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**SIMULACIÓN DEL SISTEMA ELÉCTRICO DE POTENCIA EN 138 KV  
CHIMBOTE UNO – CASMA APLICANDO EL PROGRAMA PSAT  
MATLAB**

**TESIS PARA OPTAR EL TÍTULO DE  
INGENIERO MECÁNICO ELÉCTRICO**

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## **DEDICATORIA**

A mi familia, a mis padres que me dieron siempre su apoyo para lograr lo que uno se propone, a mi esposa que me da su amor incondicional y fuerza para salir adelante, y a mis hijos que son la razón de mi existir.

## RESUMEN

En los últimos años los sistemas de potencia han crecido enormemente y geográficamente se han expandido aún más. Actualmente en nuestro país, la transmisión de energía eléctrica se efectúa mediante el Sistema Eléctrico Interconectado Nacional (SEIN) y los Sistemas Aislados (SS. AA.) , los cuales según el Anuario Estadístico de Electricidad del MINEM cada año aumentan además, las empresas de distribución de energía eléctrica cada año atienden a mayor cantidad de clientes tanto regulados como libres, por esta razón la planeación apropiada, la operación y el control de estos sistemas a gran escala, requieren técnicas computacionales avanzadas, como la programación de métodos numéricos.

Los estudios de flujo de potencia son de gran importancia en la planeación y diseño de la expansión futura de los sistemas eléctricos de potencia, así como también en la determinación de las mejores condiciones de operación de los sistemas existentes. Las empresas usan softwares comerciales muy buenos con resultados claros y precisos, pero tienen un problema, todos ellos trabajan con código cerrado, sin embargo, cuando los estudiantes están formándose en la universidad, no todas tienen laboratorios que cuenten con estos softwares, una buena alternativa es usar PSAT la cual es una herramienta de código abierto basada en MATLAB para análisis y control de sistemas de potencia. Su característica es de ser de código abierto, por esta razón permite modificar sus rutinas, en caso de que se pretendan desarrollar métodos alternativos para analizar sistemas de potencia. Para propósitos académicos y de investigación es más importante la flexibilidad que la eficiencia, allí radica la importancia de contar con herramientas computacionales de código abierto dentro de los cuales se encuentra el software libre PSAT. Los resultados obtenidos en un caso real son muy similares al software comercial Dig-Silent.

Palabras Clave: Flujos de potencia, Sistema Eléctrico, Simulación, MATLAB-PSAT

## **ABSTRACT**

In recent years, power systems have grown tremendously and geographically they have expanded further. Currently, in our country, the transmission of electric energy is carried out through the National Interconnected Electric System (SEIN) and the Isolated Systems (SS. AA.), Which according to the MINEM Statistical Yearbook of Electricity every year also increase, Electricity distribution every year serves a greater number of customers, both regulated and free, for this reason the proper planning, operation and control of these large-scale systems, advanced computational technical techniques, such as programming numerical methods. The studies of power flow are of great importance in the planning and design of the future expansion of electric power systems, as well as in the determination of the best operating conditions of controlled systems. Companies use very good commercial software with clear and precise results, but they have a problem, they all work with closed code, however, when students are training at the university, not everyone has laboratories that have these softwares, a good alternative It is to use PSAT the quality is an open source tool based on MATLAB for analysis and control of power systems. Its feature is open source, for this reason it allows you to modify your routines, in case you intend to develop alternative methods to analyze power systems. For academic and research requirements, flexibility is more important than efficiency, therein lies the importance of having open source computational tools within which PSAT free software is found. The results included in a real case are very similar to the commercial Dig-Silent software.

**KEYWORDS:** Power flows, Electrical System, Simulation, MATLAB-PSAT

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## I. INTRODUCCIÓN

### 1.1. SITUACIÓN PROBLEMÁTICA

El incremento continuo de la demanda de energía por parte de la sociedad actual, ocasiona que los Sistemas Eléctricos de Potencia (SEP) trabajen cada vez más cerca de sus límites de estabilidad de tensión, razón por la cual se pone en riesgo de colapso a los sistemas eléctricos de transmisión, por esta causa el control de la seguridad de los sistemas ha tenido un importante auge en los últimos años. En este contexto, se ha hecho énfasis en dotar a los operadores de los Centros de Control, herramientas computacionales adecuadas que les permita de alguna manera “estimar” el comportamiento del sistema, ante eventuales contingencias o salidas de operación de elementos del sistema, para con ello, detectar las áreas más vulnerables en cuanto a la estabilidad de tensión, de tal forma que los operadores puedan planificar las maniobras necesarias para que el sistema soporte las contingencias más críticas manteniendo la confiabilidad de la operación y evitando el colapso del sistema.

Algunas de las metodologías utilizadas para determinar la estabilidad de tensión en un sistema eléctrico, en el ambiente de la operación fuera de línea, basan su funcionamiento en el análisis de las contingencias de mayor criticidad establecidas previamente por la experiencia de los operadores. En el ambiente de la operación en línea de los sistemas eléctricos, además de la necesidad de disponer de información relevante en tiempos muy cortos, también se requiere de herramientas computacionales que le proporcionen al operador una información relevante de la estabilidad del sistema eléctrico.

Este trabajo describe la metodología de una simulación en un caso aplicado a un sistema eléctrico de potencia con una herramienta computacional basada en el software Matlab. Esta herramienta de análisis (PSAT) que se distribuye libremente en la red [10]. PSAT incluye flujo de potencia, flujo de potencia de continuación, óptimo flujo de potencia, análisis de estabilidad de pequeña señal y dominio del tiempo simulación.

Usualmente las empresas eléctricas trabajan con software comerciales como el caso de Dig-Silent. En el caso presentado se realizará una comparación de los

parámetros obtenidos con ambas herramientas y poder evaluar los márgenes de diferencia entre los resultados de PSAT y Dig-Silent.

A pesar de su alta eficiencia, los programas comerciales para propósitos de educación e investigación, poseen la gran desventaja de trabajar con código cerrado, es decir, cuando el código fuente no se encuentra disponible para cualquier usuario, por lo tanto no existe la posibilidad de modificar sus rutinas y/o agregar nuevos modelos de dispositivos eléctricos, de modo que cuando se investiga dichos tipos de software no cuentan con la flexibilidad necesaria para simular y evaluar el impacto de nuevas tecnologías, en desarrollo, y aun no implementadas en los sistemas de potencia reales; reduciendo así su aplicabilidad en centros de enseñanza.

Para propósitos académicos y de investigación es más importante la flexibilidad que la eficiencia, allí radica la importancia de contar con herramientas computacionales de código abierto dentro de los cuales se encuentra el software libre PSAT.

## **1.2. FORMULACIÓN DEL PROBLEMA**

¿Es posible la aplicación del programa PSAT- MATLAB para realizar un estudio de flujos de potencia en la red eléctrica CHIMBOTE UNO - CASMA?

## **II. OBJETIVOS DE LA INVESTIGACIÓN**

### **2.1. OBJETIVO GENERAL**

- Simular el sistema eléctrico de potencia en 138 kV aplicando el programa PSAT- MATLAB Chimbote Uno - Casma.

### **2.2. OBJETIVOS ESPECÍFICOS**

- Recolectar los datos de los elementos de una red eléctrica en 138 kV Chimbote Uno – Casma.
- Procesar los datos, elaborar y graficar el diseño de la red eléctrica en 138 kV Chimbote Uno Casma en PSAT-MATLAB.
- Simular el funcionamiento de la red eléctrica en 138 kV Chimbote Uno Casma en el programa PSAT-MATLAB.
- Comparar los resultados obtenidos con ambos softwares, PSAT-MATLAB Y DIG-SILENT, para evaluar los márgenes de errores en las variables.

### **III. JUSTIFICACIÓN**

**ECONÓMICA:** Permite utilizar el Software PSAT a través de la plataforma MATLAB educativo de bajo costo y poder realizar simulaciones en sistemas reales.

**SOCIAL:** Se beneficiarán todos los estudiantes y usuarios que apliquen a su investigación de análisis eléctricos de potencia al usar una herramienta alternativa.

**MEDIO AMBIENTAL:** No existe ningún tipo de contaminación al medio ambiente.

**TECNOLOGICA:** El uso de MATLAB y la herramienta PSAT, permite difundir en los estudiantes software de código abierto para cambiar, modificar o agregar nuevas rutinas con el fin de mejorarlas.

## IV. MARCO DE REFERENCIA DEL PROBLEMA

### 4.1. ANTECEDENTES DEL PROBLEMA

- **Juan Carrillo Gálvez (2009), “Modelación, simulación y análisis de flujo de carga de la red eléctrica de transporte de Guatemala, utilizando software de libre acceso” Guatemala.**

Expone la modelación de la red de transporte a través de la metodología utilizada para resolver el problema de flujo de carga con PSAT, además del flujo de carga para la red de transporte completa y el modelo reducido sustentado en el *script* R'PSAT. Finalmente, exhibe el análisis de flujo de carga para la red de transporte, sus límites de operación más significativos y las limitaciones del algoritmo de reducción.

- **Mario Arrieta Paternina (2009), herramienta de análisis de estabilidad de tensión para sistemas eléctricos de potencia.**

En este proyecto se presenta una herramienta de análisis de estabilidad de tensión para Sistemas Eléctricos de Potencia (SEP), fundamentada en el análisis de puntos de equilibrio. Se aborda este problema en tres etapas. En la primera etapa se estructura la condición inicial o punto de partida para el análisis de estabilidad comúnmente conocida como Flujo de Cargas o Flujo de Potencias. La segunda etapa consiste en determinar los elementos del SEP que pueden ser propensos a hacer inestables (nodos críticos y ramas débiles). En esta fase se aplica la técnica denominada análisis modal. Finalmente, en la tercera etapa se hace un análisis de sensibilidad perturbando cada uno de los nodos críticos identificados previamente.

- **Freddy Quille Pinto (2015), Optimización de flujo de potencia en el sistema eléctrico ecuatoriano con programación no lineal bajo Matlab. Quito**

La presente investigación analiza y minimiza las pérdidas para determinar un punto óptimo de operación del sistema eléctrico ecuatoriano utilizando un estudio de flujo de potencia y para ello se ha realizado un modelamiento de flujo óptimo el cual ha sido resuelto con el programa MATLAB.

## **4.2. FUNDAMENTOS TEÓRICOS**

### **4.2.1. FLUJOS DE POTENCIA.**

El crecimiento de las poblaciones, el comercio y la industria ha hecho que los sistemas eléctricos también crezcan. Este desarrollo obliga a añadir al sistema ciertos componentes, cuyas características se deben definir antes de que sean puestos en operación; es posible lograr esto por medio de un estudio del sistema, que se conoce como ESTUDIO DE FLUJOS DE POTENCIA.

Con el estudio de flujos de potencia se puede investigar lo siguiente:

- Flujo en KW o KVAR en las ramas de una red.
- Voltaje en los buses.
- Efecto de arreglo de circuitos e incorporación de nuevos circuitos de carga.
- Efectos de pérdidas temporales de generación o de circuitos de transmisión sobre las cargas del circuito.
- Condiciones óptimas de operación del sistema de distribución de cargas.
- Pérdidas óptimas.
- Influencia del cambio de tamaño de los conductores.
- Posición óptima del cambiador de derivaciones de los transformadores.

De acuerdo con lo anterior se puede resumir que el estudio de flujos de potencia sirve para la determinación de los voltajes y potencias activa y reactiva de todos los puntos de un sistema cuando éste opera bajo condiciones previamente establecidas.

### **4.2.2. ALGORITMOS DE FLUJO DE CARGA**

Los métodos de solución para el problema de flujo de carga se orientan por aspectos como el análisis y evaluación de seguridad, estudios de reconfiguración de las redes de transmisión, localización de capacitores, evaluación condiciones iniciales en estudios de fallas, entre otros. Cada estudio requiere una buena combinación de tipos de solución, exacta, ajustable, en línea y de propiedades de los métodos, simplicidad, versatilidad, confiabilidad; a fin de encontrar resultados adecuados a las necesidades propias del problema y en tiempos de solución que permitan analizarlos.

Los métodos iterativos de Gauss y Gauss-Seidel que utilizan la matriz de admitancias nodal, han resultado adecuados para resolver el problema de flujo de

carga pues ocupan poca memoria para cálculos, pero presentan problemas de convergencia lenta y en varios casos divergencia.

Las propiedades de convergencia del método de Newton-Raphson son superiores que las de los métodos iterativos de Gauss, pero presenta la desventaja de requerir más espacio de memoria. Sin embargo, estos métodos numéricos no son inequívocos para resolver el problema de flujo de carga, por lo que la búsqueda de algoritmos alternativos más eficientes y confiables continúa. Pueden mencionarse como métodos especiales los derivados del Newton-Raphson y los tipos de soluciones que se obtienen en estudios de flujo de carga convencionales, entre los que pueden mencionarse los métodos de segundo orden, los que calculan factores de aceleración óptimos de convergencia, y en este mismo sentido, los métodos de continuación con aplicaciones en la solución del problema de estabilidad de voltaje.

#### **4.2.3. MÉTODO DE NEWTON RAPSHON**

A finales del siglo XIX, la energía eléctrica comenzó con un nivel de voltaje de baja generación para áreas cerradas. Con el aumento de la demanda de energía, la red eléctrica se extendió y clasificó para generación, transmisión y distribución. Esta extensión es necesaria para aumentar el voltaje de transmisión, que se alcanza ahora a 1200kV. Por lo tanto, las redes eléctricas se hicieron más complejas, lo que puede causar muchos problemas en el control del flujo de potencia [1-2]. Con respecto a este aumento, es importante aplicar planes óptimos para que el sistema de energía alcance el costo mínimo y sin afectar el voltaje en el sistema. El desarrollo avanzado del sistema de red eléctrica para el futuro dará un impacto inmediato a una nueva conexión, como la dirección del flujo de energía, la protección, el perfil de voltaje, la calidad de la energía y la estabilidad [2-4]. El propósito de los estudios de flujo de potencia es planificar por adelantado y tener en cuenta diversas situaciones hipotéticas. Por ejemplo, si una línea de transmisión se está desconectando para su mantenimiento, ¿pueden las líneas restantes en el sistema manejar las cargas requeridas sin exceder sus valores nominales? Smart Grid, considerada como futura generación de energía eléctrica, utiliza métodos de cálculo en el flujo de electricidad e información para crear una red de distribución de energía automatizada y ampliamente distribuida. Este concepto está siendo ampliamente aceptado en el sistema de energía hoy en día y ahora presenta algunos grandes desafíos para integrar la generación con

Adicional de una red de comunicación más eficiente [4-5]. El problema de distribución de la potencia reactiva óptima como un subproblema de la OPF es un problema de optimización muy importante en los sistemas de energía, ya que la administración adecuada de la inyección de energía reactiva en el sistema puede minimizar la pérdida real de energía y las desviaciones del perfil de tensión y mejorar la estabilidad de la tensión [2-6]. El algoritmo para el cálculo del flujo de potencia basado en el método de Newton en la optimización permite encontrar una solución para la situación cuando los datos iniciales están fuera del dominio de existencia y tirar del punto de operación hacia el límite de factibilidad por una ruta óptima. Además, es posible estimar un margen de estabilidad estática utilizando el método de Newton en la optimización.

### A. CÁLCULOS DE POTENCIA ACTIVA Y REACTIVA

La formulación de la potencia activa y reactiva que ingresa a un bus, debe definir las siguientes cantidades [58]. Suponiendo que la tensión en el bus  $i$  se denota por

$$V_i = |V_i| \angle \delta_i = |V_i| (\cos \delta_i + j \sin \delta_i)$$

También definamos la auto-admisión en bus- $i$  como

$$Y_{ii} = |Y_{ii}| \angle \theta_{ii} = |Y_{ii}| (\cos \theta_{ii} + j \sin \theta_{ii}) = G_{ii} + jB_{ii}$$

Del mismo modo, la admisión mutua entre los autobuses  $i$  y  $j$  se puede escribir como

$$Y_{ij} = |Y_{ij}| \angle \theta_{ij} = |Y_{ij}| (\cos \theta_{ij} + j \sin \theta_{ij}) = G_{ij} + jB_{ij}$$

Además, suponiendo que el sistema de energía contenga un número total de  $n$  buses. Así, la corriente inyectada en el bus- $i$  se da como

$$I_i = Y_{i1} V_1 + Y_{i2} V_2 + \dots + Y_{in} V_n = \sum_{k=1}^n Y_{ik} V_k$$

Además, suponga que la corriente que ingresa a un bus es positiva y que al dejar que el bus sea negativo. Como consecuencia, la potencia y la potencia reactiva que entran en un bus también se considerarán positivas. La potencia compleja en el bus- $i$  viene dada por

$$\begin{aligned}
P_i - jQ_i &= V_i^* I_i = V_i^* \sum_{k=1}^n Y_{ik} V_k = |V_i| \left( \cos \delta_i - j \sin \delta_i \right) \sum_{k=1}^n |Y_{ik} V_k| \left( \cos \theta_{ik} + j \sin \theta_{ik} \right) \left( \cos \delta_k + j \sin \delta_k \right) \\
&= \sum_{k=1}^n |Y_{ik} V_i V_k| \left( \cos \delta_i - j \sin \delta_i \right) \left( \cos \theta_{ik} + j \sin \theta_{ik} \right) \left( \cos \delta_k + j \sin \delta_k \right)
\end{aligned}$$

Tenga en cuenta que

$$\begin{aligned}
\left( \cos \delta_i - j \sin \delta_i \right) \left( \cos \theta_{ik} + j \sin \theta_{ik} \right) \left( \cos \delta_k + j \sin \delta_k \right) &= \left( \cos \delta_i - j \sin \delta_i \right) \left[ \cos(\theta_{ik} + \delta_k) + j \sin(\theta_{ik} + \delta_k) \right] \\
&= \cos(\theta_{ik} + \delta_k - \delta_i) + j \sin(\theta_{ik} + \delta_k - \delta_i)
\end{aligned}$$

Por lo tanto, sustituyendo en (5) obtenemos la potencia real y reactiva como

$$\begin{aligned}
P_i &= \sum_{k=1}^n |Y_{ik} V_i V_k| \cos(\theta_{ik} + \delta_k - \delta_i) \\
Q_i &= - \sum_{k=1}^n |Y_{ik} V_i V_k| \sin(\theta_{ik} + \delta_k - \delta_i)
\end{aligned}$$

## B. DATOS POR EL FLUJO DE CARGAS

La potencia activa y reactiva generada en el bus-i se denota por  $P_{Gi}$  y  $Q_{Gi}$  respectivamente, también, la potencia real y reactiva consumida en el i bus por  $P_{Li}$  y  $Q_{Li}$  respectivamente [4-9]. Entonces la potencia real neta inyectada en el bus-i es

$$P_{i,inj} = P_{Gi} - P_{Li}$$

Suponiendo que la potencia inyectada calculada por el programa de flujo de carga sea  $P_i$ , calc. Entonces, el desajuste entre los valores reales inyectados y calculados viene dado por

$$\Delta P_i = P_{i,inj} - P_{i,calc} = P_{Gi} - P_{Li} - P_{i,calc}$$

De manera similar, el desajuste entre la potencia reactiva inyectada y los valores calculados viene dado por

$$\Delta Q_i = Q_{i,inj} - Q_{i,calc} = Q_{Gi} - Q_{Li} - Q_{i,calc}$$

### C. MÉTODO DE NEWTON-RAPHSON APLICADO AL FLUJO DE CARGAS

Esta parte discute la solución de un conjunto de ecuaciones no lineales a través del método de Newton-Raphson considerando que el establecimiento de  $n$  ecuaciones no lineales de un número total de  $n$  variables  $x_1, x_2, \dots, x_n$ . Que estas ecuaciones sean dadas por

$$\begin{aligned}f_1(x_1, \dots, x_n) &= \eta_1 \\f_2(x_1, \dots, x_n) &= \eta_2 \\&\vdots \\f_n(x_1, \dots, x_n) &= \eta_n\end{aligned}$$

Donde:  $f_1, \dots, f_n$  son funciones de las variables  $x_1, x_2, \dots, x_n$ . Por definir otro conjunto de funciones  $g_1, g_n$ , como se indica a continuación

$$\begin{aligned}g_1(x_1, \dots, x_n) &= f_1(x_1, \dots, x_n) - \eta_1 = 0 \\g_2(x_1, \dots, x_n) &= f_2(x_1, \dots, x_n) - \eta_2 = 0 \\&\vdots \\g_n(x_1, \dots, x_n) &= f_n(x_1, \dots, x_n) - \eta_n = 0\end{aligned}$$

Y suponiendo que las estimaciones iniciales de las  $n$  variables son  $x_1^{(0)}, x_2^{(0)}, \dots, x_n^{(0)}$ . Agregando correcciones  $\Delta x_1^{(0)}, \Delta x_2^{(0)}, \dots, \Delta x_n^{(0)}$  a estas variables, de modo que el resultado sea la solución correcta de estas variables definidas por

$$\begin{aligned}x_1^* &= x_1^{(0)} + \Delta x_1^{(0)} \\x_2^* &= x_2^{(0)} + \Delta x_2^{(0)} \\&\vdots \\x_n^* &= x_n^{(0)} + \Delta x_n^{(0)}\end{aligned}$$

Las funciones en (12) se pueden escribir en términos de las variables dadas en (13) como

$$g_k(x_1^*, \dots, x_n^*) = g_k(x_1^{(0)} + \Delta x_1^{(0)}, \dots, x_n^{(0)} + \Delta x_n^{(0)}), \quad k = 1, \dots, n$$

Luego podemos expandir la ecuación anterior en la serie de Taylor alrededor de los valores nominales de  $x_1^{(0)}, x_2^{(0)}, \dots, x_n^{(0)}$ .

Despreciando los términos de segundo orden y más alto de la serie, la expansión de  $g_k, k = 1, \dots, n$  se da como

$$g_k(x_1^*, \dots, x_n^*) = g_k(x_1^{(0)}, \dots, x_n^{(0)}) + \Delta x_1^{(0)} \left. \frac{\partial g_k}{\partial x_1} \right|^{(0)} + \Delta x_2^{(0)} \left. \frac{\partial g_k}{\partial x_2} \right|^{(0)} + \dots + \Delta x_n^{(0)} \left. \frac{\partial g_k}{\partial x_n} \right|^{(0)}$$

donde  $\partial g_k / \partial x_i^{(0)}$  es la derivada parcial de  $g_k$  evaluada en  $x_1^{(0)}, \dots, x_n^{(0)}$ . La ecuación (15) se puede escribir en forma de matriz vectorial como

$$\begin{bmatrix} \partial g_1 / \partial x_1 & \partial g_1 / \partial x_2 & \dots & \partial g_1 / \partial x_n \\ \partial g_2 / \partial x_1 & \partial g_2 / \partial x_2 & \dots & \partial g_2 / \partial x_n \\ \vdots & \vdots & \ddots & \vdots \\ \partial g_n / \partial x_1 & \partial g_n / \partial x_2 & \dots & \partial g_n / \partial x_n \end{bmatrix}^{(0)} \begin{bmatrix} \Delta x_1^{(0)} \\ \Delta x_2^{(0)} \\ \vdots \\ \Delta x_n^{(0)} \end{bmatrix} = \begin{bmatrix} 0 - g_1(x_1^{(0)}, \dots, x_n^{(0)}) \\ 0 - g_2(x_1^{(0)}, \dots, x_n^{(0)}) \\ \vdots \\ 0 - g_n(x_1^{(0)}, \dots, x_n^{(0)}) \end{bmatrix}$$

La matriz cuadrada de derivadas parciales se llama matriz jacobiana  $J$  con  $J^{(0)}$  que indica que la matriz se evalúa para los valores iniciales de  $x_1^{(0)}, \dots, x_n^{(0)}$ . la solución de (16) se puede escribir como

$$\begin{bmatrix} \Delta x_1^{(0)} \\ \Delta x_2^{(0)} \\ \vdots \\ \Delta x_n^{(0)} \end{bmatrix} = [J^{(0)}]^{-1} \begin{bmatrix} \Delta g_1^{(0)} \\ \Delta g_2^{(0)} \\ \vdots \\ \Delta g_n^{(0)} \end{bmatrix}$$

Dado que la serie de Taylor se trunca al descuidar los términos de segundo orden y superiores, no podemos esperar encontrar la solución correcta al final de la primera iteración. Entonces tendremos

$$\begin{aligned} x_1^{(1)} &= x_1^{(0)} + \Delta x_1^{(0)} \\ x_2^{(1)} &= x_2^{(0)} + \Delta x_2^{(0)} \\ &\vdots \\ x_n^{(1)} &= x_n^{(0)} + \Delta x_n^{(0)} \end{aligned}$$

Luego se usan para encontrar  $J^{(1)}$  y  $\Delta g_k^{(1)}$ ,  $k = 1, \dots, n$ . Luego podemos encontrar  $\Delta x_1^{(1)}, \dots, \Delta x_n^{(1)}$  a partir de una ecuación como (17) y luego calcular  $x_1^{(1)}, \dots, x_n^{(1)}$ . El proceso continúa hasta que  $\Delta g_k$ ,  $k = 1, \dots, n$  se vuelve menor que una pequeña cantidad.

#### D. SIMULACIÓN DE FLUJO DE POTENCIA MEDIANTE EL MÉTODO DE NEWTON RAPHSON

Supongamos que un sistema de energía de n-bus contiene un número total de np P-Q buses, mientras que el número de buses P-V (generador) es ng tal que  $n = np + ng + 1$ . Se supone que el bus-1 es el bus flojo. Además, usaremos las ecuaciones de desajuste de  $\Delta P_i$  y  $\Delta Q_i$  dadas en (9) y (10) respectivamente [9-12]. El enfoque del flujo de carga de NewtonRaphson es similar al de resolver un sistema de ecuaciones no lineales utilizando el método de Newton-Raphson: en cada iteración, tenemos que formar una matriz jacobiana y resolver las correcciones de una ecuación del tipo dado en (16). Para el problema de flujo de carga, esta ecuación es de la forma

$$J \begin{bmatrix} \Delta\delta_2 \\ \vdots \\ \Delta\delta_n \\ \frac{\Delta|V_2|}{|V_2|} \\ \vdots \\ \frac{\Delta|V_{1+n_p}|}{|V_{1+n_p}|} \end{bmatrix} = \begin{bmatrix} \Delta P_2 \\ \vdots \\ \Delta P_n \\ \Delta Q_2 \\ \vdots \\ \Delta Q_{1+n_p} \end{bmatrix}$$

donde la matriz jacobiana se divide en submatrices como

$$J = \begin{bmatrix} J_{11} & J_{12} \\ J_{21} & J_{22} \end{bmatrix}$$

Se puede ver que el tamaño de la matriz jacobiana es  $(n + np - 1) \times (n + np - 1)$ . Por ejemplo, para el problema del bus 5 de la figura (1) esta matriz será del tamaño  $(7 \times 7)$ . Las dimensiones de las submatrices son las siguientes:

$J_{11}$ :  $(n - 1) \times (n - 1)$ ,  $J_{12}$ :  $(n - 1) \times np$ ,  $J_{21}$ :  $np \times (n - 1)$  y  $J_{22}$ :  $np \times np$

Las submatrices son

$$J_{11} = \begin{bmatrix} \frac{\partial P_2}{\partial \delta_2} & \dots & \frac{\partial P_2}{\partial \delta_n} \\ \vdots & \ddots & \vdots \\ \frac{\partial P_n}{\partial \delta_2} & \dots & \frac{\partial P_n}{\partial \delta_n} \end{bmatrix}$$

$$J_{12} = \begin{bmatrix} |V_2| \frac{\partial P_2}{\partial |V_2|} & \dots & |V_{1+n_p}| \frac{\partial P_2}{\partial |V_{1+n_p}|} \\ \vdots & \ddots & \vdots \\ |V_2| \frac{\partial P_n}{\partial |V_2|} & \dots & |V_{1+n_p}| \frac{\partial P_n}{\partial |V_{1+n_p}|} \end{bmatrix}$$

$$J_{21} = \begin{bmatrix} \frac{\partial Q_2}{\partial \delta_2} & \dots & \frac{\partial Q_2}{\partial \delta_n} \\ \vdots & \ddots & \vdots \\ \frac{\partial Q_{1+n_p}}{\partial \delta_2} & \dots & \frac{\partial Q_{1+n_p}}{\partial \delta_n} \end{bmatrix}$$

$$J_{22} = \begin{bmatrix} |V_2| \frac{\partial Q_2}{\partial |V_2|} & \dots & |V_{1+n_p}| \frac{\partial Q_2}{\partial |V_{1+n_p}|} \\ \vdots & \ddots & \vdots \\ |V_2| \frac{\partial Q_{1+n_p}}{\partial |V_2|} & \dots & |V_{1+n_p}| \frac{\partial Q_{1+n_p}}{\partial |V_{1+n_p}|} \end{bmatrix}$$

- **Algoritmo de flujo de carga**

El procedimiento de Newton-Raphson es el siguiente:

Paso 1: elija los valores iniciales de las magnitudes de voltaje  $|V|^{(0)}$  de todos los  $n_p$  buses de carga y  $n - 1$  ángulos  $\delta^{(0)}$  de los voltajes de todos los buses, excepto el bus flojo.

Paso 2: Utilice el estimado  $|V|^{(0)}$  y  $\delta^{(0)}$  para calcular un  $n - 1$  número total de  $P_{calc}^{(0)}$  de potencia real inyectada e igual número de desajuste de potencia real  $\Delta P^{(0)}$ .

Paso 3: Utilice el estimado  $|V|^{(0)}$  y  $\delta^{(0)}$  para calcular un número  $n_p$  total de potencia reactiva inyectada  $Q_{calc}^{(0)}$  y un número igual de desajuste de potencia reactiva  $\Delta Q^{(0)}$ .

Paso 3: Usa la estimada  $|V|^{(0)}$  y  $\delta^{(0)}$  para formular la matriz jacobiana  $J^{(0)}$ .

Paso 4: Resuelve (19) para  $\Delta \delta^{(0)}$  y  $\Delta |V|^{(0)} \div |V|^{(0)}$ .

Paso 5: Obtener las actualizaciones de

$$\delta^{(1)} = \delta^{(0)} + \Delta \delta^{(0)}$$

$$|V|^{(1)} = |V|^{(0)} \left[ 1 + \frac{\Delta |V|^{(0)}}{|V|^{(0)}} \right]$$

Paso 6: Comprueba si todos los desajustes están por debajo de un número pequeño. Terminar el proceso en caso afirmativo. De lo contrario, vuelva al paso 1 para comenzar la siguiente iteración con las actualizaciones dadas por (25) y (26).

- **Formación de la matriz jacobiana**

La formación de las submatrices de la matriz jacobiana se puede simular mediante el uso de las ecuaciones de potencia activa y reactiva de (6) y (7) se pueden reescribir con la ayuda de (2) como

$$P_i = |V_i|^2 G_{ii} + \sum_{\substack{k=1 \\ k \neq i}}^n |Y_{ik} V_i V_k| \cos(\theta_{ik} + \delta_k - \delta_i)$$

$$Q_i = -|V_i|^2 B_{ii} - \sum_{\substack{k=1 \\ k \neq i}}^n |Y_{ik} V_i V_k| \sin(\theta_{ik} + \delta_k - \delta_i)$$

A. Formación de J11

Por definir J11 como

$$J_{11} = \begin{bmatrix} L_{22} & \cdots & L_{2n} \\ \vdots & \ddots & \vdots \\ L_{n2} & \cdots & L_{nn} \end{bmatrix}$$

De (21) que  $M_{ik}$  son las derivadas parciales de  $P_i$  con respecto a  $\delta_k$ . La derivada  $P_i$  (27) con respecto a  $k$  para  $i \neq k$  está dada por

$$L_{ik} = \frac{\partial P_i}{\partial \delta_k} = -|Y_{ik} V_i V_k| \sin(\theta_{ik} + \delta_k - \delta_i), \quad i \neq k$$

Además, la derivada  $P_i$  con respecto a  $k$  para  $i = k$  está dada por

$$L_{ii} = \frac{\partial P_i}{\partial \delta_i} = \sum_{\substack{k=1 \\ k \neq i}}^n |Y_{ik} V_i V_k| \sin(\theta_{ik} + \delta_k - \delta_i)$$

Comparando la ecuación anterior con (28) podemos escribir

$$L_{ii} = \frac{\partial P_i}{\partial \delta_i} = -Q_i - |V_i|^2 B_{ii}$$

## B. Formación de J21

Definamos J21 como

$$J_{21} = \begin{bmatrix} M_{22} & \cdots & M_{2n} \\ \vdots & \ddots & \vdots \\ M_{n,2} & \cdots & M_{n,n} \end{bmatrix}$$

De (23) es evidente que los elementos de J21 son la derivada parcial de Q con respecto a  $\delta$ . De (28) podemos escribir la ecuación (33)

$$M_{ik} = \frac{\partial Q_i}{\partial \delta_k} = -|Y_{ik} V_i V_k| \cos(\theta_{ik} + \delta_k - \delta_i), \quad i \neq k$$

Del mismo modo, para  $i = k$  tenemos

$$M_{ii} = \frac{\partial Q_i}{\partial \delta_i} = \sum_{\substack{k=1 \\ k \neq i}}^n |Y_{ik} V_i V_k| \cos(\theta_{ik} + \delta_k - \delta_i) = P_i - |V_i|^2 G_{ii}$$

La última igualdad de (34) es evidente a partir de (27).

## C. Formación de J12

Por definir J12 como

$$J_{12} = \begin{bmatrix} N_{22} & \cdots & N_{2n_p} \\ \vdots & \ddots & \vdots \\ N_{n,2} & \cdots & N_{n,n_p} \end{bmatrix}$$

Como se desprende de (22), los elementos de J21 involucran los derivados de la potencia real P con respecto a la magnitud de la tensión de bus  $|V|$ . Para  $i \neq k$ , podemos escribir desde (27)

$$N_{ik} = |V_k| \frac{\partial P_i}{\partial |V_k|} = |Y_{ik} V_i V_k| \cos(\theta_{ik} + \delta_k - \delta_i) = -M_{ik} \quad i \neq k$$

Para  $i = k$  tenemos

$$\begin{aligned} N_{ii} &= |V_i| \frac{\partial P_i}{\partial |V_i|} = |V_i| \left[ 2|V_i|G_{ii} + \sum_{\substack{k=1 \\ k \neq i}}^n |Y_{ik} V_k| \cos(\theta_{ik} + \delta_k - \delta_i) \right] \\ &= 2|V_i|^2 G_{ii} + \sum_{\substack{k=1 \\ k \neq i}}^n |Y_{ik} V_i V_k| \cos(\theta_{ik} + \delta_k - \delta_i) = 2|V_i|^2 G_{ii} + M_{ii} \end{aligned}$$

D. Formación de J22

Para la formación de J22 nos deja definir.

$$J_{22} = \begin{bmatrix} O_{22} & \cdots & O_{2n_p} \\ \vdots & \ddots & \vdots \\ O_{n_p 2} & \cdots & O_{n_p n_p} \end{bmatrix}$$

Para  $i \neq k$  puede escribir desde (4.39)

$$O_{ik} = |V_i| \frac{\partial Q_i}{\partial |V_k|} = -|V_i| |Y_{ik} V_i V_k| \sin(\theta_{ik} + \delta_k - \delta_i) = L_{ik}, \quad i \neq k$$

Finalmente, para  $i = k$  tenemos

$$\begin{aligned} O_{ii} &= |V_i| \frac{\partial Q_i}{\partial |V_k|} = |V_i| \left[ -2|V_i|B_{ii} - \sum_{\substack{k=1 \\ k \neq i}}^n |Y_{ik} V_k| \sin(\theta_{ik} + \delta_k - \delta_i) \right] \\ &= -2|V_i|^2 B_{ii} - \sum_{\substack{k=1 \\ k \neq i}}^n |Y_{ik} V_i V_k| \sin(\theta_{ik} + \delta_k - \delta_i) = -2|V_i|^2 B_{ii} - L_{ii} \end{aligned}$$

Por lo tanto, las submatrices J11 y J21 se calculan, la formación de las submatrices J12 y J22 es bastante sencilla. Para sistemas grandes, esto resultará en un ahorro considerable en el tiempo de cálculo.

#### B.4.1. SOFTWARE PARA ANÁLISIS DE SISTEMAS DE POTENCIA

Debido a que la operación de las redes eléctricas de potencia es cada día más compleja existe la necesidad de utilizar herramientas que faciliten su entendimiento y

maniobrabilidad. El software de computadora es la mejor alternativa a este enfoque, pero su utilidad depende de factores como el costo.

Conforme transcurre el tiempo, la cantidad de programas de simulación montados en plataformas hardware-software aumentan en número y sus diseñadores se orientan de maneras distintas para crearlos, por lo que el software para simulación de sistemas eléctricos de potencia se puede clasificar de distintas formas, considerándose entre las más importantes las del software Comercial, Didáctico, Limitado y el de Libre acceso. Esta clasificación se basa en la accesibilidad de los paquetes, ya que el análisis de contingencias, flujo de carga, pérdidas, etc., también pueden desplegar clasificaciones según sea el objeto principal de la aplicación del software. Además, el carácter creativo (interfaz) del programa, también puede ser un concepto que marque diferencias.

#### **B.4.2. DEFINICIÓN DE SOFTWARE**

Según se ha identificado el software de las cuatro clasificaciones que se han mencionado, el software comercial y el de libre acceso tienen mayor relevancia según puede compararse, por lo que se dará mayor prioridad a su descripción.

##### **SOFTWARE COMERCIAL**

El software comercial es un software que es comercializado, es decir vendido por los entes que lo producen a través de licencias para su distribución y soporte. El software comercial mayormente utilizado y disponible en el mercado como Matlab, PSS/E, CYME, EMTP, PSCAD/EMTDC, NEPLAN, PowerGraf, PowerWorld, PFLOW y Ptolemy; conlleva una filosofía de integración y típicamente es eficiente. A pesar de su entereza, este software puede ser incómodo para investigación, pues el software comercial es cerrado, ya que no permite cambiar su código fuente para modificar o adherir nuevos algoritmos en su estructura.

Por su utilidad, existen herramientas de software que son mayormente utilizadas en el mercado actual, por esta razón, es posible asumir que las características generales del software comercial pueden resumirse alrededor de algunos programas que son regularmente utilizados para analizar sistemas de potencia.

## **A. MATLAB®**

Matlab es una herramienta poderosa de programación autentica, orientada a cálculos numéricos con vectores y matrices incluyendo escalares y números complejos, cadenas de caracteres y estructuras formales complicadas, además, es capaz de trabajar con gráficos en dos y tres dimensiones.

Matlab un programa rápido para ejecutar funciones de código nativo aprovechando sus capacidades de vectorización, pero resulta lento para integrar códigos equivalentes de C y FORTRAN. Sin embargo, es una herramienta de alto nivel con un entorno de visualización gráfica que permite identificar resultados sin necesidad del uso de la programación de línea, muy útil para desarrollar aplicaciones técnicas y científicas que significativamente aumentan la productividad de los programadores.

Su nombre radica de la abreviatura de Matrix Laboratory. Sus librerías denominadas toolboxes extienden las funciones incorporadas del programa principal cubriendo prácticamente todas las áreas de la ingeniería y la simulación como el procesamiento de imágenes, estadística, análisis financiero, redes neurales, lógica difusa y simulación de sistemas dinámicos por mencionar algunas.

Para análisis de sistemas de potencia, existe el Power System Toolbox (PST) y el Voltage Stability Toolbox (VST), con las que es posible comprender la operación y control de los sistemas de potencia. Matlab cuenta con diferentes versiones que pueden ejecutarse en plataformas UNIX, Windows y Macintosh, proporcionando al usuario un medio único para resolver problemas complejos.

## **B. SIMULINK**

Es una herramienta para modelar, simular y analizar multidominios de sistemas dinámicos. Su interfaz primaria es una herramienta gráfica de diseño y un block de librerías modificables. Simulink es un complemento de Matlab, es decir, funciona si y solo si, Matlab lo hace primero.

Simulink puede simular cualquier sistema que pueda ser definido por ecuaciones diferenciales continuas o discretas. Esto significa que puede modelar sistemas continuos y discretos en el tiempo y sistemas híbridos lineales, no lineales y multifrecuencia. Posee una interfaz gráfica de usuario (GUI) para definir y analizar modelos con librerías y diagramas de bloques fáciles de utilizar, que le dan una clara

ventaja sobre la mayoría de simuladores. Simulink es integral ya que es posible simular sus modelos desde las líneas de comando de Matlab, verificar los resultados de simulación en los bloques del modelo mientras se está ejecutando, y transferirlos a la consola de Matlab para procesarlos.

### **C. PSAT**

PSAT ha sido pensado para ser portátil y de código abierto. Con este objetivo, PSAT se ha desarrollado utilizando Matlab, que se ejecuta en los sistemas operativos más comunes, como Unix, Linux, Windows y Mac OS X. Sin embargo, PSAT no sería completamente de código abierto si se ejecuta solo en Matlab, que es un software propietario. Con este objetivo, PSAT puede ejecutarse también en los últimos lanzamientos de GNU / Octave [12], que es básicamente un clon gratuito de Matlab. En conocimiento del autor, PSAT es en realidad el primer proyecto de software libre en el campo del análisis del sistema de energía. PSAT es también el primer software de sistema de energía que se ejecuta en plataformas GNU / Octave.

El esquema sinóptico de PSAT se muestra en la Fig. 1. Observe que el núcleo de PSAT es el algoritmo de flujo de potencia, que también se encarga de la inicialización de la variable de estado. Una vez que se haya resuelto el flujo de potencia, el usuario puede realizar más análisis estáticos y / o dinámicos. Estos son:

- 1) Flujo de potencia de continuación (CPF);
- 2) Flujo de potencia óptimo (OPF);
- 3) Análisis de estabilidad de pequeña señal;
- 4) Simulaciones en el dominio del tiempo.

PSAT explota profundamente los cálculos vectorizados de Matlab y las funciones de matriz dispersa para optimizar los rendimientos. Además, PSAT cuenta con el conjunto más completo de algoritmos para análisis estáticos y dinámicos entre los softwares de sistemas de energía basados en Matlab actualmente disponibles (consulte la Tabla I). PSAT también contiene interfaces para UWPFLOW [1] y GAMS [13] que extienden la capacidad de PSAT para resolver problemas de CPF y OPF, respectivamente. Estas interfaces no se discuten aquí, ya que están más allá del propósito principal de este documento.

Para realizar análisis precisos y completos del sistema de energía, PSAT admite una variedad de modelos estáticos y dinámicos, de la siguiente manera:

- Datos de flujo de potencia: barras de bus, líneas de transmisión y transformadores, buses de holgura, generadores fotovoltaicos, cargas de potencia constante y admisiones de derivación.
- Datos de mercado: ofertas y límites de suministro de energía, reservas de energía del generador y ofertas y límites de demanda de energía.
- Interruptores: Fallas y disyuntores de la línea de transmisión.
- Mediciones: Mediciones de frecuencia de bus.
- Cargas: cargas dependientes del voltaje, cargas dependientes de la frecuencia, cargas ZIP (polinomias), cargas controladas por termostato y cargas de recuperación exponencial [14].
- Máquinas: Máquinas síncronas (orden dinámico de 2 a 8) y motores de inducción (orden dinámico de 1 a 5).
- Controles: Gobernadores de turbina, AVR, PSS, limitadores de sobreexcitación y regulación de voltaje secundario.
- Transformadores de regulación: cambiadores de tomas bajo carga y transformadores de cambio de fase.
- HECHOS: SVC, TCSC, SSSC, UPFC.
- Turbinas de viento: modelos de viento, turbina de viento de velocidad constante con motor de inducción de jaula de ardilla, turbina de viento de velocidad variable con generador de inducción de alimentación doble, y turbina de viento de velocidad variable con generador síncrono de accionamiento directo.
- Otros modelos: eje dinámico de la máquina síncrona, modelo de resonancia sub-síncrona, celda de combustible de óxido sólido y equivalentes de área de sub-transmisión.

Además de los algoritmos y modelos matemáticos, PSAT incluye una variedad de herramientas adicionales, de la siguiente manera:

- 1) Interfaces gráficas de usuario fáciles de usar;
- 2) biblioteca Simulink para diagramas de red de una línea;
- 3) Conversión de archivos de datos hacia y desde otros formatos;
- 4) Editor e instalador del modelo de finido por el usuario;
- 5) Uso de la línea de comandos.

**Tabla 1. FUNCIONES DISPONIBLES EN MATLAB  
Y PLATAFORMAS GNU / OCTAVE**

Función		Matlab	GNU/Octave
Flujo de potencia de continuación.		Sí	Sí
Flujo de potencia óptimo		Sí	Sí
Análisis de estabilidad de pequeña señal.		Sí	Sí
Simulación del dominio del tiempo		Sí	Sí
GUIs y biblioteca de Simulink		Sí	No
Conversión de formato de datos		Sí	Sí
Modelos definidos por el usuario.		Sí	No
Uso de línea de comando		Sí	Sí

## I. MODELOS Y ALGORITMOS

### A. Modelo de sistema de energía

El modelo de sistema de energía estándar es básicamente un conjunto de ecuaciones algebraicas diferenciales no lineales, como sigue:

$$\begin{aligned}\dot{x} &= f(x, y, p) \\ 0 &= g(x, y, p)\end{aligned}$$

Donde  $x$  son las variables de estado  $x \in \mathbb{R}^n$ ;  $y$  son las variables algebraicas  $y \in \mathbb{R}^m$ ;  $p$  son las variables independientes  $p \in \mathbb{R}^l$ ; valore las ecuaciones diferenciales  $f: \mathbb{R}^n \times \mathbb{R}^m \times \mathbb{R}^l \rightarrow \mathbb{R}^n$ ; y  $g$  son las ecuaciones algebraicas  $g: \mathbb{R}^n \times \mathbb{R}^m \times \mathbb{R}^l \rightarrow \mathbb{R}^m$ .

PSAT utiliza (1) en todos los algoritmos, a saber, flujo de potencia, CPF, OPF, análisis de estabilidad de pequeña señal y simulación en el dominio del tiempo, como se describe en las siguientes subsecciones de III-B a III-F. Las ecuaciones algebraicas  $g$  se obtienen como la suma de todas las inyecciones de energía activa y reactiva en los autobuses:

$$g(x, y, p) = \begin{bmatrix} g_p \\ g_q \end{bmatrix} = \begin{bmatrix} g_{pm} \\ g_{qm} \end{bmatrix} - \sum_{c \in C_m} \begin{bmatrix} g_{pc} \\ g_{qc} \end{bmatrix} \quad \forall m \in \mathcal{M}$$

Donde  $g_{pm}$  y  $g_{qm}$  son los flujos de potencia en las líneas de transmisión como se definen comúnmente en la literatura [15],  $\mathcal{M}$  es el conjunto de buses de red,  $C_m$  y  $[g_{pc}^T, g_{qc}^T]^T$  son el conjunto y las inyecciones de energía de los componentes conectados al bus  $m$ , respectivamente.

El PSAT está orientado a los componentes, es decir, cualquier componente se define independientemente del resto del programa como un conjunto de ecuaciones algebraicas diferenciales no lineales, de la siguiente manera:

$$\begin{aligned}\dot{x}_c &= f_c(x_c, y_c, p_c) \\ P_c &= g_{pc}(x_c, y_c, p_c) \\ Q_c &= g_{qc}(x_c, y_c, p_c)\end{aligned}$$

Donde  $x_c$  son las variables de estado del componente,  $y_c$  las variables algebraicas (es decir,  $V$  y  $\theta$  en los buses a los que está conectado el componente) y  $p_c$  son variables independientes. Luego, las ecuaciones diferenciales  $f$  en (1) se construyen concatenando  $f_c$  de todos los componentes.

Las ecuaciones (3) junto con las matrices de los jacobianos se definen en una función que se usa tanto para análisis estáticos como dinámicos. Además de esta función, un componente se define mediante una estructura que contiene datos, parámetros y la interconexión a la red.

Para mayor claridad, consideremos el siguiente ejemplo, a saber, la carga de recuperación exponencial (ERL) [14]. El conjunto de ecuaciones algebraicas diferenciales son las siguientes:

$$\begin{aligned} \dot{x}_{c1} &= -x_{c1}/T_P + P_0(V/V_0)^{\alpha_s} - P_0(V/V_0)^{\alpha_t} \\ \dot{x}_{c2} &= -x_{c2}/T_Q + Q_0(V/V_0)^{\beta_s} - Q_0(V/V_0)^{\beta_t} \\ P_c &= x_{c1}/T_P + P_0(V/V_0)^{\alpha_t} \\ Q_c &= x_{c2}/T_Q + Q_0(V/V_0)^{\beta_t} \end{aligned}$$

**Tabla 2. FORMATO DE DATOS DE CARGA DE RECUPERACIÓN EXPONENCIAL (Erload.con)**

Columna	Variable	Descripción	Unidad
1	-	Número de BUSES	Int
2	Sn	Potencia nominal	MVA
3	Vn	Coefficiente de tensión de potencia activa	Kv
4	fn	Coefficiente de frecuencia de potencia activa	Hz
5	TP	Constante de tiempo de potencia real	S
6	TQ	Constante de tiempo de potencia reactiva	S
7	as	Exponente de potencia real estático	-
8	at	Exponente dinámico de potencia real	-
9	βs	Exponente de potencia reactiva estática	-
10	βt	Exponente dinámico de potencia reactiva	-

Donde la mayoría de los parámetros se definen en la Tabla III y  $P_0$ ,  $Q_0$  y  $V_0$  son las potencias y voltajes iniciales, respectivamente, según lo indicado por la solución de flujo de potencia. Observe que se debe conectar una carga PQ constante en el mismo bus que el ERL para determinar los valores de  $P_0$ ,  $Q_0$  y  $V_0$ .

Las cargas de recuperación exponencial se definen en la estructura Erload, cuyos campos son los siguientes:

- 1) con: datos de carga de recuperación exponencial.
- 2) bus: índices de buses a los que están conectados los ERL.
- 3) dat: potencias y voltajes iniciales ( $P_0$ ,  $Q_0$  y  $V_0$ ).
- 4) n: Número total de ERL.
- 5) xp: Índices de la variable de estado xc1.
- 6) xq: Índices de la variable de estado xc2.

## B. Flujo de potencia

PSAT incluyó el método estándar de Newton-Raphson [15], el flujo de potencia desacoplado rápido (variaciones de XB y BX [16]), y un flujo de potencia con un modelo de bus flojo distribuido [17]. Este último es una novedad entre los softwares de sistemas de energía basados en Matlab. El problema del flujo de potencia se formula como (1) con cero derivadas por primera vez  $\dot{x}$ :

$$\begin{aligned} 0 &= f(x, y) \\ 0 &= g(x, y) \end{aligned}$$

Las ecuaciones diferenciales se incluyen en (5), aunque algunos componentes dinámicos se inicializan después del análisis del flujo de potencia. Esto es necesario si los datos de entrada conocidos del componente no son los parámetros de entrada de su modelo dinámico. Por ejemplo, el usuario generalmente no conoce los voltajes de campo y los pares mecánicos de las máquinas síncronas. Sin embargo, el usuario conoce los voltajes deseados y las potencias activas inyectadas en la red por los generadores. Por lo tanto, uno puede resolver el flujo de energía primero,

utilizando buses fotovoltaicos y luego inicializar las variables de estado de la máquina sincrónica utilizando la solución de flujo de energía. Sin embargo, se pueden incluir otros componentes en el flujo de potencia, ya que uno conoce los parámetros de entrada del modelo dinámico. Por ejemplo, en el caso de los cambiadores de tomas de carga, es probable que el usuario conozca el voltaje de referencia del regulador en lugar de la relación de tomas del transformador.

El modelo de bus flujo distribuido se basa en un concepto de centro de energía generalizado y consiste en distribuir las pérdidas entre todos los generadores [17]. Esto se obtiene reescribiendo las potencias activas  $P_G$  de generadores de holgura y fotovoltaicos como:

$$P_G = (1 + k_G \gamma) P_{G_0}$$

Donde  $P_{G_0}$  son las potencias activas deseadas del generador,  $k_G$  es una variable escalar que distribuye las pérdidas de potencia entre todos los generadores y son los factores de participación de los generadores a las pérdidas. Observe que  $k_G$  es una incógnita en la medida en que las pérdidas son desconocidas. Suponiendo que (6) se haya escrito para todos los generadores,  $k_G$  se equilibra con la ecuación de referencia de fase.

### C. Flujo de potencia de continuación

La función de flujo de potencia de continuación (CPF) incluida en PSAT es una novedad entre los paquetes disponibles basados en Matlab para el análisis del sistema de potencia. El algoritmo CPF consiste en un paso predictivo que calcula un vector tangente normalizado y un paso corrector que se puede obtener mediante una parametrización local o una intersección perpendicular [18]. El problema de CPF se define en base a (1), como sigue:

$$\begin{aligned} 0 &= f(x, y, \lambda) \\ 0 &= g(x, y, \lambda) \end{aligned}$$

Donde  $\lambda \in \mathbb{R}$  es el parámetro de carga, que se utiliza para variar las potencias de carga y el generador de caso base,  $P_{G_0}$ ,  $P_{L_0}$  y  $Q_{L_0}$  respectivamente, como sigue:

$$\begin{aligned} P_G &= (\lambda + \gamma k_G) P_{G_0} \\ [P_L, Q_L] &= \lambda [P_{L_0}, Q_{L_0}] \end{aligned}$$

#### D. Flujo de potencia óptimo

El flujo de potencia óptimo (OPF) se define como un problema de optimización restringida no lineal. El Método de Punto Interior (MIP) con el método de predictor-corrector de Mehrotra, el cual se utiliza para resolver el problema OPF [19]. Tenga en cuenta que PSAT es el único software basado en Matlab que proporciona un algoritmo IPM para resolver el problema de compensación de mercado basado en OPF. Unas variedades de funciones objetivas se incluyen en PSAT, como sigue:

- 1) Procedimiento de compensación del mercado: el modelo de mercado "estándar" basado en OPF se representa en el PSAT de la siguiente manera:

$$\begin{aligned} & \text{Minimize}_{(y,p)} && F(p) \\ & \text{subject to} && g(y,p) = 0 \\ & && h_{\min} \leq h(y) \leq h_{\max} \\ & && p_{\min} \leq p \leq p_{\max} \end{aligned}$$

Donde  $g$  y  $y$  se definen como en (1), las variables de control  $p$  son las demandas de potencia y oferta  $P_D$  y  $P_S$ , mientras que  $F: R^l \rightarrow R$  y  $h: R^m \rightarrow R^q$  son la función objetivo y las restricciones de desigualdad, respectivamente. El objetivo es maximizar el beneficio social; así, la función objetivo  $F$  se define como:

$$F = - \left( \sum_i C_{D_i}(P_{D_i}) - \sum_i C_{S_i}(P_{S_i}) \right)$$

Donde  $CS$  y  $CD$  son funciones cuadráticas de ofertas de oferta y demanda en \$ / MWh, respectivamente. Los límites físicos y de seguridad  $h$  incluidos en el PSAT son similares a los utilizados en [20], y tienen en cuenta los límites térmicos de la línea de transmisión, los límites de flujo de potencia de la línea de transmisión, los límites de potencia reactiva del generador y los límites de "seguridad" de voltaje.

- 2) Modelo de compensación de mercado VSC-OPF: el siguiente problema de optimización se utiliza para representar un modelo de compensación de mercado OPF con inclusión de restricciones de estabilidad de voltaje, según lo que se propuso en [21] y [22]:

$$\begin{aligned} & \text{Minimize}_{(y,p,\hat{y},\lambda)} && f(p, \lambda) \\ & \text{subject to} && g(y,p) = 0 \\ & && \hat{g}(\hat{y}, p, \lambda) = 0 \\ & && \lambda \geq \hat{\lambda} \\ & && h_{\min} \leq h(y) \leq h_{\max} \\ & && \hat{h}_{\min} \leq h(\hat{y}) \leq \hat{h}_{\max} \\ & && p_{\min} \leq p \leq p_{\max} \end{aligned}$$

En (11), un segundo conjunto de variables de flujo de potencia  $\hat{x} \in \mathbb{R}^m$  y ecuaciones  $\hat{g}: \mathbb{R}^m \times \mathbb{R}^l \times \mathbb{R} \rightarrow \mathbb{R}^m$ , junto con las restricciones  $h(\hat{x}): \mathbb{R}^m \rightarrow \mathbb{R}^q$ , se presentan para representar la solución asociada con un parámetro de carga  $\lambda$ , donde  $\lambda$  representa un aumento en las potencias del generador y de carga de la siguiente manera:

$$\begin{aligned}\hat{P}_G &= (1 + \lambda + \hat{k}_G)P_G \\ \hat{P}_L &= (1 + \lambda)P_L\end{aligned}$$

$$\begin{aligned}\hat{P}_G &= (1 + \lambda + \hat{k}_G)P_G \\ \hat{P}_L &= (1 + \lambda)P_L\end{aligned}$$

Donde  $P_G$  y  $P_L$  son generadores totales y potencias de carga para la condición actual del mercado.

Hay dos funciones objetivas disponibles: la maximización de la distancia a la

$$F = -\lambda$$

$$F = -\omega \left( \left( \sum_i C_{D_i}(P_{D_i}) - \sum_i C_{S_i}(P_{S_i}) \right) \right) - (1-\omega)\lambda$$

condición de carga máxima:

y una función objetiva multi-objetivo:

Donde  $\omega \in (0, 1)$  es un factor que permite ponderar la influencia de la seguridad del sistema en el procedimiento de compensación del mercado.

#### E. Análisis de estabilidad de señal pequeña

PSAT permite calcular y trazar los valores propios y los factores de participación del sistema, una vez que se haya resuelto el flujo de potencia. Los valores propios se pueden calcular para la matriz de estado del sistema dinámico y para la matriz jacobiana de flujo de potencia (análisis de sensibilidad QV) [23]. A diferencia de otros softwares, como PST y herramientas basadas en Simulink, los valores propios

se calculan utilizando matrices analíticas jacobianas, lo que garantiza resultados de alta precisión.

- 1) Análisis dinámico: la matriz jacobiana AC de un sistema dinámico se define linealizando (5), como sigue:

$$\begin{bmatrix} \Delta \dot{x} \\ 0 \end{bmatrix} = \begin{bmatrix} F_x & F_y \\ G_x & J_{LFV} \end{bmatrix} \begin{bmatrix} \Delta x \\ \Delta y \end{bmatrix} = [AC] \begin{bmatrix} \Delta x \\ \Delta y \end{bmatrix}$$

Donde  $F_x = \nabla_x f$ ,  $F_y = \nabla_y f$ ,  $G_x = \nabla_x g$  y  $J_{LFV} = \nabla_y g$ .

Luego, la matriz de estado AS se obtiene eliminando  $y$ , asumiendo así implícitamente que  $J_{LFV}$  no es singular (es decir, no hay bifurcaciones inducidas por

$$A_S = F_x - F_y J_{LFV}^{-1} G_x$$

singularidad):

El cálculo de todos los valores propios puede ser un proceso largo si el orden dinámico del sistema es alto. A este fin, el PSAT.

**Tabla 3. RENDIMIENTO DE LAS SOLUCIONES DE PSAT PARA EL SISTEMA DE PRUEBAS IEEE 14-BUS**

Simulación	Tiempo transcurrido (s)
Flujo de potencia (método de Newton-Raphson)	0.0345
Flujo de potencia de continuación	2.41
Flujo de potencia óptimo	0.21
Análisis de estabilidad de pequeña señal.	0.16
Simulación del dominio del tiempo ( $\Delta t = 0.1$ s)	22.0

Permite calcular un número reducido de valores propios en función de las propiedades de la matriz dispersa y los valores relativos de valores propios (por ejemplo, la magnitud mayor o menor, etc.). El PSAT también calcula los factores de participación utilizando matrices de vectores propios derecho e izquierdo [15].

- 2) Análisis de sensibilidad QV: el análisis de sensibilidad QV se calcula en una matriz reducida, como se propuso en [23]. Supongamos que el flujo de energía de la matriz jacobiana  $J_{LFV}$  se divide en cuatro submatrices:

$$J_{LFV} = \begin{bmatrix} J_{P\theta} & J_{PV} \\ J_{Q\theta} & J_{QV} \end{bmatrix}$$

Luego, la matriz reducida utilizada para el análisis de sensibilidad QV se define de la siguiente manera:

$$J_{LFVr} = J_{QV} - J_{Q\theta} J_{P\theta}^{-1} J_{PV}$$

Donde se supone que  $J_{P\theta}$  no es singular [23]. Observe que el flujo de energía de la matriz jacobiana utilizada en PSAT tiene en cuenta todos los componentes estáticos y dinámicos, por ejemplo, cambiadores de tomas modelos etc.

#### **D. SOFTWARE DIDÁCTICO**

Este software es utilizado para objetos educativos, siendo la gama de programas didácticos aquella que contiene las versiones demo de los programas comerciales y el software libre. El software comercial regularmente es adquirido para objetos didácticos, pero los estudiantes adquieren sus versiones demo para utilidades particulares sujetos a tiempos límite de utilización; sin embargo, el software libre es la alternativa a este problema, ya que, con las mismas herramientas y un ambiente modificable, es posible mejorar los tiempos de utilidad y personalizar la funcionalidad de los programas.

#### **E. SOFTWARE LIMITADO**

Es el software que utilizan las empresas de forma interna para el control de datos en los medidores con el fin de analizar el funcionamiento de sus elementos

eléctricos y ajustarlos a necesidades locales. Regularmente este software es creado por empresas sub contratadas o programadores para su montaje o simplemente para modificar programas existentes en el medio.

## **F. SOFTWARE DE LIBRE ACCESO**

En el ramo de los sistemas eléctricos de potencia es común hacer cambios a la arquitectura de los programas de simulación. Estos cambios provocan la reducción de los costos del mercado del software ya que las políticas de código abierto permiten la reestructuración del mismo.

Algunos comerciantes de software proveen paquetes con componentes incorporados, pero el acceso al código fuente de los programas es restringido. El software de libre acceso Software Open Source OSS, se refiere a la libertad de los usuarios para ejecutar, copiar, distribuir, estudiar, cambiar y mejorar el software; que, de modo más preciso, se refiere a cuatro libertades para los usuarios de software:

- ✓ Usar el programa con cualquier propósito.
- ✓ Estudiar el funcionamiento del programa y adaptarlo a sus necesidades.
- ✓ Distribuir copias con lo que puede ayudar a otros.
- ✓ Mejorar el programa y hacer públicas las mejoras, de modo que toda la comunidad se beneficie.

### **a) GNU**

GNU es un proyecto de Licencias Públicas Generales (GPL) que desarrolla software para su distribución sin fines de lucro.

GNU pone en las manos de la comunidad servicios múltiples para su desarrollo tecnológico, es un acrónimo que significa GNU No es UNIX, siendo UNIX un sistema operativo comercial portátil, multimedia y multiusuario, técnicamente estable, base de GNU. El software GNU ha sido liberado bajo la licencia Copyleft, y su trabajo más representativo es el proyecto el GNU/Linux.

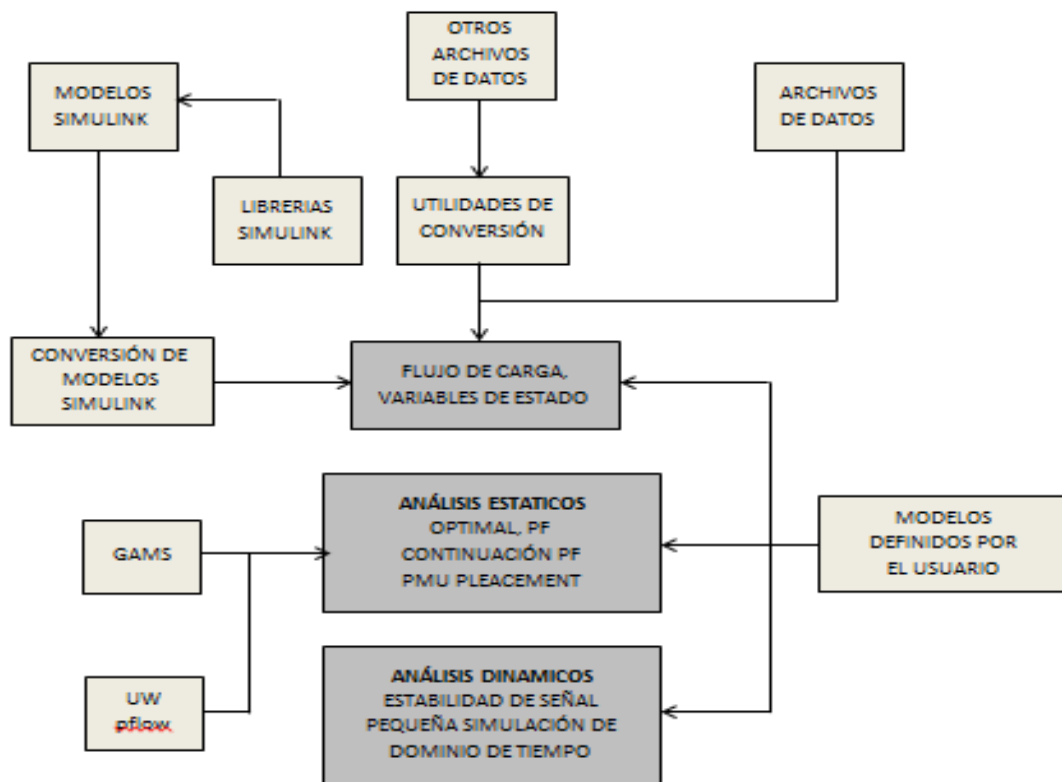
#### **➤ GNU Octave**

Octave es un programa de libre acceso con lenguaje de alto nivel creado para realizar cálculos numéricos. Su interfaz es una consola para trabajar con comandos

de línea equivalentes casi en su totalidad al lenguaje de Matlab, que puede decirse es su equivalente comercial.

Octave es más que una útil herramienta didáctica, es una puerta a los estudiantes e investigadores para resolver problemas reales con un lenguaje libre, que hace más ambicioso el proyecto GNU orientado especialmente a la simulación de redes eléctricas.

**Figura 1. ESQUEMA DE ANÁLISIS DEL PSAT**



**Tabla 4. COMPARACIÓN DEL SOPORTE DE MATLAB Y OCTAVE CON PSAT**

<b>Función</b>	<b>Matlab</b>	<b>Octave</b>
CPF	✓	✓
OPF	✓	✓
SSA	✓	✓
TD	✓	✓
Librería simulink GUI	✓	✓
Conversión de formato de datos	✓	✓
Usuarios definidos	✓	✓
Comando de línea	✓	✓

**Tabla 5. MODELOS TÍPICOS DE SIMULACIÓN DE PSAT**

<b>MODELO</b>	<b>ELEMENTOS</b>
FLUJO DE CARGA	Buses de compensación, PV y PQ; líneas de transmisión, transformadores, generadores, cargas constantes y admitancias en paralelo
MERCADO	Oferta de generación con límites, reservas de generación y demanda
PROTECCIONES	Interruptores y protectores de líneas
PMU'S	Medidores de frecuencia de buses
CARGAS	Cargas dependientes del voltaje y de frecuencia, ZIP cargas no lineales polinomiales y exponenciales, cargas térmicamente controladas.
MAQUINAS	Máquinas Síncronas y motores de inducción
CONTROLES	Gobernadores de turbina, AVR's, PSS's, límites de sobre excitación y regulación secundaria de voltaje
REGULACION DE TRANSFORMADORES	Cambiadores de tap y transformadores de fase cambiada
FACTS	SVC's, TCSC's, SSSC's, UPFC's
TURBINAS	Turbinas de viento de velocidad constante con motor de inducción de jaula de ardilla, turbinas de viento de velocidad variable con generadores síncronos
OTROS MODELOS	Máquinas síncronas con ejes dinámicos, sub síncronas de resonancia, celdas de óxido completo y áreas equivalentes de redes de transmisión

### **4.3. INTRODUCCIÓN A MATLAB**

Matlab es un poderoso y versátil software de simulación. Fue diseñado originalmente para análisis numérico y control lineal de sistemas. Este posee un entorno de cálculo el cual proporciona análisis numérico, cálculos matriciales e interfaces gráficas para usuarios. Además, existen varios toolboxes que suministran soluciones de aplicación específicas en áreas como procesamiento de señal, diseño de sistemas de control, redes neuronales, sistemas de potencia, etc.

#### **A. PSAT**

PSAT es una herramienta de código abierto basada en MATLAB para análisis y control de sistemas de potencia. Puede ser utilizado en gran variedad de sistemas de potencia: desde pequeñas redes para propósitos académicos hasta sistemas reales de tamaño medio.

Puede realizar flujos de potencia, flujos de potencia continuos, flujos óptimos de potencia, análisis de estabilidad de pequeña señal y simulaciones en el dominio del tiempo. Mediante una interfaz gráfica de usuario (GUIs) y una librería basada en Simulink se pueden ejecutar todas las órdenes de forma sencilla. Además, constituye una herramienta muy versátil que permite realizar fácilmente cambios en la topología de la red o en los componentes y parámetros eléctricos de estos.

Por ser de código abierto, cobra relevancia en un ambiente investigativo ya que es posible modificar sus rutinas, en caso de que se pretendan desarrollar métodos alternativos para analizar sistemas de potencia, y además también se pueden modificar o implementar códigos correspondientes a modificaciones o invención de nuevos dispositivos para sistema de potencia, según sea el caso. Esta característica hace de PSAT una herramienta computacional bastante usada, alrededor del mundo.

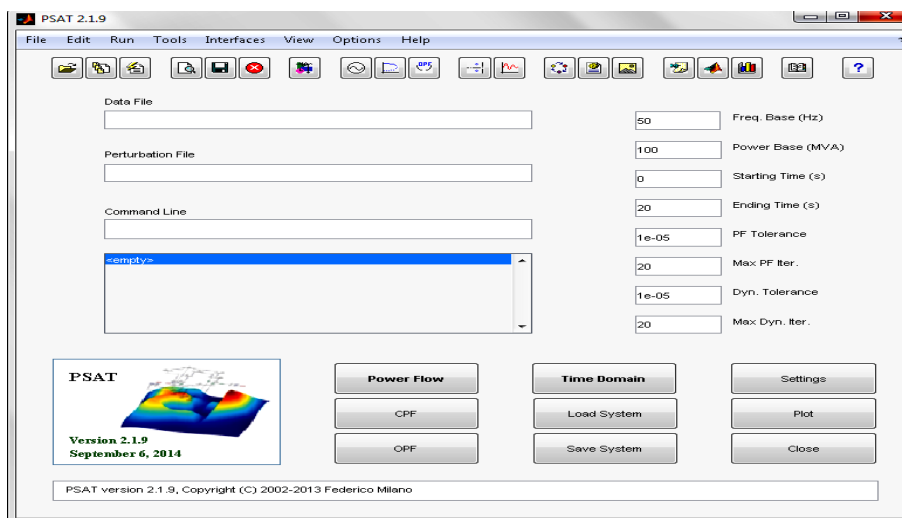
Los modelos de PSAT pueden construir topologías de redes y extraer datos de componentes de forma cómoda, sin embargo, esta GUI no está disponible en GNU/Octave; por lo que el análisis de redes se ve limitada a líneas de comando.

Las UDM extienden la capacidad de PSAT dando respaldo a los usuarios para que establezcan sus propios modelos, introduciendo variables y formas en la GUI de PSAT que automáticamente son compiladas e incrustadas en la matriz Jacobiana reescribiéndola.

## B. GUI PRINCIPAL (GUI- GRAPHIC USER INTERFACE- ITERFAZ GRAFICA DE USUARIO).

Esta GUI proporciona fácil acceso a todas las herramientas del PSAT. También proporciona la posibilidad de asignar las configuraciones principales, tales como: número de iteraciones del método NR (Newton Raphson), valor base del sistema, etc.

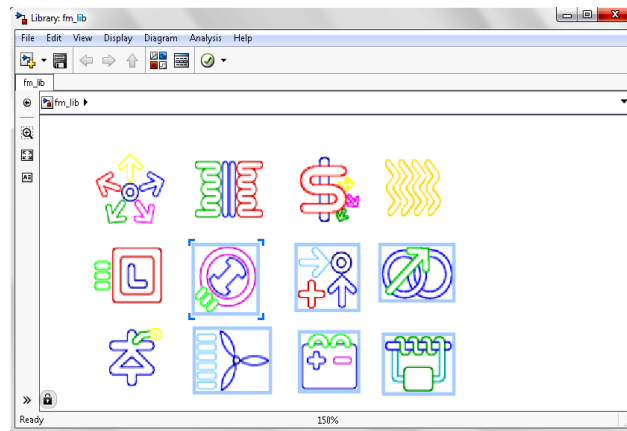
**Figura 2. INTERFAZ GRÁFICA DEL PSAT (GUI PRINCIPAL)**



## C. LIBRERÍAS SIMULINK.

PSAT proporciona un modelo gráfico de librerías Simulink que permite al usuario dibujar los diagramas de red usando bloques pictóricos. La librería PMC (Physical Model Component) de PSAT proporciona un juego completo de bloques de Simulink para diseño de redes, las cuales son agrupadas como sigue: conexiones, flujos de potencia, OPF y CPF, fallos, medidores, cargas, maquinas, transformadores, FACTS, turbinas de viento y otros modelos.

**Figura 3. LIBRERÍA SIMULINK DEL PSAT. SE MUESTRAN LAS DIFERENTES CATEGORÍAS PARA EL DISEÑO DE REDES**



#### **D. RUTINAS DE PSAT**

- **FLUJO DE POTENCIA**

PSAT dispone de varios métodos para resolver flujos de potencia:

- ✓ Método de Newton-Raphson.
- ✓ Método desacoplado rápido.
- ✓ Flujos de potencia con modelo de barra slack distribuida.

- **FLUJO ÓPTIMO DE POTENCIA (OPF)**

El flujo óptimo de potencia es definido como un problema de optimización no lineal. PSAT usa el Método de Punto Interior (IPM por sus siglas en inglés) con un método de indicador-corrector para resolver el problema de OPF.

- **ESTABILIDAD DE PEQUEÑA SEÑAL (SSS)**

PSAT es capaz de realizar análisis SSS, este tiene la opción de realizar análisis dinámicos y análisis de sensibilidad QV. Calcula y grafica los eigenvalores y los factores de participación del sistema una vez que el flujo de potencia se ha llevado a cabo.

- **SIMULACIONES EN EL DOMINIO DEL TIEMPO**

PSAT provee la opción de realizar simulaciones en el dominio del tiempo., para esto usa dos métodos de integración diferentes (regla trapezoidal y Euler retrasado). Además, es capaz de introducir perturbaciones comunes por medio de funciones incrustadas. Estas funciones incrustadas son útiles para simular perturbaciones comunes para análisis transitorio tales como fallas y operaciones de interrupción.

## V. DESARROLLO

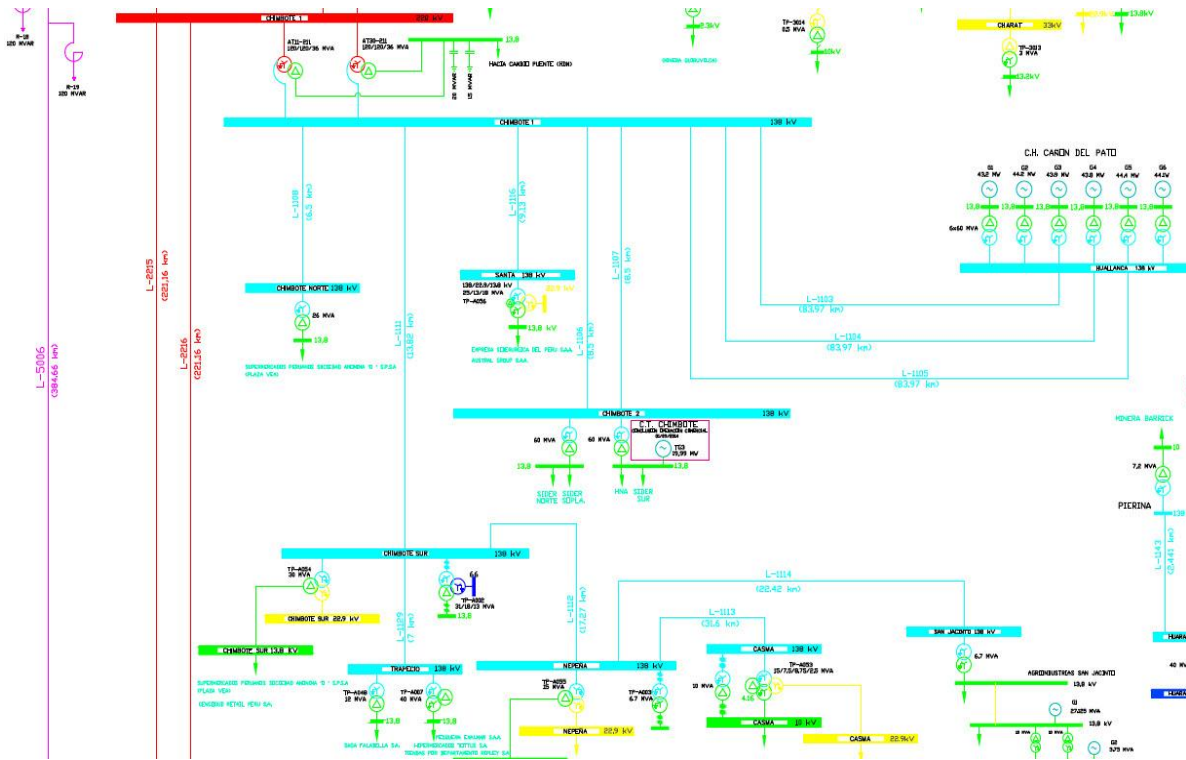
### 5.1. RECOLECTAR LOS DATOS DE LA RED ELÉCTRICA

A continuación, se muestra los datos de la red Chimbote Uno - Casma.

**Tabla 6. DATOS DE LAS LÍNEAS DE TRANSMISIÓN**

LÍNEAS DE TRANSMISIÓN	Recorrido	Longitud (km)	Resistencia R' (ohm/km)	Reactancia X' (ohm/km)	Suceptancia B' (uS/km)
L-1111	SE Chimbote Uno – SE Chimbote Sur	13.82	0.1343	0.48	3.39255
L-1129	SE Chimbote Sur – SE Trapezio	7	0.1401	0.5191	2.805756
L-1112	SE Chimbote Sur – SE Nepeña	17.27	0.3073	0.48	3.39255
L-1113	SE Nepeña – SE Casma	31.6	0.3073	0.4859	3.39255
L-1114	SE Nepeña – SE San Jacinto	22.42	0.3073	0.4859	3.39255

**Figura 4. DIAGRAMA UNIFILAR CHIMBOTE UNO CASMA**

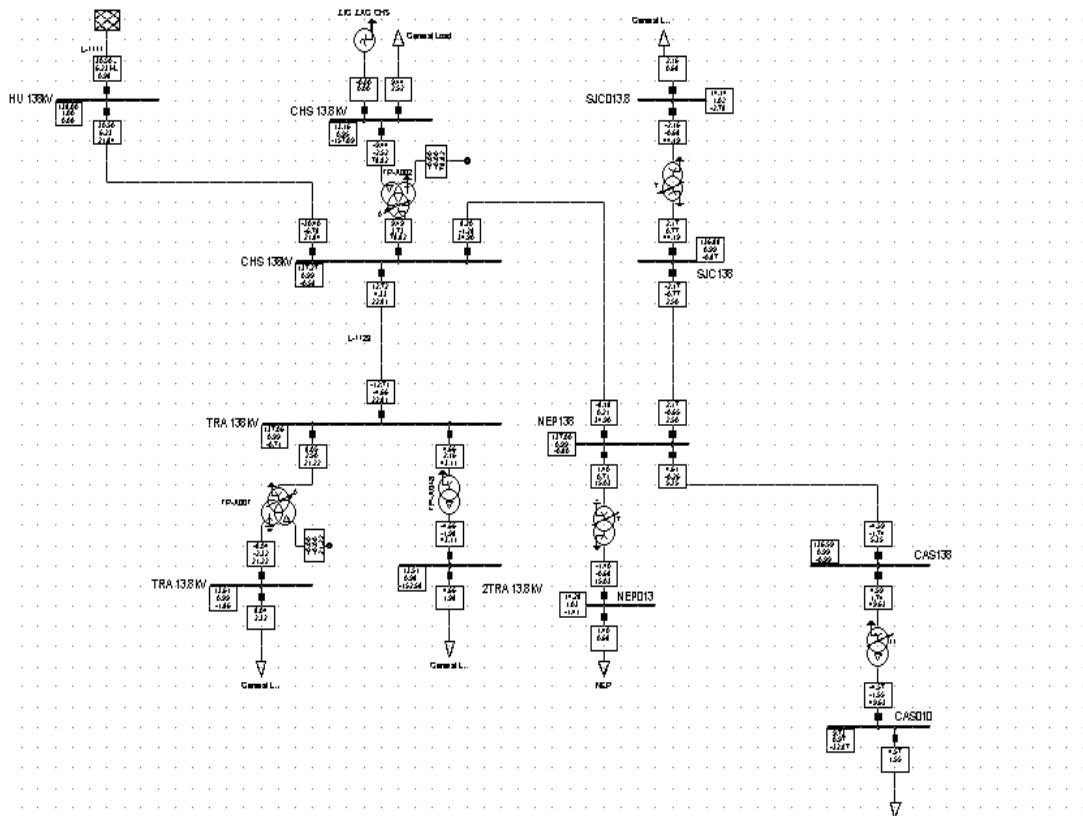


**Tabla 7. DATOS DE LOS TRANSFORMADORES DE POTENCIA**

TRANSFORMADORES DE POTENCIA	POTENCIA NOMIAL	TENSIÓN NOMIAL	TIPO DE CONEXION (HV/MD/LV)	DEMANDA	
	MW	KV		MW	MVAR
	(HV/MD/LV)	(HV/MD/LV)			
TP-A002	31/18/13	138/66/13.8	YN/YN/D	9	2.25
TP-A007	40/40/13.3	138/13.8/6.3	YN/YN/D	8.04	2.32
TP-A048	12	138/13.8	YN/D	4.66	1.98
TP-A003	5	127.65/13.8	YN/D	1.4	0.68
TP-A004	5	127.65/13.8	YN/D	4.57	1.55
TP-A006	10	127.65/13.8	YN/D	2.16	0.68

## 5.2. RESULTADOS DE LA SIMULACIÓN DE LA RED ELÉCTRICA EN SOFTWARE COMERCIAL (DIGSILENT)

Figura 5. DISEÑO DE LA RED ELÉCTRICA EN DIGSILENT



Fuente: Hidrandina-Chimbote

**Tabla 8. RESULTADO DE LAS TENSIONES EN LAS BARRAS EN DIG-SILENT**

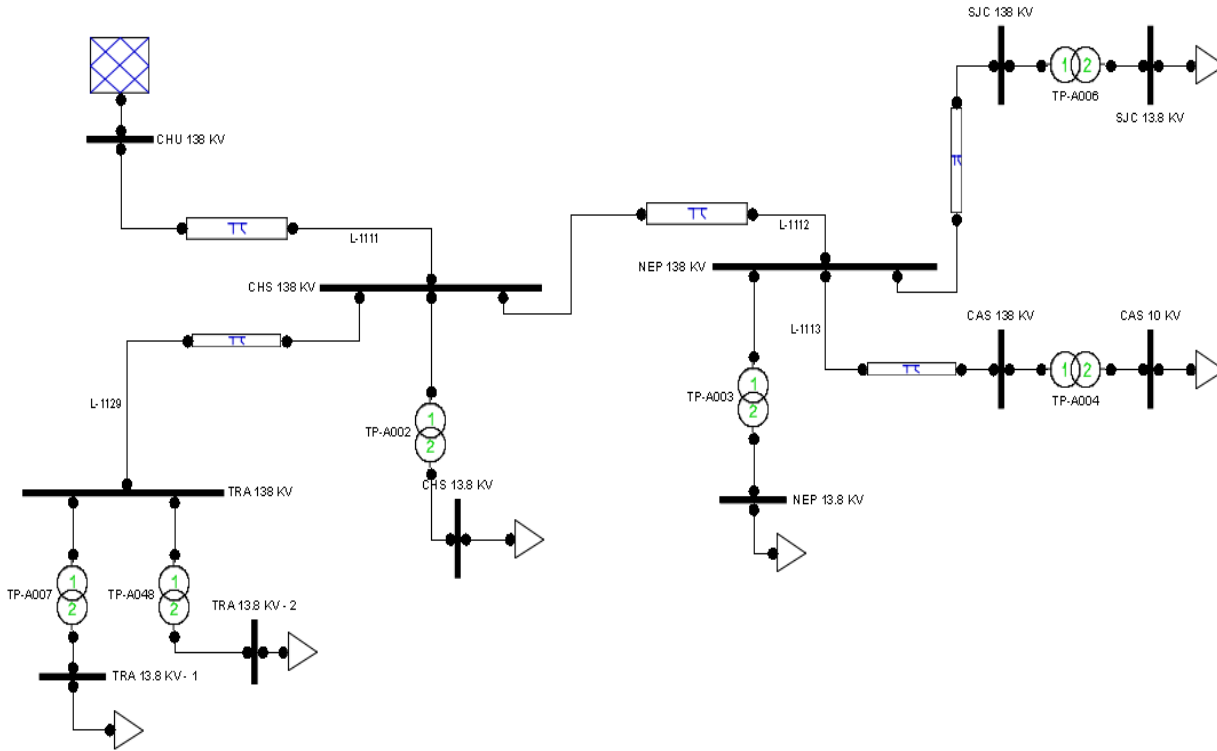
<b>BUS</b>	<b>Tensión (kv)</b>
CAS010	9.73
CAS138	136.59
CHS 13.8 kV	13.16
CHS 138kV	137.27
CHU 138kV	138.00
NEP013	14.28
NEP138	137.00
SJC013.8	14.14
SJC138	136.88
TRA 13.8 kV-1	13.61
TRA 13.8 kV - 2	13.51
TRA 138 kV	137.06

**Tabla 9. RESULTADO DE LAS POTENCIAS EN LAS LÍNEAS DE TRANSMISIÓN  
EN DIG-SILENT**

<b>Líneas</b>	<b>MW</b>	<b>MVAR</b>
L-1111	-30.40	-6.78
L-1112	8.20	-1.28
L-1113	4.61	-0.26
L-1114	2.17	-0.65
L-1129	12.72	4.33

### 5.3. DISEÑO DE LA RED ELÉCTRICA EN PSAT-MATLAB

Figura 6. DISEÑO DE LA RED ELÉCTRICA EN PSAT

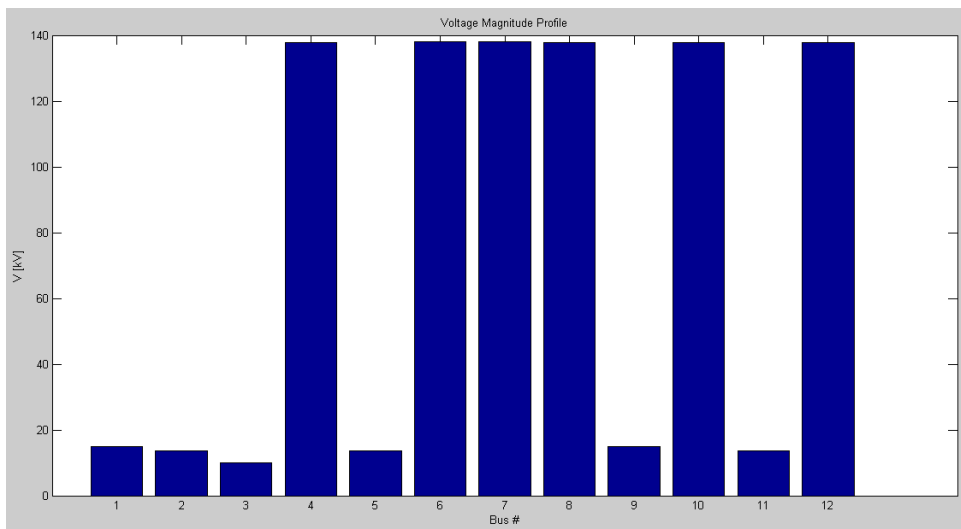


Fuente: PSAT - MATLAB

### 5.4. RESULTADOS DE LA SIMULACIÓN DE LA RED ELÉCTRICA EN PSAT-MATLAB

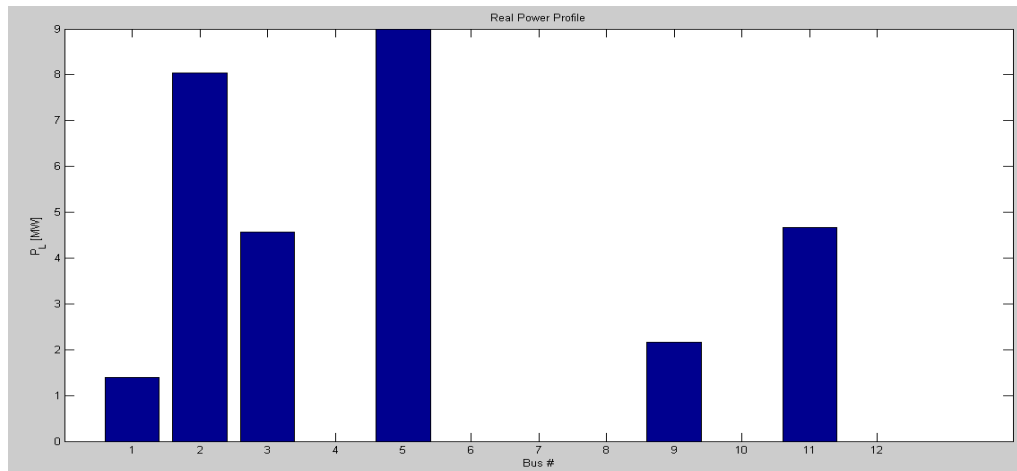
A continuación, se muestra los resultados de la simulación en PSAT-MATLAB

Figura 7. DIAGRAMA DE BARRA DE LOS TENSIONES EN KV EN LOS BUSES



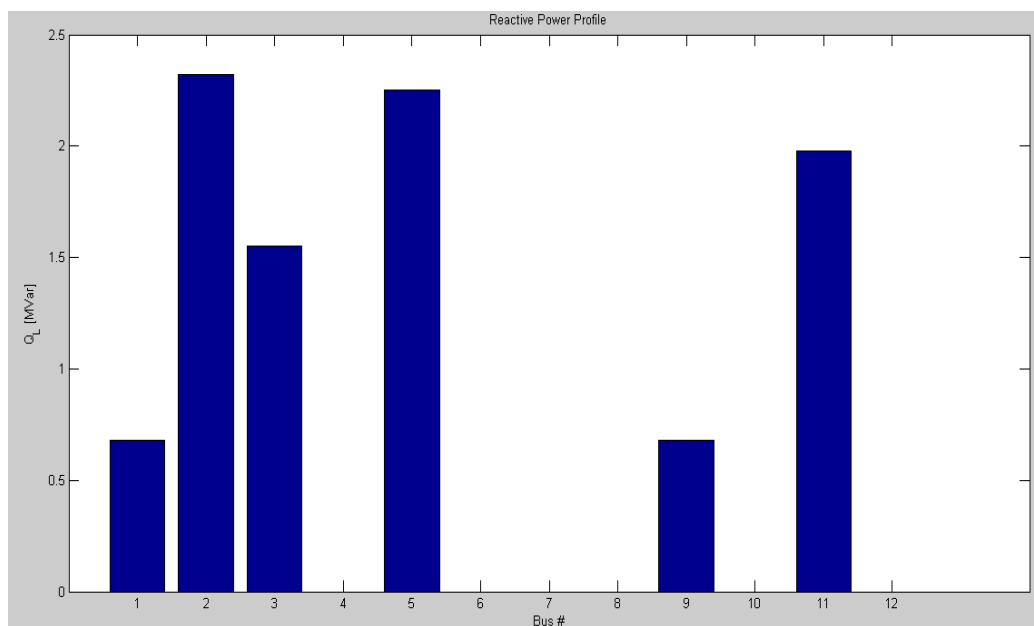
Fuente: PSAT - MATLAB

**Figura 8. DIAGRAMA DE BARRAS DE LA POTENCIA ACTIVA EN MW DE LOS BUSES**



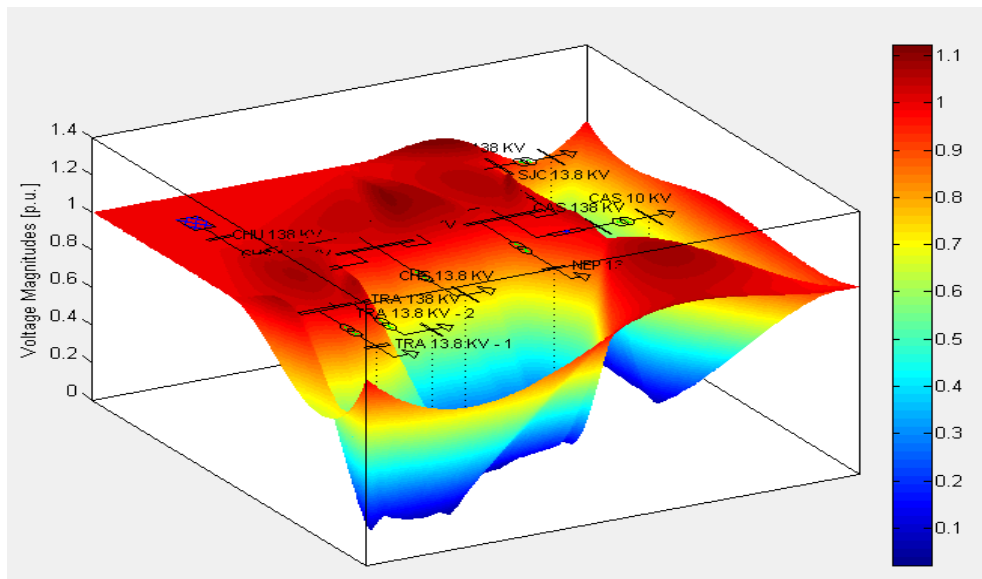
Fuente: PSAT - MATLAB

**Figura 9. DIAGRAMA DE BARRAS DE LA POTENCIA REACTIVA EN MVAR DE LOS BUSES**



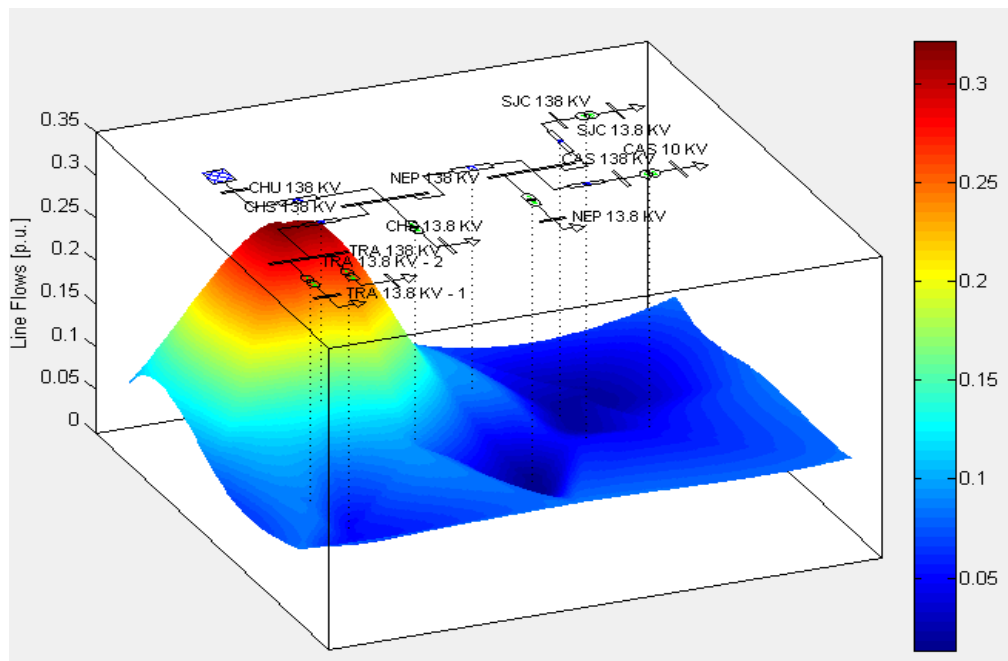
Fuente: PSAT - MATLAB

**Figura 10. DIAGRAMA EN 3D DE LOS VALORES DE LAS TENSIONES EN P.U DE LA RED ELÉCTRICA**



Fuente: PSAT – MATLAB

**Figura 11. DIAGRAMA EN 3D DE LA MÁXIMA POTENCIA ACTIVA DE LA RED EN VALORES P.U.**



Fuente: PSAT - MATLAB

**RESUMEN DE RESULTADOS DEL ESTUDIO DE FLUJO DE POTENCIA:**

**Tabla 10. RESULTADOS DE LAS BARRAS DE LA RED ELÉCTRICA**

Bus	V	phase	P gen	Q gen	P load	Q load
	[kV]	[deg]	[MW]	[MVar]	[MW]	[MVar]
NEP 13.8 KV	14.89	-0.01501	0.00	0.00	1.4	0.68
TRA 13.8 KV - 1	13.66	-0.291	0.00	0.00	8.04	2.32
CAS 10 KV	9.88	-0.28822	0.00	0.00	4.57	1.55
CAS 138 KV	137.89	0.01512	0.00	0.00	0	0
CHS 13.8 KV	13.72	-0.17903	0.00	0.00	9	2.25
CHS 138 KV	137.94	0.0072	0.00	0.00	0	0
CHU 138 KV	138.00	0	30.03	9.64	0	0
NEP 138 KV	137.91	0.01235	0.00	0.00	0	0
SJC 13.8 KV	14.88	-0.04312	0.00	0.00	2.16	0.68
SJC 138 KV	137.90	0.01354	0.00	0.00	0	0
TRA 13.8 KV - 2	13.71	-0.12956	0.00	0.00	4.66	1.98
TRA 138 KV	137.92	0.01063	0.00	0.00	0	0

**Tabla 11. RESULTADOS DE LAS LÍNEAS DE LA RED ELÉCTRICA**

From Bus	To Bus	Line	P Flow	Q Flow	P Loss	Q Loss
			[MW]	[MVar]	[MW]	[MVar]
CHU 138 KV	CHS 138 KV	1	-30.03	9.64	0.01	0.00
TRA 138 KV	CHS 138 KV	2	12.79	-4.39	0.00	0.00
CHS 138 KV	NEP 138 KV	3	8.18	2.96	0.00	0.00
NEP 138 KV	SJC 138 KV	4	2.16	0.68	0.00	0.00
CAS 138 KV	NEP 138 KV	5	4.61	-1.59	0.00	0.00
CHS 138 KV	CHS 13.8 KV	6	9.04	2.29	0.04	0.04
NEP 138 KV	NEP 13.8 KV	7	1.40	0.68	0.00	0.00
CAS 138 KV	CAS 10 KV	8	4.61	1.59	0.04	0.04
SJC 138 KV	SJC 13.8 KV	9	2.16	0.68	0.00	0.00
TRA 138 KV	TRA 13.8 KV - 1	10	8.11	2.39	0.07	0.07
TRA 138 KV	TRA 13.8 KV - 2	11	4.68	2.00	0.02	0.02

**Tabla 12. CARGA TOTAL DE LA RED ELÉCTRICA**

<b>CARGA TOTAL</b>	
<b>POTENCIA ACTIVA [MW]</b>	29.83
<b>POTENCIA REACTIVA [MVar]</b>	9.46

**Tabla 13. PÉRDIDAS EN LA RED ELÉCTRICA**

<b>PERDIDAS TOTALES</b>	
<b>POTENCIA ACTIVA [MW]</b>	0.19928233
<b>POTENCIA REACTIVA [MVar]</b>	0.17790011

## VI. CONCLUSIONES

1.- Recolectar los datos de los elementos de una red eléctrica en 138 kV Chimbote Uno – Casma.

Se recolectó los datos de las líneas de transmisión y transformadores de potencia de la red eléctrica en 138kV Chimbote Uno Casma

DATOS DE LA LÍNEAS DE TRANSMISIÓN

LÍNEAS DE TRANSMISIÓN	Recorrido	Longitud (km)	Resistencia R' (ohm/km)	Reactancia X' (ohm/km)	Suceptancia B' (uS/km)
L-1111	SE Chimbote Uno – SE Chimbote Sur	13.82	0.1343	0.48	3.39255
L-1129	SE Chimbote Sur – SE Trapezio	7	0.1401	0.5191	2.805756
L-1112	SE Chimbote Sur – SE Nepeña	17.27	0.3073	0.48	3.39255
L-1113	SE Nepeña – SE Casma	31.6	0.3073	0.4859	3.39255
L-1114	SE Nepeña – SE San Jacinto	22.42	0.3073	0.4859	3.39255

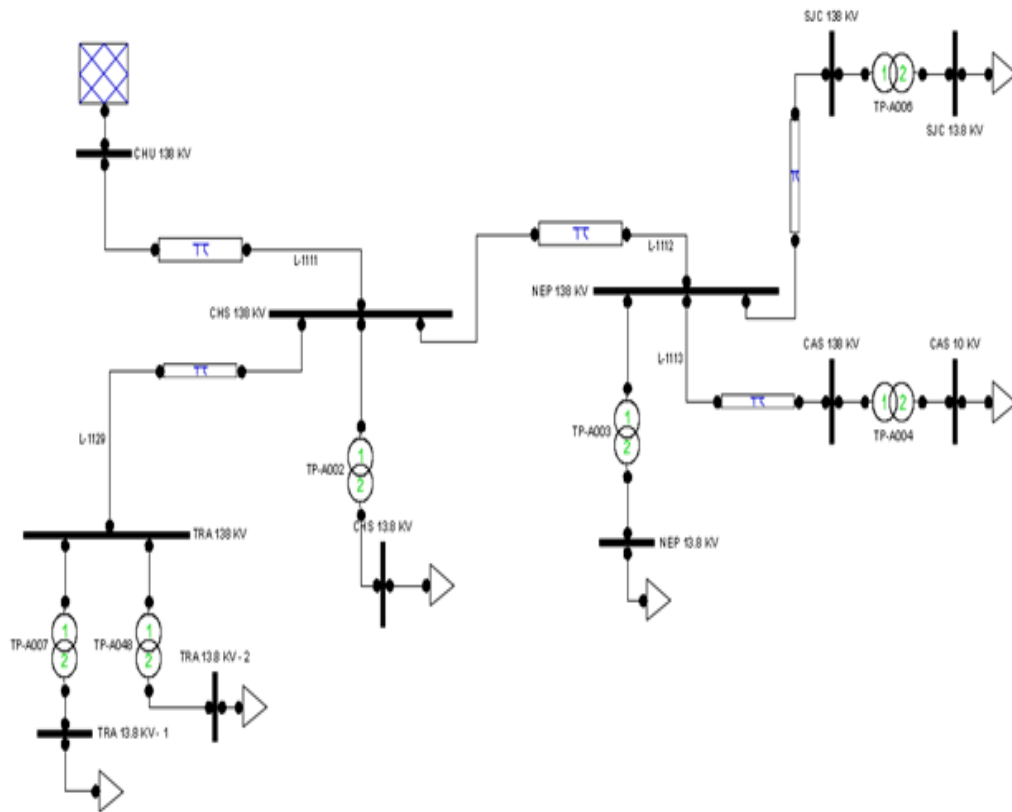
## DATOS DE LOS TRANSFORMADORES DE POTENCIA

TRANSFORMADORES DE POTENCIA	POTENCIA	TENSIÓN	TIPO DE CONEXION (HV/MD/LV)	DEMANDA	
	NOMIAL	NOMIAL		MW	MVAR
	MW	KV			
	(HV/MD/LV)	(HV/MD/LV)			
TP-A002	31/18/13	138/66/13.8	YN/YN/D	9	2.25
TP-A007	40/40/13.3	138/13.8/6.3	YN/YN/D	8.04	2.32
TP-A048	12	138/13.8	YN/D	4.66	1.98
TP-A003	5	127.65/13.8	YN/D	1.4	0.68
TP-A004	5	127.65/13.8	YN/D	4.57	1.55
TP-A006	10	127.65/13.8	YN/D	2.16	0.68

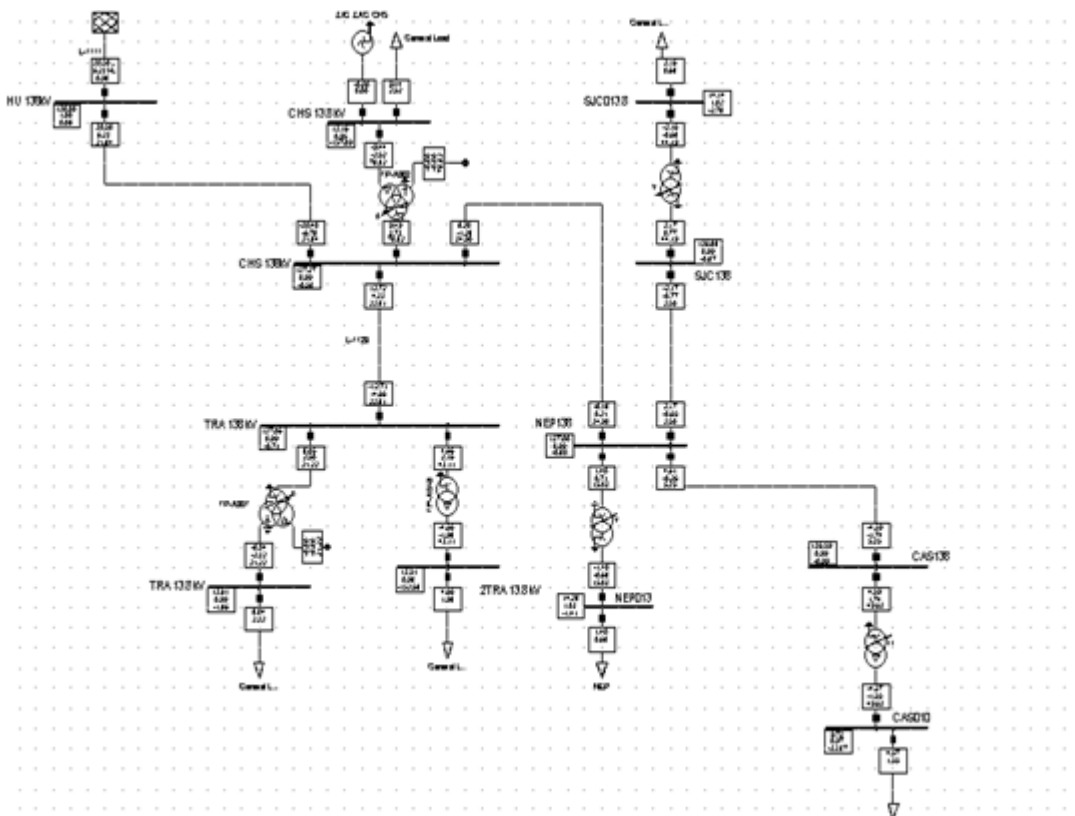
2.- Procesar los datos, elaborar y graficar el diseño de la red eléctrica en 138 kV Chimbote Uno Casma en PSAT-MATLAB.

Se procesaron los datos recolectados de la red Chimbote Uno Casma, se procesó y elaboró el gráfico del diseño de la red eléctrica en 138 kV Chimbote Uno Casma en el programa PSAT MATLAB.

## 6.1. DISEÑO DE LA RED ELÉCTRICA EN PSAT-MATLAB



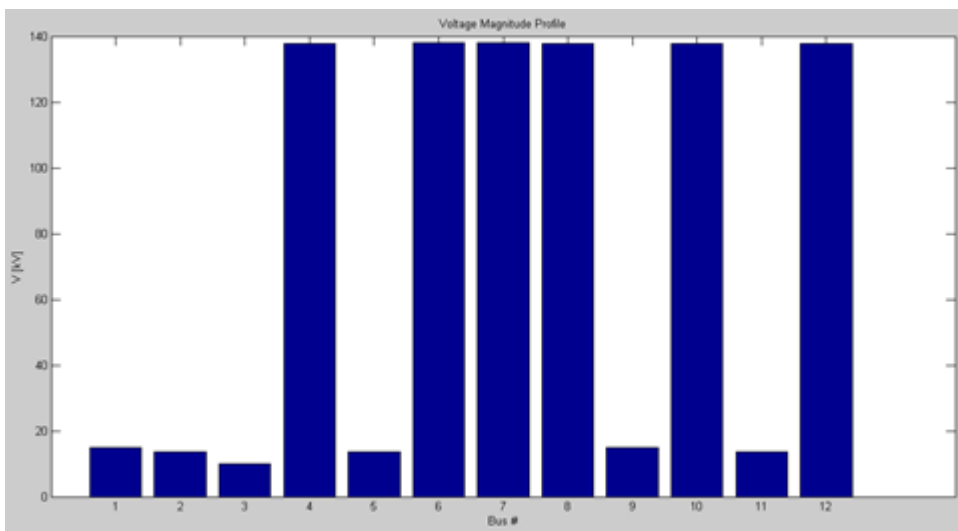
## DISEÑO DE LA RED ELÉCTRICA EN DIG SILENT



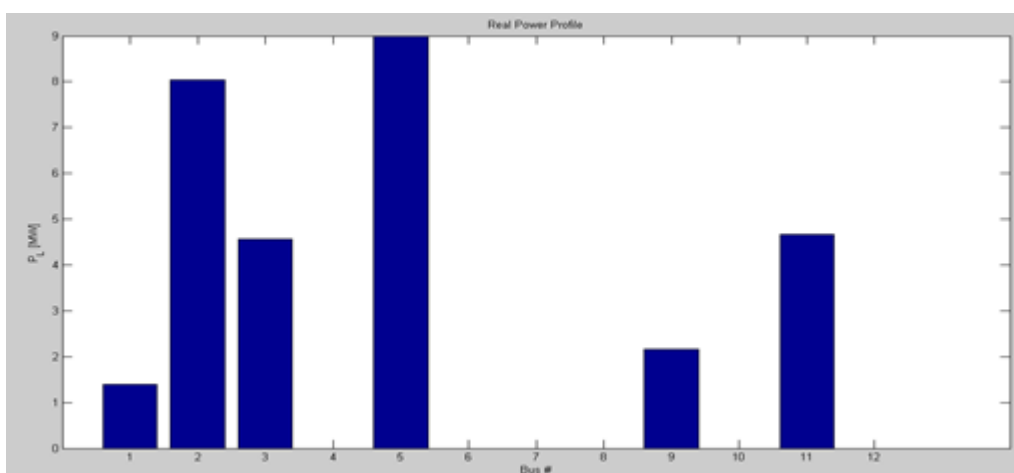
3.- Simular el funcionamiento de la red eléctrica en 138 kV Chimbote Uno Casma en el programa PSAT-MATLAB.

Se realizó la simulación de la red eléctrica en 138 kV Chimbote Uno Casma en el programa PSAT MATLAB dando como resultados los siguientes datos y gráficos.

### DIAGRAMA DE BARRA DE LOS TENSIONES EN KV EN LOS BUSES

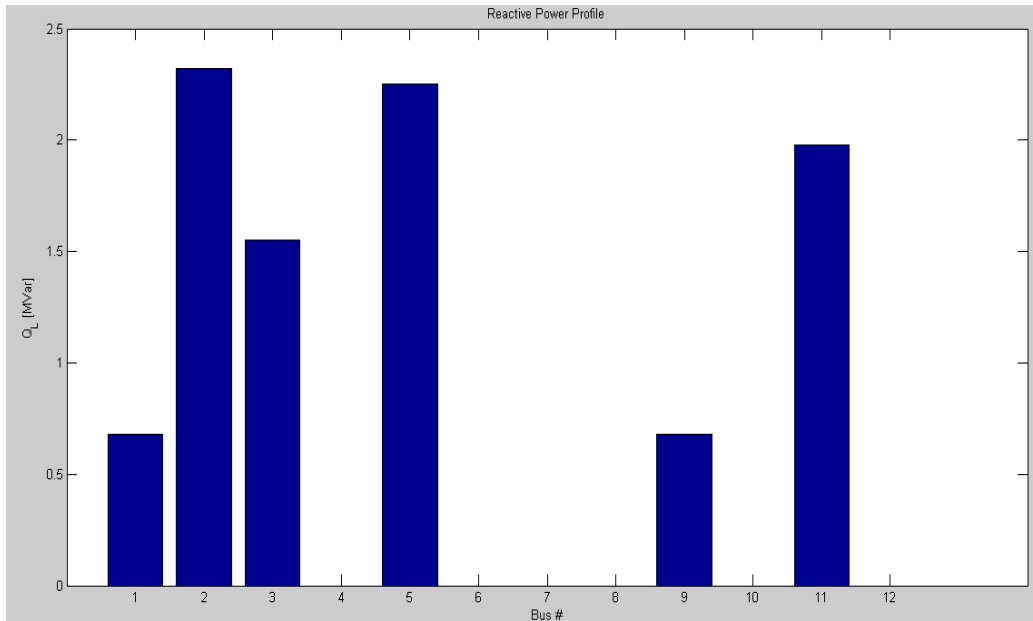


### DIAGRAMA DE BARRAS DE LA POTENCIA ACTIVA EN MW DE LOS BUSES



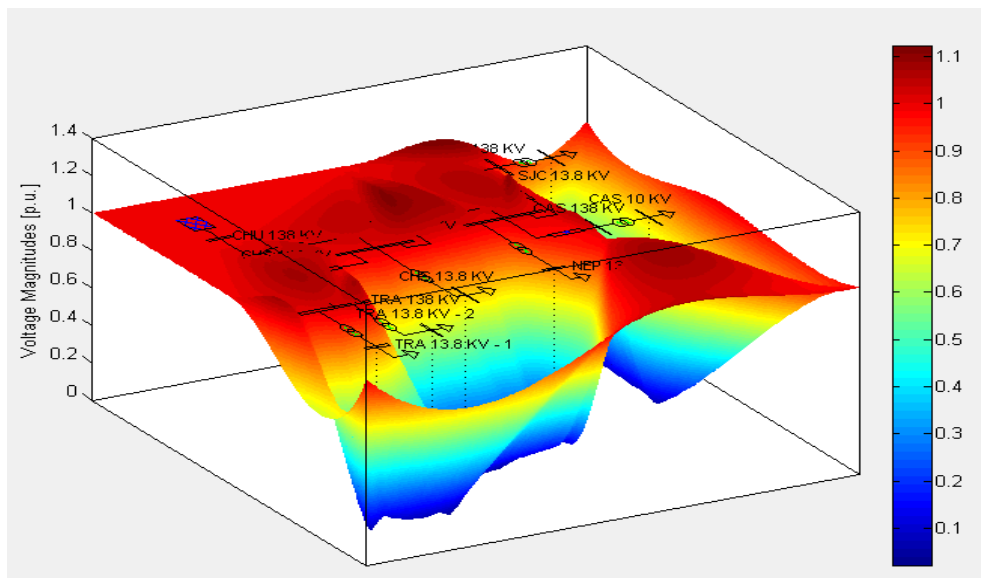
Fuente: PSAT - MATLAB

**Figura 12. DIAGRAMA DE BARRAS DE LA POTENCIA REACTIVA EN MVAR DE LOS BUSES**



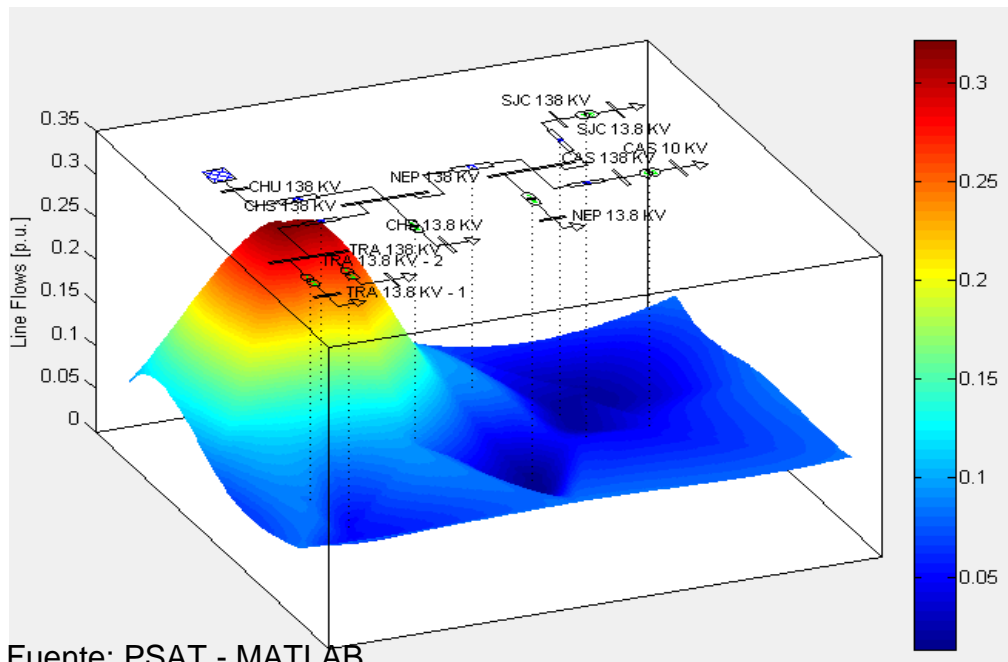
Fuente: PSAT - MATLAB

**Figura 13. DIAGRAMA EN 3D DE LOS VALORES DE LAS TENSIONES EN P.U DE LA RED ELÉCTRICA**



Fuente: PSAT - MATLAB

**Figura 14. DIAGRAMA EN 3D DE LA MÁXIMA POTENCIA ACTIVA DE LA RED EN VALORES P.U.**



**RESUMEN DE RESULTADOS DEL ESTUDIO DE FLUJO DE POTENCIA:**

**Tabla 14. RESULTADOS DE LAS BARRAS DE LA RED ELÉCTRICA**

Bus	V	phase	P gen	Q gen	P load	Q load
	[kV]	[deg]	[MW]	[MVar]	[MW]	[MVar]
NEP 13.8 KV	14.89	-0.01501	0.00	0.00	1.4	0.68
TRA 13.8 KV - 1	13.66	-0.291	0.00	0.00	8.04	2.32
CAS 10 KV	9.88	-0.28822	0.00	0.00	4.57	1.55
CAS 138 KV	137.89	0.01512	0.00	0.00	0	0
CHS 13.8 KV	13.72	-0.17903	0.00	0.00	9	2.25
CHS 138 KV	137.94	0.0072	0.00	0.00	0	0
CHU 138 KV	138.00	0	30.03	9.64	0	0
NEP 138 KV	137.91	0.01235	0.00	0.00	0	0
SJC 13.8 KV	14.88	-0.04312	0.00	0.00	2.16	0.68
SJC 138 KV	137.90	0.01354	0.00	0.00	0	0
TRA 13.8 KV - 2	13.71	-0.12956	0.00	0.00	4.66	1.98
TRA 138 KV	137.92	0.01063	0.00	0.00	0	0

**Tabla 15. RESULTADOS DE LAS LÍNEAS DE LA RED ELÉCTRICA**

From Bus	To Bus	Line	P Flow	Q Flow	P Loss	Q Loss
			[MW]	[MVar]	[MW]	[MVar]
CHU 138 KV	CHS 138 KV	1	-30.03	9.64	0.01	0.00
TRA 138 KV	CHS 138 KV	2	12.79	-4.39	0.00	0.00
CHS 138 KV	NEP 138 KV	3	8.18	2.96	0.00	0.00
NEP 138 KV	SJC 138 KV	4	2.16	0.68	0.00	0.00
CAS 138 KV	NEP 138 KV	5	4.61	-1.59	0.00	0.00
CHS 138 KV	CHS 13.8 KV	6	9.04	2.29	0.04	0.04
NEP 138 KV	NEP 13.8 KV	7	1.40	0.68	0.00	0.00
CAS 138 KV	CAS 10 KV	8	4.61	1.59	0.04	0.04
SJC 138 KV	SJC 13.8 KV	9	2.16	0.68	0.00	0.00
TRA 138 KV	TRA 13.8 KV - 1	10	8.11	2.39	0.07	0.07
TRA 138 KV	TRA 13.8 KV - 2	11	4.68	2.00	0.02	0.02

**Tabla 16. CARGA TOTAL DE LA RED ELÉCTRICA**

CARGA TOTAL	
POTENCIA ACTIVA [MW]	29.83
POTENCIA REACTIVA [MVar]	9.46

**Tabla 17. PÉRDIDAS EN LA RED ELÉCTRICA**

PERDIDAS TOTALES	
POTENCIA ACTIVA [MW]	0.19928233
POTENCIA REACTIVA [MVar]	0.17790011

- En la tabla 7 se muestran las cuatro variables más importantes de todo sistema de potencia que son, magnitud y ángulo de tensión, así como potencias activa y reactiva. Dichos datos permiten realizar, barra a barra, un análisis rápido del sistema de potencia; para el sistema en particular se ven buenos perfiles de magnitud de tensión porque en ninguna barra se encuentra por encima o por debajo del límite típico (Figura 7,8 y 9), que es cinco por ciento; de la gráfica de ángulo de tensión es llamativo que la barra 1 este en cero grados, la razón es que corresponde a la barra Slack sirviendo así de referencia para la tensión. Además, en las figuras 10 y 11, se puede visualizar claramente en valores de P.U. la forma de comportamiento de la variación de la tensión y carga máxima de la red eléctrica. Por estos resultados, El PSAT se convierte en una opción factible para muchos usuarios, debido a que este paquete simulador es gratuito y además se basa en una herramienta de cálculo matemático muy poderosa como lo es MATLAB. También cabe resaltar que el PSAT es de código abierto y esto lo hace tentativo para usuarios que quieran mejorar su estructura.

4.- Comparar los resultados obtenidos con ambos softwares, PSAT-MATLAB Y DIG-SILENT, para evaluar los márgenes de errores en las variables.

Teniendo los resultados obtenidos en el software PSAT MATLAB se compara con los resultados obtenidos en el software DIG SILENT que se presentan a continuación, para luego evaluar los márgenes de error en las variables.

## RESULTADO DE LAS TENSIONES EN LAS BARRAS EN DIG-SILENT

BUS	Tensión (kv)
CAS010	9.73
CAS138	136.59
CHS 13.8 kV	13.16
CHS 138kV	137.27
CHU 138kV	138.00
NEP013	14.28
NEP138	137.00
SJC013.8	14.14
SJC138	136.88
TRA 13.8 kV-1	13.61
TRA 13.8 kV - 2	13.51
TRA 138 kV	137.06

## RESULTADO DE LAS POTENCIAS EN LAS LÍNEAS DE TRANSMISIÓN EN DIG-SILENT

Líneas	MW	MVAR
L-1111	-30.40	-6.78
L-1112	8.20	-1.28
L-1113	4.61	-0.26
L-1114	2.17	-0.65
L-1129	12.72	4.33

- Comparando los resultados obtenidos de PSAT- MATLAB y Dig-Silent de las tensiones en las barras de las SE de potencia, se concluye que el error porcentual del primero es de  $\pm 0.02\%$ . Además, elaborando el procedimiento anterior para la potencia activa y reactiva de las líneas transmisión, son  $\pm 0.00\%$  y  $1.58\%$  respectivamente. Por estos resultados el PSAT para propósitos académicos y de investigación, el software libre constituye una excelente opción, al momento de adquirir paquetes de análisis de sistemas de potencia, para las universidades.

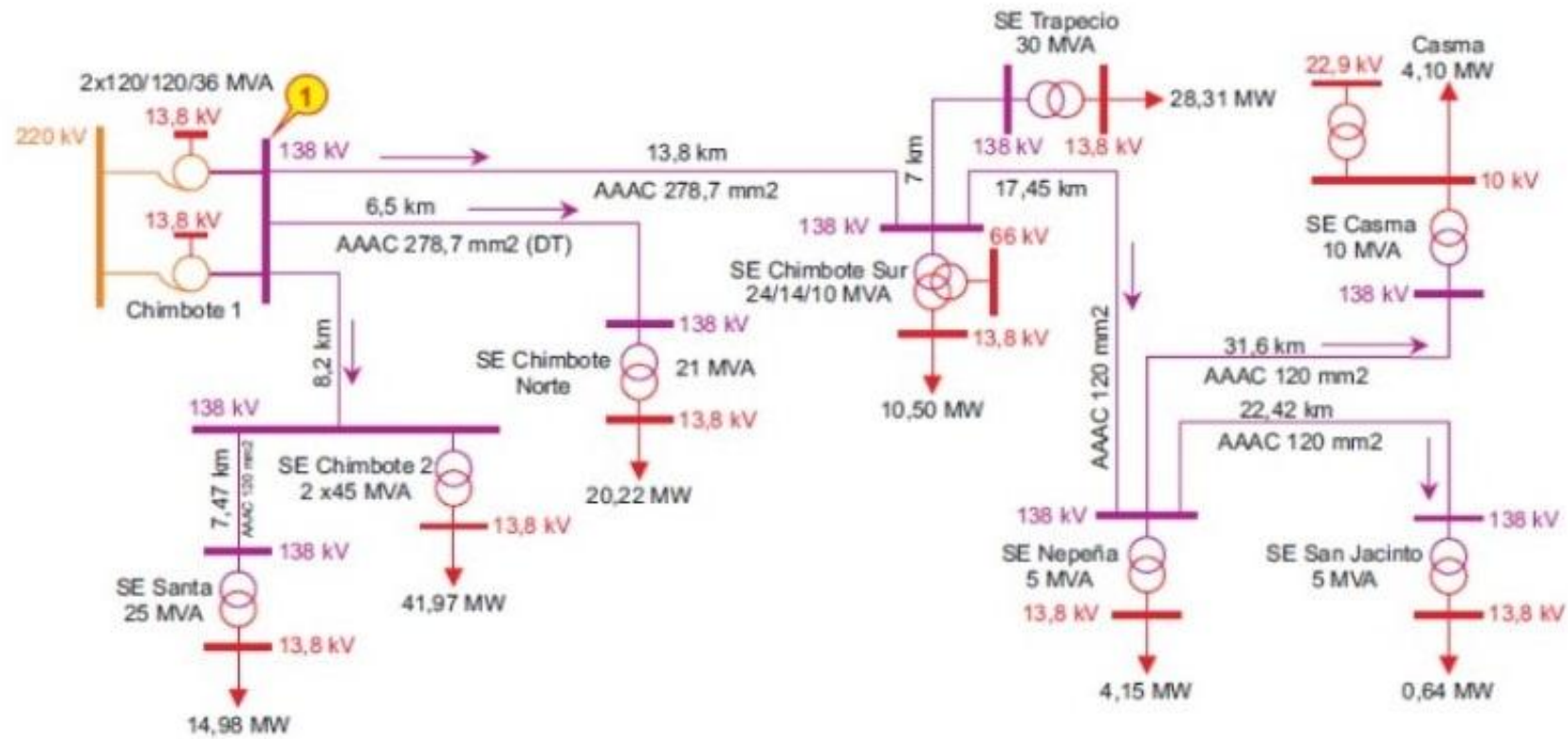
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- [11] Y. Kato and S. Iwamoto, "Transient Stability Preventive Control for Stable Operating Condition With Desired CCT," IEEE Transactions on Power Systems, vol. 17, no. 4, pp 1164-1161, Nov 2002.

VIII. ANEXOS

# Chimbote, Chimbote Rural y Casma Rural



**DEMANDA HISTORICO-DIARIO- SUB ESTACIONES CHIMBOTE UNO CASMA  
HIDRANDINA ENERO 2019**

41399	41398	22402	21537	22207
HIDRANDINA	HIDRANDINA	HIDRANDINA	HIDRANDINA	HIDRANDINA
NEPEÑA_TP-A055_BARRA_13.8	NEPEÑA_TP-A055_BARRA_22.9	TP-A006-6.6MVA	TPA007	TP-A048
13.80	22.90	13.80	13.80	13.80
NEPEÑA	NEPEÑA	SAN JACINTO	TRAPECIO	TRAPECIO
1.23	0.062	0.76	13.304	3.732
1.201	0.053	0.763	13.043	3.757
1.158	0.051	0.767	12.535	3.565
1.176	0.05	0.844	11.867	3.611
1.153	0.05	0.999	11.115	3.588
1.063	0.05	1.062	10.325	3.644
1.153	0.05	1.085	9.582	3.471
1.156	0.05	1.141	8.95	3.753
1.108	0.05	0.767	8.213	3.165
1.156	0.05	0.844	7.942	2.975
1.109	0.05	0.999	7.246	2.743
1.282	0.052	1.062	6.141	2.325
1.517	0.05	1.085	5.413	1.752
1.56	0.05	1.141	5.405	1.326
1.866	0.051	1.168	5.506	0.94
1.945	0.054	1.165	5.659	0.719
1.944	0.054	1.148	5.957	0.4
2.045	0.059	1.145	7.345	0.39
2.108	0.058	1.145	7.974	0.36
2.165	0.055	1.156	8.768	0.238
2.367	0.055	1.192	10.582	0.417
2.48	0.068	1.199	11.519	0.511
2.501	0.061	1.235	11.934	0.646
2.422	0.066	1.186	13.916	0.587
2.291	0.066	1.121	14.074	1.104
2.286	0.059	1.136	14.391	1.416
2.264	0.072	1.13	14.884	1.984
2.225	0.059	1.136	14.767	2.822
2.147	0.064	1.165	14.966	3.174
2.122	0.062	1.179	15.922	3.344
2.108	0.058	1.163	16.348	3.572
1.879	0.059	1.136	16.642	3.794
1.766	0.064	1.13	16.763	4.045
1.757	0.063	1.03	16.786	4.486
1.733	0.062	1.033	17.137	4.451

1.66	0.071	1.145	17.439	4.256
1.71	0.09	1.631	17.74	4.275
1.866	0.094	1.962	18.991	4.495
1.84	0.098	1.96	19.796	4.269
1.676	0.09	1.863	19.761	4.25
1.656	0.095	1.715	19.943	4.463
1.657	0.087	1.652	19.087	4.643
1.567	0.09	1.507	19.483	4.642
1.489	0.09	1.361	19.266	4.744
1.418	0.086	1.134	19.111	4.727
1.412	0.081	1.03	18.794	4.826
1.325	0.07	0.934	18.358	5.059
1.311	0.07	0.841	17.734	5.178
1.23	0.062	0.76	17.135	4.864
1.201	0.053	0.763	16.313	4.654
1.158	0.051	0.767	15.8	4.503
1.176	0.05	0.844	14.947	4.94
1.153	0.05	0.999	14.516	4.674
1.063	0.05	1.062	13.826	4.595
1.153	0.05	1.085	13.293	4.674
1.156	0.05	1.141	12.42	4.645
1.108	0.05	0.767	11.928	4.372
1.156	0.05	0.844	12.02	4.354
1.109	0.05	0.999	11.227	3.99
1.282	0.052	1.062	9.575	3.749
1.517	0.05	1.085	8.744	3.697
1.56	0.05	1.141	8.388	3.426
1.866	0.051	1.168	7.949	3.147
1.945	0.054	1.165	7.856	3.303
1.944	0.054	1.148	8.102	3.148
2.045	0.059	1.145	7.558	3.256
2.108	0.058	1.145	7.607	2.681
2.165	0.055	1.156	7.753	2.329
2.367	0.055	1.192	7.554	2.101
2.48	0.068	1.199	7.53	1.74
2.501	0.061	1.235	7.703	1.548
2.422	0.066	1.186	7.907	1.57
2.291	0.066	1.121	8.122	2.418
2.286	0.059	1.136	9.777	2.997
2.264	0.072	1.13	11.155	3.454
2.225	0.059	1.136	14.11	3.991
2.147	0.064	1.165	15.45	4.238
2.122	0.062	1.179	16.608	4.748
2.108	0.058	1.163	17.128	4.993
1.879	0.059	1.136	17.782	4.926

1.766	0.064	1.13	18.101	4.824
1.757	0.063	1.03	17.387	4.805
1.733	0.062	1.033	17.832	4.88
1.66	0.071	1.145	17.432	5.165
1.71	0.09	1.631	18.421	4.835
1.866	0.094	1.962	19.9	4.835
1.84	0.098	1.96	21.207	4.856
1.676	0.09	1.863	21.075	4.771
1.656	0.095	1.715	21.702	4.821
1.657	0.087	1.652	22.011	4.822
1.567	0.09	1.507	21.631	4.869
1.489	0.09	1.361	21.43	4.706
1.418	0.086	1.134	21.01	4.771
1.412	0.081	1.03	20.807	4.71
1.325	0.07	0.934	20.279	4.842
1.311	0.07	0.841	19.999	4.746
1.611	0	0.888	19.752	4.621
1.743	0	0.848	18.955	4.648
1.681	0	0.822	18.412	4.457
1.664	0	0.799	17.91	4.571
1.629	0	0.785	17.362	4.542
1.781	0	0.781	16.793	4.115
1.736	0	0.78	16.6	3.939
1.763	0	0.785	16.254	4.209
1.727	0	0.798	16.49	3.78
1.714	0	0.814	15.815	3.592
1.851	0	0.946	15.34	3.419
1.789	0	0.999	14.395	3.008
1.696	0	1.131	13.098	2.24
1.727	0	1.451	11.701	1.906
2.057	0	1.638	11.098	1.329
2.245	0	2.151	10.941	1.124
2.27	0	2.362	10.078	0.963
2.405	0	2.788	9.922	0.828
2.371	0	2.982	10.071	0.741
2.436	0	3.131	9.969	0.855
2.379	0	3.06	10.098	0.855
2.278	0	3.193	9.997	0.758
2.234	0	3.235	9.962	0.813
2.299	0	3.075	9.719	0.7
2.282	0	3.018	9.38	0.67
2.207	0	2.952	8.796	0.948
2.192	0	2.924	8.371	1.193
2.141	0	2.959	7.937	1.008
2.148	0	2.929	7.902	1.941

1.979	0	2.911	7.932	2.574
1.819	0	2.944	7.761	3.366
1.895	0	3.059	8.226	4.205
1.713	0	2.895	8.854	4.181
1.604	0	2.881	9.738	4.445
1.461	0	2.812	10.398	4.523
1.414	0	2.932	10.172	4.29
1.356	0	3.183	11.862	4.661
1.383	0	3.507	13.736	4.536
1.529	0	3.594	14.294	4.61
1.527	0	3.375	14.459	4.9
1.432	0	3.307	14.615	4.67
1.424	0	3.145	14.529	5.065
1.433	0	3.055	14.193	4.986
1.455	0	2.908	13.576	4.987
1.364	0	2.755	12.721	4.763
1.491	0	2.618	11.197	4.627
1.617	0	2.572	10.671	4.742
1.722	0	2.466	9.854	4.608
1.23	0.062	0.859	21.987	4.823
1.201	0.053	0.823	20.996	4.575
1.158	0.051	0.803	20.535	5.09
1.176	0.05	0.781	19.798	5.177
1.153	0.05	0.77	18.816	5.291
1.063	0.05	0.761	18.553	5.199
1.153	0.05	0.76	18.481	4.892
1.156	0.05	0.763	17.926	4.849
1.108	0.05	0.767	17.554	4.724
1.156	0.05	0.844	17.465	4.725
1.109	0.05	0.999	17.324	4.76
1.282	0.052	1.062	16.561	4.649
1.517	0.05	1.085	16.42	4.054
1.56	0.05	1.141	15.931	4.003
1.866	0.051	1.168	15.459	3.74
1.945	0.054	1.165	15.488	3.674
1.944	0.054	1.148	15.237	3.146
2.045	0.059	1.145	15.132	2.791
2.108	0.058	1.145	13.735	2.189
2.165	0.055	1.156	13.964	1.996
2.367	0.055	1.192	14.006	1.406
2.48	0.068	1.199	14.563	1.147
2.501	0.061	1.235	14.456	1.256
2.422	0.066	1.186	14.963	1.433
2.291	0.066	1.121	13.654	1.329
2.286	0.059	1.136	13.097	1.593

2.264	0.072	1.13	12.427	1.607
2.225	0.059	1.136	11.347	1.216
2.147	0.064	1.165	11.468	1.256
2.122	0.062	1.179	11.576	1.352
2.108	0.058	1.163	11.453	1.553
1.879	0.059	1.136	11.591	1.762
1.766	0.064	1.13	12.124	1.766
1.757	0.063	1.03	12.583	1.78
1.733	0.062	1.033	12.432	1.357
1.66	0.071	1.145	12.983	1.125
1.71	0.09	1.631	15.309	1.127
1.866	0.094	1.962	16.01	1.298
1.84	0.098	1.96	16.632	1.445
1.676	0.09	1.863	17.103	1.792
1.656	0.095	1.715	17.293	1.898
1.657	0.087	1.652	17.259	1.45
1.567	0.09	1.507	17.125	1.153
1.489	0.09	1.361	17.398	1.211
1.418	0.086	1.134	16.998	1.804
1.412	0.081	1.03	16.617	2.422
1.325	0.07	0.934	16.061	3.097
1.311	0.07	0.841	15.207	3.61
1.23	0.062	0.859	12.364	2.719
1.201	0.053	0.823	12.018	2.802
1.158	0.051	0.803	11.824	2.508
1.176	0.05	0.781	11.358	2.149
1.153	0.05	0.77	11.18	1.827
1.063	0.05	0.761	10.74	1.648
1.153	0.05	0.76	10.153	1.604
1.156	0.05	0.763	9.552	1.543
1.108	0.05	0.767	9.317	1.347
1.156	0.05	0.844	8.689	1.213
1.109	0.05	0.999	8.087	0.682
1.282	0.052	1.062	7.486	0.585
1.517	0.05	1.085	7.238	0.559
1.56	0.05	1.141	7.082	0.545
1.866	0.051	1.168	7.556	0.54
1.945	0.054	1.165	7.75	0.566
1.944	0.054	1.148	8.848	0.672
2.045	0.059	1.145	9.666	0.993
2.108	0.058	1.145	10.34	1.034
2.165	0.055	1.156	11.325	1.038
2.367	0.055	1.192	12.377	0.714
2.48	0.068	1.199	13.652	0.779
2.501	0.061	1.235	13.768	0.721

2.422	0.066	1.186	14.888	0.801
2.291	0.066	1.121	14.934	0.725
2.286	0.059	1.136	14.389	0.749
2.264	0.072	1.13	14.969	0.905
2.225	0.059	1.136	14.791	1.466
2.147	0.064	1.165	14.922	1.904
2.122	0.062	1.179	15.553	3.074
2.108	0.058	1.163	16.459	3.84
1.879	0.059	1.136	17.144	4.105
1.766	0.064	1.13	18.389	4.241
1.757	0.063	1.03	18.657	4.429
1.733	0.062	1.033	18.7	4.504
1.66	0.071	1.145	18.073	4.868
1.71	0.09	1.631	19.259	4.865
1.866	0.094	1.962	20.533	4.882
1.84	0.098	1.96	20.239	4.625
1.676	0.09	1.863	20.757	4.922
1.656	0.095	1.715	20.09	4.732
1.657	0.087	1.652	20.074	4.533
1.567	0.09	1.507	19.579	4.728
1.489	0.09	1.361	19.012	4.846
1.418	0.086	1.134	17.748	4.959
1.412	0.081	1.03	17.653	4.814
1.325	0.07	0.934	16.979	4.987
1.311	0.07	0.841	16.092	4.695
1.23	0.062	1.264	15.439	4.752
1.201	0.053	1.237	14.95	4.859
1.158	0.051	1.206	14.694	4.889
1.176	0.05	1.179	14.26	4.709
1.153	0.05	1.163	14.286	4.49
1.063	0.05	1.154	13.745	4.506
1.153	0.05	1.143	13.639	4.369
1.156	0.05	1.141	12.656	4.406
1.108	0.05	1.161	12.334	4.249
1.156	0.05	1.166	11.62	4.15
1.109	0.05	1.177	10.693	4.226
1.282	0.052	1.208	9.888	3.789
1.517	0.05	1.301	9.228	3.641
1.56	0.05	1.323	8.454	3.584
1.866	0.051	1.283	8.429	3.613
1.945	0.054	1.208	8.452	3.48
1.944	0.054	1.157	8.261	3.246
2.045	0.059	1.714	8.028	2.976
2.108	0.058	3.188	7.814	2.552
2.165	0.055	1.715	7.771	2.093

2.367	0.055	1.361	8.061	1.429
2.48	0.068	1.399	8.647	1.001
2.501	0.061	1.384	10.118	0.446
2.422	0.066	1.424	10.457	0.422
2.291	0.066	1.417	11.008	0.561
2.286	0.059	1.406	10.977	0.83
2.264	0.072	1.382	10.003	0.77
2.225	0.059	1.372	10.282	0.826
2.147	0.064	1.426	10.686	1.232
2.122	0.062	1.402	10.562	1.71
2.108	0.058	1.411	11.491	2.529
1.879	0.059	1.433	11.456	2.842
1.766	0.064	1.462	13.086	3.666
1.757	0.063	1.465	13.734	3.859
1.733	0.062	1.454	14.822	4.32
1.66	0.071	1.454	15.426	4.246
1.71	0.09	1.49	15.689	4.58
1.866	0.094	1.762	16.941	4.861
1.84	0.098	2.084	16.965	4.817
1.676	0.09	2.178	17.843	4.921
1.656	0.095	1.993	18.319	4.719
1.657	0.087	1.967	18.823	4.737
1.567	0.09	1.933	18.967	4.643
1.489	0.09	1.868	18.646	4.884
1.418	0.086	1.733	18.096	4.651
1.412	0.081	1.629	17.513	4.889
1.325	0.07	1.512	16.758	4.645
1.311	0.07	1.404	16.95	4.509
1.23	0.062	1.264	17.207	4.506
1.201	0.053	1.237	16.312	4.451
1.158	0.051	1.206	16.27	4.365
1.176	0.05	1.179	15.559	3.929
1.153	0.05	1.163	14.788	3.527
1.063	0.05	1.154	13.98	3.444
1.153	0.05	1.143	13.636	3.286
1.156	0.05	1.141	12.8	3.449
1.108	0.05	1.161	13.214	3.257
1.156	0.05	1.166	12.973	2.977
1.109	0.05	1.177	12.864	3.363
1.282	0.052	1.208	12.479	2.926
1.517	0.05	1.301	11.964	2.419
1.56	0.05	1.323	10.972	1.358
1.866	0.051	1.283	10.41	1.283
1.945	0.054	1.208	9.404	0.652
1.944	0.054	1.157	9.37	0.54

2.045	0.059	1.714	8.307	0.564
2.108	0.058	3.188	8.061	0.488
2.165	0.055	1.715	7.642	0.591
2.367	0.055	1.361	7.809	0.481
2.48	0.068	1.399	7.836	0.68
2.501	0.061	1.384	8.456	0.683
2.422	0.066	1.424	8.384	0.764
2.291	0.066	1.417	8.17	0.837
2.286	0.059	1.406	9.27	0.646
2.264	0.072	1.382	10.76	0.637
2.225	0.059	1.372	12.301	0.647
2.147	0.064	1.426	13.636	1.049
2.122	0.062	1.402	14.118	1.09
2.108	0.058	1.411	14.289	1.148
1.879	0.059	1.433	15.282	1.672
1.766	0.064	1.462	15.105	1.844
1.757	0.063	1.465	16.015	2.249
1.733	0.062	1.454	15.812	2.608
1.66	0.071	1.454	15.437	2.693
1.71	0.09	1.49	15.675	2.851
1.866	0.094	1.762	17.506	3.312
1.84	0.098	2.084	17.853	3.401
1.676	0.09	2.178	17.615	3.338
1.656	0.095	1.993	18.086	3.385
1.657	0.087	1.967	18.085	3.327
1.567	0.09	1.933	18.412	3.374
1.489	0.09	1.868	18.53	3.131
1.418	0.086	1.733	18.478	3.277
1.412	0.081	1.629	18.123	3.176
1.325	0.07	1.512	16.754	2.94
1.311	0.07	1.404	15.416	3.239
1.23	0.062	1.264	14.175	3.328
1.201	0.053	1.237	12.198	3.418
1.158	0.051	1.206	10.755	3.387
1.176	0.05	1.179	10.159	3.193
1.153	0.05	1.163	10.3	3.085
1.063	0.05	1.154	9.681	3.084
1.153	0.05	1.143	9.548	2.871
1.156	0.05	1.141	9.598	2.542
1.108	0.05	1.161	9.641	2.453
1.156	0.05	1.166	9.46	2.551
1.109	0.05	1.177	9.673	2.483
1.282	0.052	1.208	9.206	2.439
1.517	0.05	1.301	9.005	2.288
1.56	0.05	1.323	8.947	2.299

1.866	0.051	1.283	8.972	2.363
1.945	0.054	1.208	9.47	2.125
1.944	0.054	1.157	9.672	2.278
2.045	0.059	1.714	9.852	2.012
2.108	0.058	3.188	10.299	2.017
2.165	0.055	1.715	11.17	1.574
2.367	0.055	1.361	12.167	0.943
2.48	0.068	1.399	12.897	0.922
2.501	0.061	1.384	13.231	0.932
2.422	0.066	1.424	13.494	1.003
2.291	0.066	1.417	13.153	0.924
2.286	0.059	1.406	12.27	0.905
2.264	0.072	1.382	12.24	0.901
2.225	0.059	1.372	12.216	0.907
2.147	0.064	1.426	12.906	0.939
2.122	0.062	1.402	13.495	1.224
2.108	0.058	1.411	13.932	1.448
1.879	0.059	1.433	14.238	1.586
1.766	0.064	1.462	14.586	2.201
1.757	0.063	1.465	14.685	2.77
1.733	0.062	1.454	14.606	3.399
1.66	0.071	1.454	15.089	3.561
1.71	0.09	1.49	15.644	3.901
1.866	0.094	1.762	16.603	3.946
1.84	0.098	2.084	16.51	4.109
1.676	0.09	2.178	16.443	4.157
1.656	0.095	1.993	16.966	4.179
1.657	0.087	1.967	17.777	4.148
1.567	0.09	1.933	17.809	4.194
1.489	0.09	1.868	17.183	4.314
1.418	0.086	1.733	16.602	4.978
1.412	0.081	1.629	16.831	5.082
1.325	0.07	1.512	15.69	4.991
1.311	0.07	1.404	15.264	4.779
1.23	0.062	1.264	14.566	4.725
1.201	0.053	1.237	14.088	4.924
1.158	0.051	1.206	12.662	4.869
1.176	0.05	1.179	12.472	4.632
1.153	0.05	1.163	11.859	4.555
1.063	0.05	1.154	11.497	4.751
1.153	0.05	1.143	11.268	4.675
1.156	0.05	1.141	11.281	4.445
1.108	0.05	1.161	10.933	4.344
1.156	0.05	1.166	11.035	4.173
1.109	0.05	1.177	10.695	3.593

1.282	0.052	1.208	10.422	3.272
1.517	0.05	1.301	9.569	3.236
1.56	0.05	1.323	8.996	3.198
1.866	0.051	1.283	9.441	2.761
1.945	0.054	1.208	9.674	3.071
1.944	0.054	1.157	10.516	2.979
2.045	0.059	1.714	10.896	3.52
2.108	0.058	3.188	10.512	3.171
2.165	0.055	1.715	10.578	3.135
2.367	0.055	1.361	10.93	2.894
2.48	0.068	1.399	11.244	2.608
2.501	0.061	1.384	11.072	1.895
2.422	0.066	1.424	11.007	1.628
2.291	0.066	1.417	10.455	1.016
2.286	0.059	1.406	10.465	0.789
2.264	0.072	1.382	12.242	0.89
2.225	0.059	1.372	14.181	0.922
2.147	0.064	1.426	14.62	1.001
2.122	0.062	1.402	15.614	1.118
2.108	0.058	1.411	16.479	1.402
1.879	0.059	1.433	16.87	1.182
1.766	0.064	1.462	17.138	1.168
1.757	0.063	1.465	17.96	1.147
1.733	0.062	1.454	17.857	1.417
1.66	0.071	1.454	17.746	1.651
1.71	0.09	1.49	18.771	2.226
1.866	0.094	1.762	21.42	2.687
1.84	0.098	2.084	22.247	2.935
1.676	0.09	2.178	22.212	2.859
1.656	0.095	1.993	22.868	2.909
1.657	0.087	1.967	23.255	3.049
1.567	0.09	1.933	22.801	2.703
1.489	0.09	1.868	22.437	2.758
1.418	0.086	1.733	21.781	3.133
1.412	0.081	1.629	21.603	3.548
1.325	0.07	1.512	21.123	3.82
1.311	0.07	1.404	20.691	4.125
1.23	0.062	1.264	20.102	4.582
1.201	0.053	1.237	19.526	4.529
1.158	0.051	1.206	19.227	4.488
1.176	0.05	1.179	18.895	4.588
1.153	0.05	1.163	17.778	4.493
1.063	0.05	1.154	17.484	4.654
1.153	0.05	1.143	16.712	4.637
1.156	0.05	1.141	15.465	4.837

1.108	0.05	1.161	14.713	4.852
1.156	0.05	1.166	13.042	4.338
1.109	0.05	1.177	12.499	4.348
1.282	0.052	1.208	11.984	4.224
1.517	0.05	1.301	11.338	3.987
1.56	0.05	1.323	10.995	3.707
1.866	0.051	1.283	10.669	3.494
1.945	0.054	1.208	10.084	3.547
1.944	0.054	1.157	10.539	3.221
2.045	0.059	1.714	10.691	2.384
2.108	0.058	3.188	9.859	2.279
2.165	0.055	1.715	9.996	1.786
2.367	0.055	1.361	11.138	1.411
2.48	0.068	1.399	11.117	1
2.501	0.061	1.384	11.746	0.865
2.422	0.066	1.424	11.551	0.748
2.291	0.066	1.417	12.648	0.658
2.286	0.059	1.406	13.162	0.649
2.264	0.072	1.382	14.471	0.661
2.225	0.059	1.372	15.065	0.734
2.147	0.064	1.426	15.275	0.783
2.122	0.062	1.402	15.913	0.763
2.108	0.058	1.411	16.171	0.833
1.879	0.059	1.433	16.449	0.76
1.766	0.064	1.462	16.819	0.967
1.757	0.063	1.465	17.378	1.127
1.733	0.062	1.454	17.323	1.284
1.66	0.071	1.454	17.859	1.114
1.71	0.09	1.49	18.738	1.194
1.866	0.094	1.762	20.003	1.612
1.84	0.098	2.084	20.658	2.149
1.676	0.09	2.178	20.744	2.685
1.656	0.095	1.993	22.343	3.491
1.657	0.087	1.967	22.216	3.549
1.567	0.09	1.933	21.814	3.675
1.489	0.09	1.868	20.987	3.952
1.418	0.086	1.733	20.363	3.761
1.412	0.081	1.629	19.5	4.069
1.325	0.07	1.512	18.698	3.686
1.311	0.07	1.404	17.848	3.479
1.23	0.062	0.859	19.222	4.835
1.201	0.053	0.823	19.144	4.772
1.158	0.051	0.803	18.507	4.824
1.176	0.05	0.781	18.876	4.555
1.153	0.05	0.77	18.846	4.513

1.063	0.05	0.761	18.557	4.323
1.153	0.05	0.76	18.679	4.623
1.156	0.05	0.763	18.407	4.602
1.108	0.05	0.767	18.021	4.631
1.156	0.05	0.844	18.002	4.673
1.109	0.05	0.999	18.115	4.233
1.282	0.052	1.062	17.453	3.674
1.517	0.05	1.085	18.278	3.29
1.56	0.05	1.141	17.802	2.926
1.866	0.051	1.168	17.748	2.983
1.945	0.054	1.165	17.824	3.079
1.944	0.054	1.148	17.887	3.541
2.045	0.059	1.145	17.816	3.522
2.108	0.058	1.145	17.565	3.338
2.165	0.055	1.156	17.09	3.55
2.367	0.055	1.192	16.19	3.427
2.48	0.068	1.199	14.997	3.159
2.501	0.061	1.235	13.656	2.491
2.422	0.066	1.186	13.202	2.065
2.291	0.066	1.121	12.168	1.886
2.286	0.059	1.136	11.481	1.458
2.264	0.072	1.13	11.284	1.115
2.225	0.059	1.136	11.048	0.885
2.147	0.064	1.165	10.641	1.017
2.122	0.062	1.179	10.471	1.085
2.108	0.058	1.163	10.985	1.17
1.879	0.059	1.136	11.982	1.177
1.766	0.064	1.13	13.142	1.532
1.757	0.063	1.03	13.818	1.655
1.733	0.062	1.033	12.987	1.506
1.66	0.071	1.145	13.184	1.457
1.71	0.09	1.631	14.379	1.656
1.866	0.094	1.962	15.879	1.58
1.84	0.098	1.96	16.448	1.653
1.676	0.09	1.863	17.074	1.422
1.656	0.095	1.715	17.487	1.501
1.657	0.087	1.652	17.429	2.2
1.567	0.09	1.507	17.6	2.977
1.489	0.09	1.361	17.536	3.721
1.418	0.086	1.134	17.705	2.453
1.412	0.081	1.03	18.26	1.965
1.325	0.07	0.934	18.541	1.892
1.311	0.07	0.841	18.325	2.144
1.23	0.062	0.859	6.864	0.637
1.201	0.053	0.823	6.302	0.625

1.158	0.051	0.803	6.194	0.633
1.176	0.05	0.781	6.154	0.618
1.153	0.05	0.77	6.136	0.636
1.063	0.05	0.761	5.948	0.624
1.153	0.05	0.76	6.035	0.613
1.156	0.05	0.763	5.989	0.615
1.108	0.05	0.767	6.03	0.627
1.156	0.05	0.844	6.178	0.61
1.109	0.05	0.999	6.267	0.608
1.282	0.052	1.062	6.017	0.563
1.517	0.05	1.085	5.867	0.563
1.56	0.05	1.141	6.282	0.562
1.866	0.051	1.168	6.667	0.567
1.945	0.054	1.165	6.755	0.454
1.944	0.054	1.148	6.861	0.495
2.045	0.059	1.145	7.319	0.572
2.108	0.058	1.145	7.762	0.575
2.165	0.055	1.156	7.876	0.848
2.367	0.055	1.192	8.174	0.757
2.48	0.068	1.199	8.376	0.988
2.501	0.061	1.235	8.441	1.429
2.422	0.066	1.186	8.03	1.338
2.291	0.066	1.121	7.778	1.299
2.286	0.059	1.136	8.001	1.274
2.264	0.072	1.13	8.116	1.025
2.225	0.059	1.136	7.465	0.934
2.147	0.064	1.165	7.693	1.01
2.122	0.062	1.179	8.208	0.961
2.108	0.058	1.163	7.753	1.1
1.879	0.059	1.136	8.093	1.022
1.766	0.064	1.13	7.795	1.096
1.757	0.063	1.03	7.658	1.054
1.733	0.062	1.033	7.476	1.023
1.66	0.071	1.145	8.278	0.989
1.71	0.09	1.631	9.685	1.166
1.866	0.094	1.962	9.797	1.068
1.84	0.098	1.96	10.407	1.091
1.676	0.09	1.863	10.362	1.126
1.656	0.095	1.715	10.218	1.041
1.657	0.087	1.652	10.035	1.037
1.567	0.09	1.507	9.785	0.961
1.489	0.09	1.361	9.493	0.935
1.418	0.086	1.134	9.068	0.933
1.412	0.081	1.03	8.53	0.908
1.325	0.07	0.934	8.394	0.938

1.311	0.07	0.841	7.684	0.922
1.23	0.062	1.264	15.6	1.281
1.201	0.053	1.237	15.6	1.281
1.158	0.051	1.206	13.004	0.788
1.176	0.05	1.179	12.568	0.777
1.153	0.05	1.163	12.568	0.777
1.063	0.05	1.154	12.568	0.777
1.153	0.05	1.143	12.568	0.777
1.156	0.05	1.141	12.568	0.777
1.108	0.05	1.161	12.568	0.777
1.156	0.05	1.166	12.568	0.777
1.109	0.05	1.177	12.568	0.777
1.282	0.052	1.208	12.568	0.777
1.517	0.05	1.301	7.471	0.61
1.56	0.05	1.323	6.725	0.602
1.866	0.051	1.283	6.909	0.616
1.945	0.054	1.208	6.339	0.567
1.944	0.054	1.157	6.759	0.6
2.045	0.059	1.714	6.462	0.598
2.108	0.058	3.188	6.511	0.602
2.165	0.055	1.715	6.702	0.626
2.367	0.055	1.361	6.785	0.598
2.48	0.068	1.399	6.99	0.673
2.501	0.061	1.384	6.82	0.684
2.422	0.066	1.424	6.757	0.585
2.291	0.066	1.417	6.939	0.607
2.286	0.059	1.406	6.781	0.661
2.264	0.072	1.382	6.694	0.698
2.225	0.059	1.372	6.641	0.666
2.147	0.064	1.426	6.519	0.761
2.122	0.062	1.402	6.474	0.762
2.108	0.058	1.411	6.383	0.89
1.879	0.059	1.433	6.453	0.964
1.766	0.064	1.462	6.452	1.056
1.757	0.063	1.465	6.486	1.069
1.733	0.062	1.454	6.535	1.014
1.66	0.071	1.454	6.806	0.987
1.71	0.09	1.49	7.767	0.712
1.866	0.094	1.762	8.848	0.757
1.84	0.098	2.084	9.213	0.739
1.676	0.09	2.178	9.213	0.841
1.656	0.095	1.993	9.085	0.802
1.657	0.087	1.967	9.19	0.722
1.567	0.09	1.933	9.103	0.684
1.489	0.09	1.868	8.91	0.705

1.418	0.086	1.733	8.5	0.673
1.412	0.081	1.629	8.132	0.698
1.325	0.07	1.512	7.713	0.683
1.311	0.07	1.404	7.371	0.664
1.23	0.062	1.264	7.154	0.666
1.201	0.053	1.237	6.878	0.662
1.158	0.051	1.206	6.626	0.665
1.176	0.05	1.179	6.471	0.658
1.153	0.05	1.163	6.329	0.66
1.063	0.05	1.154	6.268	0.656
1.153	0.05	1.143	6.18	0.681
1.156	0.05	1.141	6.086	0.68
1.108	0.05	1.161	6.027	0.696
1.156	0.05	1.166	6.114	0.679
1.109	0.05	1.177	6.171	0.689
1.282	0.052	1.208	6.094	0.622
1.517	0.05	1.301	5.484	0.588
1.56	0.05	1.323	5.478	0.589
1.866	0.051	1.283	5.768	0.586
1.945	0.054	1.208	6.507	0.604
1.944	0.054	1.157	7.053	0.623
2.045	0.059	1.714	7.985	0.846
2.108	0.058	3.188	8.362	0.76
2.165	0.055	1.715	8.406	0.776
2.367	0.055	1.361	8.633	0.736
2.48	0.068	1.399	8.54	0.814
2.501	0.061	1.384	9.008	0.954
2.422	0.066	1.424	8.765	0.819
2.291	0.066	1.417	8.502	0.749
2.286	0.059	1.406	8.707	0.722
2.264	0.072	1.382	9.851	0.758
2.225	0.059	1.372	10.428	0.704
2.147	0.064	1.426	11.184	0.778
2.122	0.062	1.402	11.536	1.083
2.108	0.058	1.411	11.89	1.136
1.879	0.059	1.433	11.55	1.074
1.766	0.064	1.462	11.517	1.007
1.757	0.063	1.465	11.317	0.977
1.733	0.062	1.454	10.677	0.663
1.66	0.071	1.454	10.18	0.711
1.71	0.09	1.49	11.065	1.061
1.866	0.094	1.762	12.165	1.069
1.84	0.098	2.084	12.263	1.183
1.676	0.09	2.178	12.244	1.049
1.656	0.095	1.993	12.273	0.804

1.657	0.087	1.967	11.582	0.764
1.567	0.09	1.933	10.552	0.754
1.489	0.09	1.868	9.695	0.759
1.418	0.086	1.733	8.95	0.715
1.412	0.081	1.629	8.418	0.705
1.325	0.07	1.512	8.419	0.673
1.311	0.07	1.404	7.93	0.678
1.23	0.062	1.264	7.167	0.672
1.201	0.053	1.237	6.861	0.683
1.158	0.051	1.206	6.736	0.668
1.176	0.05	1.179	6.48	0.676
1.153	0.05	1.163	6.438	0.646
1.063	0.05	1.154	6.335	0.673
1.153	0.05	1.143	6.407	0.702
1.156	0.05	1.141	6.164	0.664
1.108	0.05	1.161	6.218	0.66
1.156	0.05	1.166	6.419	0.662
1.109	0.05	1.177	6.546	0.665
1.282	0.052	1.208	6.192	0.633
1.517	0.05	1.301	5.827	0.615
1.56	0.05	1.323	6.119	0.612
1.866	0.051	1.283	6.294	0.615
1.945	0.054	1.208	6.632	0.639
1.944	0.054	1.157	7.133	0.666
2.045	0.059	1.714	7.742	0.732
2.108	0.058	3.188	8.202	0.744
2.165	0.055	1.715	8.375	0.747
2.367	0.055	1.361	8.366	0.765
2.48	0.068	1.399	0	0
2.501	0.061	1.384	6.51	0.234
2.422	0.066	1.424	7.884	0.505
2.291	0.066	1.417	8.106	0.324
2.286	0.059	1.406	7.982	0.331
2.264	0.072	1.382	8.37	0.385
2.225	0.059	1.372	8.318	0.382
2.147	0.064	1.426	8.196	0.759
2.122	0.062	1.402	8.463	0.716
2.108	0.058	1.411	8.091	0.714
1.879	0.059	1.433	8	0.708
1.766	0.064	1.462	7.968	1.081
1.757	0.063	1.465	7.79	1.028
1.733	0.062	1.454	7.861	1.176
1.66	0.071	1.454	7.773	0.85
1.71	0.09	1.49	8.39	0.956
1.866	0.094	1.762	9.803	1.113

1.84	0.098	2.084	10.131	1.096
1.676	0.09	2.178	9.924	1.098
1.656	0.095	1.993	9.821	1.104
1.657	0.087	1.967	9.685	1.031
1.567	0.09	1.933	9.373	1.013
1.489	0.09	1.868	8.836	0.984
1.418	0.086	1.733	8.792	0.939
1.412	0.081	1.629	8.585	0.928
1.325	0.07	1.512	7.944	0.806
1.311	0.07	1.404	7.559	0.727
1.23	0.062	1.264	7.167	0.672
1.201	0.053	1.237	6.861	0.683
1.158	0.051	1.206	6.736	0.668
1.176	0.05	1.179	6.48	0.676
1.153	0.05	1.163	6.438	0.646
1.063	0.05	1.154	6.335	0.673
1.153	0.05	1.143	6.407	0.702
1.156	0.05	1.141	6.164	0.664
1.108	0.05	1.161	6.218	0.66
1.156	0.05	1.166	6.419	0.662
1.109	0.05	1.177	6.546	0.665
1.282	0.052	1.208	6.192	0.633
1.517	0.05	1.301	5.827	0.615
1.56	0.05	1.323	6.119	0.612
1.866	0.051	1.283	6.294	0.615
1.945	0.054	1.208	6.632	0.639
1.944	0.054	1.157	7.133	0.666
2.045	0.059	1.714	7.742	0.732
2.108	0.058	3.188	8.202	0.744
2.165	0.055	1.715	8.375	0.747
2.367	0.055	1.361	8.366	0.765
2.48	0.068	1.399	0	0
2.501	0.061	1.384	6.51	0.234
2.422	0.066	1.424	7.884	0.505
2.291	0.066	1.417	8.106	0.324
2.286	0.059	1.406	7.982	0.331
2.264	0.072	1.382	8.37	0.385
2.225	0.059	1.372	8.318	0.382
2.147	0.064	1.426	8.196	0.759
2.122	0.062	1.402	8.463	0.716
2.108	0.058	1.411	8.091	0.714
1.879	0.059	1.433	8	0.708
1.766	0.064	1.462	7.968	1.081
1.757	0.063	1.465	7.79	1.028
1.733	0.062	1.454	7.861	1.176

1.66	0.071	1.454	7.773	0.85
1.71	0.09	1.49	8.39	0.956
1.866	0.094	1.762	9.803	1.113
1.84	0.098	2.084	10.131	1.096
1.676	0.09	2.178	9.924	1.098
1.656	0.095	1.993	9.821	1.104
1.657	0.087	1.967	9.685	1.031
1.567	0.09	1.933	9.373	1.013
1.489	0.09	1.868	8.836	0.984
1.418	0.086	1.733	8.792	0.939
1.412	0.081	1.629	8.585	0.928
1.325	0.07	1.512	7.944	0.806
1.311	0.07	1.404	7.559	0.727
1.23	0.062	0.859	8.243	0.704
1.201	0.053	0.823	7.797	0.742
1.158	0.051	0.803	7.658	0.715
1.176	0.05	0.781	9.277	0.73
1.153	0.05	0.77	3.833	0.713
1.063	0.05	0.761	6.326	0.674
1.153	0.05	0.76	6.783	0.738
1.156	0.05	0.763	7.309	0.693
1.108	0.05	0.767	7.237	0.696
1.156	0.05	0.844	7.251	0.695
1.109	0.05	0.999	7.189	0.744
1.282	0.052	1.062	7.159	0.662
1.517	0.05	1.085	7.021	0.612
1.56	0.05	1.141	7.125	0.634
1.866	0.051	1.168	7.79	0.439
1.945	0.054	1.165	8.097	0.662
1.944	0.054	1.148	8.948	1.068
2.045	0.059	1.145	9.387	1.127
2.108	0.058	1.145	9.507	1.135
2.165	0.055	1.156	9.796	0.906
2.367	0.055	1.192	10.2	0.739
2.48	0.068	1.199	10.034	0.946
2.501	0.061	1.235	9.868	0.893
2.422	0.066	1.186	9.814	0.9
2.291	0.066	1.121	9.587	0.833
2.286	0.059	1.136	9.362	0.818
2.264	0.072	1.13	9.362	0.818
2.225	0.059	1.136	9.362	0.818
2.147	0.064	1.165	9.362	0.818
2.122	0.062	1.179	9.362	0.818
2.108	0.058	1.163	9.362	0.818
1.879	0.059	1.136	9.362	0.818

1.766	0.064	1.13	10.793	0.894
1.757	0.063	1.03	10.249	0.93
1.733	0.062	1.033	10.286	0.89
1.66	0.071	1.145	10.159	0.844
1.71	0.09	1.631	10.553	0.858
1.866	0.094	1.962	12.017	0.883
1.84	0.098	1.96	12.337	1
1.676	0.09	1.863	12.19	0.89
1.656	0.095	1.715	11.877	0.866
1.657	0.087	1.652	11.762	0.916
1.567	0.09	1.507	11.494	0.764
1.489	0.09	1.361	10.972	0.731
1.418	0.086	1.134	10.327	0.732
1.412	0.081	1.03	9.793	0.73
1.325	0.07	0.934	9.317	0.726
1.311	0.07	0.841	8.691	0.725
1.23	0.05	0.781	7.962	0.803
1.201	0.049	0.77	7.756	0.749
1.158	0.047	0.761	7.573	0.733
1.176	0.047	0.76	7.495	0.732
1.153	0.043	0.763	7.565	0.715
1.063	0.044	0.767	7.586	0.7
1.153	0.045	0.844	7.461	0.634
1.156	0.044	0.999	7.385	0.646
1.108	0.052	1.062	7.291	0.588
1.156	0.05	0.844	7.465	0.546
1.109	0.044	0.999	7.628	0.498
1.282	0.052	1.062	6.993	0.49
1.517	0.05	1.085	7.501	0.501
1.56	0.042	1.141	7.165	0.483
1.866	0.051	1.168	7.254	0.541
1.945	0.054	1.165	7.54	0.641
1.944	0.054	1.148	8.221	0.708
2.045	0.059	1.145	8.545	0.795
2.108	0.058	1.145	9.192	0.788
2.165	0.055	1.156	9.744	0.904
2.367	0.055	1.192	10.782	0.73
2.48	0.068	1.199	10.952	0.77
2.501	0.061	1.235	10.745	0.772
2.422	0.066	1.186	10.259	0.76
2.291	0.066	1.121	10.15	0.708
2.286	0.059	1.136	9.823	0.696
2.264	0.072	1.13	9.469	0.681
2.225	0.059	1.136	9.469	0.681
2.147	0.064	1.165	10.219	1.132

2.122	0.062	1.179	10.375	1.179
2.108	0.058	1.163	10.751	1.244
1.879	0.059	1.136	9.861	1.251
1.766	0.064	1.13	9.522	1.317
1.757	0.063	1.03	8.861	1.049
1.733	0.062	1.033	8.346	1.011
1.66	0.071	1.145	8.01	0.993
1.71	0.09	1.631	9.694	1.067
1.866	0.094	1.962	9.51	1.042
1.84	0.098	1.96	9.414	1.046
1.676	0.09	1.863	9.381	1.048
1.656	0.095	1.715	9.19	1.109
1.657	0.087	1.652	9.263	1.025
1.567	0.09	1.507	9.232	1.132
1.489	0.09	1.361	8.936	1.046
1.418	0.086	1.134	8.345	1.003
1.412	0.081	1.03	8.062	0.954
1.325	0.07	0.934	7.609	0.967
1.311	0.07	0.841	7.195	0.98
1.23	0.062	0.859	18.484	5.341
1.201	0.053	0.823	18.983	5.473
1.158	0.051	0.803	18.667	5.416
1.176	0.05	0.781	19.594	5.298
1.153	0.05	0.77	19.107	5.164
1.063	0.05	0.761	19.102	4.945
1.153	0.05	0.76	18.988	4.942
1.156	0.05	0.763	18.445	4.658
1.108	0.05	0.767	18.358	4.247
1.156	0.05	0.844	17.822	4.279
1.109	0.05	0.999	17.932	3.488
1.282	0.052	1.062	17.131	3.694
1.517	0.05	1.085	17.138	3.609
0	0	0	17.221	3.287
1.866	0.051	1.168	15.479	3.048
1.945	0.054	1.165	14.159	2.599
1.944	0.054	1.148	13.368	2.295
2.045	0.059	1.145	12.522	1.939
2.108	0.058	1.145	11.463	1.636
2.165	0.055	1.156	11.634	1.842
2.367	0.055	1.192	11.876	1.745
2.48	0.068	1.199	12.068	1.248
2.501	0.061	1.235	11.649	1.513
2.422	0.066	1.186	10.414	1.592
2.291	0.066	1.121	9.975	1.599
2.286	0.059	1.136	9.928	1.541

2.264	0.072	1.13	10.047	1.622
2.225	0.059	1.136	10.455	1.369
2.147	0.064	1.165	10.826	1.476
2.122	0.062	1.179	11.089	1.576
2.108	0.058	1.163	11.602	2.042
1.879	0.059	1.136	13.175	2.059
1.766	0.064	1.13	14.735	2.12
1.757	0.063	1.03	17.049	2.16
1.733	0.062	1.033	18.426	2.053
1.66	0.071	1.145	18.932	2.733
1.71	0.09	1.631	21.229	3.047
1.866	0.094	1.962	22.76	3.831
1.84	0.098	1.96	23.308	4.146
1.676	0.09	1.863	23.001	4.666
1.656	0.095	1.715	23.318	4.765
1.657	0.087	1.652	23.253	4.484
1.567	0.09	1.507	22.892	4.459
1.489	0.09	1.361	22.134	4.492
1.418	0.086	1.134	22.079	4.777
1.412	0.081	1.03	22.276	4.718
1.325	0.07	0.934	22.377	4.754
1.311	0.07	0.841	22.553	4.258
1.23	0.062	1.264	9.194	0.55
1.201	0.053	1.237	9.194	0.55
1.158	0.051	1.206	9.194	0.55
1.176	0.05	1.179	9.194	0.55
1.153	0.05	1.163	9.194	0.55
1.063	0.05	1.154	9.194	0.55
1.153	0.05	1.143	9.194	0.55
1.156	0.05	1.141	9.194	0.55
1.108	0.05	1.161	9.194	0.55
1.156	0.05	1.166	9.194	0.55
1.109	0.05	1.177	9.194	0.55
1.282	0.052	1.208	9.194	0.55
1.517	0.05	1.301	6.8	0.397
1.56	0.05	1.323	6.8	0.397
1.866	0.051	1.283	5.913	0.386
1.945	0.054	1.208	5.913	0.386
1.944	0.054	1.157	5.913	0.386
2.045	0.059	1.714	6.907	0.39
2.108	0.058	3.188	7.174	0.393
2.165	0.055	1.715	7.562	0.373
2.367	0.055	1.361	7.766	0.392
2.48	0.068	1.399	8.082	0.406
2.501	0.061	1.384	8.375	0.397

2.422	0.066	1.424	8.406	0.413
2.291	0.066	1.417	8.167	0.411
2.286	0.059	1.406	8.149	0.435
2.264	0.072	1.382	8.199	0.38
2.225	0.059	1.372	8.104	0.631
2.147	0.064	1.426	8.101	0.594
2.122	0.062	1.402	8.366	0.608
2.108	0.058	1.411	8.141	0.574
1.879	0.059	1.433	8.255	0.59
1.766	0.064	1.462	8.168	0.591
1.757	0.063	1.465	8.182	0.582
1.733	0.062	1.454	8.2	0.676
1.66	0.071	1.454	8.504	0.608
1.71	0.09	1.49	9.247	0.631
1.866	0.094	1.762	10.847	0.567
1.84	0.098	2.084	11.497	0.654
1.676	0.09	2.178	11.425	0.679
1.656	0.095	1.993	11.545	0.689
1.657	0.087	1.967	11.273	0.661
1.567	0.09	1.933	11.371	0.677
1.489	0.09	1.868	10.796	0.65
1.418	0.086	1.733	9.934	0.487
1.412	0.081	1.629	9.496	0.488
1.325	0.07	1.512	8.893	0.476
1.311	0.07	1.404	8.547	0.461
1.23	0.062	0.77	8.075	0.457
1.201	0.053	0.761	7.676	0.461
1.158	0.051	0.76	7.16	0.459
1.176	0.05	0.763	6.927	0.469
1.153	0.05	0.767	6.832	0.466
1.063	0.05	0.7	6.744	0.46
1.153	0.05	0.72	6.777	0.45
1.156	0.05	0.763	6.611	0.464
1.108	0.05	0.767	6.611	0.464
1.156	0.05	0.844	6.611	0.464
1.109	0.05	0.999	6.611	0.464
1.282	0.052	1.062	6.611	0.464
1.517	0.05	1.085	7.773	0.409
1.56	0.05	1.141	7.773	0.409
1.866	0.051	1.168	7.432	0.541
1.945	0.054	1.165	8.031	0.646
1.944	0.054	1.148	8.855	0.741
2.045	0.059	1.145	9.619	0.8
2.108	0.058	1.145	10.031	0.888
2.165	0.055	1.156	11.068	1.006

2.367	0.055	1.192	10.903	0.98
2.48	0.068	1.199	11.339	1.002
2.501	0.061	1.235	11.49	0.958
2.422	0.066	1.186	11.444	0.923
2.291	0.066	1.121	11.627	0.902
2.286	0.059	1.136	11.133	0.925
2.264	0.072	1.13	11.197	0.929
2.225	0.059	1.136	10.824	0.844
2.147	0.064	1.165	11.268	0.916
2.122	0.062	1.179	11.466	1.241
2.108	0.058	1.163	11.488	1.213
1.879	0.059	1.136	11.361	0.864
1.766	0.064	1.13	11.529	0.864
1.757	0.063	1.03	10.897	0.864
1.733	0.062	1.033	10.445	0.863
1.66	0.071	1.145	10.523	0.816
1.71	0.09	1.631	11.004	0.636
1.866	0.094	1.962	12.859	0.653
1.84	0.098	1.96	13.195	0.623
1.676	0.09	1.863	13.258	0.637
1.656	0.095	1.715	13.354	0.635
1.657	0.087	1.652	13.134	0.628
1.567	0.09	1.507	12.708	0.604
1.489	0.09	1.361	12.672	0.599
1.418	0.086	1.134	12.036	0.669
1.412	0.081	1.03	11.461	0.578
1.325	0.07	0.934	10.972	0.525
1.311	0.07	0.841	10.505	0.495
1.23	0.062	1.264	9.896	0.5
1.201	0.053	1.237	9.805	0.473
1.158	0.051	1.206	9.565	0.471
1.176	0.05	1.179	9.33	0.471
1.153	0.05	1.163	9.409	0.48
1.063	0.05	1.154	9.079	0.499
1.153	0.05	1.143	9.009	0.474
1.156	0.05	1.141	8.856	0.661
1.108	0.05	1.161	8.856	0.661
1.156	0.05	1.166	8.856	0.661
1.109	0.05	1.177	9.194	0.674
1.282	0.052	1.208	9.285	0.669
1.517	0.05	1.301	8.151	0.589
1.56	0.05	1.323	8.4	0.587
1.866	0.051	1.283	8.4	0.587
1.945	0.054	1.208	9.811	0.766
1.944	0.054	1.157	10.933	0.871

2.045	0.059	1.714	11.397	1.016
2.108	0.058	3.188	11.905	0.926
2.165	0.055	1.715	11.784	0.927
2.367	0.055	1.361	12.103	0.986
2.48	0.068	1.399	12.418	1.091
2.501	0.061	1.384	12.336	1.178
2.422	0.066	1.424	11.864	1.239
2.291	0.066	1.417	11.52	1.019
2.286	0.059	1.406	11.372	0.882
2.264	0.072	1.382	11.702	0.946
2.225	0.059	1.372	11.651	0.923
2.147	0.064	1.426	11.996	1.32
2.122	0.062	1.402	12.173	1.349
2.108	0.058	1.411	12.422	1.261
1.879	0.059	1.433	12.143	1.228
1.766	0.064	1.462	11.805	1.197
1.757	0.063	1.465	11.766	0.841
1.733	0.062	1.454	11.654	0.84
1.66	0.071	1.454	11.939	0.816
1.71	0.09	1.49	12.24	0.905
1.866	0.094	1.762	13.132	0.847
1.84	0.098	2.084	13.35	0.853
1.676	0.09	2.178	13.402	0.85
1.656	0.095	1.993	13.145	0.834
1.657	0.087	1.967	12.916	0.854
1.567	0.09	1.933	12.889	0.83
1.489	0.09	1.868	12.364	0.887
1.418	0.086	1.733	12.05	0.827
1.412	0.081	1.629	11.274	0.788
1.325	0.07	1.512	10.89	0.772
1.311	0.07	1.404	10.32	0.738
1.23	0.062	0.77	8.075	0.457
1.201	0.053	0.761	7.676	0.461
1.158	0.051	0.76	7.16	0.459
1.176	0.05	0.763	6.927	0.469
1.153	0.05	0.767	6.832	0.466
1.063	0.05	0.7	6.744	0.46
1.153	0.05	0.72	6.777	0.45
1.156	0.05	0.763	6.611	0.464
1.108	0.05	0.767	6.611	0.464
1.156	0.05	0.844	6.611	0.464
1.109	0.05	0.999	6.611	0.464
1.282	0.052	1.062	6.611	0.464
1.517	0.05	1.085	7.773	0.409
1.56	0.05	1.141	7.773	0.409

1.866	0.051	1.168	7.432	0.541
1.945	0.054	1.165	8.031	0.646
1.944	0.054	1.148	8.855	0.741
2.045	0.059	1.145	9.619	0.8
2.108	0.058	1.145	10.031	0.888
2.165	0.055	1.156	11.068	1.006
2.367	0.055	1.192	10.903	0.98
2.48	0.068	1.199	11.339	1.002
2.501	0.061	1.235	11.49	0.958
2.422	0.066	1.186	11.444	0.923
2.291	0.066	1.121	11.627	0.902
2.286	0.059	1.136	11.133	0.925
2.264	0.072	1.13	11.197	0.929
2.225	0.059	1.136	10.824	0.844
2.147	0.064	1.165	11.268	0.916
2.122	0.062	1.179	11.466	1.241
2.108	0.058	1.163	11.488	1.213
1.879	0.059	1.136	11.361	0.864
1.766	0.064	1.13	11.529	0.864
1.757	0.063	1.03	10.897	0.864
1.733	0.062	1.033	10.445	0.863
1.66	0.071	1.145	10.523	0.816
1.71	0.09	1.631	11.004	0.636
1.866	0.094	1.962	12.859	0.653
1.84	0.098	1.96	13.195	0.623
1.676	0.09	1.863	13.258	0.637
1.656	0.095	1.715	13.354	0.635
1.657	0.087	1.652	13.134	0.628
1.567	0.09	1.507	12.708	0.604
1.489	0.09	1.361	12.672	0.599
1.418	0.086	1.134	12.036	0.669
1.412	0.081	1.03	11.461	0.578
1.325	0.07	0.934	10.972	0.525
1.311	0.07	0.841	10.505	0.495
1.23	0.062	1.264	10.294	1.132
1.201	0.053	1.237	9.71	1.091
1.158	0.051	1.206	9.519	1.075
1.176	0.05	1.179	9.25	1.03
1.153	0.05	1.163	9.158	0.894
1.063	0.05	1.154	8.898	0.855
1.153	0.05	1.143	9.101	0.779
1.156	0.05	1.141	8.867	0.751
1.108	0.05	1.161	9.022	0.723
1.156	0.05	1.166	8.963	0.758
1.109	0.05	1.177	9.264	0.732

1.282	0.052	1.208	8.858	0.738
1.517	0.05	1.301	7.075	0.712
1.56	0.05	1.323	6.083	0.818
1.866	0.051	1.283	6.792	0.826
1.945	0.054	1.208	7.463	1.029
1.944	0.054	1.157	8.277	1.348
2.045	0.059	1.714	9.213	1.398
2.108	0.058	3.188	9.887	1.425
2.165	0.055	1.715	10.14	1.167
2.367	0.055	1.361	10.171	1.215
2.48	0.068	1.399	10.654	1.251
2.501	0.061	1.384	11.124	1.258
2.422	0.066	1.424	10.656	1.147
2.291	0.066	1.417	10.379	1.109
2.286	0.059	1.406	10.06	1.039
2.264	0.072	1.382	10.286	1.14
2.225	0.059	1.372	10.473	1.114
2.147	0.064	1.426	10.573	1.385
2.122	0.062	1.402	10.917	1.444
2.108	0.058	1.411	11.251	1.532
1.879	0.059	1.433	11.044	1.486
1.766	0.064	1.462	10.961	1.531
1.757	0.063	1.465	12.466	1.599
1.733	0.062	1.454	11.824	1.446
1.66	0.071	1.454	11.739	1.444
1.71	0.09	1.49	12.101	1.539
1.866	0.094	1.762	13.48	1.449
1.84	0.098	2.084	14.127	1.435
1.676	0.09	2.178	13.849	1.467
1.656	0.095	1.993	13.694	1.416
1.657	0.087	1.967	13.366	1.396
1.567	0.09	1.933	12.961	1.427
1.489	0.09	1.868	12.351	1.34
1.418	0.086	1.733	12.178	1.371
1.412	0.081	1.629	11.519	1.381
1.325	0.07	1.512	11.54	1.386
1.311	0.07	1.404	11.192	1.255
1.23	0.062	1.264	10.617	1.245
1.201	0.053	1.237	10.405	1.122
1.158	0.051	1.206	10.489	1.142
1.176	0.05	1.179	10.091	1.157
1.153	0.05	1.163	9.64	1.116
1.063	0.05	1.154	9.488	1.07
1.153	0.05	1.143	9.567	0.974
1.156	0.05	1.141	9.562	0.859

1.108	0.05	1.161	4.877	0.859
1.156	0.05	1.166	6.246	0.849
1.109	0.05	1.177	7.749	0.86
1.282	0.052	1.208	8.558	0.909
1.517	0.05	1.301	8.553	0.885
1.56	0.05	1.323	8.3	0.887
1.866	0.051	1.283	8.936	0.919
1.945	0.054	1.208	9.517	1.01
1.944	0.054	1.157	10.277	1.023
2.045	0.059	1.714	10.75	1.203
2.108	0.058	3.188	10.972	1.22
2.165	0.055	1.715	11.557	1.577
2.367	0.055	1.361	11.8	1.575
2.48	0.068	1.399	12.288	1.665
2.501	0.061	1.384	12.528	1.727
2.422	0.066	1.424	12.512	1.41
2.291	0.066	1.417	12.136	1.578
2.286	0.059	1.406	12.447	1.12
2.264	0.072	1.382	11.874	1.092
2.225	0.059	1.372	12.174	1.159
2.147	0.064	1.426	12.335	1.059
2.122	0.062	1.402	12.526	1.129
2.108	0.058	1.411	12.456	1.282
1.879	0.059	1.433	12.173	1.322
1.766	0.064	1.462	12.045	1.426
1.757	0.063	1.465	11.721	1.384
1.733	0.062	1.454	11.614	1.31
1.66	0.071	1.454	11.558	1.345
1.71	0.09	1.49	11.902	1.352
1.866	0.094	1.762	13.465	1.337
1.84	0.098	2.084	13.916	1.331
1.676	0.09	2.178	13.699	1.309
1.656	0.095	1.993	10.721	1.277
1.657	0.087	1.967	10.289	1.245
1.567	0.09	1.933	10.043	1.275
1.489	0.09	1.868	11.087	1.278
1.418	0.086	1.733	10.528	1.201
1.412	0.081	1.629	9.92	1.227
1.325	0.07	1.512	9.707	1.272
1.311	0.07	1.404	9.588	1.213
1.23	0.062	1.264	10.294	1.132
1.201	0.053	1.237	9.71	1.091
1.158	0.051	1.206	9.519	1.075
1.176	0.05	1.179	9.25	1.03
1.153	0.05	1.163	9.158	0.894

1.063	0.05	1.154	8.898	0.855
1.153	0.05	1.143	9.101	0.779
1.156	0.05	1.141	8.867	0.751
1.108	0.05	1.161	9.022	0.723
1.156	0.05	1.166	8.963	0.758
1.109	0.05	1.177	9.264	0.732
1.282	0.052	1.208	8.858	0.738
1.517	0.05	1.301	7.075	0.712
1.56	0.05	1.323	6.083	0.818
1.866	0.051	1.283	6.792	0.826
1.945	0.054	1.208	7.463	1.029
1.944	0.054	1.157	8.277	1.348
2.045	0.059	1.714	9.213	1.398
2.108	0.058	3.188	9.887	1.425
2.165	0.055	1.715	10.14	1.167
2.367	0.055	1.361	10.171	1.215
2.48	0.068	1.399	10.654	1.251
2.501	0.061	1.384	11.124	1.258
2.422	0.066	1.424	10.656	1.147
2.291	0.066	1.417	10.379	1.109
2.286	0.059	1.406	10.06	1.039
2.264	0.072	1.382	10.286	1.14
2.225	0.059	1.372	10.473	1.114
2.147	0.064	1.426	10.573	1.385
2.122	0.062	1.402	10.917	1.444
2.108	0.058	1.411	11.251	1.532
1.879	0.059	1.433	11.044	1.486
1.766	0.064	1.462	10.961	1.531
1.757	0.063	1.465	12.466	1.599
1.733	0.062	1.454	11.824	1.446
1.66	0.071	1.454	11.739	1.444
1.71	0.09	1.49	12.101	1.539
1.866	0.094	1.762	13.48	1.449
1.84	0.098	2.084	14.127	1.435
1.676	0.09	2.178	13.849	1.467
1.656	0.095	1.993	13.694	1.416
1.657	0.087	1.967	13.366	1.396
1.567	0.09	1.933	12.961	1.427
1.489	0.09	1.868	12.351	1.34
1.418	0.086	1.733	12.178	1.371
1.412	0.081	1.629	11.519	1.381
1.325	0.07	1.512	11.54	1.386
1.311	0.07	1.404	11.192	1.255
1.23	0.062	1.264	10.294	1.132
1.201	0.053	1.237	9.71	1.091

1.158	0.051	1.206	9.519	1.075
1.176	0.05	1.179	9.25	1.03
1.153	0.05	1.163	9.158	0.894
1.063	0.05	1.154	8.898	0.855
1.153	0.05	1.143	9.101	0.779
1.156	0.05	1.141	8.867	0.751
1.108	0.05	1.161	9.022	0.723
1.156	0.05	1.166	8.963	0.758
1.109	0.05	1.177	9.264	0.732
1.282	0.052	1.208	8.858	0.738
1.517	0.05	1.301	7.075	0.712
1.56	0.05	1.323	6.083	0.818
1.866	0.051	1.283	6.792	0.826
1.945	0.054	1.208	7.463	1.029
1.944	0.054	1.157	8.277	1.348
2.045	0.059	1.714	9.213	1.398
2.108	0.058	3.188	9.887	1.425
2.165	0.055	1.715	10.14	1.167
2.367	0.055	1.361	10.171	1.215
2.48	0.068	1.399	10.654	1.251
2.501	0.061	1.384	11.124	1.258
2.422	0.066	1.424	10.656	1.147
2.291	0.066	1.417	10.379	1.109
2.286	0.059	1.406	10.06	1.039
2.264	0.072	1.382	10.286	1.14
2.225	0.059	1.372	10.473	1.114
2.147	0.064	1.426	10.573	1.385
2.122	0.062	1.402	10.917	1.444
2.108	0.058	1.411	11.251	1.532
1.879	0.059	1.433	11.044	1.486
1.766	0.064	1.462	10.961	1.531
1.757	0.063	1.465	12.466	1.599
1.733	0.062	1.454	11.824	1.446
1.66	0.071	1.454	11.739	1.444
1.71	0.09	1.49	12.101	1.539
1.866	0.094	1.762	13.48	1.449
1.84	0.098	2.084	14.127	1.435
1.676	0.09	2.178	13.849	1.467
1.656	0.095	1.993	13.694	1.416
1.657	0.087	1.967	13.366	1.396
1.567	0.09	1.933	12.961	1.427
1.489	0.09	1.868	12.351	1.34
1.418	0.086	1.733	12.178	1.371
1.412	0.081	1.629	11.519	1.381
1.325	0.07	1.512	11.54	1.386

1.311	0.07	1.404	11.192	1.255
1.23	0.062	1.264	7.588	0.71
1.201	0.053	1.237	7.276	0.676
1.158	0.051	1.206	7.1	0.699
1.176	0.05	1.179	6.923	0.675
1.153	0.05	1.163	6.751	0.678
1.063	0.05	1.154	6.766	0.662
1.153	0.05	1.143	6.767	0.691
1.156	0.05	1.141	6.558	0.676
1.108	0.05	1.161	6.602	0.8
1.156	0.05	1.166	6.629	0.697
1.109	0.05	1.177	6.851	0.677
1.282	0.052	1.208	6.872	0.666
1.517	0.05	1.301	6.674	0.625
1.56	0.05	1.323	6.613	0.64
1.866	0.051	1.283	7.474	0.751
1.945	0.054	1.208	7.792	0.843
1.944	0.054	1.157	8.526	1.122
2.045	0.059	1.714	9.31	1.285
2.108	0.058	3.188	10.194	1.316
2.165	0.055	1.715	10.481	1.038
2.367	0.055	1.361	10.606	1.029
2.48	0.068	1.399	10.858	0.975
2.501	0.061	1.384	11.319	1.078
2.422	0.066	1.424	11.083	0.975
2.291	0.066	1.417	10.681	0.987
2.286	0.059	1.406	10.415	0.901
2.264	0.072	1.382	10.663	0.996
2.225	0.059	1.372	10.592	0.928
2.147	0.064	1.426	10.777	1.013
2.122	0.062	1.402	10.794	1.01
2.108	0.058	1.411	10.908	0.777
1.879	0.059	1.433	10.736	0.958
1.766	0.064	1.462	10.774	0.892
1.757	0.063	1.465	10.612	1.166
1.733	0.062	1.454	10.564	1.128
1.66	0.071	1.454	9.879	1.259
1.71	0.09	1.49	10.634	1.166
1.866	0.094	1.762	11.5	1.272
1.84	0.098	2.084	11.786	1.068
1.676	0.09	2.178	11.51	1.16
1.656	0.095	1.993	11.55	1.047
1.657	0.087	1.967	11.152	1.039
1.567	0.09	1.933	10.991	1.125
1.489	0.09	1.868	10.714	1.023

1.418	0.086	1.733	10.092	1.025
1.412	0.081	1.629	9.357	0.963
1.325	0.07	1.512	9.265	0.98
1.311	0.07	1.404	8.626	0.98
1.23	0.062	1.264	8.261	0.996
1.201	0.053	1.237	7.88	0.738
1.158	0.051	1.206	7.858	0.748
1.176	0.05	1.179	7.827	0.814
1.153	0.05	1.163	7.856	0.755
1.063	0.05	1.154	7.625	0.678
1.153	0.05	1.143	7.633	0.662
1.156	0.05	1.141	7.69	0.782
1.108	0.05	1.161	7.73	0.772
1.156	0.05	1.166	7.79	0.708
1.109	0.05	1.177	7.778	0.807
1.282	0.052	1.208	7.745	0.791
1.517	0.05	1.301	6.862	0.707
1.56	0.05	1.323	6.947	0.701
1.866	0.051	1.283	7.848	0.779
1.945	0.054	1.208	8.117	0.817
1.944	0.054	1.157	9.128	1.257
2.045	0.059	1.714	9.938	1.322
2.108	0.058	3.188	9.92	1.454
2.165	0.055	1.715	10.341	1.489
2.367	0.055	1.361	10.937	1.238
2.48	0.068	1.399	11.159	1.26
2.501	0.061	1.384	11.549	1.242
2.422	0.066	1.424	11.252	1.255
2.291	0.066	1.417	11.125	1.224
2.286	0.059	1.406	10.834	1.125
2.264	0.072	1.382	10.935	1.221
2.225	0.059	1.372	11.284	1.412
2.147	0.064	1.426	11.146	1.424
2.122	0.062	1.402	11.486	1.581
2.108	0.058	1.411	11.84	1.436
1.879	0.059	1.433	11.57	1.53
1.766	0.064	1.462	11.635	1.537
1.757	0.063	1.465	11.532	1.534
1.733	0.062	1.454	11.361	1.427
1.66	0.071	1.454	10.877	1.51
1.71	0.09	1.49	11.298	1.44
1.866	0.094	1.762	12.826	1.418
1.84	0.098	2.084	12.71	1.389
1.676	0.09	2.178	12.525	1.406
1.656	0.095	1.993	12.242	1.323

1.657	0.087	1.967	11.931	1.306
1.567	0.09	1.933	11.685	1.255
1.489	0.09	1.868	11.228	1.162
1.418	0.086	1.733	10.643	1.175
1.412	0.081	1.629	9.864	1.151
1.325	0.07	1.512	9.664	1.094
1.311	0.07	1.404	9.193	1.064
1.23	0.062	1.264	9.119	1.081
1.201	0.053	1.237	8.921	1.042
1.158	0.051	1.206	8.699	1.016
1.176	0.05	1.179	8.366	0.952
1.153	0.05	1.163	8.36	0.964
1.063	0.05	1.154	8.199	0.968
1.153	0.05	1.143	8.251	0.886
1.156	0.05	1.141	8.257	0.768
1.108	0.05	1.161	8.458	0.726
1.156	0.05	1.166	8.299	0.733
1.109	0.05	1.177	8.325	0.78
1.282	0.052	1.208	7.996	0.756
1.517	0.05	1.301	7.66	0.785
1.56	0.05	1.323	7.711	0.848
1.866	0.051	1.283	8.073	0.93
1.945	0.054	1.208	8.402	1.108
1.944	0.054	1.157	9.195	1.384
2.045	0.059	1.714	10.015	1.809
2.108	0.058	3.188	10.127	1.667
2.165	0.055	1.715	10.751	1.398
2.367	0.055	1.361	10.853	1.363
2.48	0.068	1.399	11.291	1.58
2.501	0.061	1.384	11.496	1.351
2.422	0.066	1.424	11.261	1.236
2.291	0.066	1.417	11.296	1.221
2.286	0.059	1.406	10.927	1.185
2.264	0.072	1.382	11.255	1.293
2.225	0.059	1.372	11.493	1.398
2.147	0.064	1.426	12.088	1.509
2.122	0.062	1.402	11.949	1.613
2.108	0.058	1.411	11.978	1.495
1.879	0.059	1.433	11.424	1.508
1.766	0.064	1.462	11.645	1.467
1.757	0.063	1.465	11.567	1.605
1.733	0.062	1.454	11.416	1.521
1.66	0.071	1.454	10.944	1.433
1.71	0.09	1.49	11.303	1.461
1.866	0.094	1.762	12.906	1.477

1.84	0.098	2.084	12.63	1.433
1.676	0.09	2.178	12.535	1.417
1.656	0.095	1.993	12.834	1.495
1.657	0.087	1.967	12.576	1.455
1.567	0.09	1.933	12.575	1.316
1.489	0.09	1.868	11.981	1.358
1.418	0.086	1.733	11.223	1.325
1.412	0.081	1.629	10.259	1.288
1.325	0.07	1.512	10.044	1.196
1.311	0.07	1.404	9.734	1.133
1.23	0.062	1.264	8.261	0.996
1.201	0.053	1.237	7.88	0.738
1.158	0.051	1.206	7.858	0.748
1.176	0.05	1.179	7.827	0.814
1.153	0.05	1.163	7.856	0.755
1.063	0.05	1.154	7.625	0.678
1.153	0.05	1.143	7.633	0.662
1.156	0.05	1.141	7.69	0.782
1.108	0.05	1.161	7.73	0.772
1.156	0.05	1.166	7.79	0.708
1.109	0.05	1.177	7.778	0.807
1.282	0.052	1.208	7.745	0.791
1.517	0.05	1.301	6.862	0.707
1.56	0.05	1.323	6.947	0.701
1.866	0.051	1.283	7.848	0.779
1.945	0.054	1.208	8.117	0.817
1.944	0.054	1.157	9.128	1.257
2.045	0.059	1.714	9.938	1.322
2.108	0.058	3.188	9.92	1.454
2.165	0.055	1.715	10.341	1.489
2.367	0.055	1.361	10.937	1.238
2.48	0.068	1.399	11.159	1.26
2.501	0.061	1.384	11.549	1.242
2.422	0.066	1.424	11.252	1.255
2.291	0.066	1.417	11.125	1.224
2.286	0.059	1.406	10.834	1.125
2.264	0.072	1.382	10.935	1.221
2.225	0.059	1.372	11.284	1.412
2.147	0.064	1.426	11.146	1.424
2.122	0.062	1.402	11.486	1.581
2.108	0.058	1.411	11.84	1.436
1.879	0.059	1.433	11.57	1.53
1.766	0.064	1.462	11.635	1.537
1.757	0.063	1.465	11.532	1.534
1.733	0.062	1.454	11.361	1.427

1.66	0.071	1.454	10.877	1.51
1.71	0.09	1.49	11.298	1.44
1.866	0.094	1.762	12.826	1.418
1.84	0.098	2.084	12.71	1.389
1.676	0.09	2.178	12.525	1.406
1.656	0.095	1.993	12.242	1.323
1.657	0.087	1.967	11.931	1.306
1.567	0.09	1.933	11.685	1.255
1.489	0.09	1.868	11.228	1.162
1.418	0.086	1.733	10.643	1.175
1.412	0.081	1.629	9.864	1.151
1.325	0.07	1.512	9.664	1.094
1.311	0.07	1.404	9.193	1.064

**DEMANDA HISTORICO-DIARIO-SUB ESTACIONES CHIMBOTE UNO CASMA HIDRANDINA FEBRERO 2019**

41396	41397	21535	41395	41399	41398	22402	21537	22207
HIDRANDINA	HIDRANDINA	HIDRANDINA	HIDRANDINA	HIDRANDINA	HIDRANDINA	HIDRANDINA	HIDRANDINA	HIDRANDINA
CASMA_TP-A053_BARRA_10	CASMA_TP-A053_BARRA_22.9	TP-A001	CHIMBOTE_SUR_TP-A054_BARRA_13.8	NEPEÑA_TP-A055_BARRA_13.8	NEPEÑA_TP-A055_BARRA_22.9	TP-A006-6.6MVA	TPA007	TP-A048
10	22.90	13.80	13.80	13.80	22.90	13.80	13.80	13.80
CASMA	CASMA	CHIMBOTE NORTE	CHIMBOTE SUR	NEPEÑA	NEPEÑA	SAN JACINTO	TRAPECIO	TRAPECIO
3.444	2.718	11.123	11.11	1.23	0.062	1.264	8.261	0.996
3.248	2.717	10.517	10.41	1.201	0.053	1.237	7.88	0.738
3.183	2.774	9.566	9.79	1.158	0.051	1.206	7.858	0.748
3.133	2.813	9.383	9.49	1.176	0.05	1.179	7.827	0.814
2.825	2.85	9.302	9.27	1.153	0.05	1.163	7.856	0.755
2.929	2.842	9.077	8.9	1.063	0.05	1.154	7.625	0.678
2.894	2.868	8.956	8.75	1.153	0.05	1.143	7.633	0.662
2.836	2.798	8.782	8.65	1.156	0.05	1.141	7.69	0.782
2.829	2.839	8.986	8.63	1.108	0.05	1.161	7.73	0.772
2.746	2.875	9.171	8.48	1.156	0.05	1.166	7.79	0.708
2.754	2.857	9.269	8.66	1.109	0.05	1.177	7.778	0.807
2.615	2.781	9.523	8.69	1.282	0.052	1.208	7.745	0.791
2.559	2.646	9.075	8.24	1.517	0.05	1.301	6.862	0.707
2.699	2.833	9.853	8.74	1.56	0.05	1.323	6.947	0.701
2.618	2.865	10.287	9.19	1.866	0.051	1.283	7.848	0.779
2.786	2.545	11.857	9.74	1.945	0.054	1.208	8.117	0.817
2.97	2.719	12.909	10.44	1.944	0.054	1.157	9.128	1.257
3.424	3.233	13.415	11.35	2.045	0.059	1.714	9.938	1.322
3.582	3.259	14.522	11.64	2.108	0.058	3.188	9.92	1.454
3.686	3.287	15.068	11.86	2.165	0.055	1.715	10.341	1.489
3.771	3.29	13.422	12.18	2.367	0.055	1.361	10.937	1.238
4.016	3.23	14.263	12.56	2.48	0.068	1.399	11.159	1.26
4.224	3.414	14.463	13.15	2.501	0.061	1.384	11.549	1.242
4.272	3.535	15.655	13.54	2.422	0.066	1.424	11.252	1.255
4.229	3.629	16.071	13.48	2.291	0.066	1.417	11.125	1.224
3.98	3.377	15.715	13	2.286	0.059	1.406	10.834	1.125
4	3.345	15.715	12.83	2.264	0.072	1.382	10.935	1.221
3.932	3.323	14.215	11.92	2.225	0.059	1.372	11.284	1.412
4.014	3.23	14.363	12.43	2.147	0.064	1.426	11.146	1.424
4.081	3.224	14.807	12.69	2.122	0.062	1.402	11.486	1.581
4.051	3.149	14.919	12.53	2.108	0.058	1.411	11.84	1.436
3.912	3.061	15.248	12.39	1.879	0.059	1.433	11.57	1.53
3.901	3.058	14.905	12.47	1.766	0.064	1.462	11.635	1.537
3.862	2.903	14.871	12.23	1.757	0.063	1.465	11.532	1.534
3.844	2.726	14.44	12.02	1.733	0.062	1.454	11.361	1.427

3.777	2.51	14.585	12.29	1.66	0.071	1.454	10.877	1.51
3.54	2.497	15.807	13.04	1.71	0.09	1.49	11.298	1.44
4.102	2.996	18.241	16.37	1.866	0.094	1.762	12.826	1.418
4.178	3.238	18.639	17.5	1.84	0.098	2.084	12.71	1.389
4.232	2.654	18.339	17.73	1.676	0.09	2.178	12.525	1.406
4.184	2.76	17.85	17.78	1.656	0.095	1.993	12.242	1.323
4.374	2.992	17.17	17.55	1.657	0.087	1.967	11.931	1.306
4.276	3.132	16.821	17.08	1.567	0.09	1.933	11.685	1.255
4.258	2.938	15.846	16.37	1.489	0.09	1.868	11.228	1.162
4.035	2.852	14.914	15.49	1.418	0.086	1.733	10.643	1.175
3.742	2.801	13.792	14.48	1.412	0.081	1.629	9.864	1.151
3.526	2.689	13.297	13.3	1.325	0.07	1.512	9.664	1.094
3.394	2.639	12.318	12.1	1.311	0.07	1.404	9.193	1.064
3.444	2.718	11.123	11.11	1.23	0.062	1.264	8.261	0.996
3.248	2.717	10.517	10.41	1.201	0.053	1.237	7.88	0.738
3.183	2.774	9.566	9.79	1.158	0.051	1.206	7.858	0.748
3.133	2.813	9.383	9.49	1.176	0.05	1.179	7.827	0.814
2.825	2.85	9.302	9.27	1.153	0.05	1.163	7.856	0.755
2.929	2.842	9.077	8.9	1.063	0.05	1.154	7.625	0.678
2.894	2.868	8.956	8.75	1.153	0.05	1.143	7.633	0.662
2.836	2.798	8.782	8.65	1.156	0.05	1.141	7.69	0.782
2.829	2.839	8.986	8.63	1.108	0.05	1.161	7.73	0.772
2.746	2.875	9.171	8.48	1.156	0.05	1.166	7.79	0.708
2.754	2.857	9.269	8.66	1.109	0.05	1.177	7.778	0.807
2.615	2.781	9.523	8.69	1.282	0.052	1.208	7.745	0.791
2.559	2.646	9.075	8.24	1.517	0.05	1.301	6.862	0.707
2.699	2.833	9.853	8.74	1.56	0.05	1.323	6.947	0.701
2.618	2.865	10.287	9.19	1.866	0.051	1.283	7.848	0.779
2.786	2.545	11.857	9.74	1.945	0.054	1.208	8.117	0.817
2.97	2.719	12.909	10.44	1.944	0.054	1.157	9.128	1.257
3.424	3.233	13.415	11.35	2.045	0.059	1.714	9.938	1.322
3.582	3.259	14.522	11.64	2.108	0.058	3.188	9.92	1.454
3.686	3.287	15.068	11.86	2.165	0.055	1.715	10.341	1.489
3.771	3.29	13.422	12.18	2.367	0.055	1.361	10.937	1.238
4.016	3.23	14.263	12.56	2.48	0.068	1.399	11.159	1.26
4.224	3.414	14.463	13.15	2.501	0.061	1.384	11.549	1.242
4.272	3.535	15.655	13.54	2.422	0.066	1.424	11.252	1.255
4.229	3.629	16.071	13.48	2.291	0.066	1.417	11.125	1.224
3.98	3.377	15.715	13	2.286	0.059	1.406	10.834	1.125
4	3.345	15.715	12.83	2.264	0.072	1.382	10.935	1.221
3.932	3.323	14.215	11.92	2.225	0.059	1.372	11.284	1.412
4.014	3.23	14.363	12.43	2.147	0.064	1.426	11.146	1.424
4.081	3.224	14.807	12.69	2.122	0.062	1.402	11.486	1.581
4.051	3.149	14.919	12.53	2.108	0.058	1.411	11.84	1.436
3.912	3.061	15.248	12.39	1.879	0.059	1.433	11.57	1.53

3.901	3.058	14.905	12.47	1.766	0.064	1.462	11.635	1.537
3.862	2.903	14.871	12.23	1.757	0.063	1.465	11.532	1.534
3.844	2.726	14.44	12.02	1.733	0.062	1.454	11.361	1.427
3.777	2.51	14.585	12.29	1.66	0.071	1.454	10.877	1.51
3.54	2.497	15.807	13.04	1.71	0.09	1.49	11.298	1.44
4.102	2.996	18.241	16.37	1.866	0.094	1.762	12.826	1.418
4.178	3.238	18.639	17.5	1.84	0.098	2.084	12.71	1.389
4.232	2.654	18.339	17.73	1.676	0.09	2.178	12.525	1.406
4.184	2.76	17.85	17.78	1.656	0.095	1.993	12.242	1.323
4.374	2.992	17.17	17.55	1.657	0.087	1.967	11.931	1.306
4.276	3.132	16.821	17.08	1.567	0.09	1.933	11.685	1.255
4.258	2.938	15.846	16.37	1.489	0.09	1.868	11.228	1.162
4.035	2.852	14.914	15.49	1.418	0.086	1.733	10.643	1.175
3.742	2.801	13.792	14.48	1.412	0.081	1.629	9.864	1.151
3.526	2.689	13.297	13.3	1.325	0.07	1.512	9.664	1.094
3.394	2.639	12.318	12.1	1.311	0.07	1.404	9.193	1.064
3.277	2.864	11.822	10.33	1.23	0.062	1.264	10.554	0.941
3.222	2.8	10.78	9.81	1.201	0.053	1.237	10.035	0.853
3.139	2.827	10.594	9.46	1.158	0.051	1.206	9.68	0.849
3.033	2.874	10.217	8.75	1.176	0.05	1.179	9.444	0.724
2.985	2.914	10.075	8.55	1.153	0.05	1.163	8.955	0.751
2.951	2.771	9.429	8.44	1.063	0.05	1.154	8.807	0.717
2.901	2.829	9.488	8.27	1.153	0.05	1.143	8.552	0.662
2.945	2.885	9.172	8.06	1.156	0.05	1.141	8.393	0.672
2.938	2.956	9.086	7.98	1.108	0.05	1.161	8.346	0.683
2.845	2.932	9.282	7.95	1.156	0.05	1.166	8.336	0.678
2.594	2.896	9.374	7.99	1.109	0.05	1.177	8.337	0.666
2.62	2.931	8.425	7.7	1.282	0.052	1.208	8.435	0.634
2.134	2.774	8.39	6.64	1.517	0.05	1.301	7.461	0.582
2.224	2.631	8.754	6.92	1.56	0.05	1.323	7.421	0.58
2.366	2.6	8.62	7.37	1.866	0.051	1.283	7.615	0.605
2.358	2.587	9.449	7.88	1.945	0.054	1.208	7.99	0.629
2.458	2.415	10.306	8.51	1.944	0.054	1.157	8.53	0.648
2.457	2.487	10.585	8.96	2.045	0.059	1.714	8.89	0.611
2.591	2.568	11.493	9.46	2.108	0.058	3.188	9.016	0.605
2.601	2.499	12.194	9.69	2.165	0.055	1.715	9.181	0.621
2.719	2.507	12.469	9.96	2.367	0.055	1.361	9.825	0.596
2.931	2.439	12.655	10.29	2.48	0.068	1.399	10.052	0.618
2.968	2.533	12.902	10.46	2.501	0.061	1.384	10.201	0.685
3.105	2.539	12.978	10.59	2.422	0.066	1.424	10.352	0.655
3.165	2.021	12.957	10.82	2.291	0.066	1.417	10.324	0.622
3.004	2.083	12.673	10.55	2.286	0.059	1.406	10.225	0.639
2.833	1.995	13.17	10.34	2.264	0.072	1.382	9.787	0.629
2.843	2.033	12.329	10	2.225	0.059	1.372	9.702	0.635
2.77	2.034	12.068	9.89	2.147	0.064	1.426	9.738	0.677

2.709	1.993	12.105	9.72	2.122	0.062	1.402	9.765	0.64
2.707	1.964	11.754	9.66	2.108	0.058	1.411	9.704	0.614
2.668	1.928	12.031	9.72	1.879	0.059	1.433	9.713	0.63
2.68	1.951	11.476	9.72	1.766	0.064	1.462	9.615	0.615
2.672	1.906	11.861	9.73	1.757	0.063	1.465	9.698	0.66
2.678	1.82	11.686	9.77	1.733	0.062	1.454	9.849	0.557
2.712	1.824	12.08	10.03	1.66	0.071	1.454	9.766	0.647
2.883	1.847	13.36	11.1	1.71	0.09	1.49	10.441	0.678
3.373	2.37	15.126	13.85	1.866	0.094	1.762	12.606	0.716
3.6	2.5	16.413	14.56	1.84	0.098	2.084	13.226	0.691
3.596	2.631	16.393	14.61	1.676	0.09	2.178	13.118	0.69
3.557	2.659	15.993	14.57	1.656	0.095	1.993	13.122	0.746
3.548	2.466	15.992	14.58	1.657	0.087	1.967	12.905	0.698
3.468	2.454	15.69	14.39	1.567	0.09	1.933	12.898	0.716
3.382	2.279	15.22	13.78	1.489	0.09	1.868	12.085	0.768
3.206	2.047	14.149	13.29	1.418	0.086	1.733	11.687	0.668
3.07	2.016	13.851	12.39	1.412	0.081	1.629	10.907	0.605
2.895	2.028	12.909	11.62	1.325	0.07	1.512	10.488	0.687
2.769	1.906	11.755	10.56	1.311	0.07	1.404	10.006	0.645
3.444	2.718	11.123	11.11	1.23	0.062	1.264	8.261	0.996
3.248	2.717	10.517	10.41	1.201	0.053	1.237	7.88	0.738
3.183	2.774	9.566	9.79	1.158	0.051	1.206	7.858	0.748
3.133	2.813	9.383	9.49	1.176	0.05	1.179	7.827	0.814
2.825	2.85	9.302	9.27	1.153	0.05	1.163	7.856	0.755
2.929	2.842	9.077	8.9	1.063	0.05	1.154	7.625	0.678
2.894	2.868	8.956	8.75	1.153	0.05	1.143	7.633	0.662
2.836	2.798	8.782	8.65	1.156	0.05	1.141	7.69	0.782
2.829	2.839	8.986	8.63	1.108	0.05	1.161	7.73	0.772
2.746	2.875	9.171	8.48	1.156	0.05	1.166	7.79	0.708
2.754	2.857	9.269	8.66	1.109	0.05	1.177	7.778	0.807
2.615	2.781	9.523	8.69	1.282	0.052	1.208	7.745	0.791
2.559	2.646	9.075	8.24	1.517	0.05	1.301	6.862	0.707
2.699	2.833	9.853	8.74	1.56	0.05	1.323	6.947	0.701
2.618	2.865	10.287	9.19	1.866	0.051	1.283	7.848	0.779
2.786	2.545	11.857	9.74	1.945	0.054	1.208	8.117	0.817
2.97	2.719	12.909	10.44	1.944	0.054	1.157	9.128	1.257
3.424	3.233	13.415	11.35	2.045	0.059	1.714	9.938	1.322
3.582	3.259	14.522	11.64	2.108	0.058	3.188	9.92	1.454
3.686	3.287	15.068	11.86	2.165	0.055	1.715	10.341	1.489
3.771	3.29	13.422	12.18	2.367	0.055	1.361	10.937	1.238
4.016	3.23	14.263	12.56	2.48	0.068	1.399	11.159	1.26
4.224	3.414	14.463	13.15	2.501	0.061	1.384	11.549	1.242
4.272	3.535	15.655	13.54	2.422	0.066	1.424	11.252	1.255
4.229	3.629	16.071	13.48	2.291	0.066	1.417	11.125	1.224
3.98	3.377	15.715	13	2.286	0.059	1.406	10.834	1.125

4	3.345	15.715	12.83	2.264	0.072	1.382	10.935	1.221
3.932	3.323	14.215	11.92	2.225	0.059	1.372	11.284	1.412
4.014	3.23	14.363	12.43	2.147	0.064	1.426	11.146	1.424
4.081	3.224	14.807	12.69	2.122	0.062	1.402	11.486	1.581
4.051	3.149	14.919	12.53	2.108	0.058	1.411	11.84	1.436
3.912	3.061	15.248	12.39	1.879	0.059	1.433	11.57	1.53
3.901	3.058	14.905	12.47	1.766	0.064	1.462	11.635	1.537
3.862	2.903	14.871	12.23	1.757	0.063	1.465	11.532	1.534
3.844	2.726	14.44	12.02	1.733	0.062	1.454	11.361	1.427
3.777	2.51	14.585	12.29	1.66	0.071	1.454	10.877	1.51
3.54	2.497	15.807	13.04	1.71	0.09	1.49	11.298	1.44
4.102	2.996	18.241	16.37	1.866	0.094	1.762	12.826	1.418
4.178	3.238	18.639	17.5	1.84	0.098	2.084	12.71	1.389
4.232	2.654	18.339	17.73	1.676	0.09	2.178	12.525	1.406
4.184	2.76	17.85	17.78	1.656	0.095	1.993	12.242	1.323
4.374	2.992	17.17	17.55	1.657	0.087	1.967	11.931	1.306
4.276	3.132	16.821	17.08	1.567	0.09	1.933	11.685	1.255
4.258	2.938	15.846	16.37	1.489	0.09	1.868	11.228	1.162
4.035	2.852	14.914	15.49	1.418	0.086	1.733	10.643	1.175
3.742	2.801	13.792	14.48	1.412	0.081	1.629	9.864	1.151
3.526	2.689	13.297	13.3	1.325	0.07	1.512	9.664	1.094
3.394	2.639	12.318	12.1	1.311	0.07	1.404	9.193	1.064
3.444	2.718	11.123	11.11	1.23	0.062	1.264	8.261	0.996
3.248	2.717	10.517	10.41	1.201	0.053	1.237	7.88	0.738
3.183	2.774	9.566	9.79	1.158	0.051	1.206	7.858	0.748
3.133	2.813	9.383	9.49	1.176	0.05	1.179	7.827	0.814
2.825	2.85	9.302	9.27	1.153	0.05	1.163	7.856	0.755
2.929	2.842	9.077	8.9	1.063	0.05	1.154	7.625	0.678
2.894	2.868	8.956	8.75	1.153	0.05	1.143	7.633	0.662
2.836	2.798	8.782	8.65	1.156	0.05	1.141	7.69	0.782
2.829	2.839	8.986	8.63	1.108	0.05	1.161	7.73	0.772
2.746	2.875	9.171	8.48	1.156	0.05	1.166	7.79	0.708
2.754	2.857	9.269	8.66	1.109	0.05	1.177	7.778	0.807
2.615	2.781	9.523	8.69	1.282	0.052	1.208	7.745	0.791
2.559	2.646	9.075	8.24	1.517	0.05	1.301	6.862	0.707
2.699	2.833	9.853	8.74	1.56	0.05	1.323	6.947	0.701
2.618	2.865	10.287	9.19	1.866	0.051	1.283	7.848	0.779
2.786	2.545	11.857	9.74	1.945	0.054	1.208	8.117	0.817
2.97	2.719	12.909	10.44	1.944	0.054	1.157	9.128	1.257
3.424	3.233	13.415	11.35	2.045	0.059	1.714	9.938	1.322
3.582	3.259	14.522	11.64	2.108	0.058	3.188	9.92	1.454
3.686	3.287	15.068	11.86	2.165	0.055	1.715	10.341	1.489
3.771	3.29	13.422	12.18	2.367	0.055	1.361	10.937	1.238
4.016	3.23	14.263	12.56	2.48	0.068	1.399	11.159	1.26
4.224	3.414	14.463	13.15	2.501	0.061	1.384	11.549	1.242

4.272	3.535	15.655	13.54	2.422	0.066	1.424	11.252	1.255
4.229	3.629	16.071	13.48	2.291	0.066	1.417	11.125	1.224
3.98	3.377	15.715	13	2.286	0.059	1.406	10.834	1.125
4	3.345	15.715	12.83	2.264	0.072	1.382	10.935	1.221
3.932	3.323	14.215	11.92	2.225	0.059	1.372	11.284	1.412
4.014	3.23	14.363	12.43	2.147	0.064	1.426	11.146	1.424
4.081	3.224	14.807	12.69	2.122	0.062	1.402	11.486	1.581
4.051	3.149	14.919	12.53	2.108	0.058	1.411	11.84	1.436
3.912	3.061	15.248	12.39	1.879	0.059	1.433	11.57	1.53
3.901	3.058	14.905	12.47	1.766	0.064	1.462	11.635	1.537
3.862	2.903	14.871	12.23	1.757	0.063	1.465	11.532	1.534
3.844	2.726	14.44	12.02	1.733	0.062	1.454	11.361	1.427
3.777	2.51	14.585	12.29	1.66	0.071	1.454	10.877	1.51
3.54	2.497	15.807	13.04	1.71	0.09	1.49	11.298	1.44
4.102	2.996	18.241	16.37	1.866	0.094	1.762	12.826	1.418
4.178	3.238	18.639	17.5	1.84	0.098	2.084	12.71	1.389
4.232	2.654	18.339	17.73	1.676	0.09	2.178	12.525	1.406
4.184	2.76	17.85	17.78	1.656	0.095	1.993	12.242	1.323
4.374	2.992	17.17	17.55	1.657	0.087	1.967	11.931	1.306
4.276	3.132	16.821	17.08	1.567	0.09	1.933	11.685	1.255
4.258	2.938	15.846	16.37	1.489	0.09	1.868	11.228	1.162
4.035	2.852	14.914	15.49	1.418	0.086	1.733	10.643	1.175
3.742	2.801	13.792	14.48	1.412	0.081	1.629	9.864	1.151
3.526	2.689	13.297	13.3	1.325	0.07	1.512	9.664	1.094
3.394	2.639	12.318	12.1	1.311	0.07	1.404	9.193	1.064
3.263	2.945	11.123	11.11	1.23	0.062	1.264	10.528	0.701
3.131	2.936	10.517	10.41	1.201	0.053	1.237	10.351	0.692
3.101	2.857	11.253	10.07	1.158	0.051	1.206	10.155	0.699
2.95	2.85	10.922	9.41	1.176	0.05	1.179	9.859	0.7
2.993	2.923	10.409	8.9	1.153	0.05	1.163	9.626	0.698
2.939	2.827	9.978	8.65	1.063	0.05	1.154	9.484	0.699
2.888	2.881	9.611	8.32	1.153	0.05	1.143	9.532	0.692
2.934	2.993	9.449	8.16	1.156	0.05	1.141	9.423	0.727
2.941	3.064	9.467	8.04	1.108	0.05	1.161	9.204	0.678
3.009	3.124	9.266	7.92	1.156	0.05	1.166	9.482	0.678
2.928	3.106	9.078	7.91	1.109	0.05	1.177	9.509	0.788
2.97	2.981	9.302	7.98	1.282	0.052	1.208	9.36	0.659
2.672	2.921	9.412	8.01	1.517	0.05	1.301	9.076	0.675
2.652	3.065	9.838	8.21	1.56	0.05	1.323	9.182	0.664
2.654	3.124	9.703	8.07	1.866	0.051	1.283	9.713	0.702
2.97	2.483	10.42	8.35	1.945	0.054	1.208	10.558	0.788
3.269	2.545	10.973	9	1.944	0.054	1.157	11.752	1.25
3.863	3.149	11.747	9.21	2.045	0.059	1.714	12.346	1.5
4.043	3.258	12.913	10.03	2.108	0.058	3.188	12.711	1.656
4.119	3.481	13.228	10.38	2.165	0.055	1.715	13.127	1.679

4.145	3.486	14.616	10.85	2.367	0.055	1.361	13.162	1.69
4.142	3.587	14.731	10.97	2.48	0.068	1.399	13.474	1.314
4.287	3.477	15.508	11.31	2.501	0.061	1.384	13.654	1.469
4.403	3.502	15.961	11.65	2.422	0.066	1.424	13.443	1.274
4.318	3.526	16.288	12.01	2.291	0.066	1.417	13.27	1.135
4.2	3.36	16.056	12.07	2.286	0.059	1.406	13.065	1.11
4.174	3.464	16.01	12.28	2.264	0.072	1.382	13.291	1.223
3.947	3.548	15.739	11.88	2.225	0.059	1.372	13.301	1.223
4.165	3.472	15.306	11.57	2.147	0.064	1.426	13.31	1.308
4.183	3.272	15.294	11.52	2.122	0.062	1.402	13.36	1.387
4.166	3.312	15.132	11.54	2.108	0.058	1.411	13.378	1.396
4.114	3.315	15.28	11.66	1.879	0.059	1.433	13.508	1.726
4.16	3.246	15.36	11.79	1.766	0.064	1.462	13.36	1.5
4.094	3.107	15.68	11.6	1.757	0.063	1.465	13.703	0.929
4.04	3.022	15.411	6.42	1.733	0.062	1.454	13.439	1.089
4.011	2.613	14.988	6.23	1.66	0.071	1.454	13.269	0.887
4	2.904	14.908	9.21	1.71	0.09	1.49	13.874	0.99
4.318	3.323	14.717	10.47	1.866	0.094	1.762	15.278	0.904
4.345	3.515	15.912	12.23	1.84	0.098	2.084	15.996	0.855
4.475	3.039	18.471	15.14	1.676	0.09	2.178	15.854	0.878
4.227	3.022	18.847	15.76	1.656	0.095	1.993	15.584	0.861
4.254	3.341	18.656	15.76	1.657	0.087	1.967	15.4	0.809
4.424	3.325	18.135	15.68	1.567	0.09	1.933	14.794	0.847
4.363	3.065	17.519	15.6	1.489	0.09	1.868	14.199	0.758
4.131	2.965	16.966	15.3	1.418	0.086	1.733	13.372	0.758
3.988	2.886	15.923	14.51	1.412	0.081	1.629	12.983	0.697
3.795	2.88	15.195	13.81	1.325	0.07	1.512	12.11	0.721
3.622	2.813	14.029	12.85	1.311	0.07	1.404	11.837	0.744
3.263	2.945	11.123	11.11	1.23	0.062	1.264	10.528	0.701
3.131	2.936	10.517	10.41	1.201	0.053	1.237	10.351	0.692
3.101	2.857	11.253	10.07	1.158	0.051	1.206	10.155	0.699
2.95	2.85	10.922	9.41	1.176	0.05	1.179	9.859	0.7
2.993	2.923	10.409	8.9	1.153	0.05	1.163	9.626	0.698
2.939	2.827	9.978	8.65	1.063	0.05	1.154	9.484	0.699
2.888	2.881	9.611	8.32	1.153	0.05	1.143	9.532	0.692
2.934	2.993	9.449	8.16	1.156	0.05	1.141	9.423	0.727
2.941	3.064	9.467	8.04	1.108	0.05	1.161	9.204	0.678
3.009	3.124	9.266	7.92	1.156	0.05	1.166	9.482	0.678
2.928	3.106	9.078	7.91	1.109	0.05	1.177	9.509	0.788
2.97	2.981	9.302	7.98	1.282	0.052	1.208	9.36	0.659
2.672	2.921	9.412	8.01	1.517	0.05	1.301	9.076	0.675
2.652	3.065	9.838	8.21	1.56	0.05	1.323	9.182	0.664
2.654	3.124	9.703	8.07	1.866	0.051	1.283	9.713	0.702
2.97	2.483	10.42	8.35	1.945	0.054	1.208	10.558	0.788
3.269	2.545	10.973	9	1.944	0.054	1.157	11.752	1.25

3.863	3.149	11.747	9.21	2.045	0.059	1.714	12.346	1.5
4.043	3.258	12.913	10.03	2.108	0.058	3.188	12.711	1.656
4.119	3.481	13.228	10.38	2.165	0.055	1.715	13.127	1.679
4.145	3.486	14.616	10.85	2.367	0.055	1.361	13.162	1.69
4.142	3.587	14.731	10.97	2.48	0.068	1.399	13.474	1.314
4.287	3.477	15.508	11.31	2.501	0.061	1.384	13.654	1.469
4.403	3.502	15.961	11.65	2.422	0.066	1.424	13.443	1.274
4.318	3.526	16.288	12.01	2.291	0.066	1.417	13.27	1.135
4.2	3.36	16.056	12.07	2.286	0.059	1.406	13.065	1.11
4.174	3.464	16.01	12.28	2.264	0.072	1.382	13.291	1.223
3.947	3.548	15.739	11.88	2.225	0.059	1.372	13.301	1.223
4.165	3.472	15.306	11.57	2.147	0.064	1.426	13.31	1.308
4.183	3.272	15.294	11.52	2.122	0.062	1.402	13.36	1.387
4.166	3.312	15.132	11.54	2.108	0.058	1.411	13.378	1.396
4.114	3.315	15.28	11.66	1.879	0.059	1.433	13.508	1.726
4.16	3.246	15.36	11.79	1.766	0.064	1.462	13.36	1.5
4.094	3.107	15.68	11.6	1.757	0.063	1.465	13.703	0.929
4.04	3.022	15.411	6.42	1.733	0.062	1.454	13.439	1.089
4.011	2.613	14.988	6.23	1.66	0.071	1.454	13.269	0.887
4	2.904	14.908	9.21	1.71	0.09	1.49	13.874	0.99
4.318	3.323	14.717	10.47	1.866	0.094	1.762	15.278	0.904
4.345	3.515	15.912	12.23	1.84	0.098	2.084	15.996	0.855
4.475	3.039	18.471	15.14	1.676	0.09	2.178	15.854	0.878
4.227	3.022	18.847	15.76	1.656	0.095	1.993	15.584	0.861
4.254	3.341	18.656	15.76	1.657	0.087	1.967	15.4	0.809
4.424	3.325	18.135	15.68	1.567	0.09	1.933	14.794	0.847
4.363	3.065	17.519	15.6	1.489	0.09	1.868	14.199	0.758
4.131	2.965	16.966	15.3	1.418	0.086	1.733	13.372	0.758
3.988	2.886	15.923	14.51	1.412	0.081	1.629	12.983	0.697
3.795	2.88	15.195	13.81	1.325	0.07	1.512	12.11	0.721
3.622	2.813	14.029	12.85	1.311	0.07	1.404	11.837	0.744
3.444	2.718	11.123	11.11	1.23	0.062	1.264	8.261	0.996
3.248	2.717	10.517	10.41	1.201	0.053	1.237	7.88	0.738
3.183	2.774	9.566	9.79	1.158	0.051	1.206	7.858	0.748
3.133	2.813	9.383	9.49	1.176	0.05	1.179	7.827	0.814
2.825	2.85	9.302	9.27	1.153	0.05	1.163	7.856	0.755
2.929	2.842	9.077	8.9	1.063	0.05	1.154	7.625	0.678
2.894	2.868	8.956	8.75	1.153	0.05	1.143	7.633	0.662
2.836	2.798	8.782	8.65	1.156	0.05	1.141	7.69	0.782
2.829	2.839	8.986	8.63	1.108	0.05	1.161	7.73	0.772
2.746	2.875	9.171	8.48	1.156	0.05	1.166	7.79	0.708
2.754	2.857	9.269	8.66	1.109	0.05	1.177	7.778	0.807
2.615	2.781	9.523	8.69	1.282	0.052	1.208	7.745	0.791
2.559	2.646	9.075	8.24	1.517	0.05	1.301	6.862	0.707
2.699	2.833	9.853	8.74	1.56	0.05	1.323	6.947	0.701

2.618	2.865	10.287	9.19	1.866	0.051	1.283	7.848	0.779
2.786	2.545	11.857	9.74	1.945	0.054	1.208	8.117	0.817
2.97	2.719	12.909	10.44	1.944	0.054	1.157	9.128	1.257
3.424	3.233	13.415	11.35	2.045	0.059	1.714	9.938	1.322
3.582	3.259	14.522	11.64	2.108	0.058	3.188	9.92	1.454
3.686	3.287	15.068	11.86	2.165	0.055	1.715	10.341	1.489
3.771	3.29	13.422	12.18	2.367	0.055	1.361	10.937	1.238
4.016	3.23	14.263	12.56	2.48	0.068	1.399	11.159	1.26
4.224	3.414	14.463	13.15	2.501	0.061	1.384	11.549	1.242
4.272	3.535	15.655	13.54	2.422	0.066	1.424	11.252	1.255
4.229	3.629	16.071	13.48	2.291	0.066	1.417	11.125	1.224
3.98	3.377	15.715	13	2.286	0.059	1.406	10.834	1.125
4	3.345	15.715	12.83	2.264	0.072	1.382	10.935	1.221
3.932	3.323	14.215	11.92	2.225	0.059	1.372	11.284	1.412
4.014	3.23	14.363	12.43	2.147	0.064	1.426	11.146	1.424
4.081	3.224	14.807	12.69	2.122	0.062	1.402	11.486	1.581
4.051	3.149	14.919	12.53	2.108	0.058	1.411	11.84	1.436
3.912	3.061	15.248	12.39	1.879	0.059	1.433	11.57	1.53
3.901	3.058	14.905	12.47	1.766	0.064	1.462	11.635	1.537
3.862	2.903	14.871	12.23	1.757	0.063	1.465	11.532	1.534
3.844	2.726	14.44	12.02	1.733	0.062	1.454	11.361	1.427
3.777	2.51	14.585	12.29	1.66	0.071	1.454	10.877	1.51
3.54	2.497	15.807	13.04	1.71	0.09	1.49	11.298	1.44
4.102	2.996	18.241	16.37	1.866	0.094	1.762	12.826	1.418
4.178	3.238	18.639	17.5	1.84	0.098	2.084	12.71	1.389
4.232	2.654	18.339	17.73	1.676	0.09	2.178	12.525	1.406
4.184	2.76	17.85	17.78	1.656	0.095	1.993	12.242	1.323
4.374	2.992	17.17	17.55	1.657	0.087	1.967	11.931	1.306
4.276	3.132	16.821	17.08	1.567	0.09	1.933	11.685	1.255
4.258	2.938	15.846	16.37	1.489	0.09	1.868	11.228	1.162
4.035	2.852	14.914	15.49	1.418	0.086	1.733	10.643	1.175
3.742	2.801	13.792	14.48	1.412	0.081	1.629	9.864	1.151
3.526	2.689	13.297	13.3	1.325	0.07	1.512	9.664	1.094
3.394	2.639	12.318	12.1	1.311	0.07	1.404	9.193	1.064
3.444	2.718	11.123	11.11	1.23	0.062	1.264	8.261	0.996
3.248	2.717	10.517	10.41	1.201	0.053	1.237	7.88	0.738
3.183	2.774	9.566	9.79	1.158	0.051	1.206	7.858	0.748
3.133	2.813	9.383	9.49	1.176	0.05	1.179	7.827	0.814
2.825	2.85	9.302	9.27	1.153	0.05	1.163	7.856	0.755
2.929	2.842	9.077	8.9	1.063	0.05	1.154	7.625	0.678
2.894	2.868	8.956	8.75	1.153	0.05	1.143	7.633	0.662
2.836	2.798	8.782	8.65	1.156	0.05	1.141	7.69	0.782
2.829	2.839	8.986	8.63	1.108	0.05	1.161	7.73	0.772
2.746	2.875	9.171	8.48	1.156	0.05	1.166	7.79	0.708
2.754	2.857	9.269	8.66	1.109	0.05	1.177	7.778	0.807

2.615	2.781	9.523	8.69	1.282	0.052	1.208	7.745	0.791
2.559	2.646	9.075	8.24	1.517	0.05	1.301	6.862	0.707
2.699	2.833	9.853	8.74	1.56	0.05	1.323	6.947	0.701
2.618	2.865	10.287	9.19	1.866	0.051	1.283	7.848	0.779
2.786	2.545	11.857	9.74	1.945	0.054	1.208	8.117	0.817
2.97	2.719	12.909	10.44	1.944	0.054	1.157	9.128	1.257
3.424	3.233	13.415	11.35	2.045	0.059	1.714	9.938	1.322
3.582	3.259	14.522	11.64	2.108	0.058	3.188	9.92	1.454
3.686	3.287	15.068	11.86	2.165	0.055	1.715	10.341	1.489
3.771	3.29	13.422	12.18	2.367	0.055	1.361	10.937	1.238
4.016	3.23	14.263	12.56	2.48	0.068	1.399	11.159	1.26
4.224	3.414	14.463	13.15	2.501	0.061	1.384	11.549	1.242
4.272	3.535	15.655	13.54	2.422	0.066	1.424	11.252	1.255
4.229	3.629	16.071	13.48	2.291	0.066	1.417	11.125	1.224
3.98	3.377	15.715	13	2.286	0.059	1.406	10.834	1.125
4	3.345	15.715	12.83	2.264	0.072	1.382	10.935	1.221
3.932	3.323	14.215	11.92	2.225	0.059	1.372	11.284	1.412
4.014	3.23	14.363	12.43	2.147	0.064	1.426	11.146	1.424
4.081	3.224	14.807	12.69	2.122	0.062	1.402	11.486	1.581
4.051	3.149	14.919	12.53	2.108	0.058	1.411	11.84	1.436
3.912	3.061	15.248	12.39	1.879	0.059	1.433	11.57	1.53
3.901	3.058	14.905	12.47	1.766	0.064	1.462	11.635	1.537
3.862	2.903	14.871	12.23	1.757	0.063	1.465	11.532	1.534
3.844	2.726	14.44	12.02	1.733	0.062	1.454	11.361	1.427
3.777	2.51	14.585	12.29	1.66	0.071	1.454	10.877	1.51
3.54	2.497	15.807	13.04	1.71	0.09	1.49	11.298	1.44
4.102	2.996	18.241	16.37	1.866	0.094	1.762	12.826	1.418
4.178	3.238	18.639	17.5	1.84	0.098	2.084	12.71	1.389
4.232	2.654	18.339	17.73	1.676	0.09	2.178	12.525	1.406
4.184	2.76	17.85	17.78	1.656	0.095	1.993	12.242	1.323
4.374	2.992	17.17	17.55	1.657	0.087	1.967	11.931	1.306
4.276	3.132	16.821	17.08	1.567	0.09	1.933	11.685	1.255
4.258	2.938	15.846	16.37	1.489	0.09	1.868	11.228	1.162
4.035	2.852	14.914	15.49	1.418	0.086	1.733	10.643	1.175
3.742	2.801	13.792	14.48	1.412	0.081	1.629	9.864	1.151
3.526	2.689	13.297	13.3	1.325	0.07	1.512	9.664	1.094
3.394	2.639	12.318	12.1	1.311	0.07	1.404	9.193	1.064
3.263	2.945	11.123	11.11	1.23	0.062	1.264	10.528	0.701
3.131	2.936	10.517	10.41	1.201	0.053	1.237	10.351	0.692
3.101	2.857	11.253	10.07	1.158	0.051	1.206	10.155	0.699
2.95	2.85	10.922	9.41	1.176	0.05	1.179	9.859	0.7
2.993	2.923	10.409	8.9	1.153	0.05	1.163	9.626	0.698
2.939	2.827	9.978	8.65	1.063	0.05	1.154	9.484	0.699
2.888	2.881	9.611	8.32	1.153	0.05	1.143	9.532	0.692
2.934	2.993	9.449	8.16	1.156	0.05	1.141	9.423	0.727

2.941	3.064	9.467	8.04	1.108	0.05	1.161	9.204	0.678
3.009	3.124	9.266	7.92	1.156	0.05	1.166	9.482	0.678
2.928	3.106	9.078	7.91	1.109	0.05	1.177	9.509	0.788
2.97	2.981	9.302	7.98	1.282	0.052	1.208	9.36	0.659
2.672	2.921	9.412	8.01	1.517	0.05	1.301	9.076	0.675
0	0	9.838	0	0	0	1.323	0	0
0	0	9.703	0	0	0	1.283	0	0
0	0	10.42	0	0	0	1.208	0	0
0	0	10.973	0	0	0	1.157	0	0
0	0	11.747	0	0	0	1.714	0	0
0	0	12.913	0	0	0	3.188	0	0
0	0	13.228	0	0	0	1.715	0	0
0	0	14.616	0	0	0	1.361	0	0
0	0	14.731	0	0	0	1.399	0	0
0	0	15.508	0	0	0	1.384	0	0
0	0	15.961	0	0	0	1.424	0	0
0	0	16.288	0	0	0	1.417	0	0
0	0	16.056	0	0	0	1.406	0	0
0	0	16.01	0	0	0	1.382	0	0
0	0	15.739	0	0	0	1.372	0	0
0	0	15.306	0	0	0	1.426	0	0
0	0	15.294	0	0	0	1.402	0	0
0	0	15.132	0	0	0	1.411	0	0
0	0	15.28	0	0	0	1.433	0	0
0	0	15.36	0	0	0	1.462	0	0
0	0	15.68	0	0	0	1.465	0	0
4.04	3.022	15.411	6.42	1.733	0.062	1.454	13.439	1.089
4.011	2.613	14.988	6.23	1.66	0.071	1.454	13.269	0.887
4	2.904	14.908	9.21	1.71	0.09	1.49	13.874	0.99
4.318	3.323	14.717	10.47	1.866	0.094	1.762	15.278	0.904
4.345	3.515	15.912	12.23	1.84	0.098	2.084	15.996	0.855
4.475	3.039	18.471	15.14	1.676	0.09	2.178	15.854	0.878
4.227	3.022	18.847	15.76	1.656	0.095	1.993	15.584	0.861
4.254	3.341	18.656	15.76	1.657	0.087	1.967	15.4	0.809
4.424	3.325	18.135	15.68	1.567	0.09	1.933	14.794	0.847
4.363	3.065	17.519	15.6	1.489	0.09	1.868	14.199	0.758
4.131	2.965	16.966	15.3	1.418	0.086	1.733	13.372	0.758
3.988	2.886	15.923	14.51	1.412	0.081	1.629	12.983	0.697
3.795	2.88	15.195	13.81	1.325	0.07	1.512	12.11	0.721
3.622	2.813	14.029	12.85	1.311	0.07	1.404	11.837	0.744
2.701	1.992	19.021	10.1	1.23	0.062	1.264	8.681	0.657
2.609	1.977	19.021	9.43	1.201	0.053	1.237	8.377	0.653
2.506	1.962	19.021	8.95	1.158	0.051	1.206	8.104	0.651
2.442	1.888	19.021	8.58	1.176	0.05	1.179	8.417	0.624
2.389	1.91	19.021	8.33	1.153	0.05	1.163	8.345	0.644

2.361	1.903	19.021	8.2	1.063	0.05	1.154	8.238	0.591
2.344	1.912	19.021	8.13	1.153	0.05	1.143	8.351	0.651
2.339	1.951	19.021	7.88	1.156	0.05	1.141	8.084	0.668
2.218	1.926	19.021	7.86	1.108	0.05	1.161	8.218	0.65
2.222	1.934	19.021	7.84	1.156	0.05	1.166	8.143	0.668
2.232	1.904	19.021	8.06	1.109	0.05	1.177	8.452	0.688
2.322	2.071	19.021	8.19	1.282	0.052	1.208	8.484	0.699
2.181	2.08	19.021	7.61	1.517	0.05	1.301	7.812	0.661
2.322	2.433	19.021	8.08	0	0	1.323	8.267	0.725
2.606	2.322	19.021	8.44	0	0	1.283	8.898	0.778
2.909	2.739	19.021	9.25	0	0	1.208	9.294	0.818
3.339	3.216	19.021	9.97	0	0	1.157	10.369	0.872
3.53	3.373	19.021	10.44	0	0	1.714	10.983	1.291
3.768	3.379	14.569	10.72	0	0	3.188	11.437	1.45
3.808	3.363	14.569	10.99	0	0	1.715	11.834	1.3
4.096	3.392	14.569	11.18	0	0	1.361	12.586	1.431
4.085	3.428	14.569	11.56	0	0	1.399	12.659	1.427
4.251	3.388	14.569	11.96	0	0	1.384	13.611	1.079
4.216	3.439	14.569	12.23	0	0	1.424	12.947	1.103
4.192	3.497	14.569	12.15	0	0	1.417	12.49	1.005
3.937	3.371	14.569	11.81	0	0	1.406	12.226	1.042
3.926	3.366	14.569	11.46	0	0	1.382	12.541	1.033
4.047	3.403	14.916	11.43	0	0	1.372	12.659	1.081
4.406	3.294	15.055	11.55	0	0	1.426	13.137	1.175
4.284	3.362	15.055	11.41	0	0	1.402	12.732	1.149
4.329	3.428	15.055	11.53	0	0	1.411	13.131	1.126
4.256	3.503	15.055	11.51	0	0	1.433	12.743	1.083
4.223	3.256	15.055	11.37	0	0	1.462	12.888	0.912
4.144	3.037	15.055	11.39	0	0	1.465	12.245	0.974
4.027	2.724	15.055	11.22	1.733	0.062	1.454	12.404	0.914
3.853	2.667	15.055	11.43	1.66	0.071	1.454	12.049	0.862
3.936	2.805	15.055	12.09	1.71	0.09	1.49	12.552	0.869
4.388	3.416	15.055	14.87	1.866	0.094	1.762	14.609	0.944
4.43	3.62	15.055	15.47	1.84	0.098	2.084	14.564	0.94
4.425	2.948	15.055	15.56	1.676	0.09	2.178	14.872	0.897
4.282	3.245	15.055	15.48	1.656	0.095	1.993	14.662	0.95
4.581	3.355	15.055	15.22	1.657	0.087	1.967	14.532	0.855
4.493	3.288	15.055	15.14	1.567	0.09	1.933	14.517	0.8
4.441	3.078	15.055	14.32	1.489	0.09	1.868	13.3	0.858
4.33	2.859	15.055	13.68	1.418	0.086	1.733	12.68	0.794
4.098	2.897	15.055	12.77	1.412	0.081	1.629	12.304	0.781
3.903	2.731	15.055	11.64	1.325	0.07	1.512	11.954	0.769
3.664	2.695	15.055	10.62	1.311	0.07	1.404	11.235	0.713
3.444	2.718	11.123	11.11	1.23	0.062	1.264	8.261	0.996
3.248	2.717	10.517	10.41	1.201	0.053	1.237	7.88	0.738

3.183	2.774	9.566	9.79	1.158	0.051	1.206	7.858	0.748
3.133	2.813	9.383	9.49	1.176	0.05	1.179	7.827	0.814
2.825	2.85	9.302	9.27	1.153	0.05	1.163	7.856	0.755
2.929	2.842	9.077	8.9	1.063	0.05	1.154	7.625	0.678
2.894	2.868	8.956	8.75	1.153	0.05	1.143	7.633	0.662
2.836	2.798	8.782	8.65	1.156	0.05	1.141	7.69	0.782
2.829	2.839	8.986	8.63	1.108	0.05	1.161	7.73	0.772
2.746	2.875	9.171	8.48	1.156	0.05	1.166	7.79	0.708
2.754	2.857	9.269	8.66	1.109	0.05	1.177	7.778	0.807
2.615	2.781	9.523	8.69	1.282	0.052	1.208	7.745	0.791
2.559	2.646	9.075	8.24	1.517	0.05	1.301	6.862	0.707
2.699	2.833	9.853	8.74	1.56	0.05	1.323	6.947	0.701
2.618	2.865	10.287	9.19	1.866	0.051	1.283	7.848	0.779
2.786	2.545	11.857	9.74	1.945	0.054	1.208	8.117	0.817
2.97	2.719	12.909	10.44	1.944	0.054	1.157	9.128	1.257
3.424	3.233	13.415	11.35	2.045	0.059	1.714	9.938	1.322
3.582	3.259	14.522	11.64	2.108	0.058	3.188	9.92	1.454
3.686	3.287	15.068	11.86	2.165	0.055	1.715	10.341	1.489
3.771	3.29	13.422	12.18	2.367	0.055	1.361	10.937	1.238
4.016	3.23	14.263	12.56	2.48	0.068	1.399	11.159	1.26
4.224	3.414	14.463	13.15	2.501	0.061	1.384	11.549	1.242
4.272	3.535	15.655	13.54	2.422	0.066	1.424	11.252	1.255
4.229	3.629	16.071	13.48	2.291	0.066	1.417	11.125	1.224
3.98	3.377	15.715	13	2.286	0.059	1.406	10.834	1.125
4	3.345	15.715	12.83	2.264	0.072	1.382	10.935	1.221
3.932	3.323	14.215	11.92	2.225	0.059	1.372	11.284	1.412
4.014	3.23	14.363	12.43	2.147	0.064	1.426	11.146	1.424
4.081	3.224	14.807	12.69	2.122	0.062	1.402	11.486	1.581
4.051	3.149	14.919	12.53	2.108	0.058	1.411	11.84	1.436
3.912	3.061	15.248	12.39	1.879	0.059	1.433	11.57	1.53
3.901	3.058	14.905	12.47	1.766	0.064	1.462	11.635	1.537
3.862	2.903	14.871	12.23	1.757	0.063	1.465	11.532	1.534
3.844	2.726	14.44	12.02	1.733	0.062	1.454	11.361	1.427
3.777	2.51	14.585	12.29	1.66	0.071	1.454	10.877	1.51
3.54	2.497	15.807	13.04	1.71	0.09	1.49	11.298	1.44
4.102	2.996	18.241	16.37	1.866	0.094	1.762	12.826	1.418
4.178	3.238	18.639	17.5	1.84	0.098	2.084	12.71	1.389
4.232	2.654	18.339	17.73	1.676	0.09	2.178	12.525	1.406
4.184	2.76	17.85	17.78	1.656	0.095	1.993	12.242	1.323
4.374	2.992	17.17	17.55	1.657	0.087	1.967	11.931	1.306
4.276	3.132	16.821	17.08	1.567	0.09	1.933	11.685	1.255
4.258	2.938	15.846	16.37	1.489	0.09	1.868	11.228	1.162
4.035	2.852	14.914	15.49	1.418	0.086	1.733	10.643	1.175
3.742	2.801	13.792	14.48	1.412	0.081	1.629	9.864	1.151
3.526	2.689	13.297	13.3	1.325	0.07	1.512	9.664	1.094

3.394	2.639	12.318	12.1	1.311	0.07	1.404	9.193	1.064
3.469	2.609	15.055	9.99	1.23	0.062	1.264	10.971	0.733
3.482	2.347	15.055	9.4	1.201	0.053	1.237	10.645	0.701
3.42	2.422	15.055	8.83	1.158	0.051	1.206	10.252	0.719
3.291	2.358	15.055	8.59	1.176	0.05	1.179	10.063	0.674
3.092	2.732	15.055	6.23	1.153	0.05	1.163	9.82	0.691
3.037	2.661	15.055	6.14	1.063	0.05	1.154	9.721	0.673
2.996	2.773	15.055	5.98	1.153	0.05	1.143	9.806	0.677
3.044	2.805	15.055	5.95	1.156	0.05	1.141	9.744	0.682
3.081	2.804	15.055	7.88	1.108	0.05	1.161	9.716	0.717
3.1	2.949	15.055	7.94	1.156	0.05	1.166	9.886	0.696
3.051	2.958	15.055	8.03	1.109	0.05	1.177	9.924	0.723
2.975	2.874	15.055	8.21	1.282	0.052	1.208	9.891	0.725
2.598	2.817	15.055	7.77	1.517	0.05	1.301	9.125	0.609
2.624	2.912	15.055	8.02	1.56	0.05	1.323	9.282	0.722
2.736	2.993	15.055	8.64	1.866	0.051	1.283	9.639	0.754
2.904	1.786	15.055	9.13	1.945	0.054	1.208	10.396	0.832
3.281	1.959	15.055	9.91	1.944	0.054	1.157	11.123	0.924
3.931	2.37	15.055	10.39	2.045	0.059	1.714	12.164	1.224
4.049	2.585	15.055	10.85	2.108	0.058	3.188	12.422	1.388
3.928	2.757	15.055	11.04	2.165	0.055	1.715	12.813	1.363
4.007	2.824	15.055	11.34	2.367	0.055	1.361	12.887	1.207
3.841	3.009	15.055	11.65	2.48	0.068	1.399	13.308	1.067
4.259	2.86	15.055	12.15	2.501	0.061	1.384	13.539	0.882
4.451	3.029	15.055	12.35	2.422	0.066	1.424	13.066	1.034
4.421	3.086	15.055	12.26	2.291	0.066	1.417	13.281	1.025
4.292	2.998	15.055	11.85	2.286	0.059	1.406	12.942	1.006
4.126	2.927	15.055	11.52	2.264	0.072	1.382	13.041	0.997
4.113	2.894	15.055	11.35	2.225	0.059	1.372	13.051	1.059
4.256	3.197	15.055	11.38	2.147	0.064	1.426	13.288	1.104
4.394	3.516	15.055	11.34	2.122	0.062	1.402	13.427	1.03
4.448	3.475	15.055	11.46	2.108	0.058	1.411	13.618	1.016
4.427	3.521	15.055	11.4	1.879	0.059	1.433	13.378	1.02
4.356	3.431	15.055	11.3	1.766	0.064	1.462	13.523	1.115
4.168	3.358	15.055	11.35	1.757	0.063	1.465	13.327	1.002
4.121	2.988	15.055	10.91	1.733	0.062	1.454	13.647	0.91
4.099	2.772	15.055	11.06	1.66	0.071	1.454	13.266	0.898
4.03	2.805	15.055	11.32	1.71	0.09	1.49	13.322	1.002
4.288	2.998	15.055	14.46	1.866	0.094	1.762	15.108	0.914
4.246	3.185	15.055	15.52	1.84	0.098	2.084	15.747	0.952
4.294	2.485	15.055	8.97	1.676	0.09	2.178	15.612	0.945
4.343	2.846	15.055	9.13	1.656	0.095	1.993	15.472	0.911
4.451	3.328	15.055	15.62	1.657	0.087	1.967	15.104	0.88
4.527	3.287	15.055	15.18	1.567	0.09	1.933	14.909	0.882
4.531	3.177	15.055	14.71	1.489	0.09	1.868	14.417	0.9

4.371	2.994	15.055	14.05	1.418	0.086	1.733	13.545	0.866
4.156	2.844	15.055	12.89	1.412	0.081	1.629	12.616	0.744
3.865	2.827	15.055	12.05	1.325	0.07	1.512	12.207	0.762
3.667	2.658	15.055	10.91	1.311	0.07	1.404	11.45	0.786
3.546	2.8	15.055	10.09	1.23	0.062	1.264	11.045	0.846
3.527	2.783	15.055	9.45	1.201	0.053	1.237	11.146	0.74
3.492	2.771	15.055	9	1.158	0.051	1.206	10.774	0.715
3.361	2.688	15.055	8.62	1.176	0.05	1.179	10.527	0.695
3.286	2.656	15.055	8.24	1.153	0.05	1.163	10.509	0.697
3.309	2.805	15.055	8.17	1.063	0.05	1.154	10.244	0.698
3.305	2.769	15.055	7.9	1.153	0.05	1.143	10.22	0.693
3.47	2.678	15.055	7.99	1.156	0.05	1.141	10.163	0.698
3.461	2.71	15.055	7.85	1.108	0.05	1.161	10.208	0.687
3.438	2.767	15.055	7.94	1.156	0.05	1.166	9.919	0.689
3.336	2.769	15.055	8.01	1.109	0.05	1.177	9.952	0.727
3.373	2.754	15.055	8.1	1.282	0.052	1.208	10.019	0.658
3.053	2.661	15.055	7.45	1.517	0.05	1.301	9.153	0.653
2.976	2.993	15.055	8.15	1.56	0.05	1.323	9.115	0.76
3.067	3.129	15.055	8.33	1.866	0.051	1.283	9.195	0.832
2.956	2.83	15.055	8.98	1.945	0.054	1.208	9.97	0.905
3.257	2.513	15.055	9.75	1.944	0.054	1.157	10.596	1.009
3.611	3.155	15.055	10.26	2.045	0.059	1.714	11.474	1.492
3.87	3.298	15.055	10.73	2.108	0.058	3.188	11.739	1.502
3.8	3.298	15.055	11.12	2.165	0.055	1.715	12.212	1.499
4.263	3.33	15.055	11.26	2.367	0.055	1.361	12.926	1.544
4.313	3.438	15.055	11.62	2.48	0.068	1.399	13.654	1.313
4.414	3.5	15.055	12.04	2.501	0.061	1.384	13.811	1.264
4.406	3.523	15.055	12.19	2.422	0.066	1.424	13.633	1.281
4.188	3.689	15.055	12.31	2.291	0.066	1.417	13.739	1.319
4.108	3.441	15.055	11.86	2.286	0.059	1.406	12.967	1.318
4.223	3.305	15.055	11.56	2.264	0.072	1.382	13.14	1.009
4.241	3.44	15.055	11.31	2.225	0.059	1.372	13.134	1.378
4.143	3.354	15.055	11.33	2.147	0.064	1.426	13.617	1.274
4.185	3.408	15.055	11.34	2.122	0.062	1.402	13.463	1.348
4.409	3.505	15.055	11.26	2.108	0.058	1.411	13.574	1.532
4.329	3.328	15.055	11.29	1.879	0.059	1.433	13.472	1.733
4.314	3.222	15.055	11.13	1.766	0.064	1.462	13.559	1.512
4.279	2.993	15.055	11.23	1.757	0.063	1.465	13.158	1.45
4.072	2.766	15.055	11.29	1.733	0.062	1.454	12.793	1.389
3.952	2.657	15.055	11.32	1.66	0.071	1.454	12.594	1.453
4.071	2.805	15.055	11.91	1.71	0.09	1.49	13.188	1.349
4.32	3.469	15.055	15	1.866	0.094	1.762	15.077	1.353
4.288	3.528	15.055	15.56	1.84	0.098	2.084	15.534	1.296
4.324	2.914	15.055	15.54	1.676	0.09	2.178	15.325	1.23
4.313	2.841	15.055	15.48	1.656	0.095	1.993	15.235	1.176

4.417	3.404	15.055	15.08	1.657	0.087	1.967	14.876	1.069
4.487	3.249	15.055	14.81	1.567	0.09	1.933	14.59	0.964
4.391	3.117	15.055	14.2	1.489	0.09	1.868	13.71	0.907
4.234	2.924	15.055	13.72	1.418	0.086	1.733	13.275	0.872
4.085	2.856	15.055	13	1.412	0.081	1.629	12.759	0.779
4.026	2.721	15.055	12.18	1.325	0.07	1.512	12.944	0.8
3.743	2.774	15.055	11.33	1.311	0.07	1.404	12.132	0.765
3.444	2.718	11.123	11.11	1.23	0.062	1.264	8.261	0.996
3.248	2.717	10.517	10.41	1.201	0.053	1.237	7.88	0.738
3.183	2.774	9.566	9.79	1.158	0.051	1.206	7.858	0.748
3.133	2.813	9.383	9.49	1.176	0.05	1.179	7.827	0.814
2.825	2.85	9.302	9.27	1.153	0.05	1.163	7.856	0.755
2.929	2.842	9.077	8.9	1.063	0.05	1.154	7.625	0.678
2.894	2.868	8.956	8.75	1.153	0.05	1.143	7.633	0.662
2.836	2.798	8.782	8.65	1.156	0.05	1.141	7.69	0.782
2.829	2.839	8.986	8.63	1.108	0.05	1.161	7.73	0.772
2.746	2.875	9.171	8.48	1.156	0.05	1.166	7.79	0.708
2.754	2.857	9.269	8.66	1.109	0.05	1.177	7.778	0.807
2.615	2.781	9.523	8.69	1.282	0.052	1.208	7.745	0.791
2.559	2.646	9.075	8.24	1.517	0.05	1.301	6.862	0.707
2.699	2.833	9.853	8.74	1.56	0.05	1.323	6.947	0.701
2.618	2.865	10.287	9.19	1.866	0.051	1.283	7.848	0.779
2.786	2.545	11.857	9.74	1.945	0.054	1.208	8.117	0.817
2.97	2.719	12.909	10.44	1.944	0.054	1.157	9.128	1.257
3.424	3.233	13.415	11.35	2.045	0.059	1.714	9.938	1.322
3.582	3.259	14.522	11.64	2.108	0.058	3.188	9.92	1.454
3.686	3.287	15.068	11.86	2.165	0.055	1.715	10.341	1.489
3.771	3.29	13.422	12.18	2.367	0.055	1.361	10.937	1.238
4.016	3.23	14.263	12.56	2.48	0.068	1.399	11.159	1.26
4.224	3.414	14.463	13.15	2.501	0.061	1.384	11.549	1.242
4.272	3.535	15.655	13.54	2.422	0.066	1.424	11.252	1.255
4.229	3.629	16.071	13.48	2.291	0.066	1.417	11.125	1.224
3.98	3.377	15.715	13	2.286	0.059	1.406	10.834	1.125
4	3.345	15.715	12.83	2.264	0.072	1.382	10.935	1.221
3.932	3.323	14.215	11.92	2.225	0.059	1.372	11.284	1.412
4.014	3.23	14.363	12.43	2.147	0.064	1.426	11.146	1.424
4.081	3.224	14.807	12.69	2.122	0.062	1.402	11.486	1.581
4.051	3.149	14.919	12.53	2.108	0.058	1.411	11.84	1.436
3.912	3.061	15.248	12.39	1.879	0.059	1.433	11.57	1.53
3.901	3.058	14.905	12.47	1.766	0.064	1.462	11.635	1.537
3.862	2.903	14.871	12.23	1.757	0.063	1.465	11.532	1.534
3.844	2.726	14.44	12.02	1.733	0.062	1.454	11.361	1.427
3.777	2.51	14.585	12.29	1.66	0.071	1.454	10.877	1.51
3.54	2.497	15.807	13.04	1.71	0.09	1.49	11.298	1.44
4.102	2.996	18.241	16.37	1.866	0.094	1.762	12.826	1.418

4.178	3.238	18.639	17.5	1.84	0.098	2.078	12.71	1.389
4.232	2.654	18.339	17.73	1.676	0.09	2.178	12.525	1.406
4.184	2.76	17.85	17.78	1.656	0.095	1.993	12.242	1.323
4.374	2.992	17.17	17.55	1.657	0.087	1.967	11.931	1.306
4.276	3.132	16.821	17.08	1.567	0.09	1.933	11.685	1.255
4.258	2.938	15.846	16.37	1.489	0.09	1.868	11.228	1.162
4.035	2.852	14.914	15.49	1.418	0.086	1.733	10.643	1.175
3.742	2.801	13.792	14.48	1.412	0.081	1.629	9.864	1.151
3.526	2.689	13.297	13.3	1.325	0.07	1.512	9.664	1.094
3.394	2.639	12.318	12.1	1.311	0.07	1.404	9.193	1.064
3.263	2.945	11.123	11.11	1.23	0.062	1.264	10.528	0.701
3.131	2.936	10.517	10.41	1.201	0.053	1.237	10.351	0.692
3.101	2.857	11.253	10.07	1.158	0.051	1.206	10.155	0.699
2.95	2.85	10.922	9.41	1.176	0.05	1.179	9.859	0.7
2.993	2.923	10.409	8.9	1.153	0.05	1.163	9.626	0.698
2.939	2.827	9.978	8.65	1.063	0.05	1.154	9.484	0.699
2.888	2.881	9.611	8.32	1.153	0.05	1.143	9.532	0.692
2.934	2.993	9.449	8.16	1.156	0.05	1.141	9.423	0.727
2.941	3.064	9.467	8.04	1.108	0.05	1.161	9.204	0.678
3.009	3.124	9.266	7.92	1.156	0.05	1.166	9.482	0.678
2.928	3.106	9.078	7.91	1.109	0.05	1.177	9.509	0.788
2.97	2.981	9.302	7.98	1.282	0.052	1.208	9.36	0.659
2.672	2.921	9.412	8.01	1.517	0.05	1.301	9.076	0.675
0	0	9.838	0	0	0	1.323	0	0
0	0	9.703	0	0	0	1.283	0	0
0	0	10.42	0	0	0	1.208	0	0
0	0	10.973	0	0	0	1.157	0	0
0	0	11.747	0	0	0	1.714	0	0
0	0	12.913	0	0	0	3.188	0	0
0	0	13.228	0	0	0	1.715	0	0
0	0	14.616	0	0	0	1.361	0	0
0	0	14.731	0	0	0	1.399	0	0
0	0	15.508	0	0	0	1.384	0	0
0	0	15.961	0	0	0	1.424	0	0
0	0	16.288	0	0	0	1.417	0	0
0	0	16.056	0	0	0	1.406	0	0
0	0	16.01	0	0	0	1.382	0	0
0	0	15.739	0	0	0	1.372	0	0
0	0	15.306	0	0	0	1.426	0	0
0	0	15.294	0	0	0	1.402	0	0
0	0	15.132	0	0	0	1.411	0	0
0	0	15.28	0	0	0	1.433	0	0
0	0	15.36	0	0	0	1.462	0	0
0	0	15.68	0	0	0	1.465	0	0
4.04	3.022	15.411	6.42	1.733	0.062	1.454	13.439	1.089

4.011	2.613	14.988	6.23	1.66	0.071	1.454	13.269	0.887
4	2.904	14.908	9.21	1.71	0.09	1.49	13.874	0.99
4.318	3.323	14.717	10.47	1.866	0.094	1.762	15.278	0.904
4.345	3.515	15.912	12.23	1.84	0.098	2.084	15.996	0.855
4.475	3.039	18.471	15.14	1.676	0.09	2.178	15.854	0.878
4.227	3.022	18.847	15.76	1.656	0.095	1.993	15.584	0.861
4.254	3.341	18.656	15.76	1.657	0.087	1.967	15.4	0.809
4.424	3.325	18.135	15.68	1.567	0.09	1.933	14.794	0.847
4.363	3.065	17.519	15.6	1.489	0.09	1.868	14.199	0.758
4.131	2.965	16.966	15.3	1.418	0.086	1.733	13.372	0.758
3.988	2.886	15.923	14.51	1.412	0.081	1.629	12.983	0.697
3.795	2.88	15.195	13.81	1.325	0.07	1.512	12.11	0.721
3.622	2.813	14.029	12.85	1.311	0.07	1.404	11.837	0.744
3.811	2.882	11.123	10.75	1.23	0.062	1.264	10.815	0.844
3.811	2.882	10.517	9.87	1.201	0.053	1.237	10.355	0.798
3.811	2.882	11.253	9.33	1.158	0.051	1.206	9.698	0.769
3.811	2.882	10.922	8.87	1.176	0.05	1.179	8.822	0.8
3.811	2.882	10.409	8.57	1.153	0.05	1.163	8.848	0.694
3.811	2.882	9.978	8.34	1.063	0.05	1.154	8.796	0.752
3.811	2.882	9.611	8.22	1.153	0.05	1.143	8.505	0.75
3.811	2.882	9.449	7.93	1.156	0.05	1.141	8.291	0.768
2.605	2.555	9.467	7.96	1.108	0.05	1.161	8.267	0.768
2.605	2.555	9.266	7.84	1.156	0.05	1.166	8.087	0.746
2.605	2.555	9.078	7.92	1.109	0.05	1.177	8.154	0.757
2.605	2.555	9.302	7.62	1.282	0.052	1.208	7.957	0.681
2.605	2.555	9.412	6.79	1.517	0.05	1.301	7.034	0.629
2.605	2.555	9.838	7	1.56	0.05	1.323	7.037	0.609
2.167	2.744	9.703	7.3	1.866	0.051	1.283	7.496	0.635
2.167	2.744	10.42	7.62	1.945	0.054	1.208	7.552	0.636
2.433	2.022	10.973	8.11	1.944	0.054	1.157	7.806	0.628
2.482	2.054	11.747	8.55	2.045	0.059	1.714	8.259	0.647
2.482	2.054	12.913	9.17	2.108	0.058	3.188	8.438	0.664
2.482	2.054	13.228	9.65	2.165	0.055	1.715	9.042	0.711
2.482	2.054	14.616	9.75	2.367	0.055	1.361	9.214	0.68
2.482	2.054	14.731	10.09	2.48	0.068	1.399	9.567	0.472
2.482	2.054	15.508	10.23	2.501	0.061	1.384	9.704	0.464
2.482	2.054	15.961	10.43	2.422	0.066	1.424	9.797	0.774
2.482	2.054	16.288	10.55	2.291	0.066	1.417	9.615	0.564
2.482	2.054	16.056	10.67	2.286	0.059	1.406	9.504	0.576
2.482	2.054	16.01	10.36	2.264	0.072	1.382	9.393	0.647
2.482	2.054	15.739	10.14	2.225	0.059	1.372	9.437	0.667
2.81	2.042	15.306	9.89	2.147	0.064	1.426	9.344	0.666
2.81	2.042	15.294	9.76	2.122	0.062	1.402	9.366	0.632
2.81	2.042	15.132	9.61	2.108	0.058	1.411	9.386	0.801
2.81	2.042	15.28	9.71	1.879	0.059	1.433	9.33	0.92

2.81	2.042	15.36	9.63	1.766	0.064	1.462	9.745	0.612
2.81	2.042	15.68	9.68	1.757	0.063	1.465	9.92	0.634
2.81	2.042	15.411	9.72	1.733	0.062	1.454	10.153	0.651
2.81	2.042	14.988	10.04	1.66	0.071	1.454	10.351	0.634
2.81	2.042	14.908	10.83	1.71	0.09	1.49	10.726	0.981
2.81	2.042	14.717	13.52	1.866	0.094	1.762	12.958	0.72
2.81	2.042	15.912	14.3	1.84	0.098	2.084	13.15	0.722
2.81	2.042	18.471	14.54	1.676	0.09	2.178	13.356	0.761
2.81	2.042	18.847	14.68	1.656	0.095	1.993	13.625	0.732
2.81	2.042	18.656	14.47	1.657	0.087	1.967	13.616	0.69
2.81	2.042	18.135	14.35	1.567	0.09	1.933	13.221	1.023
2.81	2.042	17.519	13.74	1.489	0.09	1.868	12.418	1.02
2.81	2.042	16.966	13.29	1.418	0.086	1.733	11.966	0.694
2.81	2.042	15.923	12.37	1.412	0.081	1.629	11.216	0.696
2.81	2.042	15.195	11.68	1.325	0.07	1.512	10.733	0.692
2.81	2.042	14.029	10.69	1.311	0.07	1.404	10.168	0.725
2.686	1.897	11.123	9.75	1.23	0.062	1.264	9.592	0.686
2.686	1.897	10.517	9.23	1.201	0.053	1.237	9.511	0.7
2.686	1.897	11.253	8.77	1.158	0.051	1.206	9.132	0.674
2.686	1.897	10.922	8.38	1.176	0.05	1.179	8.945	0.646
2.686	1.897	10.409	8.13	1.153	0.05	1.163	8.747	0.662
2.686	1.897	9.978	8.08	1.063	0.05	1.154	8.702	0.677
2.686	1.897	9.611	7.86	1.153	0.05	1.143	8.487	0.693
2.686	1.897	9.449	7.88	1.156	0.05	1.141	8.434	0.692
2.686	1.897	9.467	7.77	1.108	0.05	1.161	8.54	0.672
2.686	1.897	9.266	7.81	1.156	0.05	1.166	8.498	0.705
2.686	1.897	9.078	7.98	1.109	0.05	1.177	8.337	0.69
2.686	1.897	9.302	8.35	1.282	0.052	1.208	8.697	0.702
2.686	1.897	9.412	7.75	1.517	0.05	1.301	7.985	0.696
2.686	1.897	9.838	8.05	1.56	0.05	1.323	8.632	0.66
2.686	1.897	9.703	8.41	1.866	0.051	1.283	9.086	0.671
2.686	1.897	10.42	8.92	1.945	0.054	1.208	9.758	0.79
2.686	1.897	10.973	9.63	1.944	0.054	1.157	10.614	0.916
3.342	3.101	11.747	9.97	2.045	0.059	1.714	11.221	0.99
3.342	3.101	12.913	10.37	2.108	0.058	3.188	11.817	0.989
3.342	3.101	13.228	10.63	2.165	0.055	1.715	12.168	1.033
3.342	3.101	14.616	10.98	2.367	0.055	1.361	12.656	1.115
3.342	3.101	14.731	11.37	2.48	0.068	1.399	12.921	1.158
3.342	3.101	15.508	11.97	2.501	0.061	1.384	13.165	1.13
3.342	3.101	15.961	12.18	2.422	0.066	1.424	12.996	1.362
3.342	3.101	16.288	12.17	2.291	0.066	1.417	12.644	1.359
3.342	3.101	16.056	11.73	2.286	0.059	1.406	12.502	1.092
3.342	3.101	16.01	11.41	2.264	0.072	1.382	12.45	1.114
3.342	3.101	15.739	11.35	2.225	0.059	1.372	12.843	1.076
4.379	3.425	15.306	11.4	2.147	0.064	1.426	13.024	1.086

4.379	3.425	15.294	11.39	2.122	0.062	1.402	13.206	1.462
4.379	3.425	15.132	11.33	2.108	0.058	1.411	12.932	1.512
4.379	3.425	15.28	11	1.879	0.059	1.433	13.122	1.212
4.379	3.425	15.36	11.01	1.766	0.064	1.462	13.088	1.178
4.379	3.425	15.68	10.93	1.757	0.063	1.465	12.746	1.242
4.379	3.425	15.411	11.24	1.733	0.062	1.454	12.722	1.193
4.379	3.425	14.988	11.75	1.66	0.071	1.454	12.421	1.168
4.379	3.425	14.908	12.52	1.71	0.09	1.49	12.796	1.196
4.379	3.425	14.717	14.97	1.866	0.094	1.762	13.892	1.228
4.379	3.425	15.912	15.58	1.84	0.098	2.084	14.028	1.192
4.379	3.425	18.471	15.62	1.676	0.09	2.178	14.01	1.146
4.379	3.425	18.847	15.64	1.656	0.095	1.993	13.88	1.155
4.379	3.425	18.656	15.42	1.657	0.087	1.967	13.819	1.151
4.379	3.425	18.135	15.07	1.567	0.09	1.933	13.252	1.087
4.379	3.425	17.519	14.34	1.489	0.09	1.868	12.9	1.1
4.502	3.189	16.966	13.51	1.418	0.086	1.733	12.596	1.132
4.502	3.189	15.923	12.67	1.412	0.081	1.629	11.82	1.027
4.502	3.189	15.195	11.86	1.325	0.07	1.512	11.741	1.06
4.502	3.189	14.029	10.67	1.311	0.07	1.404	11.106	1.081
4.502	3.189	11.123	9.97	1.23	0.062	1.264	10.868	0.984
4.502	3.189	10.517	9.43	1.201	0.053	1.237	10.499	1.026
4.502	3.189	11.253	8.8	1.158	0.051	1.206	10.319	0.985
4.502	3.189	10.922	8.47	1.176	0.05	1.179	9.928	0.964
4.502	3.189	10.409	8.41	1.153	0.05	1.163	10.017	0.919
4.502	3.189	9.978	8.06	1.063	0.05	1.154	9.767	0.859
4.502	3.189	9.611	7.89	1.153	0.05	1.143	9.661	0.795
4.502	3.189	9.449	7.81	1.156	0.05	1.141	9.59	0.768
4.502	3.189	9.467	7.86	1.108	0.05	1.161	9.961	0.741
4.502	3.189	9.266	7.85	1.156	0.05	1.166	10.041	0.759
2.958	1.857	9.078	7.97	1.109	0.05	1.177	9.926	0.839
2.958	1.857	9.302	8.11	1.282	0.052	1.208	10.139	0.733
2.958	1.857	9.412	7.84	1.517	0.05	1.301	9.926	0.715
2.958	1.857	9.838	8.1	1.56	0.05	1.323	9.834	0.779
2.958	1.857	9.703	8.53	1.866	0.051	1.283	10.171	0.73
2.958	1.857	10.42	9.01	1.945	0.054	1.208	10.829	0.83
2.958	1.857	10.973	9.78	1.944	0.054	1.157	11.725	0.931
2.958	1.857	11.747	10.3	2.045	0.059	1.714	12.33	0.902
2.958	1.857	12.913	10.84	2.108	0.058	3.188	12.815	0.965
2.958	1.857	13.228	11.06	2.165	0.055	1.715	12.909	1.071
2.958	1.857	14.616	11.46	2.367	0.055	1.361	13.342	1.422
4.212	3.481	14.731	11.89	2.48	0.068	1.399	14.279	1.434
4.212	3.481	15.508	12.32	2.501	0.061	1.384	13.955	1.123
4.212	3.481	15.961	12.36	2.422	0.066	1.424	13.597	1.28
4.212	3.481	16.288	12.34	2.291	0.066	1.417	13.092	1.234
4.212	3.481	16.056	11.95	2.286	0.059	1.406	12.791	1.346

4.212	3.481	16.01	11.55	2.264	0.072	1.382	12.983	1.322
4.212	3.481	15.739	11.36	2.225	0.059	1.372	12.943	1.371
4.212	3.481	15.306	11.27	2.147	0.064	1.426	13.31	1.5
4.212	3.481	15.294	11.42	2.122	0.062	1.402	13.406	1.444
4.212	3.481	15.132	11.25	2.108	0.058	1.411	13.071	1.49
4.212	3.481	15.28	11.05	1.879	0.059	1.433	13.083	1.888
4.169	3.151	15.36	11.04	1.766	0.064	1.462	12.96	1.805
4.169	3.151	15.68	11.07	1.757	0.063	1.465	12.858	1.36
4.169	3.151	15.411	11.04	1.733	0.062	1.454	12.677	1.344
4.169	3.151	14.988	11.16	1.66	0.071	1.454	12.507	1.362
4.169	3.151	14.908	11.89	1.71	0.09	1.49	13.146	1.312
3.933	3	14.717	14.64	1.866	0.094	1.762	14.766	1.332
3.933	3	15.912	15.43	1.84	0.098	2.084	14.934	1.268
3.933	3	18.471	15.53	1.676	0.09	2.178	14.528	1.28
3.933	3	18.847	15.53	1.656	0.095	1.993	14.433	1.229
3.933	3	18.656	15.34	1.657	0.087	1.967	14.062	1.144
3.933	3	18.135	14.9	1.567	0.09	1.933	14.052	1.161
3.933	3	17.519	14.49	1.489	0.09	1.868	13.843	1.071
3.933	3	16.966	13.38	1.418	0.086	1.733	13.219	0.877
3.933	3	15.923	12.62	1.412	0.081	1.629	12.447	0.977
3.003	2.829	15.195	11.62	1.325	0.07	1.512	12.016	0.953
3.003	2.829	14.029	10.64	1.311	0.07	1.404	11.648	0.983
3.003	2.829	15.212	9.68	1.23	0.062	1.264	11.278	0.945
3.003	2.829	15.212	9.15	1.201	0.053	1.237	10.763	0.973
3.003	2.829	15.212	8.93	1.158	0.051	1.206	10.638	0.967
3.003	2.829	15.212	8.4	1.176	0.05	1.179	10.369	0.888
3.003	2.829	15.212	8.17	1.153	0.05	1.163	10.278	0.969
3.003	2.829	15.212	8.03	1.063	0.05	1.154	10.112	0.943
3.003	2.829	15.212	7.92	1.153	0.05	1.143	10.016	0.939
3.003	2.829	15.212	7.91	1.156	0.05	1.141	9.986	0.917
3.003	2.829	15.212	7.82	1.108	0.05	1.161	9.935	0.802
2.077	2.223	15.212	8.01	1.156	0.05	1.166	9.931	0.768
2.077	2.223	15.212	8.16	1.109	0.05	1.177	10.25	0.702
2.077	2.223	15.212	8.36	1.282	0.052	1.208	10.36	0.688
2.077	2.223	15.212	7.99	1.517	0.05	1.301	9.595	0.642
2.077	2.223	10.372	8.19	1.56	0.05	1.323	9.691	0.67
2.077	2.223	11.301	8.61	1.866	0.051	1.283	9.843	0.827
2.077	2.223	11.751	9.17	1.945	0.054	1.208	10.447	0.822
2.077	2.223	12.981	10.06	1.944	0.054	1.157	11.178	1.228
2.077	2.223	14.069	9.11	2.045	0.059	1.714	11.671	1.438
2.077	2.223	14.925	10.77	2.108	0.058	3.188	12.406	1.326
2.077	2.223	15.512	10.95	2.165	0.055	1.715	12.942	1.404
4.102	3.412	16.009	11.22	2.367	0.055	1.361	13.352	1.446
4.13	3.412	16.421	11.66	2.48	0.068	1.399	13.69	1.077
4.13	3.412	16.672	12.06	2.501	0.061	1.384	14.02	1.059

4.13	3.412	16.62	12.47	2.422	0.066	1.424	13.93	1.101
4.13	3.412	15.791	12.33	2.291	0.066	1.417	12.823	1.094
4.13	3.412	15.851	12.06	2.286	0.059	1.406	13.007	1.031
4.13	3.412	13.534	11.63	2.264	0.072	1.382	13.189	1.043
4.13	3.412	13.461	11.54	2.225	0.059	1.372	13.605	1.031
4.13	3.412	15.271	11.59	2.147	0.064	1.426	13.756	1.18
4.13	3.412	15.472	11.47	2.122	0.062	1.402	13.744	1.517
4.13	3.412	15.472	11.42	2.108	0.058	1.411	13.747	1.451
3.85	3.246	15.362	11.32	1.879	0.059	1.433	13.61	1.293
3.85	3.246	15.185	11.22	1.766	0.064	1.462	13.853	1.303
3.85	3.246	15.461	11.02	1.757	0.063	1.465	13.385	1.204
3.85	3.246	15.264	10.87	1.733	0.062	1.454	13.279	1.236
3.85	3.246	15.4	11.22	1.66	0.071	1.454	12.863	1.106
3.85	3.246	17.216	13.38	1.71	0.09	1.49	13.876	1.158
3.85	3.246	18.446	15.16	1.866	0.094	1.762	15.025	1.133
3.85	3.246	18.895	15.72	1.84	0.098	2.084	15.272	1.106
3.85	3.246	18.513	15.68	1.676	0.09	2.178	14.963	1.068
3.85	3.246	18.016	12.18	1.656	0.095	1.993	15.153	1.119
3.85	3.246	17.491	11.91	1.657	0.087	1.967	15.198	1.015
3.85	3.246	16.414	11.62	1.567	0.09	1.933	15.621	0.975
3.85	3.246	15.942	11.07	1.489	0.09	1.868	14.645	0.962
3.85	3.246	15.018	11.92	1.418	0.086	1.733	14.134	0.989
3.85	3.246	14.092	9.89	1.412	0.081	1.629	13.501	0.938
3.85	3.246	13.137	9.05	1.325	0.07	1.512	13.09	0.928
3.273	2.651	12.186	8.23	1.311	0.07	1.404	12.411	1.011
3.273	2.651	11.261	8.29	1.23	0.062	1.264	12.032	0.955
3.273	2.651	10.761	8.35	1.201	0.053	1.237	11.929	1.023
3.273	2.651	10.298	8.08	1.158	0.051	1.206	11.704	0.961
3.273	2.651	9.93	7.78	1.176	0.05	1.179	11.299	0.835
3.273	2.651	9.7	7.47	1.153	0.05	1.163	11.484	0.843
3.273	2.651	9.281	7.21	1.063	0.05	1.154	11.316	0.755
3.273	2.651	9.281	7.22	1.153	0.05	1.143	11.55	0.703
3.273	2.651	9.37	7.14	1.156	0.05	1.141	11.327	0.775
3.273	2.651	9.111	7.03	1.108	0.05	1.161	11.364	0.696
3.273	2.651	9.319	7.11	1.156	0.05	1.166	11.316	0.771
2.305	2.211	9.499	7.21	1.109	0.05	1.177	11.393	0.726
2.373	2.257	10.041	7.43	1.282	0.052	1.208	11.844	0.733
2.373	2.257	9.569	7.47	1.517	0.05	1.301	10.327	0.627
2.373	2.257	10.289	8.01	1.56	0.05	1.323	10.931	0.724
2.373	2.257	11.054	8.46	1.866	0.051	1.283	10.77	0.747
2.373	2.257	11.6	9.19	1.945	0.054	1.208	11.037	0.833
2.373	2.257	13.203	10.06	1.944	0.054	1.157	11.683	0.88
2.373	2.257	14.168	10.56	2.045	0.059	1.714	12.596	0.993
2.373	2.257	15.045	11.01	2.108	0.058	3.188	12.44	1.038
2.373	2.257	15.405	11.17	2.165	0.055	1.715	13.223	1.375

3.927	3.396	16.084	11.59	2.367	0.055	1.361	13.603	1.425
3.927	3.396	16.727	12.01	2.48	0.068	1.399	13.681	1.483
3.927	3.396	16.933	12.29	2.501	0.061	1.384	14.27	1.107
3.927	3.396	16.572	12.75	2.422	0.066	1.424	13.822	1.076
3.927	3.396	16.572	12.62	2.291	0.066	1.417	13.775	1.111
3.927	3.396	15.919	12.25	2.286	0.059	1.406	13.222	1.042
3.927	3.396	15.467	11.82	2.264	0.072	1.382	13.142	0.994
3.927	3.396	15.483	11.77	2.225	0.059	1.372	13.202	1.14
3.927	3.396	15.669	11.78	2.147	0.064	1.426	13.476	1.137
4.21	3.46	15.778	11.52	2.122	0.062	1.402	13.642	1.257
4.191	3.47	15.569	11.49	2.108	0.058	1.411	13.677	1.315
4.191	3.47	15.783	9.9	1.879	0.059	1.433	13.981	1.427
4.191	3.47	15.633	10.6	1.766	0.064	1.462	14.039	1.273
4.191	3.47	15.419	8.55	1.757	0.063	1.465	14.91	1.277
4.191	3.47	15.342	8.42	1.733	0.062	1.454	14.655	1.188
4.191	3.47	15.588	8.78	1.66	0.071	1.454	14.145	1.191
4.191	3.47	16.746	11.4	1.71	0.09	1.49	14.912	1.169
4.191	3.47	18.537	14.21	1.866	0.094	1.762	16.398	1.166
4.191	3.47	18.963	14.58	1.84	0.098	2.084	16.592	1.159
4.191	3.47	18.627	14.52	1.676	0.09	2.178	16.771	1.21
4.191	3.47	18.438	14.62	1.656	0.095	1.993	16.566	1.114
4.191	3.47	17.951	14.4	1.657	0.087	1.967	16.2	1.099
4.191	3.47	17.498	14.11	1.567	0.09	1.933	16.425	1.163
4.191	3.47	16.636	13.41	1.489	0.09	1.868	15.181	1.139
4.191	3.47	15.381	12.62	1.418	0.086	1.733	14.612	1.067
3.844	2.774	14.227	11.75	1.412	0.081	1.629	14.208	1.117
3.807	2.646	13.708	10.92	1.325	0.07	1.512	13.951	1.129
3.807	2.646	13.051	9.92	1.311	0.07	1.404	13.476	1.037
3.273	2.651	12.023	9.25	1.23	0.062	1.264	12.838	1.001
3.273	2.651	10.949	8.67	1.201	0.053	1.237	12.309	0.918
3.273	2.651	10.889	9.03	1.158	0.051	1.206	11.529	0.863
3.273	2.651	10.261	8.56	1.176	0.05	1.179	11.412	0.864
3.273	2.651	10.113	8.29	1.153	0.05	1.163	11.081	0.813
3.273	2.651	9.918	8.05	1.063	0.05	1.154	10.748	0.826
3.273	2.651	9.671	7.94	1.153	0.05	1.143	10.722	0.905
3.273	2.651	9.757	7.89	1.156	0.05	1.141	10.73	0.91
3.273	2.651	9.584	7.94	1.108	0.05	1.161	10.612	0.817
3.273	2.651	9.607	7.99	1.156	0.05	1.166	10.618	0.845
2.305	2.211	10.001	8.3	1.109	0.05	1.177	10.829	0.648
2.373	2.257	10.04	8.31	1.282	0.052	1.208	10.739	0.564
2.373	2.257	9.446	7.49	1.517	0.05	1.301	9.724	0.734
2.373	2.257	9.86	7.86	1.56	0.05	1.323	10.337	0.819
2.373	2.257	10.205	8.19	1.866	0.051	1.283	11.202	0.81
2.373	2.257	10.387	8.78	1.945	0.054	1.208	11.229	0.832
2.373	2.257	11.333	9.7	1.944	0.054	1.157	11.964	1.366

2.373	2.257	12.38	10.2	2.045	0.059	1.714	12.798	1.359
2.373	2.257	13.164	10.66	2.108	0.058	3.188	13.007	1.362
2.373	2.257	13.469	10.65	2.165	0.055	1.715	14.122	1.407
3.927	3.396	14.239	11.17	2.367	0.055	1.361	14.348	1.14
3.927	3.396	14.526	11.62	2.48	0.068	1.399	14.584	1.172
3.927	3.396	15.113	11.85	2.501	0.061	1.384	14.383	1.308
3.927	3.396	14.93	11.93	2.422	0.066	1.424	14.246	1.25
3.927	3.396	14.91	12.05	2.291	0.066	1.417	13.417	1.285
3.927	3.396	14.452	11.73	2.286	0.059	1.406	13.212	1.158
3.927	3.396	14.259	11.38	2.264	0.072	1.382	13.281	1.025
3.927	3.396	14.38	11.07	2.225	0.059	1.372	13.086	1.04
3.927	3.396	13.797	11.08	2.147	0.064	1.426	13.508	1.069
4.21	3.46	14.204	11.21	2.122	0.062	1.402	13.739	1.158
4.191	3.47	14.181	11.08	2.108	0.058	1.411	13.22	1.293
4.191	3.47	14.274	10.99	1.879	0.059	1.433	12.6	1.115
4.191	3.47	14.43	10.91	1.766	0.064	1.462	13.295	1.51
4.191	3.47	14.609	10.66	1.757	0.063	1.465	13.158	1.592
4.191	3.47	14.29	10.5	1.733	0.062	1.454	13.058	1.336
4.191	3.47	13.995	10.7	1.66	0.071	1.454	12.769	1.29
4.191	3.47	15.483	11.7	1.71	0.09	1.49	13.477	1.363
4.191	3.47	17.768	14.62	1.866	0.094	1.762	15.366	1.2
4.191	3.47	18.592	15.33	1.84	0.098	2.084	15.791	1.224
4.191	3.47	18.155	15.29	1.676	0.09	2.178	15.399	1.133
4.191	3.47	17.99	15.46	1.656	0.095	1.993	15.459	1.128
4.191	3.47	17.524	15.03	1.657	0.087	1.967	14.967	1.083
4.191	3.47	16.804	14.72	1.567	0.09	1.933	14.76	1.047
4.191	3.47	15.62	14.07	1.489	0.09	1.868	14.189	1.007
4.191	3.47	14.819	13.36	1.418	0.086	1.733	13.643	0.996
3.844	2.774	14.31	12.46	1.412	0.081	1.629	13.067	0.91
3.807	2.646	12.953	11.47	1.325	0.07	1.512	12.945	0.842
3.807	2.646	12.5	10.64	1.311	0.07	1.404	12.521	0.801
2.686	1.897	11.409	9.85	1.23	0.062	1	12.02	0.733
2.686	1.897	10.671	9.26	1.201	0.053	1	11.26	0.715
2.686	1.897	10.276	8.83	1.158	0.051	1.2	11.088	0.799
2.686	1.897	9.798	8.46	1.176	0.05	1.179	10.602	0.74
2.686	1.897	9.552	8.18	1.153	0.05	1.163	10.398	0.743
2.686	1.897	9.218	7.95	1.063	0.05	1.154	10.333	0.759
2.686	1.897	9.11	7.92	1.153	0.05	1.143	10.62	0.748
2.686	1.897	9	7.77	1.156	0.05	1.141	10.913	0.762
2.686	1.897	9.031	7.8	1.108	0.05	1.161	10.466	0.73
2.686	1.897	9.069	7.83	1.156	0.05	1.166	10.353	0.749
2.686	1.897	9.395	8.02	1.109	0.05	1.177	10.443	0.764
2.686	1.897	9.493	7.97	1.282	0.052	1.208	10.533	0.742
2.686	1.897	9.232	7.3	1.517	0.05	1.301	9.714	0.768
2.686	1.897	9.748	7.53	1.56	0.05	1.323	9.661	0.855

2.686	1.897	10.366	7.91	1.866	0.051	1.283	10.411	0.857
2.686	1.897	11.104	8.28	1.945	0.054	1.208	10.918	0.953
2.686	1.897	12.059	8.96	1.944	0.054	1.157	11.456	1.631
3.342	3.101	12.993	9.48	2.045	0.059	1.714	11.938	1.585
3.342	3.101	13.788	9.82	2.108	0.058	3.188	12.196	1.501
3.342	3.101	14.77	10.33	2.165	0.055	1.715	12.341	1.818
3.342	3.101	14.956	10.52	2.367	0.055	1.361	12.382	1.792
3.342	3.101	14.949	10.86	2.48	0.068	1.399	12.715	1.488
3.342	3.101	15.467	11.16	2.501	0.061	1.384	12.761	1.508
3.342	3.101	15.03	11.3	2.422	0.066	1.424	12.452	1.573
3.342	3.101	14.948	11.21	2.291	0.066	1.417	12.258	1.525
3.342	3.101	14.479	10.76	2.286	0.059	1.406	11.529	1.449
3.342	3.101	13.792	10.46	2.264	0.072	1.382	11.777	1.551
3.342	3.101	13.762	10.4	2.225	0.059	1.372	11.823	1.471
4.379	3.425	13.323	10.16	2.147	0.064	1.426	11.438	1.285
4.379	3.425	13.362	10.25	2.122	0.062	1.402	11.655	1.272
4.379	3.425	13.681	10.09	2.108	0.058	1.411	11.691	1.309
4.379	3.425	13.758	10.05	1.879	0.059	1.433	11.575	1.338
4.379	3.425	13.467	10.14	1.766	0.064	1.462	11.718	1.48
4.379	3.425	13.274	10.1	1.757	0.063	1.465	10.932	1.375
4.379	3.425	13.174	10.08	1.733	0.062	1.454	11.195	1.409
4.379	3.425	13.1	10.17	1.66	0.071	1.454	10.737	1.409
4.379	3.425	13.471	10.91	1.71	0.09	1.49	11.257	1.265
4.379	3.425	16.575	14.07	1.866	0.094	1.762	13.058	1.251
4.379	3.425	17.39	14.76	1.84	0.098	2.084	13.302	1.231
4.379	3.425	17.266	15.02	1.676	0.09	2.178	13.251	1.194
4.379	3.425	17.4	14.87	1.656	0.095	1.993	13.281	1.151
4.379	3.425	16.694	14.52	1.657	0.087	1.967	12.883	1.085
4.379	3.425	16.252	14.29	1.567	0.09	1.933	12.991	1.072
4.379	3.425	15.541	13.85	1.489	0.09	1.868	12.515	1.1
4.502	3.189	14.776	13.34	1.418	0.086	1.733	12.188	1.006
4.502	3.189	14.2	12.57	1.412	0.081	1.629	11.584	0.943
4.502	3.189	12.8	11.88	1.325	0.07	1.512	11.14	0.904
4.502	3.189	12.728	11.2	1.311	0.07	1.404	10.584	0.863
3.273	2.651	11.995	10.13	1.23	0.062	1.264	10.416	0.789
3.273	2.651	11.205	9.65	1.201	0.053	1.237	9.713	0.762
3.273	2.651	10.724	9.11	1.158	0.051	1.206	9.232	0.742
3.273	2.651	10.377	8.65	1.176	0.05	1.179	9.031	0.682
3.273	2.651	9.951	8.41	1.153	0.05	1.163	8.759	0.673
3.273	2.651	9.68	8.17	1.063	0.05	1.154	8.792	0.705
3.273	2.651	9.623	8.03	1.153	0.05	1.143	8.631	0.7
3.273	2.651	9.295	7.85	1.156	0.05	1.141	8.703	0.716
3.273	2.651	9.162	7.82	1.108	0.05	1.161	8.407	0.696
3.273	2.651	9.198	7.84	1.156	0.05	1.166	8.469	0.721
2.305	2.211	9.25	7.76	1.109	0.05	1.177	8.159	0.687

2.373	2.257	9.059	7.58	1.282	0.052	1.208	7.954	0.679
2.373	2.257	8.48	6.62	1.517	0.05	1.301	7.247	0.607
2.373	2.257	8.896	6.99	1.56	0.05	1.323	7.145	0.581
2.373	2.257	9.115	7.4	1.866	0.051	1.283	7.236	0.593
2.373	2.257	9.715	7.88	1.945	0.054	1.208	7.797	0.673
2.373	2.257	10.164	8.55	1.944	0.054	1.157	7.974	0.913
2.373	2.257	10.89	9.09	2.045	0.059	1.714	8.824	1.131
2.373	2.257	11.293	9.5	2.108	0.058	3.188	9.081	1.13
2.373	2.257	11.573	9.68	2.165	0.055	1.715	9.286	0.899
3.927	3.396	12.002	9.86	2.367	0.055	1.361	9.425	0.834
3.927	3.396	12.093	10.21	2.48	0.068	1.399	9.743	0.841
3.927	3.396	12.467	10.46	2.501	0.061	1.384	9.834	0.858
3.927	3.396	12.552	10.62	2.422	0.066	1.424	9.957	0.791
3.927	3.396	12.466	10.68	2.291	0.066	1.417	10.087	0.858
3.927	3.396	12.073	10.53	2.286	0.059	1.406	9.493	0.86
3.927	3.396	11.722	10.07	2.264	0.072	1.382	9.397	0.581
3.927	3.396	11.507	9.84	2.225	0.059	1.372	9.354	0.575
3.927	3.396	11.513	9.74	2.147	0.064	1.426	9.386	0.57
4.21	3.46	11.639	9.59	2.122	0.062	1.402	9.229	0.592
4.191	3.47	11.367	9.59	2.108	0.058	1.411	9.258	0.582
4.191	3.47	11.481	9.59	1.879	0.059	1.433	9.122	0.611
4.191	3.47	11.455	9.76	1.766	0.064	1.462	9.267	0.635
4.191	3.47	11.424	9.65	1.757	0.063	1.465	9.188	0.56
4.191	3.47	11.687	9.79	1.733	0.062	1.454	9.472	0.53
4.191	3.47	12.188	10.5	1.66	0.071	1.454	9.82	0.334
4.191	3.47	13.873	11.77	1.71	0.09	1.49	10.976	0.444
4.191	3.47	15.677	14.02	1.866	0.094	1.762	12.182	0.425
4.191	3.47	16.074	14.32	1.84	0.098	2.084	12.29	0.392
4.191	3.47	16.174	14.5	1.676	0.09	2.178	12.431	0.419
4.191	3.47	16.172	14.46	1.656	0.095	1.993	12.278	0.326
4.191	3.47	15.99	14.24	1.657	0.087	1.967	12.014	0.315
4.191	3.47	15.582	14.23	1.567	0.09	1.933	11.991	0.336
4.191	3.47	14.818	13.39	1.489	0.09	1.868	11.352	0.313
4.191	3.47	14.064	12.96	1.418	0.086	1.733	11.128	0.314
3.844	2.774	13.436	12.11	1.412	0.081	1.629	10.471	0.331
3.807	2.646	12.65	11.12	1.325	0.07	1.512	10.097	0.333
3.807	2.646	11.807	10.35	1.311	0.07	1.404	9.683	0.321
3.686	3.369	11.26	9.7	1.23	0.062	1.264	9.051	0.306
3.686	3.369	10.326	9.13	1.201	0.053	1.237	8.479	0.32
3.686	3.369	10.109	8.68	1.158	0.051	1.206	8.349	0.303
3.686	3.369	9.685	8.46	1.176	0.05	1.179	8.314	0.298
2.447	1.627	9.351	8.01	1.153	0.05	1.163	8.083	0.285
2.447	1.627	8.928	7.7	1.063	0.05	1.154	7.951	0.29
2.447	1.627	8.995	7.68	1.153	0.05	1.143	7.993	0.299
2.447	1.627	8.923	7.58	1.156	0.05	1.141	7.848	0.288

2.447	1.627	8.982	7.55	1.108	0.05	1.161	7.687	0.29
2.447	1.627	9.236	7.6	1.156	0.05	1.166	8.002	0.315
2.447	1.627	9.088	7.71	1.109	0.05	1.177	8.392	0.341
2.447	1.627	9.378	7.86	1.282	0.052	1.208	8.409	0.359
2.447	1.627	9.478	7.95	1.517	0.05	1.301	8.285	0.32
2.447	1.627	9.544	7.72	1.56	0.05	1.323	7.971	0.27
2.447	1.627	10.647	8.24	1.866	0.051	1.283	8.559	0.306
2.447	1.627	10.959	8.73	1.945	0.054	1.208	8.971	0.434
2.447	1.627	11.896	9.96	1.944	0.054	1.157	9.753	0.519
2.447	1.627	13.185	10.14	2.045	0.059	1.714	10.415	0.587
2.447	1.627	13.989	10.62	2.108	0.058	3.188	11.372	0.935
2.447	1.627	14.804	10.81	2.165	0.055	1.715	12.38	0.742
2.447	1.627	15.121	10.99	2.367	0.055	1.361	12.877	0.762
2.447	1.627	15.673	11.55	2.48	0.068	1.399	13.034	0.738
2.447	1.627	16.333	11.82	2.501	0.061	1.384	12.896	0.705
2.447	1.627	16.11	12.08	2.422	0.066	1.424	13.003	0.665
2.447	1.627	16.073	12.43	2.291	0.066	1.417	13.148	0.675
2.447	1.627	15.544	11.82	2.286	0.059	1.406	12.964	0.772
2.447	1.627	15.255	11.61	2.264	0.072	1.382	13.095	0.771
2.447	1.627	15.009	11.56	2.225	0.059	1.372	12.526	0.823
2.447	1.627	15.247	11.65	2.147	0.064	1.426	13.314	0.887
4.478	3.429	15.119	11.61	2.122	0.062	1.402	13.173	0.92
4.478	3.429	15.076	11.73	2.108	0.058	1.411	13.929	0.939
4.478	3.429	15.334	11.39	1.879	0.059	1.433	13.624	1.096
4.478	3.429	15.29	11.24	1.766	0.064	1.462	13.735	1.107
4.478	3.429	14.91	11.12	1.757	0.063	1.465	13.217	0.965
4.478	3.429	14.913	10.98	1.733	0.062	1.454	13.096	1.4
4.478	3.429	14.716	11.08	1.66	0.071	1.454	12.202	1.441
4.478	3.429	15.399	11.7	1.71	0.09	1.49	12.506	1.474
4.478	3.429	18.069	14.82	1.866	0.094	1.762	14.156	1.531
4.478	3.429	18.462	15.56	1.84	0.098	2.084	14.243	1.163
4.478	3.429	18.252	15.57	1.676	0.09	2.178	13.961	1.175
4.478	3.429	18.11	15.72	1.656	0.095	1.993	14.121	1.233
4.478	3.429	17.42	15.18	1.657	0.087	1.967	13.678	1.205
4.478	3.429	16.805	15.05	1.567	0.09	1.933	13.529	1.16
4.478	3.429	15.985	14.36	1.489	0.09	1.868	12.909	1.121
4.478	3.429	15.267	13.76	1.418	0.086	1.733	12.494	1.145
4.478	3.429	14.261	12.73	1.412	0.081	1.629	11.817	1.056
4.478	3.429	13.519	11.95	1.325	0.07	1.512	11.703	1.216
4.478	3.429	12.376	10.78	1.311	0.07	1.404	11.174	1.186
3.273	2.651	11.292	9.72	1.23	0.062	1.264	11.093	1.179
3.273	2.651	10.86	9.21	1.201	0.053	1.237	10.881	0.962
3.273	2.651	10.421	8.79	1.158	0.051	1.206	10.589	0.901
3.273	2.651	9.982	8.55	1.176	0.05	1.179	10.327	0.943
3.273	2.651	9.647	8.12	1.153	0.05	1.163	9.854	1.189

3.273	2.651	9.15	7.87	1.063	0.05	1.154	9.85	1.169
3.273	2.651	9.365	7.9	1.153	0.05	1.143	9.708	1.15
3.273	2.651	9.197	7.84	1.156	0.05	1.141	9.753	1.169
3.273	2.651	9.11	7.75	1.108	0.05	1.161	9.608	1.02
3.273	2.651	8.909	7.81	1.156	0.05	1.166	9.636	1.022
2.305	2.211	9.597	7.9	1.109	0.05	1.177	9.677	0.96
2.373	2.257	9.752	8.03	1.282	0.052	1.208	9.668	0.977
2.373	2.257	9.266	7.45	1.517	0.05	1.301	9.441	0.928
2.373	2.257	9.754	7.78	1.56	0.05	1.323	9.645	0.989
2.373	2.257	10.526	8.27	1.866	0.051	1.283	9.97	1.127
2.373	2.257	11.613	8.81	1.945	0.054	1.208	10.38	1.016
2.373	2.257	12.624	9.2	1.944	0.054	1.157	11.359	1.133
2.373	2.257	13.665	9.73	2.045	0.059	1.714	12.245	1.151
2.373	2.257	14.397	9.98	2.108	0.058	3.188	12.554	1.138
2.373	2.257	14.659	10.45	2.165	0.055	1.715	13.131	1.123
3.927	3.396	15.492	10.91	2.367	0.055	1.361	13.421	1.202
3.927	3.396	16.073	11.18	2.48	0.068	1.399	13.732	1.119
3.927	3.396	16.371	11.82	2.501	0.061	1.384	13.852	1.452
3.927	3.396	16.339	12.07	2.422	0.066	1.424	13.921	1.546
3.927	3.396	16.087	11.89	2.291	0.066	1.417	13.68	1.502
3.927	3.396	15.668	11.54	2.286	0.059	1.406	13.607	1.456
3.927	3.396	15.303	11.18	2.264	0.072	1.382	13.143	0.995
3.927	3.396	15.63	11.03	2.225	0.059	1.372	13.418	1.083
3.927	3.396	15.189	11.05	2.147	0.064	1.426	13.454	1.179
4.21	3.46	15.342	11.16	2.122	0.062	1.402	14.123	1.293
4.191	3.47	15.224	11.13	2.108	0.058	1.411	14.014	1.313
4.191	3.47	15.254	10.88	1.879	0.059	1.433	13.5	1.545
4.191	3.47	15.194	11.34	1.766	0.064	1.462	13.453	1.595
4.191	3.47	15.157	11.34	1.757	0.063	1.465	13.435	1.61
4.191	3.47	14.579	11.09	1.733	0.062	1.454	13.042	1.646
4.191	3.47	14.737	11.18	1.66	0.071	1.454	12.73	1.682
4.191	3.47	15.928	12.13	1.71	0.09	1.49	13.509	1.711
4.191	3.47	18.163	15.23	1.866	0.094	1.762	14.79	1.758
4.191	3.47	18.566	15.74	1.84	0.098	2.084	15.653	1.693
4.191	3.47	18.348	15.75	1.676	0.09	2.178	15.355	1.68
4.191	3.47	17.967	15.77	1.656	0.095	1.993	15.108	1.577
4.191	3.47	17.542	15.42	1.657	0.087	1.967	15.006	1.651
4.191	3.47	16.829	15.14	1.567	0.09	1.933	14.394	1.583
4.191	3.47	16.064	14.52	1.489	0.09	1.868	13.839	1.472
4.191	3.47	14.888	13.66	1.418	0.086	1.733	12.986	1.471
3.844	2.774	14.007	12.75	1.412	0.081	1.629	12.439	1.283
3.807	2.646	13.155	11.81	1.325	0.07	1.512	11.986	1.189
3.807	2.646	12.161	10.81	1.311	0.07	1.404	11.427	1.174
3.607	2.581	11.292	9.72	1.23	0.062	1.264	11.325	1.082
3.607	2.581	10.86	9.21	1.201	0.053	1.237	10.506	0.996

3.607	2.581	10.421	8.79	1.158	0.051	1.206	10.401	0.905
3.607	2.581	9.982	8.55	1.176	0.05	1.179	10.648	0.843
3.607	2.581	9.647	8.12	1.153	0.05	1.163	10.192	0.802
3.607	2.581	9.15	7.87	1.063	0.05	1.154	10.108	0.773
3.607	2.581	9.365	7.9	1.153	0.05	1.143	10.065	0.738
3.607	2.581	9.197	7.84	1.156	0.05	1.141	9.903	0.715
3.607	2.581	9.11	7.75	1.108	0.05	1.161	9.99	0.76
3.607	2.581	8.909	7.81	1.156	0.05	1.166	9.823	0.827
3.128	2.712	9.597	7.9	1.109	0.05	1.177	9.701	0.737
3.128	2.766	9.752	8.03	1.282	0.052	1.208	9.716	0.773
3.128	2.766	9.266	7.45	1.517	0.05	1.301	9.111	0.888
3.128	2.766	9.754	7.78	1.56	0.05	1.323	9.604	0.815
3.128	2.766	10.526	8.27	1.866	0.051	1.283	9.876	0.776
3.128	2.766	11.613	8.81	1.945	0.054	1.208	10.454	0.903
3.128	2.766	12.624	9.2	1.944	0.054	1.157	11.266	0.941
3.128	2.766	13.665	9.73	2.045	0.059	1.714	11.507	0.985
3.128	2.766	14.397	9.98	2.108	0.058	3.188	11.871	1.087
3.128	2.766	14.659	10.45	2.165	0.055	1.715	12.817	1.056
3.128	2.766	15.492	10.91	2.367	0.055	1.361	13.323	1.066
4.42	3.504	16.073	11.18	2.48	0.068	1.399	13.428	1.321
4.383	3.555	16.371	11.82	2.501	0.061	1.384	13.777	1.566
4.383	3.555	16.339	12.07	2.422	0.066	1.424	13.401	1.584
4.383	3.555	16.087	11.89	2.291	0.066	1.417	13.296	1.63
4.383	3.555	15.668	11.54	2.286	0.059	1.406	13.217	1.523
4.383	3.555	15.303	11.18	2.264	0.072	1.382	13.299	1.373
4.383	3.555	15.63	11.03	2.225	0.059	1.372	13.57	1.377
4.383	3.555	15.189	11.05	2.147	0.064	1.426	13.951	1.435
4.383	3.555	15.342	11.16	2.122	0.062	1.402	13.582	1.702
4.383	3.555	15.224	11.13	2.108	0.058	1.411	14.182	1.655
4.383	3.555	15.254	10.88	1.879	0.059	1.433	14.194	1.85
4.183	3.193	15.194	11.34	1.766	0.064	1.462	13.311	1.8
4.183	3.193	15.157	11.34	1.757	0.063	1.465	13.091	1.583
4.183	3.193	14.579	11.09	1.733	0.062	1.454	13.018	1.409
4.183	3.193	14.737	11.18	1.66	0.071	1.454	12.601	1.287
4.183	3.193	15.928	12.13	1.71	0.09	1.49	12.744	1.2
4.183	3.193	18.163	15.23	1.866	0.094	1.762	14.71	1.314
4.183	3.193	18.566	15.74	1.84	0.098	2.084	15.404	1.274
4.183	3.193	18.348	15.75	1.676	0.09	2.178	14.971	1.223
4.183	3.193	17.967	15.77	1.656	0.095	1.993	14.901	1.222
4.183	3.193	17.542	15.42	1.657	0.087	1.967	14.809	1.226
4.183	3.193	16.829	15.14	1.567	0.09	1.933	14.806	1.147
4.183	3.193	16.064	14.52	1.489	0.09	1.868	13.797	1.128
4.183	3.193	14.888	13.66	1.418	0.086	1.733	13.019	1.127
4.183	3.193	14.007	12.75	1.412	0.081	1.629	12.342	1.131
4.183	3.193	13.155	11.81	1.325	0.07	1.512	12.267	1.059

4.183	3.193	12.161	10.81	1.311	0.07	1.404	11.992	1.148
4.183	3.193	11.292	10.08	1.23	0.062	1.264	11.548	1.15
4.183	3.193	10.86	9.32	1.201	0.053	1.237	11.092	1.15
4.183	3.193	10.421	8.9	1.158	0.051	1.206	11.004	1.148
4.183	3.193	9.982	8.56	1.176	0.05	1.179	10.566	1.169
4.183	3.193	9.647	8.19	1.153	0.05	1.163	10.074	0.947
4.183	3.193	9.15	8	1.063	0.05	1.154	10.003	0.859
2.923	2.289	9.365	7.82	1.153	0.05	1.143	9.926	0.764
2.923	2.289	9.197	7.84	1.156	0.05	1.141	9.72	0.737
2.923	2.289	9.11	7.7	1.108	0.05	1.161	9.652	0.684
2.923	2.289	8.909	7.8	1.156	0.05	1.166	9.613	0.852
2.923	2.289	9.597	7.86	1.109	0.05	1.177	9.861	0.81
2.923	2.289	9.752	8.02	1.282	0.052	1.208	9.914	0.779
2.923	2.289	9.266	7.36	1.517	0.05	1.301	9.399	0.68
2.923	2.289	9.754	7.75	1.56	0.05	1.323	9.775	0.725
2.923	2.289	10.526	8.28	1.866	0.051	1.283	9.858	0.762
2.923	2.289	11.613	8.71	1.945	0.054	1.208	10.632	0.83
2.923	2.289	12.624	9.7	1.944	0.054	1.157	11.668	0.947
2.923	2.289	13.665	10.12	2.045	0.059	1.714	12.54	1.031
3.81	3.161	14.397	10.6	2.108	0.058	3.188	12.598	1.329
3.783	3.302	14.659	10.96	2.165	0.055	1.715	13.632	1.386
3.783	3.302	15.492	11.18	2.367	0.055	1.361	13.509	1.49
3.783	3.302	16.073	11.66	2.48	0.068	1.399	13.671	1.267
3.783	3.302	16.371	12.07	2.501	0.061	1.384	13.901	1.237
3.783	3.302	16.339	12.17	2.422	0.066	1.424	13.612	1.365
3.783	3.302	16.087	12.09	2.291	0.066	1.417	13.232	1.214
3.783	3.302	15.668	11.73	2.286	0.059	1.406	12.775	1.287
3.783	3.302	15.303	11.4	2.264	0.072	1.382	12.971	1.339
3.783	3.302	15.63	11.17	2.225	0.059	1.372	13.313	1.445
3.783	3.302	15.189	11.16	2.147	0.064	1.426	13.761	1.48
4.093	3.123	15.342	11.17	2.122	0.062	1.402	13.925	1.641
4.093	3.123	15.224	11.05	2.108	0.058	1.411	13.502	1.697
4.093	3.123	15.254	11.21	1.879	0.059	1.433	13.679	1.619
4.093	3.123	15.194	11.04	1.766	0.064	1.462	13.741	1.589
4.093	3.123	15.157	11.06	1.757	0.063	1.465	13.38	1.5
4.093	3.123	14.579	10.89	1.733	0.062	1.454	12.987	1.325
4.093	3.123	14.737	11.16	1.66	0.071	1.454	12.77	1.342
4.093	3.123	15.928	11.94	1.71	0.09	1.49	13.347	1.473
4.093	3.123	18.163	14.84	1.866	0.094	1.762	14.844	1.452
4.093	3.123	18.566	15.47	1.84	0.098	2.084	15.405	1.491
4.093	3.123	18.348	15.58	1.676	0.09	2.178	15.532	1.347
4.093	3.123	17.967	15.52	1.656	0.095	1.993	15.411	1.352
4.093	3.123	17.542	15.29	1.657	0.087	1.967	15.134	1.392
4.093	3.123	16.829	14.89	1.567	0.09	1.933	14.754	1.331
4.093	3.123	16.064	14.34	1.489	0.09	1.868	13.863	1.27

4.093	3.123	14.888	13.62	1.418	0.086	1.733	13.285	1.165
4.093	3.123	14.007	12.87	1.412	0.081	1.629	12.971	1.269
4.093	3.123	13.155	11.74	1.325	0.07	1.512	12.565	1.343
4.093	3.123	12.161	10.93	1.311	0.07	1.404	12.196	1.268

## DEMANDA HISTORICO-DIARIO-SUB ESTACIONES CHIMBOTE UNO CASMA HIDRANDINA MARZO 2019

PUNTO DE MEDICIÓN	41396	41397	21535	41395	41399	41398	22402	21537	22207
EMPRESA	HIDRANDINA	HIDRANDINA	HIDRANDINA	HIDRANDINA	HIDRANDINA	HIDRANDINA	HIDRANDINA	HIDRANDINA	HIDRANDINA
EQUIPO	CASMA_TP-A053_BARRA_10	CASMA_TP-A053_BARRA_22.9	TP-A001	CHIMBOTE_SUR_TP-A054_BARRA_13.8	NEPEÑA_TP-A055_BARRA_13.8	NEPEÑA_TP-A055_BARRA_22.9	TP-A006-6.6MVA	TPA007	TP-A048
TENSION	10	22.90	13.80	13.80	13.80	22.90	13.80	13.80	13.80
FECHA HORA / SUBESTACIÓN	CASMA	CASMA	CHIMBOTE NORTE	CHIMBOTE SUR	NEPEÑA	NEPEÑA	SAN JACINTO	TRAPECIO	TRAPECIO
01/03/2019 00:30	4.183	3.193	11.292	10.08	1.23	0.062	1.264	11.548	1.15
01/03/2019 01:00	4.183	3.193	10.86	9.32	1.201	0.053	1.237	11.092	1.15
01/03/2019 01:30	4.183	3.193	10.421	8.9	1.158	0.051	1.206	11.004	1.148
01/03/2019 02:00	4.183	3.193	9.982	8.56	1.176	0.05	1.179	10.566	1.169
01/03/2019 02:30	4.183	3.193	9.647	8.19	1.153	0.05	1.163	10.074	0.947
01/03/2019 03:00	4.183	3.193	9.15	8	1.063	0.05	1.154	10.003	0.859
01/03/2019 03:30	2.923	2.289	9.365	7.82	1.153	0.05	1.143	9.926	0.764
01/03/2019 04:00	2.923	2.289	9.197	7.84	1.156	0.05	1.141	9.72	0.737
01/03/2019 04:30	2.923	2.289	9.11	7.7	1.108	0.05	1.161	9.652	0.684
01/03/2019 05:00	2.923	2.289	8.909	7.8	1.156	0.05	1.166	9.613	0.852
01/03/2019 05:30	2.923	2.289	9.597	7.86	1.109	0.05	1.177	9.861	0.81
01/03/2019 06:00	2.923	2.289	9.752	8.02	1.282	0.052	1.208	9.914	0.779
01/03/2019 06:30	2.923	2.289	9.266	7.36	1.517	0.05	1.301	9.399	0.68
01/03/2019 07:00	2.923	2.289	9.754	7.75	1.56	0.05	1.323	9.775	0.725
01/03/2019 07:30	2.923	2.289	10.526	8.28	1.866	0.051	1.283	9.858	0.762
01/03/2019 08:00	2.923	2.289	11.613	8.71	1.945	0.054	1.208	10.632	0.83

01/03/2019 08:30	2.923	2.289	12.624	9.7	1.944	0.054	1.157	11.668	0.947
01/03/2019 09:00	2.923	2.289	13.665	10.12	2.045	0.059	1.714	12.54	1.031
01/03/2019 09:30	3.81	3.161	14.397	10.6	2.108	0.058	3.188	12.598	1.329
01/03/2019 10:00	3.783	3.302	14.659	10.96	2.165	0.055	1.715	13.632	1.386
01/03/2019 10:30	3.783	3.302	15.492	11.18	2.367	0.055	1.361	13.509	1.49
01/03/2019 11:00	3.783	3.302	16.073	11.66	2.48	0.068	1.399	13.671	1.267
01/03/2019 11:30	3.783	3.302	16.371	12.07	2.501	0.061	1.384	13.901	1.237
01/03/2019 12:00	3.783	3.302	16.339	12.17	2.422	0.066	1.424	13.612	1.365
01/03/2019 12:30	3.783	3.302	16.087	12.09	2.291	0.066	1.417	13.232	1.214
01/03/2019 13:00	3.783	3.302	15.668	11.73	2.286	0.059	1.406	12.775	1.287
01/03/2019 13:30	3.783	3.302	15.303	11.4	2.264	0.072	1.382	12.971	1.339
01/03/2019 14:00	3.783	3.302	15.63	11.17	2.225	0.059	1.372	13.313	1.445
01/03/2019 14:30	3.783	3.302	15.189	11.16	2.147	0.064	1.426	13.761	1.48
01/03/2019 15:00	4.093	3.123	15.342	11.17	2.122	0.062	1.402	13.925	1.641
01/03/2019 15:30	4.093	3.123	15.224	11.05	2.108	0.058	1.411	13.502	1.697
01/03/2019 16:00	4.093	3.123	15.254	11.21	1.879	0.059	1.433	13.679	1.619
01/03/2019 16:30	4.093	3.123	15.194	11.04	1.766	0.064	1.462	13.741	1.589
01/03/2019 17:00	4.093	3.123	15.157	11.06	1.757	0.063	1.465	13.38	1.5
01/03/2019 17:30	4.093	3.123	14.579	10.89	1.733	0.062	1.454	12.987	1.325
01/03/2019 18:00	4.093	3.123	14.737	11.16	1.66	0.071	1.454	12.77	1.342
01/03/2019 18:30	4.093	3.123	15.928	11.94	1.71	0.09	1.49	13.347	1.473
01/03/2019 19:00	4.093	3.123	18.163	14.84	1.866	0.094	1.762	14.844	1.452
01/03/2019 19:30	4.093	3.123	18.566	15.47	1.84	0.098	2.084	15.405	1.491
01/03/2019 20:00	4.093	3.123	18.348	15.58	1.676	0.09	2.178	15.532	1.347
01/03/2019 20:30	4.093	3.123	17.967	15.52	1.656	0.095	1.993	15.411	1.352
01/03/2019 21:00	4.093	3.123	17.542	15.29	1.657	0.087	1.967	15.134	1.392
01/03/2019 21:30	4.093	3.123	16.829	14.89	1.567	0.09	1.933	14.754	1.331
01/03/2019 22:00	4.093	3.123	16.064	14.34	1.489	0.09	1.868	13.863	1.27
01/03/2019 22:30	4.093	3.123	14.888	13.62	1.418	0.086	1.733	13.285	1.165

01/03/2019 23:00	4.093	3.123	14.007	12.87	1.412	0.081	1.629	12.971	1.269
01/03/2019 23:30	4.093	3.123	13.155	11.74	1.325	0.07	1.512	12.565	1.343
02/03/2019 00:00	4.093	3.123	12.161	10.93	1.311	0.07	1.404	12.196	1.268
02/03/2019 00:30	4.183	3.193	11.292	10.08	1.23	0.062	1.264	11.548	1.15
02/03/2019 01:00	4.183	3.193	10.86	9.32	1.201	0.053	1.237	11.092	1.15
02/03/2019 01:30	4.183	3.193	10.421	8.9	1.158	0.051	1.206	11.004	1.148
02/03/2019 02:00	4.183	3.193	9.982	8.56	1.176	0.05	1.179	10.566	1.169
02/03/2019 02:30	4.183	3.193	9.647	8.19	1.153	0.05	1.163	10.074	0.947
02/03/2019 03:00	4.183	3.193	9.15	8	1.063	0.05	1.154	10.003	0.859
02/03/2019 03:30	2.923	2.289	9.365	7.82	1.153	0.05	1.143	9.926	0.764
02/03/2019 04:00	2.923	2.289	9.197	7.84	1.156	0.05	1.141	9.72	0.737
02/03/2019 04:30	2.923	2.289	9.11	7.7	1.108	0.05	1.161	9.652	0.684
02/03/2019 05:00	2.923	2.289	8.909	7.8	1.156	0.05	1.166	9.613	0.852
02/03/2019 05:30	2.923	2.289	9.597	7.86	1.109	0.05	1.177	9.861	0.81
02/03/2019 06:00	2.923	2.289	9.752	8.02	1.282	0.052	1.208	9.914	0.779
02/03/2019 06:30	2.923	2.289	9.266	7.36	1.517	0.05	1.301	9.399	0.68
02/03/2019 07:00	2.923	2.289	9.754	7.75	1.56	0.05	1.323	9.775	0.725
02/03/2019 07:30	2.923	2.289	10.526	8.28	1.866	0.051	1.283	9.858	0.762
02/03/2019 08:00	2.923	2.289	11.613	8.71	1.945	0.054	1.208	10.632	0.83
02/03/2019 08:30	2.923	2.289	12.624	9.7	1.944	0.054	1.157	11.668	0.947
02/03/2019 09:00	2.923	2.289	13.665	10.12	2.045	0.059	1.714	12.54	1.031
02/03/2019 09:30	3.81	3.161	14.397	10.6	2.108	0.058	3.188	12.598	1.329
02/03/2019 10:00	3.783	3.302	14.659	10.96	2.165	0.055	1.715	13.632	1.386
02/03/2019 10:30	3.783	3.302	15.492	11.18	2.367	0.055	1.361	13.509	1.49
02/03/2019 11:00	3.783	3.302	16.073	11.66	2.48	0.068	1.399	13.671	1.267
02/03/2019 11:30	3.783	3.302	16.371	12.07	2.501	0.061	1.384	13.901	1.237
02/03/2019 12:00	3.783	3.302	16.339	12.17	2.422	0.066	1.424	13.612	1.365
02/03/2019 12:30	3.783	3.302	16.087	12.09	2.291	0.066	1.417	13.232	1.214
02/03/2019 13:00	3.783	3.302	15.668	11.73	2.286	0.059	1.406	12.775	1.287

02/03/2019 13:30	3.783	3.302	15.303	11.4	2.264	0.072	1.382	12.971	1.339
02/03/2019 14:00	3.783	3.302	15.63	11.17	2.225	0.059	1.372	13.313	1.445
02/03/2019 14:30	3.783	3.302	15.189	11.16	2.147	0.064	1.426	13.761	1.48
02/03/2019 15:00	4.093	3.123	15.342	11.17	2.122	0.062	1.402	13.925	1.641
02/03/2019 15:30	4.093	3.123	15.224	11.05	2.108	0.058	1.411	13.502	1.697
02/03/2019 16:00	4.093	3.123	15.254	11.21	1.879	0.059	1.433	13.679	1.619
02/03/2019 16:30	4.093	3.123	15.194	11.04	1.766	0.064	1.462	13.741	1.589
02/03/2019 17:00	4.093	3.123	15.157	11.06	1.757	0.063	1.465	13.38	1.5
02/03/2019 17:30	4.093	3.123	14.579	10.89	1.733	0.062	1.454	12.987	1.325
02/03/2019 18:00	4.093	3.123	14.737	11.16	1.66	0.071	1.454	12.77	1.342
02/03/2019 18:30	4.093	3.123	15.928	11.94	1.71	0.09	1.49	13.347	1.473
02/03/2019 19:00	4.093	3.123	18.163	14.84	1.866	0.094	1.762	14.844	1.452
02/03/2019 19:30	4.093	3.123	18.566	15.47	1.84	0.098	2.084	15.405	1.491
02/03/2019 20:00	4.093	3.123	18.348	15.58	1.676	0.09	2.178	15.532	1.347
02/03/2019 20:30	4.093	3.123	17.967	15.52	1.656	0.095	1.993	15.411	1.352
02/03/2019 21:00	4.093	3.123	17.542	15.29	1.657	0.087	1.967	15.134	1.392
02/03/2019 21:30	4.093	3.123	16.829	14.89	1.567	0.09	1.933	14.754	1.331
02/03/2019 22:00	4.093	3.123	16.064	14.34	1.489	0.09	1.868	13.863	1.27
02/03/2019 22:30	4.093	3.123	14.888	13.62	1.418	0.086	1.733	13.285	1.165
02/03/2019 23:00	4.093	3.123	14.007	12.87	1.412	0.081	1.629	12.971	1.269
02/03/2019 23:30	4.093	3.123	13.155	11.74	1.325	0.07	1.512	12.565	1.343
03/03/2019 00:00	4.093	3.123	12.161	10.93	1.311	0.07	1.404	12.196	1.268
03/03/2019 00:30	3.735	3.271	12.161	10.29	1.23	0.062	1.264	9.919	0.723
03/03/2019 01:00	3.735	3.271	12.161	9.76	1.201	0.053	1.237	9.258	0.733
03/03/2019 01:30	3.735	3.271	12.161	9.29	1.158	0.051	1.206	8.838	0.686
03/03/2019 02:00	3.735	3.271	12.161	8.89	1.176	0.05	1.179	8.823	0.735
03/03/2019 02:30	3.735	3.271	12.161	8.51	1.153	0.05	1.163	8.448	0.787
03/03/2019 03:00	3.735	3.271	12.161	8.25	1.063	0.05	1.154	8.25	0.73
03/03/2019 03:30	3.735	3.271	12.161	8.23	1.153	0.05	1.143	8.324	0.719

03/03/2019 04:00	3.735	3.271	12.161	8.05	1.156	0.05	1.141	8.355	0.688
03/03/2019 04:30	3.735	3.271	12.161	8.07	1.108	0.05	1.161	8.21	0.707
03/03/2019 05:00	3.735	3.271	12.161	7.7	1.156	0.05	1.166	8.165	0.693
03/03/2019 05:30	3.735	3.271	12.161	7.7	1.109	0.05	1.177	8.098	0.683
03/03/2019 06:00	3.735	3.271	12.161	7.44	1.282	0.052	1.208	8.006	0.677
03/03/2019 06:30	3.735	3.271	12.161	6.28	1.517	0.05	1.301	7.194	0.612
03/03/2019 07:00	3.735	3.271	12.161	6.67	1.56	0.05	1.323	7.376	0.594
03/03/2019 07:30	3.735	3.271	12.161	7.08	1.866	0.051	1.283	7.55	0.639
03/03/2019 08:00	3.735	3.271	12.161	7.45	1.945	0.054	1.208	7.763	0.649
03/03/2019 08:30	3.735	3.271	12.161	8.04	1.944	0.054	1.157	7.874	0.659
03/03/2019 09:00	3.735	3.271	12.161	8.69	2.045	0.059	1.714	8.375	0.628
03/03/2019 09:30	3.735	3.271	12.161	9.09	2.108	0.058	3.188	8.86	0.73
03/03/2019 10:00	3.735	3.271	12.161	9.55	2.165	0.055	1.715	9.286	0.687
03/03/2019 10:30	3.735	3.271	12.161	9.8	2.367	0.055	1.361	9.587	0.822
03/03/2019 11:00	3.735	3.271	12.161	10.13	2.48	0.068	1.399	10.025	0.739
03/03/2019 11:30	3.735	3.271	12.161	10.5	2.501	0.061	1.384	9.943	0.66
03/03/2019 12:00	3.735	3.271	12.161	10.79	2.422	0.066	1.424	10.191	0.697
03/03/2019 12:30	3.735	3.271	12.161	10.69	2.291	0.066	1.417	10.048	0.74
03/03/2019 13:00	3.735	3.271	12.161	10.6	2.286	0.059	1.406	9.927	0.709
03/03/2019 13:30	3.735	3.271	12.161	10.24	2.264	0.072	1.382	9.918	0.731
03/03/2019 14:00	3.735	3.271	12.161	10.15	2.225	0.059	1.372	9.631	0.749
03/03/2019 14:30	3.735	3.271	12.161	9.85	2.147	0.064	1.426	9.715	0.786
03/03/2019 15:00	3.735	3.271	12.161	9.85	2.122	0.062	1.402	9.649	0.72
03/03/2019 15:30	3.735	3.271	12.161	9.81	2.108	0.058	1.411	9.652	0.691
03/03/2019 16:00	3.735	3.271	12.161	9.85	1.879	0.059	1.433	9.571	0.682
03/03/2019 16:30	3.735	3.271	12.161	9.74	1.766	0.064	1.462	9.653	0.672
03/03/2019 17:00	3.735	3.271	12.161	9.88	1.757	0.063	1.465	9.55	0.76
03/03/2019 17:30	3.735	3.271	12.161	10.05	1.733	0.062	1.454	9.669	0.662
03/03/2019 18:00	3.735	3.271	12.161	10.14	1.66	0.071	1.454	9.95	0.7

03/03/2019 18:30	3.735	3.271	12.161	11.47	1.71	0.09	1.49	10.651	0.747
03/03/2019 19:00	3.735	3.271	12.161	14.04	1.866	0.094	1.762	12.406	0.78
03/03/2019 19:30	3.735	3.271	12.161	14.62	1.84	0.098	2.084	12.656	0.797
03/03/2019 20:00	3.735	3.271	12.161	14.73	1.676	0.09	2.178	12.55	0.791
03/03/2019 20:30	3.735	3.271	12.161	14.69	1.656	0.095	1.993	12.806	0.796
03/03/2019 21:00	3.735	3.271	12.161	14.52	1.657	0.087	1.967	12.622	0.723
03/03/2019 21:30	3.735	3.271	12.161	14.25	1.567	0.09	1.933	12.215	0.722
03/03/2019 22:00	3.735	3.271	12.161	13.83	1.489	0.09	1.868	11.605	0.722
03/03/2019 22:30	3.735	3.271	12.161	13.09	1.418	0.086	1.733	10.84	0.698
03/03/2019 23:00	3.735	3.271	12.161	12.45	1.412	0.081	1.629	10.31	0.742
03/03/2019 23:30	3.735	3.271	12.161	11.41	1.325	0.07	1.512	9.753	0.707
04/03/2019 00:00	3.735	3.271	12.161	10.62	1.311	0.07	1.404	9.244	0.691
04/03/2019 00:30	4.183	3.193	11.292	9.59	1.23	0.062	1.264	8.692	0.698
04/03/2019 01:00	4.183	3.193	10.86	9.04	1.201	0.053	1.237	8.334	0.708
04/03/2019 01:30	4.183	3.193	10.421	8.67	1.158	0.051	1.206	8.088	0.689
04/03/2019 02:00	4.183	3.193	9.982	8.29	1.176	0.05	1.179	7.927	0.7
04/03/2019 02:30	4.183	3.193	9.647	8.11	1.153	0.05	1.163	7.717	0.712
04/03/2019 03:00	4.183	3.193	9.15	7.98	1.063	0.05	1.154	7.624	0.69
04/03/2019 03:30	2.923	2.289	9.365	7.84	1.153	0.05	1.143	7.615	0.712
04/03/2019 04:00	2.923	2.289	9.197	7.77	1.156	0.05	1.141	7.521	0.707
04/03/2019 04:30	2.923	2.289	9.11	7.8	1.108	0.05	1.161	7.584	0.72
04/03/2019 05:00	2.923	2.289	8.909	7.99	1.156	0.05	1.166	7.677	0.679
04/03/2019 05:30	2.923	2.289	9.597	8.13	1.109	0.05	1.177	7.89	0.669
04/03/2019 06:00	2.923	2.289	9.752	8.38	1.282	0.052	1.208	8.094	0.662
04/03/2019 06:30	2.923	2.289	9.266	7.64	1.517	0.05	1.301	7.825	0.661
04/03/2019 07:00	2.923	2.289	9.754	8.09	1.56	0.05	1.323	8.299	0.629
04/03/2019 07:30	2.923	2.289	10.526	8.47	1.866	0.051	1.283	8.964	0.702
04/03/2019 08:00	2.923	2.289	11.613	8.82	1.945	0.054	1.208	9.5	0.749
04/03/2019 08:30	2.923	2.289	12.624	9.78	1.944	0.054	1.157	10.386	0.829

04/03/2019 09:00	2.923	2.289	13.665	10.06	2.045	0.059	1.714	10.954	0.893
04/03/2019 09:30	3.81	3.161	14.397	10.46	2.108	0.058	3.188	12.041	0.954
04/03/2019 10:00	3.783	3.302	14.659	10.85	2.165	0.055	1.715	12.281	0.958
04/03/2019 10:30	3.783	3.302	15.492	11.25	2.367	0.055	1.361	12.406	1.176
04/03/2019 11:00	3.783	3.302	16.073	11.56	2.48	0.068	1.399	12.926	1.207
04/03/2019 11:30	3.783	3.302	16.371	11.89	2.501	0.061	1.384	13.297	1.191
04/03/2019 12:00	3.783	3.302	16.339	12.1	2.422	0.066	1.424	13.059	1.227
04/03/2019 12:30	3.783	3.302	16.087	11.88	2.291	0.066	1.417	12.889	1.139
04/03/2019 13:00	3.783	3.302	15.668	11.69	2.286	0.059	1.406	12.521	1.008
04/03/2019 13:30	3.783	3.302	15.303	11.11	2.264	0.072	1.382	12.477	1.033
04/03/2019 14:00	3.783	3.302	15.63	11.04	2.225	0.059	1.372	13.181	0.999
04/03/2019 14:30	3.783	3.302	15.189	10.84	2.147	0.064	1.426	12.831	1.222
04/03/2019 15:00	4.093	3.123	15.342	10.99	2.122	0.062	1.402	12.631	1.288
04/03/2019 15:30	4.093	3.123	15.224	10.95	2.108	0.058	1.411	12.903	1.26
04/03/2019 16:00	4.093	3.123	15.254	10.79	1.879	0.059	1.433	12.858	1.412
04/03/2019 16:30	4.093	3.123	15.194	10.8	1.766	0.064	1.462	12.467	1.375
04/03/2019 17:00	4.093	3.123	15.157	10.73	1.757	0.063	1.465	12.293	1.377
04/03/2019 17:30	4.093	3.123	14.579	10.64	1.733	0.062	1.454	12.253	1.365
04/03/2019 18:00	4.093	3.123	14.737	10.84	1.66	0.071	1.454	12.284	1.277
04/03/2019 18:30	4.093	3.123	15.928	12.53	1.71	0.09	1.49	13.851	1.331
04/03/2019 19:00	4.093	3.123	18.163	14.92	1.866	0.094	1.762	14.805	1.315
04/03/2019 19:30	4.093	3.123	18.566	15.47	1.84	0.098	2.084	14.899	1.352
04/03/2019 20:00	4.093	3.123	18.348	15.46	1.676	0.09	2.178	14.599	1.371
04/03/2019 20:30	4.093	3.123	17.967	15.29	1.656	0.095	1.993	14.587	1.32
04/03/2019 21:00	4.093	3.123	17.542	15.09	1.657	0.087	1.967	14.265	1.337
04/03/2019 21:30	4.093	3.123	16.829	14.83	1.567	0.09	1.933	14.023	1.313
04/03/2019 22:00	4.093	3.123	16.064	14.18	1.489	0.09	1.868	13.161	1.369
04/03/2019 22:30	4.093	3.123	14.888	13.59	1.418	0.086	1.733	12.585	1.271
04/03/2019 23:00	4.093	3.123	14.007	12.47	1.412	0.081	1.629	11.795	1.183

04/03/2019 23:30	4.093	3.123	13.155	11.42	1.325	0.07	1.512	11.24	1.126
05/03/2019 00:00	4.093	3.123	12.161	10.48	1.311	0.07	1.404	10.584	1.135
05/03/2019 00:30	4.183	3.193	9.266	9.56	1.23	0.062	1.264	10.32	1
05/03/2019 01:00	4.183	3.193	8.653	9.07	1.201	0.053	1.237	10.265	0.822
05/03/2019 01:30	4.183	3.193	8.424	8.58	1.158	0.051	1.206	10.073	0.801
05/03/2019 02:00	4.183	3.193	8.149	8.27	1.176	0.05	1.179	9.883	0.714
05/03/2019 02:30	4.183	3.193	7.831	8.09	1.153	0.05	1.163	9.838	0.729
05/03/2019 03:00	4.183	3.193	7.703	7.89	1.063	0.05	1.154	10.009	0.705
05/03/2019 03:30	2.923	2.289	7.659	7.87	1.153	0.05	1.143	10.059	0.694
05/03/2019 04:00	2.923	2.289	7.506	7.84	1.156	0.05	1.141	9.826	0.725
05/03/2019 04:30	2.923	2.289	7.553	7.76	1.108	0.05	1.161	9.894	0.722
05/03/2019 05:00	2.923	2.289	7.451	7.78	1.156	0.05	1.166	9.78	0.747
05/03/2019 05:30	2.923	2.289	7.747	7.92	1.109	0.05	1.177	9.97	0.74
05/03/2019 06:00	2.923	2.289	8.133	8.07	1.282	0.052	1.208	9.89	0.735
05/03/2019 06:30	2.923	2.289	7.941	7.94	1.517	0.05	1.301	9.357	0.731
05/03/2019 07:00	2.923	2.289	8.359	8	1.56	0.05	1.323	9.607	0.738
05/03/2019 07:30	2.923	2.289	8.997	8.41	1.866	0.051	1.283	10.161	0.732
05/03/2019 08:00	2.923	2.289	10.01	8.83	1.945	0.054	1.208	10.337	0.809
05/03/2019 08:30	2.923	2.289	10.868	9.59	1.944	0.054	1.157	11.381	0.871
05/03/2019 09:00	2.923	2.289	11.771	10.03	2.045	0.059	1.714	12.003	0.914
05/03/2019 09:30	3.81	3.161	12.114	10.58	2.108	0.058	3.188	12.13	0.988
05/03/2019 10:00	3.783	3.302	12.617	10.82	2.165	0.055	1.715	12.388	1.089
05/03/2019 10:30	3.783	3.302	12.926	11.31	2.367	0.055	1.361	12.868	1.114
05/03/2019 11:00	3.783	3.302	12.792	11.8	2.48	0.068	1.399	13.442	1.253
05/03/2019 11:30	3.783	3.302	13.319	12.06	2.501	0.061	1.384	13.511	1.202
05/03/2019 12:00	3.783	3.302	13.322	12.23	2.422	0.066	1.424	12.829	1.209
05/03/2019 12:30	3.783	3.302	12.94	12.2	2.291	0.066	1.417	12.375	1.145
05/03/2019 13:00	3.783	3.302	12.969	11.9	2.286	0.059	1.406	12.26	1.172
05/03/2019 13:30	3.783	3.302	12.838	11.62	2.264	0.072	1.382	12.276	1.063

05/03/2019 14:00	3.783	3.302	12.618	11.34	2.225	0.059	1.372	12.7	1.181
05/03/2019 14:30	3.783	3.302	12.838	11.44	2.147	0.064	1.426	13.021	1.186
05/03/2019 15:00	4.093	3.123	13.041	11.43	2.122	0.062	1.402	12.875	1.335
05/03/2019 15:30	4.093	3.123	13.144	11.39	2.108	0.058	1.411	13.145	1.464
05/03/2019 16:00	4.093	3.123	12.728	11.31	1.879	0.059	1.433	13.088	1.476
05/03/2019 16:30	4.093	3.123	13.178	11.36	1.766	0.064	1.462	13.402	1.559
05/03/2019 17:00	4.093	3.123	13.17	11.07	1.757	0.063	1.465	13.194	1.772
05/03/2019 17:30	4.093	3.123	12.785	11.32	1.733	0.062	1.454	13.281	1.754
05/03/2019 18:00	4.093	3.123	12.794	11.81	1.66	0.071	1.454	12.94	1.839
05/03/2019 18:30	4.093	3.123	14.485	13.82	1.71	0.09	1.49	14.305	1.446
05/03/2019 19:00	4.093	3.123	15.434	15.41	1.866	0.094	1.762	14.947	1.519
05/03/2019 19:30	4.093	3.123	15.601	15.66	1.84	0.098	2.084	15.119	1.504
05/03/2019 20:00	4.093	3.123	15.146	15.73	1.676	0.09	2.178	14.907	1.514
05/03/2019 20:30	4.093	3.123	15.059	15.46	1.656	0.095	1.993	14.819	1.43
05/03/2019 21:00	4.093	3.123	14.718	15.37	1.657	0.087	1.967	14.588	1.421
05/03/2019 21:30	4.093	3.123	14.105	14.93	1.567	0.09	1.933	14.468	1.428
05/03/2019 22:00	4.093	3.123	13.199	14.48	1.489	0.09	1.868	13.706	1.37
05/03/2019 22:30	4.093	3.123	12.456	13.76	1.418	0.086	1.733	13.447	1.35
05/03/2019 23:00	4.093	3.123	11.443	12.64	1.412	0.081	1.629	12.911	1.393
05/03/2019 23:30	4.093	3.123	10.764	11.53	1.325	0.07	1.512	12.876	1.324
06/03/2019 00:00	4.093	3.123	10.138	10.53	1.311	0.07	1.404	12.422	1.352
06/03/2019 00:30	3.618	2.693	9.4	9.7	1	0.062	1.15	11.646	1.316
06/03/2019 01:00	3.618	2.693	8.862	9.09	1	0.053	1.15	11.259	1.411
06/03/2019 01:30	3.618	2.693	8.448	8.74	1.12	0.051	1	10.867	1.277
06/03/2019 02:00	3.618	2.693	8.075	8.36	1.176	0.05	1.141	10.517	1.275
06/03/2019 02:30	3.618	2.693	8.031	8.08	1.153	0.05	1.161	10.325	1.105
06/03/2019 03:00	3.618	2.693	7.895	7.92	1.063	0.05	1.166	10.18	1.095
06/03/2019 03:30	3.618	2.693	7.778	7.89	1.153	0.05	1.177	10.259	0.878
06/03/2019 04:00	3.618	2.693	7.527	7.8	1.156	0.05	1.141	10.069	0.837

06/03/2019 04:30	3.618	2.693	7.219	7.8	1.108	0.05	1.161	10.071	0.762
06/03/2019 05:00	3.618	2.693	7.644	7.75	1.156	0.05	1.166	9.894	0.73
06/03/2019 05:30	3.618	2.693	7.825	8.05	1.109	0.05	1.177	10.108	0.743
06/03/2019 06:00	3.618	2.693	8.214	8.28	1.282	0.052	1.208	10.293	0.738
06/03/2019 06:30	3.618	2.693	8.22	8.07	1.517	0.05	1.301	9.606	0.681
06/03/2019 07:00	3.618	2.693	8.645	8.14	1.56	0.05	1.323	9.133	0.761
06/03/2019 07:30	2.633	2.539	9.281	8.51	1.866	0.051	1.283	10.105	0.783
06/03/2019 08:00	2.633	2.539	9.655	8.99	1.945	0.054	1.208	10.866	0.841
06/03/2019 08:30	2.633	2.539	11.051	9.51	1.944	0.054	1.157	11.152	0.877
06/03/2019 09:00	2.633	2.539	11.604	10.06	2.045	0.059	1.714	11.701	0.757
06/03/2019 09:30	2.633	2.539	12.285	10.4	2.108	0.058	3.188	12.035	0.93
06/03/2019 10:00	2.633	2.539	12.842	10.79	2.165	0.055	1.715	12.341	1.035
06/03/2019 10:30	2.633	2.539	13.234	11.12	2.367	0.055	1.361	13.252	1.014
06/03/2019 11:00	2.633	2.539	13.641	11.5	2.48	0.068	1.399	13.497	1.126
06/03/2019 11:30	2.633	2.539	13.801	11.8	2.501	0.061	1.384	13.463	1.136
06/03/2019 12:00	2.633	2.539	13.67	12.03	2.422	0.066	1.424	12.738	1.056
06/03/2019 12:30	2.633	2.539	13.335	11.81	2.291	0.066	1.417	12.547	0.995
06/03/2019 13:00	4.314	3.008	11.649	11.33	2.286	0.059	1.406	12.85	1.228
06/03/2019 13:30	4.191	3.027	11.604	11.13	2.264	0.072	1.382	12.537	1.005
06/03/2019 14:00	4.204	2.99	11.885	10.99	2.225	0.059	1.372	12.962	1.32
06/03/2019 14:30	4.204	2.99	11.86	10.99	2.147	0.064	1.426	13.866	1.51
06/03/2019 15:00	4.204	2.99	12.151	10.97	2.122	0.062	1.402	14.288	1.592
06/03/2019 15:30	4.204	2.99	12.541	10.95	2.108	0.058	1.411	14.298	1.72
06/03/2019 16:00	4.204	2.99	12.427	10.76	1.879	0.059	1.433	14.126	1.358
06/03/2019 16:30	4.204	2.99	12.38	10.66	1.766	0.064	1.462	13.425	1.464
06/03/2019 17:00	4.204	2.99	12.426	10.49	1.757	0.063	1.465	13.185	1.59
06/03/2019 17:30	4.204	2.99	12.653	10.63	1.733	0.062	1.454	12.718	1.572
06/03/2019 18:00	4.204	2.99	12.808	11.07	1.66	0.071	1.454	13.054	1.567
06/03/2019 18:30	4.204	2.99	14.542	13.72	1.71	0.09	1.49	14.394	1.518

06/03/2019 19:00	4.204	2.99	15.403	15.06	1.866	0.094	1.762	15.038	1.364
06/03/2019 19:30	4.204	2.99	15.51	15.42	1.84	0.098	2.084	15.218	1.32
06/03/2019 20:00	4.204	2.99	15.441	15.36	1.676	0.09	2.178	15.088	1.325
06/03/2019 20:30	4.204	2.99	14.925	15.26	1.656	0.095	1.993	14.808	1.325
06/03/2019 21:00	4.204	2.99	14.507	15.05	1.657	0.087	1.967	15.111	1.271
06/03/2019 21:30	4.204	2.99	13.869	14.98	1.567	0.09	1.933	14.542	1.327
06/03/2019 22:00	4.204	2.99	13.051	14.19	1.489	0.09	1.868	13.864	1.283
06/03/2019 22:30	4.204	2.99	12.216	13.68	1.418	0.086	1.733	13.38	1.136
06/03/2019 23:00	4.204	2.99	11.539	12.43	1.412	0.081	1.629	12.299	1.01
06/03/2019 23:30	4.204	2.99	10.634	11.4	1.325	0.07	1.512	11.562	0.996
07/03/2019 00:00	4.204	2.99	9.9	10.37	1.311	0.07	1.404	10.924	0.894
07/03/2019 00:30	4.204	2.99	9.227	9.51	1	0.062	1.15	10.467	0.853
07/03/2019 01:00	4.204	2.99	8.644	9.05	1	0.053	1.15	10.102	0.747
07/03/2019 01:30	4.204	2.99	8.322	8.47	1.12	0.051	1	9.508	0.724
07/03/2019 02:00	4.204	2.99	8.094	8.18	1.176	0.05	1.141	9.399	0.742
07/03/2019 02:30	4.204	2.99	8.203	8.01	1.153	0.05	1.161	9.614	0.706
07/03/2019 03:00	2.675	2.002	7.633	7.76	1.063	0.05	1.166	9.391	0.705
07/03/2019 03:30	2.662	1.919	7.426	7.63	1.153	0.05	1.177	9.171	0.699
07/03/2019 04:00	2.645	1.983	7.371	7.57	1.156	0.05	1.141	9.023	0.683
07/03/2019 04:30	2.665	2.021	7.441	7.6	1.108	0.05	1.161	8.955	0.736
07/03/2019 05:00	2.521	1.96	7.844	7.6	1.156	0.05	1.166	9.035	0.712
07/03/2019 05:30	2.562	2.009	7.63	7.72	1.109	0.05	1.177	9.15	0.735
07/03/2019 06:00	2.521	2.005	7.975	8.18	1.282	0.052	1.208	9.222	0.849
07/03/2019 06:30	2.31	1.944	8.146	7.71	1.517	0.05	1.301	8.309	0.708
07/03/2019 07:00	2.572	2.786	8.784	7.98	1.56	0.05	1.323	8.692	0.793
07/03/2019 07:30	2.801	2.768	9.636	8.32	1.866	0.051	1.283	9.292	0.829
07/03/2019 08:00	2.885	2.614	9.551	8.91	1.945	0.054	1.208	10.191	1.153
07/03/2019 08:30	3.029	3.123	10.448	9.54	1.944	0.054	1.157	10.797	1.229
07/03/2019 09:00	3.172	3.201	11.351	10.02	2.045	0.059	1.714	11.37	1.29

07/03/2019 09:30	3.635	3.355	11.971	10.36	2.108	0.058	3.188	12.402	1.082
07/03/2019 10:00	3.635	3.355	12.194	10.76	2.165	0.055	1.715	12.295	1.028
07/03/2019 10:30	3.635	3.355	12.744	11.02	2.367	0.055	1.361	13.058	0.992
07/03/2019 11:00	3.635	3.355	13.437	11.37	2.48	0.068	1.399	13.161	0.921
07/03/2019 11:30	3.635	3.355	13.685	11.81	2.501	0.061	1.384	12.925	1.093
07/03/2019 12:00	3.635	3.355	13.415	12.09	2.422	0.066	1.424	12.918	1.106
07/03/2019 12:30	3.635	3.355	13.492	12.25	2.291	0.066	1.417	12.474	1.029
07/03/2019 13:00	3.635	3.355	12.764	11.66	2.286	0.059	1.406	12.611	1.347
07/03/2019 13:30	3.635	3.355	12.911	11.26	2.264	0.072	1.382	12.899	1.385
07/03/2019 14:00	3.77	3.398	12.813	11.1	2.225	0.059	1.372	13.088	1.447
07/03/2019 14:30	3.869	3.433	12.979	11.05	2.147	0.064	1.426	13.646	1.413
07/03/2019 15:00	3.696	3.298	12.714	11.17	2.122	0.062	1.402	14.029	1.202
07/03/2019 15:30	3.798	3.241	13.007	11.08	2.108	0.058	1.411	13.89	1.215
07/03/2019 16:00	4.021	3.209	13.091	11.04	1.879	0.059	1.433	13.479	1.269
07/03/2019 16:30	3.932	3.312	13.152	10.83	1.766	0.064	1.462	13.654	1.257
07/03/2019 17:00	3.932	3.312	12.881	10.73	1.757	0.063	1.465	13.967	1.299
07/03/2019 17:30	3.932	3.312	12.878	10.98	1.733	0.062	1.454	13.879	1.292
07/03/2019 18:00	3.932	3.312	12.709	11.23	1.66	0.071	1.454	14.087	1.233
07/03/2019 18:30	3.932	3.312	14.1	12.46	1.71	0.09	1.49	14.898	1.153
07/03/2019 19:00	3.932	3.312	15.469	15.02	1.866	0.094	1.762	16.056	1.217
07/03/2019 19:30	3.932	3.312	15.388	15.4	1.84	0.098	2.084	16.233	1.133
07/03/2019 20:00	3.932	3.312	15.406	15.4	1.676	0.09	2.178	16.072	1.157
07/03/2019 20:30	3.932	3.312	15.164	15.44	1.656	0.095	1.993	15.968	1.069
07/03/2019 21:00	3.932	3.312	14.533	15.15	1.657	0.087	1.967	15.767	1.063
07/03/2019 21:30	3.932	3.312	13.972	14.71	1.567	0.09	1.933	15.221	0.989
07/03/2019 22:00	3.932	3.312	13.117	14.4	1.489	0.09	1.868	14.166	0.943
07/03/2019 22:30	3.932	3.312	12.42	13.52	1.418	0.086	1.733	13.575	0.889
07/03/2019 23:00	3.932	3.312	11.532	12.61	1.412	0.081	1.629	13.099	0.91
07/03/2019 23:30	3.932	3.312	10.779	11.56	1.325	0.07	1.512	12.126	0.825

08/03/2019 00:00	3.932	3.312	10.108	10.65	1.311	0.07	1.404	11.459	0.833
08/03/2019 00:30	4.204	2.99	9.486	9.62	1	0.062	1.15	10.951	0.835
08/03/2019 01:00	4.204	2.99	8.862	9.08	1	0.053	1.15	10.587	0.801
08/03/2019 01:30	4.204	2.99	8.153	8.61	1.12	0.051	1	10.296	0.8
08/03/2019 02:00	4.204	2.99	7.809	8.37	1.176	0.05	1.141	10.036	0.85
08/03/2019 02:30	4.204	2.99	7.981	8.04	1.153	0.05	1.161	9.847	0.845
08/03/2019 03:00	2.675	2.002	7.661	7.86	1.063	0.05	1.166	9.734	0.838
08/03/2019 03:30	2.662	1.919	7.674	7.81	1.153	0.05	1.177	9.715	0.899
08/03/2019 04:00	2.645	1.983	7.42	7.75	1.156	0.05	1.141	9.58	0.831
08/03/2019 04:30	2.665	2.021	7.586	7.81	1.108	0.05	1.161	9.612	0.85
08/03/2019 05:00	2.521	1.96	7.691	7.87	1.156	0.05	1.166	9.437	0.902
08/03/2019 05:30	2.562	2.009	7.907	8.01	1.109	0.05	1.177	9.377	0.781
08/03/2019 06:00	2.521	2.005	8.015	8.17	1.282	0.052	1.208	9.469	0.729
08/03/2019 06:30	2.31	1.944	7.928	7.83	1.517	0.05	1.301	8.728	0.674
08/03/2019 07:00	2.572	2.786	8.333	7.72	1.56	0.05	1.323	8.944	0.718
08/03/2019 07:30	2.801	2.768	9.126	7.97	1.866	0.051	1.283	9.32	0.735
08/03/2019 08:00	2.885	2.614	9.674	8.49	1.945	0.054	1.208	9.967	0.882
08/03/2019 08:30	3.029	3.123	10.424	8.92	1.944	0.054	1.157	10.537	0.96
08/03/2019 09:00	3.172	3.201	11.361	9.27	2.045	0.059	1.714	11.392	0.989
08/03/2019 09:30	3.635	3.355	11.905	9.57	2.108	0.058	3.188	11.962	1.157
08/03/2019 10:00	3.635	3.355	12.598	9.98	2.165	0.055	1.715	12.148	1.106
08/03/2019 10:30	3.635	3.355	13	10.16	2.367	0.055	1.361	12.323	1.488
08/03/2019 11:00	3.635	3.355	13.581	10.51	2.48	0.068	1.399	13.023	1.591
08/03/2019 11:30	3.635	3.355	13.785	10.69	2.501	0.061	1.384	13.045	1.578
08/03/2019 12:00	3.635	3.355	13.637	11.01	2.422	0.066	1.424	13.086	1.271
08/03/2019 12:30	3.635	3.355	13.19	10.93	2.291	0.066	1.417	12.473	1.259
08/03/2019 13:00	3.635	3.355	12.621	10.42	2.286	0.059	1.406	12.699	1.147
08/03/2019 13:30	3.635	3.355	12.739	10.17	2.264	0.072	1.382	10.882	1.249
08/03/2019 14:00	3.77	3.398	12.933	10.15	2.225	0.059	1.372	11.002	1.221

08/03/2019 14:30	3.869	3.433	13.057	10.24	2.147	0.064	1.426	11.324	1.301
08/03/2019 15:00	3.696	3.298	13.37	10.24	2.122	0.062	1.402	11.324	1.301
08/03/2019 15:30	0	0	13.469	10.24	2.108	0.058	1.411	11.324	1.301
08/03/2019 16:00	0	0	13.459	10.24	1.879	0.059	1.433	11.324	1.301
08/03/2019 16:30	3.932	3.312	13.494	10.24	1.766	0.064	1.462	11.324	1.301
08/03/2019 17:00	3.932	3.312	13.336	10.24	1.757	0.063	1.465	11.324	1.301
08/03/2019 17:30	3.932	3.312	13.17	10.24	1.733	0.062	1.454	10.632	1.445
08/03/2019 18:00	3.932	3.312	12.708	11.23	1.66	0.071	1.454	10.869	1.152
08/03/2019 18:30	3.932	3.312	14.011	12.97	1.71	0.09	1.49	11.389	1.167
08/03/2019 19:00	3.932	3.312	16.068	13.36	1.866	0.094	1.762	12.174	1.177
08/03/2019 19:30	3.932	3.312	16.253	13.52	1.84	0.098	2.084	14.085	1.09
08/03/2019 20:00	3.932	3.312	16.14	13.43	1.676	0.09	2.178	14.173	1.095
08/03/2019 20:30	3.932	3.312	15.788	15.15	1.656	0.095	1.993	14.537	1.094
08/03/2019 21:00	3.932	3.312	15.239	14.86	1.657	0.087	1.967	14.166	1.085
08/03/2019 21:30	3.932	3.312	14.803	14.79	1.567	0.09	1.933	13.94	1.046
08/03/2019 22:00	3.932	3.312	14.011	13.21	1.489	0.09	1.868	13.065	1.039
08/03/2019 22:30	3.932	3.312	13.444	13.05	1.418	0.086	1.733	11.922	1.034
08/03/2019 23:00	3.932	3.312	12.706	12.37	1.412	0.081	1.629	11.787	1.017
08/03/2019 23:30	3.932	3.312	11.656	11.44	1.325	0.07	1.512	10.922	1.001
09/03/2019 00:00	3.932	3.312	11.071	10.6	1.311	0.07	1.404	10.317	0.804
09/03/2019 00:30	4.204	2.99	10.378	9.75	1	0.062	1.15	9.766	0.777
09/03/2019 01:00	4.204	2.99	9.545	9.33	1	0.053	1.15	9.404	0.741
09/03/2019 01:30	4.204	2.99	9.068	8.79	1.12	0.051	1	9.074	0.729
09/03/2019 02:00	4.204	2.99	8.941	8.47	1.176	0.05	1.141	8.714	0.888
09/03/2019 02:30	4.204	2.99	8.663	8.1	1.153	0.05	1.161	8.624	0.804
09/03/2019 03:00	2.675	2.002	8.366	8	1.063	0.05	1.166	8.498	0.768
09/03/2019 03:30	2.662	1.919	8.22	7.92	1.153	0.05	1.177	8.358	0.726
09/03/2019 04:00	2.645	1.983	8.152	7.85	1.156	0.05	1.141	8.43	0.696
09/03/2019 04:30	2.665	2.021	8.011	7.76	1.108	0.05	1.161	7.311	0.683

09/03/2019 05:00	2.521	1.96	8.102	7.83	1.156	0.05	1.166	7.265	0.685
09/03/2019 05:30	2.562	2.009	8.151	7.9	1.109	0.05	1.177	7.403	0.712
09/03/2019 06:00	2.521	2.005	8.311	7.88	1.282	0.052	1.208	9.06	0.676
09/03/2019 06:30	2.31	1.944	7.987	7.2	1.517	0.05	1.301	8.203	0.643
09/03/2019 07:00	2.572	2.786	8.15	7.61	1.56	0.05	1.323	8.249	0.662
09/03/2019 07:30	2.801	2.768	9.17	7.86	1.866	0.051	1.283	8.906	0.696
09/03/2019 08:00	2.885	2.614	9.255	8.68	1.945	0.054	1.208	9.425	0.744
09/03/2019 08:30	3.029	3.123	10.256	9.37	1.944	0.054	1.157	10.326	0.859
09/03/2019 09:00	3.172	3.201	10.016	9.53	2.045	0.059	1.714	11.066	0.945
09/03/2019 09:30	3.635	3.355	10.791	9.96	2.108	0.058	3.188	11.596	1.048
09/03/2019 10:00	3.635	3.355	11.143	10.26	2.165	0.055	1.715	12.194	0.99
09/03/2019 10:30	3.635	3.355	11.668	10.51	2.367	0.055	1.361	12.542	0.994
09/03/2019 11:00	3.635	3.355	12.958	10.94	2.48	0.068	1.399	12.738	1.079
09/03/2019 11:30	3.635	3.355	13.307	11.14	2.501	0.061	1.384	12.933	1.062
09/03/2019 12:00	3.635	3.355	12.999	11.41	2.422	0.066	1.424	12.977	1.049
09/03/2019 12:30	3.635	3.355	12.682	11.43	2.291	0.066	1.417	12.618	1.187
09/03/2019 13:00	3.635	3.355	12.521	10.96	2.286	0.059	1.406	12.402	1.17
09/03/2019 13:30	3.635	3.355	12.604	10.56	2.264	0.072	1.382	12.652	1.39
09/03/2019 14:00	3.77	3.398	12.487	10.3	2.225	0.059	1.372	12.553	1.418
09/03/2019 14:30	3.869	3.433	12.091	10.29	2.147	0.064	1.426	12.194	1.193
09/03/2019 15:00	3.696	3.298	11.967	10.14	2.122	0.062	1.402	12.203	1.266
09/03/2019 15:30	0	0	12.088	10.14	2.108	0.058	1.411	12.078	1.215
09/03/2019 16:00	0	0	11.838	10.2	1.879	0.059	1.433	11.892	1.192
09/03/2019 16:30	3.932	3.312	11.859	10.14	1.766	0.064	1.462	11.585	1.189
09/03/2019 17:00	3.932	3.312	11.686	10.2	1.757	0.063	1.465	11.534	1.161
09/03/2019 17:30	3.932	3.312	11.883	10.38	1.733	0.062	1.454	11.285	1.118
09/03/2019 18:00	3.932	3.312	11.443	10.83	1.66	0.071	1.454	11.02	1.091
09/03/2019 18:30	3.932	3.312	13.472	13.04	1.71	0.09	1.49	12.497	1.269
09/03/2019 19:00	3.932	3.312	15.013	14.57	1.866	0.094	1.762	13.574	1.241

09/03/2019 19:30	3.932	3.312	15.114	14.76	1.84	0.098	2.084	13.806	1.195
09/03/2019 20:00	3.932	3.312	15.333	14.99	1.676	0.09	2.178	14.02	1.189
09/03/2019 20:30	3.932	3.312	15.215	14.8	1.656	0.095	1.993	13.433	1.199
09/03/2019 21:00	3.932	3.312	14.688	14.71	1.657	0.087	1.967	13.377	1.162
09/03/2019 21:30	3.932	3.312	14.229	14.39	1.567	0.09	1.933	13.138	1.173
09/03/2019 22:00	3.932	3.312	13.505	13.63	1.489	0.09	1.868	12.499	1.09
09/03/2019 22:30	3.932	3.312	12.94	13.13	1.418	0.086	1.733	11.867	1.049
09/03/2019 23:00	3.932	3.312	12.22	12.43	1.412	0.081	1.629	11.649	1.002
09/03/2019 23:30	3.932	3.312	11.828	11.85	1.325	0.07	1.512	11.094	0.92
10/03/2019 00:00	3.932	3.312	10.82	10.72	1.311	0.07	1.404	9.814	0.9
10/03/2019 00:30	3.821	2.881	10.266	10.08	1	0.062	1.15	9.457	0.838
10/03/2019 01:00	3.821	2.881	9.712	9.36	1	0.053	1.15	9.059	0.816
10/03/2019 01:30	3.821	2.881	9.137	8.95	1.12	0.051	1	8.616	0.804
10/03/2019 02:00	3.821	2.881	9.042	8.59	1.176	0.05	1.141	8.347	0.744
10/03/2019 02:30	3.821	2.881	8.856	8.33	1.153	0.05	1.161	8.24	0.746
10/03/2019 03:00	3.821	2.881	8.489	8.11	1.063	0.05	1.166	8.168	0.736
10/03/2019 03:30	3.821	2.881	8.187	7.93	1.153	0.05	1.177	7.957	0.726
10/03/2019 04:00	3.821	2.881	8.011	7.82	1.156	0.05	1.141	7.934	0.704
10/03/2019 04:30	3.821	2.881	7.999	7.82	1.108	0.05	1.161	8.04	0.707
10/03/2019 05:00	3.821	2.881	8.003	7.74	1.156	0.05	1.166	7.824	0.718
10/03/2019 05:30	3.821	2.881	8.105	7.82	1.109	0.05	1.177	7.937	0.746
10/03/2019 06:00	3.821	2.881	7.934	7.69	1.282	0.052	1.208	8.058	0.754
10/03/2019 06:30	3.821	2.881	7.384	6.52	1.517	0.05	1.301	7.155	0.67
10/03/2019 07:00	3.821	2.881	7.535	6.75	1.56	0.05	1.323	7.077	0.667
10/03/2019 07:30	3.821	2.881	7.877	7.24	1.866	0.051	1.283	7.056	0.765
10/03/2019 08:00	3.821	2.881	8.428	7.93	1.945	0.054	1.208	7.487	0.665
10/03/2019 08:30	3.821	2.881	9.021	8.4	1.944	0.054	1.157	7.861	0.702
10/03/2019 09:00	3.821	2.881	9.263	9.08	2.045	0.059	1.714	8.049	0.778
10/03/2019 09:30	2.871	1.993	9.622	9.45	2.108	0.058	3.188	8.166	0.882

10/03/2019 10:00	2.871	1.993	9.874	9.74	2.165	0.055	1.715	8.58	0.99
10/03/2019 10:30	2.871	1.993	10.47	10.08	2.367	0.055	1.361	8.652	0.988
10/03/2019 11:00	2.871	1.993	10.87	10.28	2.48	0.068	1.399	9.219	0.706
10/03/2019 11:30	2.871	1.993	11.056	10.54	2.501	0.061	1.384	9.359	0.712
10/03/2019 12:00	2.871	1.993	11.555	10.82	2.422	0.066	1.424	9.267	0.712
10/03/2019 12:30	2.871	1.993	11.483	10.88	2.291	0.066	1.417	9.686	0.714
10/03/2019 13:00	2.871	1.993	11.241	10.69	2.286	0.059	1.406	9.537	0.688
10/03/2019 13:30	2.871	1.993	10.876	10.57	2.264	0.072	1.382	9.41	0.708
10/03/2019 14:00	2.871	1.993	10.754	10.04	2.225	0.059	1.372	9.32	0.662
10/03/2019 14:30	2.871	1.993	10.617	9.98	2.147	0.064	1.426	9.388	0.687
10/03/2019 15:00	2.871	1.993	10.4	9.82	2.122	0.062	1.402	9.14	0.692
10/03/2019 15:30	2.871	1.993	10.433	9.91	2.108	0.058	1.411	9.266	0.719
10/03/2019 16:00	2.871	1.993	10.596	9.72	1.879	0.059	1.433	9.174	0.665
10/03/2019 16:30	2.871	1.993	10.474	9.69	1.766	0.064	1.462	9.25	0.715
10/03/2019 17:00	2.871	1.993	10.371	9.76	1.757	0.063	1.465	9.23	0.664
10/03/2019 17:30	2.871	1.993	10.451	10.13	1.733	0.062	1.454	8.959	0.684
10/03/2019 18:00	2.871	1.993	10.623	10.26	1.66	0.071	1.454	9.295	0.692
10/03/2019 18:30	2.871	1.993	12.424	12.2	1.71	0.09	1.49	9.295	0.692
10/03/2019 19:00	2.871	1.993	13.741	14.33	1.866	0.094	1.762	11.762	0.763
10/03/2019 19:30	2.871	1.993	14.361	14.77	1.84	0.098	2.084	12.186	0.763
10/03/2019 20:00	2.871	1.993	14.339	14.81	1.676	0.09	2.178	12.422	0.74
10/03/2019 20:30	3.663	2.496	14.235	14.61	1.656	0.095	1.993	12.507	0.73
10/03/2019 21:00	3.645	2.48	13.904	14.58	1.657	0.087	1.967	12.392	0.746
10/03/2019 21:30	3.645	2.48	13.714	14.44	1.567	0.09	1.933	12.393	0.734
10/03/2019 22:00	3.645	2.48	12.913	13.64	1.489	0.09	1.868	11.64	0.748
10/03/2019 22:30	3.645	2.48	12.6	12.95	1.418	0.086	1.733	11.12	0.718
10/03/2019 23:00	3.645	2.48	11.73	12.06	1.412	0.081	1.629	10.46	0.796
10/03/2019 23:30	3.645	2.48	10.906	11.12	1.325	0.07	1.512	10.122	0.725
11/03/2019 00:00	3.645	2.48	9.806	10.13	1.311	0.07	1.404	9.435	0.713

11/03/2019 00:30	3.645	2.48	9.297	9.55	1	0.062	1.15	10.095	0.699
11/03/2019 01:00	3.645	2.48	8.752	9.03	1	0.053	1.15	9.213	0.702
11/03/2019 01:30	3.645	2.48	8.428	8.52	1.12	0.051	1	8.641	0.703
11/03/2019 02:00	3.645	2.48	8.031	8.26	1.176	0.05	1.141	8.248	0.74
11/03/2019 02:30	3.645	2.48	7.864	8.02	1.153	0.05	1.161	8.428	0.711
11/03/2019 03:00	3.645	2.48	7.635	7.87	1.063	0.05	1.166	8.176	0.713
11/03/2019 03:30	3.645	2.48	7.338	7.7	1.153	0.05	1.177	7.95	0.713
11/03/2019 04:00	3.645	2.48	7.487	7.63	1.156	0.05	1.141	7.873	0.685
11/03/2019 04:30	3.645	2.48	7.398	7.76	1.108	0.05	1.161	8.243	0.691
11/03/2019 05:00	3.645	2.48	7.823	7.74	1.156	0.05	1.166	7.999	0.702
11/03/2019 05:30	3.645	2.48	8.215	8.16	1.109	0.05	1.177	8.172	0.7
11/03/2019 06:00	3.645	2.48	8.935	9.08	1.282	0.052	1.208	8.259	0.688
11/03/2019 06:30	3.645	2.48	9.187	9.41	1.517	0.05	1.301	7.933	0.667
11/03/2019 07:00	3.645	2.48	9.348	8.9	1.56	0.05	1.323	8.138	0.729
11/03/2019 07:30	3.645	2.48	9.35	8.53	1.866	0.051	1.283	8.34	0.744
11/03/2019 08:00	3.645	2.48	9.882	8.75	1.945	0.054	1.208	8.915	0.76
11/03/2019 08:30	3.645	2.48	10.679	8.77	1.944	0.054	1.157	9.444	0.845
11/03/2019 09:00	3.645	2.48	11.683	9.34	2.045	0.059	1.714	10.097	1.086
11/03/2019 09:30	3.645	2.48	12.217	9.78	2.108	0.058	3.188	10.845	1.104
11/03/2019 10:00	3.645	2.48	12.744	10.44	2.165	0.055	1.715	10.909	1.031
11/03/2019 10:30	3.645	2.48	13.403	10.93	2.367	0.055	1.361	11.767	1.125
11/03/2019 11:00	3.612	2.652	13.384	11.29	2.48	0.068	1.399	12.128	1.105
11/03/2019 11:30	3.612	2.652	14.076	11.66	2.501	0.061	1.384	11.93	1.117
11/03/2019 12:00	3.612	2.652	14.049	11.95	2.422	0.066	1.424	11.575	1.069
11/03/2019 12:30	3.612	2.652	14.049	11.54	2.291	0.066	1.417	11.413	1.117
11/03/2019 13:00	3.612	2.652	14.049	11.42	2.286	0.059	1.406	11.278	1.054
11/03/2019 13:30	3.612	2.652	14.049	10.9	2.264	0.072	1.382	11.379	1.13
11/03/2019 14:00	3.612	2.652	14.049	10.93	2.225	0.059	1.372	11.826	1.274
11/03/2019 14:30	3.612	2.652	14.049	10.85	2.147	0.064	1.426	12.118	1.355

11/03/2019 15:00	3.612	2.652	14.049	11.03	2.122	0.062	1.402	12.206	1.065
11/03/2019 15:30	3.612	2.652	14.049	11.04	2.108	0.058	1.411	12.701	1.072
11/03/2019 16:00	3.612	2.652	14.049	10.87	1.879	0.059	1.433	12.534	1.082
11/03/2019 16:30	3.612	2.652	14.049	10.88	1.766	0.064	1.462	12.584	0.98
11/03/2019 17:00	3.612	2.652	14.049	10.62	1.757	0.063	1.465	12.431	0.953
11/03/2019 17:30	3.612	2.652	14.049	10.72	1.733	0.062	1.454	12.344	0.958
11/03/2019 18:00	3.612	2.652	14.049	10.93	1.66	0.071	1.454	12.758	0.943
11/03/2019 18:30	3.612	2.652	14.049	12.54	1.71	0.09	1.49	13.859	0.993
11/03/2019 19:00	3.612	2.652	14.049	15.2	1.866	0.094	1.762	14.739	0.988
11/03/2019 19:30	3.612	2.652	14.049	15.73	1.84	0.098	2.084	14.931	0.992
11/03/2019 20:00	3.612	2.652	14.049	15.8	1.676	0.09	2.178	14.727	0.996
11/03/2019 20:30	3.612	2.652	14.049	15.77	1.656	0.095	1.993	14.636	1.077
11/03/2019 21:00	4.09	2.746	14.049	15.38	1.657	0.087	1.967	14.511	1.195
11/03/2019 21:30	4.09	2.746	14.049	15.04	1.567	0.09	1.933	14.349	1.075
11/03/2019 22:00	4.09	2.746	14.049	14.3	1.489	0.09	1.868	13.63	1.116
11/03/2019 22:30	4.09	2.746	14.049	13.29	1.418	0.086	1.733	12.925	1.102
11/03/2019 23:00	4.09	2.746	14.049	12.4	1.412	0.081	1.629	12.571	1.101
11/03/2019 23:30	4.09	2.746	14.049	11.36	1.325	0.07	1.512	11.848	1.137
12/03/2019 00:00	4.09	2.746	14.049	10.42	1.311	0.07	1.404	11.298	1.111
12/03/2019 00:30	4.09	2.746	9.4	9.46	1	0.062	1.15	10.539	1.107
12/03/2019 01:00	4.09	2.746	8.862	8.84	1	0.053	1.15	10.18	1.056
12/03/2019 01:30	4.09	2.746	8.448	8.55	1.12	0.051	1	9.757	1.052
12/03/2019 02:00	4.09	2.746	8.075	8.16	1.176	0.05	1.141	9.465	1
12/03/2019 02:30	4.09	2.746	8.031	7.92	1.153	0.05	1.161	9.401	0.962
12/03/2019 03:00	4.09	2.746	7.895	7.77	1.063	0.05	1.166	9.252	0.879
12/03/2019 03:30	4.09	2.746	7.778	7.75	1.153	0.05	1.177	9.2	0.855
12/03/2019 04:00	4.09	2.746	7.527	7.65	1.156	0.05	1.141	8.684	0.836
12/03/2019 04:30	4.09	2.746	7.219	7.79	1.108	0.05	1.161	8.725	0.857
12/03/2019 05:00	4.09	2.746	7.644	7.85	1.156	0.05	1.166	8.746	0.795

12/03/2019 05:30	4.09	2.746	7.825	8.15	1.109	0.05	1.177	8.998	0.778
12/03/2019 06:00	4.09	2.746	8.214	8.92	1.282	0.052	1.208	9.035	0.769
12/03/2019 06:30	4.09	2.746	8.22	9.24	1.517	0.05	1.301	8.733	0.712
12/03/2019 07:00	4.09	2.746	8.645	8.83	1.56	0.05	1.323	8.562	0.758
12/03/2019 07:30	4.09	2.746	9.281	8.53	1.866	0.051	1.283	8.83	0.792
12/03/2019 08:00	4.09	2.746	9.655	9.03	1.945	0.054	1.208	9.505	0.796
12/03/2019 08:30	2.984	2.833	11.051	9.52	1.944	0.054	1.157	9.89	0.692
12/03/2019 09:00	2.984	2.833	11.604	10.06	2.045	0.059	1.714	10.58	0.936
12/03/2019 09:30	2.984	2.833	12.285	10.08	2.108	0.058	3.188	10.757	1.065
12/03/2019 10:00	2.984	2.833	12.842	10.31	2.165	0.055	1.715	11.316	1.054
12/03/2019 10:30	2.984	2.833	13.234	10.41	2.367	0.055	1.361	11.915	1.033
12/03/2019 11:00	2.984	2.833	13.641	10.74	2.48	0.068	1.399	12.696	1.489
12/03/2019 11:30	2.984	2.833	13.801	11.23	2.501	0.061	1.384	12.619	1.605
12/03/2019 12:00	2.984	2.833	13.67	11.35	2.422	0.066	1.424	12.449	1.474
12/03/2019 12:30	2.984	2.833	13.335	11.31	2.291	0.066	1.417	12.387	1.528
12/03/2019 13:00	2.984	2.833	11.649	10.86	2.286	0.059	1.406	12.221	1.085
12/03/2019 13:30	2.984	2.833	11.604	10.72	2.264	0.072	1.382	12.601	1.18
12/03/2019 14:00	3.66	3.131	11.885	10.84	2.225	0.059	1.372	12.825	1.296
12/03/2019 14:30	3.66	3.131	11.86	10.87	2.147	0.064	1.426	13.487	1.356
12/03/2019 15:00	3.66	3.131	12.151	11.07	2.122	0.062	1.402	13.815	1.329
12/03/2019 15:30	3.66	3.131	12.541	11.14	2.108	0.058	1.411	13.769	1.335
12/03/2019 16:00	3.66	3.131	12.427	11.11	1.879	0.059	1.433	13.803	1.391
12/03/2019 16:30	3.66	3.131	12.38	10.96	1.766	0.064	1.462	13.701	1.458
12/03/2019 17:00	3.66	3.131	12.426	10.73	1.757	0.063	1.465	13.316	1.519
12/03/2019 17:30	3.66	3.131	12.653	10.25	1.733	0.062	1.454	12.913	1.537
12/03/2019 18:00	3.66	3.131	12.808	10.22	1.66	0.071	1.454	12.672	1.123
12/03/2019 18:30	3.66	3.131	14.542	11.46	1.71	0.09	1.49	13.402	1.179
12/03/2019 19:00	3.66	3.131	15.403	15.44	1.866	0.094	1.762	15.02	1.23
12/03/2019 19:30	3.66	3.131	15.51	15.9	1.84	0.098	2.084	15.267	1.385

12/03/2019 20:00	3.66	3.131	15.441	16.09	1.676	0.09	2.178	14.961	1.344
12/03/2019 20:30	3.66	3.131	14.925	15.89	1.656	0.095	1.993	14.651	1.375
12/03/2019 21:00	3.66	3.131	14.507	15.67	1.657	0.087	1.967	14.53	1.273
12/03/2019 21:30	3.66	3.131	13.869	15.23	1.567	0.09	1.933	13.706	1.263
12/03/2019 22:00	3.66	3.131	13.051	14.49	1.489	0.09	1.868	12.933	1.288
12/03/2019 22:30	3.66	3.131	12.216	13.52	1.418	0.086	1.733	12.471	1.233
12/03/2019 23:00	3.66	3.131	11.539	12.41	1.412	0.081	1.629	11.391	1.212
12/03/2019 23:30	3.66	3.131	10.634	11.41	1.325	0.07	1.512	10.909	1.216
13/03/2019 00:00	3.66	3.131	9.9	10.42	1.311	0.07	1.404	10.456	1.198
13/03/2019 00:30	3.66	3.131	9.4	9.41	1	0.062	1.15	9.733	1.207
13/03/2019 01:00	3.66	3.131	8.862	8.88	1	0.053	1.15	9.519	1.278
13/03/2019 01:30	3.66	3.131	8.448	8.42	1.12	0.051	1	9.109	1.3
13/03/2019 02:00	2.564	1.859	8.075	8.18	1.176	0.05	1.141	8.839	1.189
13/03/2019 02:30	2.564	1.859	8.031	7.93	1.153	0.05	1.161	8.912	1.168
13/03/2019 03:00	2.564	1.859	7.895	7.77	1.063	0.05	1.166	8.494	1.064
13/03/2019 03:30	2.564	1.859	7.778	7.68	1.153	0.05	1.177	8.383	1.072
13/03/2019 04:00	2.564	1.859	7.527	7.71	1.156	0.05	1.141	8.32	1.109
13/03/2019 04:30	2.564	1.859	7.219	7.66	1.108	0.05	1.161	8.172	1.01
13/03/2019 05:00	2.564	1.859	7.644	7.83	1.156	0.05	1.166	8.195	0.982
13/03/2019 05:30	2.564	1.859	7.825	8.11	1.109	0.05	1.177	8.332	0.978
13/03/2019 06:00	2.564	1.859	8.214	9.07	1.282	0.052	1.208	8.684	0.952
13/03/2019 06:30	2.564	1.859	8.22	9.38	1.517	0.05	1.301	8.085	0.906
13/03/2019 07:00	2.564	1.859	8.645	8.98	1.56	0.05	1.323	8.089	0.934
13/03/2019 07:30	2.564	1.859	9.281	8.68	1.866	0.051	1.283	8.38	0.975
13/03/2019 08:00	2.564	1.859	9.655	9.28	1.945	0.054	1.208	8.866	0.816
13/03/2019 08:30	2.564	1.859	11.051	9.76	1.944	0.054	1.157	9.839	0.929
13/03/2019 09:00	2.564	1.859	11.604	9.97	2.045	0.059	1.714	10.419	1.067
13/03/2019 09:30	2.564	1.859	12.285	10.6	2.108	0.058	3.188	10.601	1.177
13/03/2019 10:00	2.564	1.859	12.842	10.86	2.165	0.055	1.715	11.367	1.322

13/03/2019 10:30	2.564	1.859	13.234	11.1	2.367	0.055	1.361	11.502	1.28
13/03/2019 11:00	3.986	2.674	13.641	11.46	2.48	0.068	1.399	11.55	1.509
13/03/2019 11:30	3.831	2.728	13.801	11.9	2.501	0.061	1.384	11.692	1.523
13/03/2019 12:00	3.831	2.728	13.67	11.92	2.422	0.066	1.424	11.325	1.574
13/03/2019 12:30	3.831	2.728	13.335	11.59	2.291	0.066	1.417	10.737	1.42
13/03/2019 13:00	3.831	2.728	11.649	11.27	2.286	0.059	1.406	11.007	1.139
13/03/2019 13:30	3.831	2.728	11.604	11.04	2.264	0.072	1.382	11.057	1.303
13/03/2019 14:00	3.831	2.728	11.885	11.05	2.225	0.059	1.372	11.715	1.384
13/03/2019 14:30	3.831	2.728	11.86	11.11	2.147	0.064	1.426	11.924	1.447
13/03/2019 15:00	3.831	2.728	12.151	11.3	2.122	0.062	1.402	12.159	1.522
13/03/2019 15:30	3.831	2.728	12.541	11.18	2.108	0.058	1.411	12.274	1.484
13/03/2019 16:00	3.831	2.728	12.427	11.17	1.879	0.059	1.433	12.63	1.382
13/03/2019 16:30	3.831	2.728	12.38	10.94	1.766	0.064	1.462	12.259	1.417
13/03/2019 17:00	3.831	2.728	12.426	10.78	1.757	0.063	1.465	11.967	1.324
13/03/2019 17:30	3.831	2.728	12.653	10.84	1.733	0.062	1.454	12.08	1.214
13/03/2019 18:00	3.831	2.728	12.808	11.1	1.66	0.071	1.454	12.305	1.113
13/03/2019 18:30	3.831	2.728	14.542	13.5	1.71	0.09	1.49	13.127	1.128
13/03/2019 19:00	3.831	2.728	15.403	15.52	1.866	0.094	1.762	13.931	1.146
13/03/2019 19:30	3.831	2.728	15.51	15.73	1.84	0.098	2.084	14.327	1.124
13/03/2019 20:00	3.831	2.728	15.441	15.72	1.676	0.09	2.178	14.391	1.067
13/03/2019 20:30	3.831	2.728	14.925	15.61	1.656	0.095	1.993	14.448	1.137
13/03/2019 21:00	3.831	2.728	14.507	15.36	1.657	0.087	1.967	14.362	0.966
13/03/2019 21:30	3.831	2.728	13.869	14.69	1.567	0.09	1.933	14.124	0.899
13/03/2019 22:00	3.906	2.67	13.051	13.97	1.489	0.09	1.868	12.856	0.883
13/03/2019 22:30	3.906	2.67	12.216	12.88	1.418	0.086	1.733	11.892	0.842
13/03/2019 23:00	3.906	2.67	11.539	12.07	1.412	0.081	1.629	11.394	0.789
13/03/2019 23:30	3.906	2.67	10.634	10.94	1.325	0.07	1.512	11.096	0.806
14/03/2019 00:00	3.906	2.67	9.9	10.11	1.311	0.07	1.404	10.457	0.814
14/03/2019 00:30	3.66	3.131	9.4	9.41	1	0.062	1.15	9.733	1.207

14/03/2019 01:00	3.66	3.131	8.862	8.88	1	0.053	1.15	9.519	1.278
14/03/2019 01:30	3.66	3.131	8.448	8.42	1.12	0.051	1	9.109	1.3
14/03/2019 02:00	2.564	1.859	8.075	8.18	1.176	0.05	1.141	8.839	1.189
14/03/2019 02:30	2.564	1.859	8.031	7.93	1.153	0.05	1.161	8.912	1.168
14/03/2019 03:00	2.564	1.859	7.895	7.77	1.063	0.05	1.166	8.494	1.064
14/03/2019 03:30	2.564	1.859	7.778	7.68	1.153	0.05	1.177	8.383	1.072
14/03/2019 04:00	2.564	1.859	7.527	7.71	1.156	0.05	1.141	8.32	1.109
14/03/2019 04:30	2.564	1.859	7.219	7.66	1.108	0.05	1.161	8.172	1.01
14/03/2019 05:00	2.564	1.859	7.644	7.83	1.156	0.05	1.166	8.195	0.982
14/03/2019 05:30	2.564	1.859	7.825	8.11	1.109	0.05	1.177	8.332	0.978
14/03/2019 06:00	2.564	1.859	8.214	9.07	1.282	0.052	1.208	8.684	0.952
14/03/2019 06:30	2.564	1.859	8.22	9.38	1.517	0.05	1.301	8.085	0.906
14/03/2019 07:00	2.564	1.859	8.645	8.98	1.56	0.05	1.323	8.089	0.934
14/03/2019 07:30	2.564	1.859	9.281	8.68	1.866	0.051	1.283	8.38	0.975
14/03/2019 08:00	2.564	1.859	9.655	9.28	1.945	0.054	1.208	8.866	0.816
14/03/2019 08:30	2.564	1.859	11.051	9.76	1.944	0.054	1.157	9.839	0.929
14/03/2019 09:00	2.564	1.859	11.604	9.97	2.045	0.059	1.714	10.419	1.067
14/03/2019 09:30	2.564	1.859	12.285	10.6	2.108	0.058	3.188	10.601	1.177
14/03/2019 10:00	2.564	1.859	12.842	10.86	2.165	0.055	1.715	11.367	1.322
14/03/2019 10:30	2.564	1.859	13.234	11.1	2.367	0.055	1.361	11.502	1.28
14/03/2019 11:00	3.986	2.674	13.641	11.46	2.48	0.068	1.399	11.55	1.509
14/03/2019 11:30	3.831	2.728	13.801	11.9	2.501	0.061	1.384	11.692	1.523
14/03/2019 12:00	3.831	2.728	13.67	11.92	2.422	0.066	1.424	11.325	1.574
14/03/2019 12:30	3.831	2.728	13.335	11.59	2.291	0.066	1.417	10.737	1.42
14/03/2019 13:00	3.831	2.728	11.649	11.27	2.286	0.059	1.406	11.007	1.139
14/03/2019 13:30	3.831	2.728	11.604	11.04	2.264	0.072	1.382	11.057	1.303
14/03/2019 14:00	3.831	2.728	11.885	11.05	2.225	0.059	1.372	11.715	1.384
14/03/2019 14:30	3.831	2.728	11.86	11.11	2.147	0.064	1.426	11.924	1.447
14/03/2019 15:00	3.831	2.728	12.151	11.3	2.122	0.062	1.402	12.159	1.522

14/03/2019 15:30	3.831	2.728	12.541	11.18	2.108	0.058	1.411	12.274	1.484
14/03/2019 16:00	3.831	2.728	12.427	11.17	1.879	0.059	1.433	12.63	1.382
14/03/2019 16:30	3.831	2.728	12.38	10.94	1.766	0.064	1.462	12.259	1.417
14/03/2019 17:00	3.831	2.728	12.426	10.78	1.757	0.063	1.465	11.967	1.324
14/03/2019 17:30	3.831	2.728	12.653	10.84	1.733	0.062	1.454	12.08	1.214
14/03/2019 18:00	3.831	2.728	12.808	11.1	1.66	0.071	1.454	12.305	1.113
14/03/2019 18:30	3.831	2.728	14.542	13.5	1.71	0.09	1.49	13.127	1.128
14/03/2019 19:00	3.831	2.728	15.403	15.52	1.866	0.094	1.762	13.931	1.146
14/03/2019 19:30	3.831	2.728	15.51	15.73	1.84	0.098	2.084	14.327	1.124
14/03/2019 20:00	3.831	2.728	15.441	15.72	1.676	0.09	2.178	14.391	1.067
14/03/2019 20:30	3.831	2.728	14.925	15.61	1.656	0.095	1.993	14.448	1.137
14/03/2019 21:00	3.831	2.728	14.507	15.36	1.657	0.087	1.967	14.362	0.966
14/03/2019 21:30	3.831	2.728	13.869	14.69	1.567	0.09	1.933	14.124	0.899
14/03/2019 22:00	3.906	2.67	13.051	13.97	1.489	0.09	1.868	12.856	0.883
14/03/2019 22:30	3.906	2.67	12.216	12.88	1.418	0.086	1.733	11.892	0.842
14/03/2019 23:00	3.906	2.67	11.539	12.07	1.412	0.081	1.629	11.394	0.789
14/03/2019 23:30	3.906	2.67	10.634	10.94	1.325	0.07	1.512	11.096	0.806
15/03/2019 00:00	3.906	2.67	9.9	10.11	1.311	0.07	1.404	10.457	0.814
15/03/2019 00:30	3.957	3.464	9.4	9.46	1	0.062	1	8.525	0.681
15/03/2019 01:00	3.957	3.464	8.862	8.85	1	0.053	1.141	8.22	0.501
15/03/2019 01:30	3.957	3.464	8.448	8.39	1.12	0.051	1.161	7.706	0.46
15/03/2019 02:00	2.583	1.683	8.075	8.13	1.176	0.05	1.166	7.821	0.476
15/03/2019 02:30	2.697	1.561	8.031	7.93	1.153	0.05	1.177	7.507	0.483
15/03/2019 03:00	2.6	1.675	7.895	7.75	1.063	0.05	1.166	7.571	0.394
15/03/2019 03:30	2.668	1.662	7.778	7.6	1.153	0.05	1.177	7.486	0.35
15/03/2019 04:00	2.635	1.646	7.527	7.47	1.156	0.05	1.141	7.279	0.374
15/03/2019 04:30	2.697	1.789	7.219	7.48	1.108	0.05	1.161	7.389	0.385
15/03/2019 05:00	2.614	1.923	7.644	7.6	1.156	0.05	1.166	6.845	0.315
15/03/2019 05:30	2.6	1.91	7.825	8.06	1.109	0.05	1.177	6.994	0.363

15/03/2019 06:00	2.724	1.991	8.214	8.85	1.282	0.052	1.208	6.958	0.299
15/03/2019 06:30	2.574	2.165	8.22	9.36	1.517	0.05	1.301	6.633	0.28
15/03/2019 07:00	2.566	2.42	8.645	8.84	1.56	0.05	1.323	6.565	0.282
15/03/2019 07:30	2.593	2.761	9.281	8.67	1.866	0.051	1.283	6.964	0.375
15/03/2019 08:00	2.668	2.479	9.655	8.74	1.945	0.054	1.208	6.194	0.343
15/03/2019 08:30	2.867	2.982	11.051	9.34	1.944	0.054	1.157	6.911	0.406
15/03/2019 09:00	2.947	3.323	11.604	9.77	2.045	0.059	1.714	7.227	0.471
15/03/2019 09:30	3.08	3.429	12.285	10.18	2.108	0.058	3.188	8.08	0.835
15/03/2019 10:00	3.561	3.462	12.842	10.35	2.165	0.055	1.715	8.35	0.936
15/03/2019 10:30	3.728	3.555	13.234	10.67	2.367	0.055	1.361	8.041	0.879
15/03/2019 11:00	3.866	3.564	13.641	10.92	2.48	0.068	1.399	8.492	0.872
15/03/2019 11:30	3.866	3.564	13.801	11.31	2.501	0.061	1.384	8.85	0.537
15/03/2019 12:00	3.866	3.564	13.67	11.27	2.422	0.066	1.424	8.487	0.519
15/03/2019 12:30	3.866	3.564	13.335	10.98	2.291	0.066	1.417	8.401	0.484
15/03/2019 13:00	3.866	3.564	11.649	10.81	2.286	0.059	1.406	8.123	0.453
15/03/2019 13:30	3.866	3.564	11.604	10.64	2.264	0.072	1.382	8.561	0.475
15/03/2019 14:00	3.866	3.564	11.885	10.58	2.225	0.059	1.372	8.938	0.516
15/03/2019 14:30	3.866	3.564	11.86	10.57	2.147	0.064	1.426	9.235	0.516
15/03/2019 15:00	3.866	3.564	12.151	10.86	2.122	0.062	1.402	8.844	0.694
15/03/2019 15:30	3.866	3.564	12.541	10.9	2.108	0.058	1.411	8.104	0.605
15/03/2019 16:00	3.866	3.564	12.427	10.63	1.879	0.059	1.433	8.154	0.526
15/03/2019 16:30	3.624	3.083	12.38	10.8	1.766	0.064	1.462	9.527	0.549
15/03/2019 17:00	3.723	3.065	12.426	10.63	1.757	0.063	1.465	9.198	0.51
15/03/2019 17:30	3.723	3.065	12.653	10.71	1.733	0.062	1.454	9.201	0.473
15/03/2019 18:00	3.723	3.065	12.808	10.88	1.66	0.071	1.454	8.825	0.427
15/03/2019 18:30	3.723	3.065	14.542	12.96	1.71	0.09	1.49	10.054	0.481
15/03/2019 19:00	3.723	3.065	15.403	15.01	1.866	0.094	1.762	10.459	0.38
15/03/2019 19:30	3.723	3.065	15.51	15.23	1.84	0.098	2.084	10.379	0.402
15/03/2019 20:00	3.723	3.065	15.441	15.25	1.676	0.09	2.178	10.276	0.357

15/03/2019 20:30	3.723	3.065	14.925	15.19	1.656	0.095	1.993	9.948	0.351
15/03/2019 21:00	3.723	3.065	14.507	14.82	1.657	0.087	1.967	9.917	0.267
15/03/2019 21:30	3.723	3.065	13.869	14.63	1.567	0.09	1.933	9.761	0.285
15/03/2019 22:00	3.723	3.065	13.051	14.09	1.489	0.09	1.868	9.64	0.321
15/03/2019 22:30	3.723	3.065	12.216	13.36	1.418	0.086	1.733	8.94	0.304
15/03/2019 23:00	3.723	3.065	11.539	12.21	1.412	0.081	1.629	8.694	0.307
15/03/2019 23:30	3.723	3.065	10.634	11.35	1.325	0.07	1.512	8.184	0.303
16/03/2019 00:00	3.723	3.065	9.9	10.57	1.311	0.07	1.404	7.792	0.288
16/03/2019 00:30	3.723	3.065	9.4	9.46	1	0.062	1	7.267	0.29
16/03/2019 01:00	3.723	3.065	8.862	9.02	1	0.053	1.141	6.966	0.51
16/03/2019 01:30	3.723	3.065	8.448	8.45	1.12	0.051	1.161	6.716	0.504
16/03/2019 02:00	3.723	3.065	8.075	8.2	1.176	0.05	1.166	6.913	0.512
16/03/2019 02:30	3.723	3.065	8.031	7.82	1.153	0.05	1.177	7.017	0.497
16/03/2019 03:00	3.723	3.065	7.895	7.69	1.063	0.05	1.166	6.943	0.517
16/03/2019 03:30	3.723	3.065	7.778	7.61	1.153	0.05	1.177	6.942	0.51
16/03/2019 04:00	3.723	3.065	7.527	7.5	1.156	0.05	1.141	6.755	0.512
16/03/2019 04:30	3.723	3.065	7.219	7.41	1.108	0.05	1.161	6.857	0.511
16/03/2019 05:00	3.723	3.065	7.644	7.67	1.156	0.05	1.166	6.965	0.528
16/03/2019 05:30	2.601	2.109	7.825	7.65	1.109	0.05	1.177	7.069	0.5
16/03/2019 06:00	2.601	2.109	8.214	7.74	1.282	0.052	1.208	7.107	0.462
16/03/2019 06:30	2.601	2.109	8.22	6.82	1.517	0.05	1.301	6.316	0.402
16/03/2019 07:00	2.601	2.109	8.645	7.38	1.56	0.05	1.323	6.786	0.444
16/03/2019 07:30	2.601	2.109	9.281	7.91	1.866	0.051	1.283	6.783	0.448
16/03/2019 08:00	2.601	2.109	9.655	8.55	1.945	0.054	1.208	7.434	0.444
16/03/2019 08:30	2.601	2.109	11.051	9.27	1.944	0.054	1.157	8.211	0.566
16/03/2019 09:00	2.601	2.109	11.604	9.82	2.045	0.059	1.714	8.583	0.677
16/03/2019 09:30	2.601	2.109	12.285	10.26	2.108	0.058	3.188	8.953	0.816
16/03/2019 10:00	2.601	2.109	12.842	10.42	2.165	0.055	1.715	9.238	1.017
16/03/2019 10:30	2.601	2.109	13.234	10.63	2.367	0.055	1.361	9.704	0.952

16/03/2019 11:00	2.601	2.109	13.641	11.21	2.48	0.068	1.399	10.023	0.646
16/03/2019 11:30	3.434	3.048	13.801	11.3	2.501	0.061	1.384	10.115	0.653
16/03/2019 12:00	3.434	3.048	13.67	11.16	2.422	0.066	1.424	9.871	0.628
16/03/2019 12:30	3.434	3.048	13.335	11.29	2.291	0.066	1.417	9.684	0.579
16/03/2019 13:00	3.434	3.048	11.649	10.71	2.286	0.059	1.406	9.563	0.58
16/03/2019 13:30	3.434	3.048	11.604	10.38	2.264	0.072	1.382	9.709	0.625
16/03/2019 14:00	3.434	3.048	11.885	10.16	2.225	0.059	1.372	9.565	0.667
16/03/2019 14:30	3.434	3.048	11.86	10.02	2.147	0.064	1.426	9.816	0.701
16/03/2019 15:00	3.434	3.048	12.151	10.05	2.122	0.062	1.402	9.866	0.738
16/03/2019 15:30	3.434	3.048	12.541	9.98	2.108	0.058	1.411	9.948	0.515
16/03/2019 16:00	3.434	3.048	12.427	10.02	1.879	0.059	1.433	9.664	0.598
16/03/2019 16:30	3.017	2.654	12.38	10.09	1.766	0.064	1.462	9.445	0.577
16/03/2019 17:00	2.965	2.624	12.426	9.99	1.757	0.063	1.465	9.214	0.521
16/03/2019 17:30	2.965	2.624	12.653	10.25	1.733	0.062	1.454	9.268	0.506
16/03/2019 18:00	2.965	2.624	12.808	10.52	1.66	0.071	1.454	9.052	0.472
16/03/2019 18:30	2.965	2.624	14.542	12.94	1.71	0.09	1.49	10.58	0.514
16/03/2019 19:00	2.965	2.624	15.403	14.67	1.866	0.094	1.762	11.454	0.561
16/03/2019 19:30	2.965	2.624	15.51	14.54	1.84	0.098	2.084	11.596	0.52
16/03/2019 20:00	2.965	2.624	15.441	14.57	1.676	0.09	2.178	11.41	0.532
16/03/2019 20:30	2.965	2.624	14.925	14.47	1.656	0.095	1.993	11.384	0.556
16/03/2019 21:00	2.965	2.624	14.507	14.23	1.657	0.087	1.967	11.077	0.525
16/03/2019 21:30	2.965	2.624	13.869	13.93	1.567	0.09	1.933	10.964	0.613
16/03/2019 22:00	2.965	2.624	13.051	13.58	1.489	0.09	1.868	10.447	0.504
16/03/2019 22:30	2.965	2.624	12.216	12.87	1.418	0.086	1.733	9.908	0.492
16/03/2019 23:00	2.965	2.624	11.539	12.07	1.412	0.081	1.629	9.609	0.496
16/03/2019 23:30	2.965	2.624	10.634	11.4	1.325	0.07	1.512	9.063	0.495
17/03/2019 00:00	2.965	2.624	9.9	10.67	1.311	0.07	1.404	8.676	0.533
17/03/2019 00:30	3.723	3.065	9.4	9.46	1	0.062	1	7.267	0.29
17/03/2019 01:00	3.723	3.065	8.862	9.02	1	0.053	1.141	6.966	0.51

17/03/2019 01:30	3.723	3.065	8.448	8.45	1.12	0.051	1.161	6.716	0.504
17/03/2019 02:00	3.723	3.065	8.075	8.2	1.176	0.05	1.166	6.913	0.512
17/03/2019 02:30	3.723	3.065	8.031	7.82	1.153	0.05	1.177	7.017	0.497
17/03/2019 03:00	3.723	3.065	7.895	7.69	1.063	0.05	1.166	6.943	0.517
17/03/2019 03:30	3.723	3.065	7.778	7.61	1.153	0.05	1.177	6.942	0.51
17/03/2019 04:00	3.723	3.065	7.527	7.5	1.156	0.05	1.141	6.755	0.512
17/03/2019 04:30	3.723	3.065	7.219	7.41	1.108	0.05	1.161	6.857	0.511
17/03/2019 05:00	3.723	3.065	7.644	7.67	1.156	0.05	1.166	6.965	0.528
17/03/2019 05:30	2.601	2.109	7.825	7.65	1.109	0.05	1.177	7.069	0.5
17/03/2019 06:00	2.601	2.109	8.214	7.74	1.282	0.052	1.208	7.107	0.462
17/03/2019 06:30	2.601	2.109	8.22	6.82	1.517	0.05	1.301	6.316	0.402
17/03/2019 07:00	2.601	2.109	8.645	7.38	1.56	0.05	1.323	6.786	0.444
17/03/2019 07:30	2.601	2.109	9.281	7.91	1.866	0.051	1.283	6.783	0.448
17/03/2019 08:00	2.601	2.109	9.655	8.55	1.945	0.054	1.208	7.434	0.444
17/03/2019 08:30	2.601	2.109	11.051	9.27	1.944	0.054	1.157	8.211	0.566
17/03/2019 09:00	2.601	2.109	11.604	9.82	2.045	0.059	1.714	8.583	0.677
17/03/2019 09:30	2.601	2.109	12.285	10.26	2.108	0.058	3.188	8.953	0.816
17/03/2019 10:00	2.601	2.109	12.842	10.42	2.165	0.055	1.715	9.238	1.017
17/03/2019 10:30	2.601	2.109	13.234	10.63	2.367	0.055	1.361	9.704	0.952
17/03/2019 11:00	2.601	2.109	13.641	11.21	2.48	0.068	1.399	10.023	0.646
17/03/2019 11:30	3.434	3.048	13.801	11.3	2.501	0.061	1.384	10.115	0.653
17/03/2019 12:00	3.434	3.048	13.67	11.16	2.422	0.066	1.424	9.871	0.628
17/03/2019 12:30	3.434	3.048	13.335	11.29	2.291	0.066	1.417	9.684	0.579
17/03/2019 13:00	3.434	3.048	11.649	10.71	2.286	0.059	1.406	9.563	0.58
17/03/2019 13:30	3.434	3.048	11.604	10.38	2.264	0.072	1.382	9.709	0.625
17/03/2019 14:00	3.434	3.048	11.885	10.16	2.225	0.059	1.372	9.565	0.667
17/03/2019 14:30	3.434	3.048	11.86	10.02	2.147	0.064	1.426	9.816	0.701
17/03/2019 15:00	3.434	3.048	12.151	10.05	2.122	0.062	1.402	9.866	0.738
17/03/2019 15:30	3.434	3.048	12.541	9.98	2.108	0.058	1.411	9.948	0.515

17/03/2019 16:00	3.434	3.048	12.427	10.02	1.879	0.059	1.433	9.664	0.598
17/03/2019 16:30	3.017	2.654	12.38	10.09	1.766	0.064	1.462	9.445	0.577
17/03/2019 17:00	2.965	2.624	12.426	9.99	1.757	0.063	1.465	9.214	0.521
17/03/2019 17:30	2.965	2.624	12.653	10.25	1.733	0.062	1.454	9.268	0.506
17/03/2019 18:00	2.965	2.624	12.808	10.52	1.66	0.071	1.454	9.052	0.472
17/03/2019 18:30	2.965	2.624	14.542	12.94	1.71	0.09	1.49	10.58	0.514
17/03/2019 19:00	2.965	2.624	15.403	14.67	1.866	0.094	1.762	11.454	0.561
17/03/2019 19:30	2.965	2.624	15.51	14.54	1.84	0.098	2.084	11.596	0.52
17/03/2019 20:00	2.965	2.624	15.441	14.57	1.676	0.09	2.178	11.41	0.532
17/03/2019 20:30	2.965	2.624	14.925	14.47	1.656	0.095	1.993	11.384	0.556
17/03/2019 21:00	2.965	2.624	14.507	14.23	1.657	0.087	1.967	11.077	0.525
17/03/2019 21:30	2.965	2.624	13.869	13.93	1.567	0.09	1.933	10.964	0.613
17/03/2019 22:00	2.965	2.624	13.051	13.58	1.489	0.09	1.868	10.447	0.504
17/03/2019 22:30	2.965	2.624	12.216	12.87	1.418	0.086	1.733	9.908	0.492
17/03/2019 23:00	2.965	2.624	11.539	12.07	1.412	0.081	1.629	9.609	0.496
17/03/2019 23:30	2.965	2.624	10.634	11.4	1.325	0.07	1.512	9.063	0.495
18/03/2019 00:00	2.965	2.624	9.9	10.67	1.311	0.07	1.404	8.676	0.533
18/03/2019 00:30	2.656	1.915	9.4	9.33	1	0.062	1	8.215	0.495
18/03/2019 01:00	2.656	1.915	8.862	8.71	1	0.053	1.141	7.886	0.491
18/03/2019 01:30	2.656	1.915	8.448	8.28	1.12	0.051	1.161	7.627	0.482
18/03/2019 02:00	2.656	1.915	8.075	7.99	1.176	0.05	1.166	7.401	0.495
18/03/2019 02:30	2.656	1.915	8.031	7.87	1.153	0.05	1.177	7.442	0.476
18/03/2019 03:00	2.656	1.915	7.895	7.58	1.063	0.05	1.166	7.137	0.47
18/03/2019 03:30	2.656	1.915	7.778	7.51	1.153	0.05	1.177	7.062	0.469
18/03/2019 04:00	2.656	1.915	7.527	7.49	1.156	0.05	1.141	7.002	0.471
18/03/2019 04:30	2.656	1.915	7.219	7.48	1.108	0.05	1.161	6.994	0.472
18/03/2019 05:00	2.656	1.915	7.644	7.61	1.156	0.05	1.166	7.027	0.473
18/03/2019 05:30	2.656	1.915	7.825	8.01	1.109	0.05	1.177	7.208	0.484
18/03/2019 06:00	2.656	1.915	8.214	8.89	1.282	0.052	1.208	7.381	0.484

18/03/2019 06:30	2.656	1.915	8.22	9.34	1.517	0.05	1.301	7.126	0.422
18/03/2019 07:00	2.656	1.915	8.645	8.65	1.56	0.05	1.323	7.06	0.422
18/03/2019 07:30	2.656	1.915	9.281	8.5	1.866	0.051	1.283	7.081	0.483
18/03/2019 08:00	2.656	1.915	9.655	8.77	1.945	0.054	1.208	7.252	0.448
18/03/2019 08:30	2.604	3.059	11.051	9.17	1.944	0.054	1.157	8.099	0.529
18/03/2019 09:00	2.641	3.111	11.604	9.3	2.045	0.059	1.714	8.715	0.631
18/03/2019 09:30	2.641	3.111	12.285	9.52	2.108	0.058	3.188	9.111	0.668
18/03/2019 10:00	2.641	3.111	12.842	9.72	2.165	0.055	1.715	9.296	0.677
18/03/2019 10:30	2.641	3.111	13.234	10	2.367	0.055	1.361	9.833	0.704
18/03/2019 11:00	2.641	3.111	13.641	10.5	2.48	0.068	1.399	9.921	0.698
18/03/2019 11:30	2.641	3.111	13.801	10.92	2.501	0.061	1.384	10.385	0.732
18/03/2019 12:00	2.641	3.111	13.67	10.97	2.422	0.066	1.424	10.178	0.646
18/03/2019 12:30	2.641	3.111	13.335	10.92	2.291	0.066	1.417	9.845	0.913
18/03/2019 13:00	2.641	3.111	11.649	10.43	2.286	0.059	1.406	9.397	0.892
18/03/2019 13:30	2.641	3.111	11.604	10.26	2.264	0.072	1.382	9.718	0.961
18/03/2019 14:00	3.354	3.082	11.885	10.31	2.225	0.059	1.372	9.828	0.646
18/03/2019 14:30	3.305	3.148	11.86	10.29	2.147	0.064	1.426	10.063	0.774
18/03/2019 15:00	3.25	3.073	12.151	10.6	2.122	0.062	1.402	10.311	0.758
18/03/2019 15:30	3.25	3.073	12.541	10.31	2.108	0.058	1.411	10.303	0.682
18/03/2019 16:00	3.25	3.073	12.427	10.44	1.879	0.059	1.433	10.398	0.703
18/03/2019 16:30	3.25	3.073	12.38	10.26	1.766	0.064	1.462	10.406	0.695
18/03/2019 17:00	3.25	3.073	12.426	10.22	1.757	0.063	1.465	10.644	0.673
18/03/2019 17:30	3.25	3.073	12.653	10.29	1.733	0.062	1.454	10.112	0.405
18/03/2019 18:00	3.25	3.073	12.808	10.6	1.66	0.071	1.454	9.84	0.356
18/03/2019 18:30	3.25	3.073	14.542	13.2	1.71	0.09	1.49	11.054	0.399
18/03/2019 19:00	3.25	3.073	15.403	14.91	1.866	0.094	1.762	11.564	0.382
18/03/2019 19:30	3.25	3.073	15.51	15.3	1.84	0.098	2.084	11.334	0.378
18/03/2019 20:00	3.25	3.073	15.441	15.33	1.676	0.09	2.178	11.381	0.323
18/03/2019 20:30	3.25	3.073	14.925	15.12	1.656	0.095	1.993	10.962	0.346

18/03/2019 21:00	3.25	3.073	14.507	14.85	1.657	0.087	1.967	10.757	0.31
18/03/2019 21:30	3.25	3.073	13.869	14.32	1.567	0.09	1.933	10.364	0.311
18/03/2019 22:00	3.25	3.073	13.051	13.6	1.489	0.09	1.868	9.503	0.258
18/03/2019 22:30	3.25	3.073	12.216	12.66	1.418	0.086	1.733	9.062	0.296
18/03/2019 23:00	3.25	3.073	11.539	11.68	1.412	0.081	1.629	8.435	0.291
18/03/2019 23:30	3.25	3.073	10.634	10.68	1.325	0.07	1.512	8.267	0.293
19/03/2019 00:00	3.25	3.073	9.9	9.67	1.311	0.07	1.404	7.632	0.261
19/03/2019 00:30	3.25	3.073	9.4	8.71	1	0.062	1	6.922	0.271
19/03/2019 01:00	3.25	3.073	8.862	8.3	1	0.053	1.141	6.821	0.281
19/03/2019 01:30	3.25	3.073	8.448	7.84	1.12	0.051	1.161	6.399	0.28
19/03/2019 02:00	3.25	3.073	8.075	7.49	1.176	0.05	1.166	6.188	0.274
19/03/2019 02:30	3.25	3.073	8.031	7.41	1.153	0.05	1.177	6.233	0.256
19/03/2019 03:00	3.25	3.073	7.895	7.26	1.063	0.05	1.166	6.106	0.263
19/03/2019 03:30	2.339	1.902	7.778	7.32	1.153	0.05	1.177	6.308	0.265
19/03/2019 04:00	2.303	1.981	7.527	7.16	1.156	0.05	1.141	6.289	0.275
19/03/2019 04:30	2.331	2.072	7.219	7.23	1.108	0.05	1.161	6.656	0.258
19/03/2019 05:00	2.331	2.072	7.644	7.38	1.156	0.05	1.166	6.722	0.259
19/03/2019 05:30	2.331	2.072	7.825	7.8	1.109	0.05	1.177	6.891	0.224
19/03/2019 06:00	2.331	2.072	8.214	8.48	1.282	0.052	1.208	6.929	0.248
19/03/2019 06:30	2.331	2.072	8.22	9	1.517	0.05	1.301	6.785	0.178
19/03/2019 07:00	2.331	2.072	8.645	8.53	1.56	0.05	1.323	6.799	0.216
19/03/2019 07:30	2.331	2.072	9.281	8.31	1.866	0.051	1.283	7.324	0.23
19/03/2019 08:00	2.331	2.072	9.655	8.6	1.945	0.054	1.208	8.006	0.27
19/03/2019 08:30	2.331	2.072	11.051	9.08	1.944	0.054	1.157	8.813	0.333
19/03/2019 09:00	2.331	2.072	11.604	9.2	2.045	0.059	1.714	9.217	0.41
19/03/2019 09:30	2.331	2.072	12.285	9.32	2.108	0.058	3.188	9.427	0.742
19/03/2019 10:00	2.331	2.072	12.842	9.82	2.165	0.055	1.715	9.932	0.674
19/03/2019 10:30	3.039	3.333	13.234	10.24	2.367	0.055	1.361	10.257	0.674
19/03/2019 11:00	3.039	3.333	13.641	10.59	2.48	0.068	1.399	11.076	0.715

19/03/2019 11:30	3.039	3.333	13.801	10.69	2.501	0.061	1.384	10.855	0.7
19/03/2019 12:00	3.039	3.333	13.67	10.82	2.422	0.066	1.424	10.07	0.665
19/03/2019 12:30	3.039	3.333	13.335	10.76	2.291	0.066	1.417	9.956	0.638
19/03/2019 13:00	3.039	3.333	11.649	10.42	2.286	0.059	1.406	9.898	0.595
19/03/2019 13:30	3.039	3.333	11.604	10.16	2.264	0.072	1.382	9.985	0.611
19/03/2019 14:00	3.039	3.333	11.885	10.05	2.225	0.059	1.372	10.173	0.645
19/03/2019 14:30	3.039	3.333	11.86	10.45	2.147	0.064	1.426	10.917	0.751
19/03/2019 15:00	3.039	3.333	12.151	10.42	2.122	0.062	1.402	11.264	0.732
19/03/2019 15:30	3.314	3.273	12.541	10.36	2.108	0.058	1.411	11.312	0.753
19/03/2019 16:00	3.317	3.089	12.427	10.3	1.879	0.059	1.433	11.25	0.711
19/03/2019 16:30	3.208	3.18	12.38	10.16	1.766	0.064	1.462	10.875	0.773
19/03/2019 17:00	3.208	3.18	12.426	9.95	1.757	0.063	1.465	11.468	0.626
19/03/2019 17:30	3.208	3.18	12.653	10.13	1.733	0.062	1.454	11.242	0.586
19/03/2019 18:00	3.208	3.18	12.808	10.45	1.66	0.071	1.454	11.444	0.56
19/03/2019 18:30	3.208	3.18	14.542	13.14	1.71	0.09	1.49	12.505	0.631
19/03/2019 19:00	3.208	3.18	15.403	14.77	1.866	0.094	1.762	13.172	0.615
19/03/2019 19:30	3.208	3.18	15.51	15.23	1.84	0.098	2.084	13.064	0.585
19/03/2019 20:00	3.208	3.18	15.441	15.12	1.676	0.09	2.178	13.118	0.569
19/03/2019 20:30	3.208	3.18	14.925	15.04	1.656	0.095	1.993	12.663	0.524
19/03/2019 21:00	3.208	3.18	14.507	14.61	1.657	0.087	1.967	12.503	0.546
19/03/2019 21:30	3.208	3.18	13.869	14.34	1.567	0.09	1.933	12.293	0.484
19/03/2019 22:00	3.208	3.18	13.051	13.67	1.489	0.09	1.868	11.546	0.517
19/03/2019 22:30	3.208	3.18	12.216	12.77	1.418	0.086	1.733	10.753	0.52
19/03/2019 23:00	3.208	3.18	11.539	11.48	1.412	0.081	1.629	10.207	0.494
19/03/2019 23:30	3.208	3.18	10.634	10.49	1.325	0.07	1.512	9.608	0.499
20/03/2019 00:00	3.208	3.18	9.9	9.48	1.311	0.07	1.404	9.157	0.5
20/03/2019 00:30	3.208	3.18	14.049	8.82	1	0.062	1	8.768	0.481
20/03/2019 01:00	3.208	3.18	14.049	8.18	1	0.053	1.141	8.337	0.486
20/03/2019 01:30	3.208	3.18	14.049	7.84	1.12	0.051	1.161	8.206	0.458

20/03/2019 02:00	3.208	3.18	14.049	7.56	1.176	0.05	1.166	7.815	0.482
20/03/2019 02:30	3.208	3.18	14.049	7.44	1.153	0.05	1.177	7.639	0.486
20/03/2019 03:00	3.208	3.18	14.049	7.23	1.063	0.05	1.166	7.435	0.474
20/03/2019 03:30	3.208	3.18	14.049	7.29	1.153	0.05	1.177	7.377	0.468
20/03/2019 04:00	3.208	3.18	14.049	7.29	1.156	0.05	1.141	7.569	0.479
20/03/2019 04:30	3.208	3.18	14.049	7.23	1.108	0.05	1.161	7.386	0.469
20/03/2019 05:00	3.208	3.18	14.049	7.16	1.156	0.05	1.166	7.464	0.505
20/03/2019 05:30	2.185	2.157	14.049	7.59	1.109	0.05	1.177	7.716	0.507
20/03/2019 06:00	2.185	2.21	14.049	8.47	1.282	0.052	1.208	7.704	0.513
20/03/2019 06:30	2.185	2.21	14.049	9.21	1.517	0.05	1.301	7.384	0.452
20/03/2019 07:00	2.185	2.21	14.049	8.75	1.56	0.05	1.323	7.394	0.45
20/03/2019 07:30	2.185	2.21	14.049	8.51	1.866	0.051	1.283	7.747	0.47
20/03/2019 08:00	2.185	2.21	14.049	8.66	1.945	0.054	1.208	8.28	0.507
20/03/2019 08:30	2.185	2.21	14.049	8.97	1.944	0.054	1.157	9.008	0.586
20/03/2019 09:00	2.185	2.21	14.049	9.25	2.045	0.059	1.714	9.479	0.886
20/03/2019 09:30	2.185	2.21	14.049	9.64	2.108	0.058	3.188	9.65	1.054
20/03/2019 10:00	2.185	2.21	14.049	9.86	2.165	0.055	1.715	9.977	1.148
20/03/2019 10:30	2.185	2.21	14.049	10.15	2.367	0.055	1.361	10.456	0.939
20/03/2019 11:00	2.185	2.21	14.049	10.47	2.48	0.068	1.399	10.379	0.881
20/03/2019 11:30	2.185	2.21	14.049	10.93	2.501	0.061	1.384	10.846	0.982
20/03/2019 12:00	3.323	3.366	14.049	10.9	2.422	0.066	1.424	10.323	0.979
20/03/2019 12:30	3.323	3.366	14.049	10.63	2.291	0.066	1.417	10.092	0.966
20/03/2019 13:00	3.323	3.366	14.049	10.33	2.286	0.059	1.406	9.928	0.851
20/03/2019 13:30	3.323	3.366	14.049	10.17	2.264	0.072	1.382	10.232	0.979
20/03/2019 14:00	3.323	3.366	14.049	10.24	2.225	0.059	1.372	10.484	0.938
20/03/2019 14:30	3.323	3.366	14.049	10.29	2.147	0.064	1.426	10.884	0.916
20/03/2019 15:00	3.323	3.366	14.049	10.27	2.122	0.062	1.402	10.799	1.075
20/03/2019 15:30	3.323	3.366	14.049	10.2	2.108	0.058	1.411	10.98	1.257
20/03/2019 16:00	3.323	3.366	14.049	10.17	1.879	0.059	1.433	11.039	1.246

20/03/2019 16:30	3.323	3.366	14.049	10.02	1.766	0.064	1.462	10.889	0.899
20/03/2019 17:00	3.323	3.366	14.049	10.07	1.757	0.063	1.465	10.703	0.802
20/03/2019 17:30	3.323	3.366	14.049	9.88	1.733	0.062	1.454	10.489	0.766
20/03/2019 18:00	3.323	3.366	14.049	10.05	1.66	0.071	1.454	10.588	0.854
20/03/2019 18:30	3.323	3.366	14.049	12.56	1.71	0.09	1.49	11.237	0.844
20/03/2019 19:00	3.323	3.366	14.049	14.56	1.866	0.094	1.762	12.062	0.824
20/03/2019 19:30	3.323	3.366	14.049	15.01	1.84	0.098	2.084	11.953	0.715
20/03/2019 20:00	3.323	3.366	14.049	14.99	1.676	0.09	2.178	11.751	0.663
20/03/2019 20:30	3.323	3.366	14.049	14.76	1.656	0.095	1.993	11.419	0.636
20/03/2019 21:00	3.323	3.366	14.049	14.41	1.657	0.087	1.967	11.017	0.409
20/03/2019 21:30	3.323	3.366	14.049	13.86	1.567	0.09	1.933	10.869	0.311
20/03/2019 22:00	3.323	3.366	14.049	13.36	1.489	0.09	1.868	10.008	0.335
20/03/2019 22:30	3.323	3.366	14.049	12.33	1.418	0.086	1.733	9.212	0.384
20/03/2019 23:00	3.323	3.366	14.049	11.32	1.412	0.081	1.629	8.59	0.333
20/03/2019 23:30	2.833	2.101	14.049	10.45	1.325	0.07	1.512	8.425	0.291
21/03/2019 00:00	2.833	2.101	14.049	9.63	1.311	0.07	1.404	8.308	0.29
21/03/2019 00:30	3.208	3.18	14.049	8.68	1	0.062	1	7.745	0.265
21/03/2019 01:00	3.208	3.18	14.049	8.03	1	0.053	1.141	7.474	0.275
21/03/2019 01:30	3.208	3.18	14.049	7.82	1.12	0.051	1.161	7.356	0.271
21/03/2019 02:00	3.208	3.18	14.049	7.53	1.176	0.05	1.166	7.229	0.273
21/03/2019 02:30	3.208	3.18	14.049	7.28	1.153	0.05	1.177	6.98	0.255
21/03/2019 03:00	3.208	3.18	14.049	7.17	1.063	0.05	1.166	7.027	0.258
21/03/2019 03:30	3.208	3.18	14.049	7.13	1.153	0.05	1.177	6.846	0.251
21/03/2019 04:00	3.208	3.18	14.049	7.11	1.156	0.05	1.141	6.804	0.279
21/03/2019 04:30	3.208	3.18	14.049	7.18	1.108	0.05	1.161	7.008	0.267
21/03/2019 05:00	3.208	3.18	14.049	7.27	1.156	0.05	1.166	6.973	0.255
21/03/2019 05:30	2.185	2.157	14.049	7.76	1.109	0.05	1.177	7.379	0.267
21/03/2019 06:00	2.185	2.21	14.049	8.67	1.282	0.052	1.208	7.55	0.246
21/03/2019 06:30	2.185	2.21	14.049	9.18	1.517	0.05	1.301	7.43	0.181

21/03/2019 07:00	2.185	2.21	14.049	8.61	1.56	0.05	1.323	7.394	0.217
21/03/2019 07:30	2.185	2.21	14.049	8.42	1.866	0.051	1.283	7.473	0.251
21/03/2019 08:00	2.185	2.21	14.049	8.56	1.945	0.054	1.208	7.94	0.21
21/03/2019 08:30	2.185	2.21	14.049	8.97	1.944	0.054	1.157	8.53	0.32
21/03/2019 09:00	2.185	2.21	14.049	9.14	2.045	0.059	1.714	8.827	0.371
21/03/2019 09:30	2.185	2.21	14.049	9.34	2.108	0.058	3.188	9.434	0.448
21/03/2019 10:00	2.185	2.21	14.049	9.76	2.165	0.055	1.715	9.967	0.444
21/03/2019 10:30	2.185	2.21	14.049	10.11	2.367	0.055	1.361	10.261	0.471
21/03/2019 11:00	2.185	2.21	14.049	10.29	2.48	0.068	1.399	10.947	0.413
21/03/2019 11:30	2.185	2.21	14.049	10.7	2.501	0.061	1.384	11.075	0.473
21/03/2019 12:00	3.323	3.366	14.049	10.74	2.422	0.066	1.424	10.851	0.431
21/03/2019 12:30	3.323	3.366	14.049	10.39	2.291	0.066	1.417	10.293	0.349
21/03/2019 13:00	3.323	3.366	14.049	10.23	2.286	0.059	1.406	9.993	0.395
21/03/2019 13:30	3.323	3.366	14.049	9.99	2.264	0.072	1.382	10.102	0.391
21/03/2019 14:00	3.323	3.366	14.049	9.83	2.225	0.059	1.372	10.373	0.399
21/03/2019 14:30	3.323	3.366	14.049	10.04	2.147	0.064	1.426	10.485	0.524
21/03/2019 15:00	3.323	3.366	14.049	10.08	2.122	0.062	1.402	10.574	0.722
21/03/2019 15:30	3.323	3.366	14.049	10.08	2.108	0.058	1.411	10.96	0.77
21/03/2019 16:00	3.323	3.366	14.049	9.98	1.879	0.059	1.433	10.679	0.703
21/03/2019 16:30	3.323	3.366	14.049	10.03	1.766	0.064	1.462	10.649	0.359
21/03/2019 17:00	3.323	3.366	14.049	9.7	1.757	0.063	1.465	10.534	0.356
21/03/2019 17:30	3.323	3.366	14.049	9.56	1.733	0.062	1.454	10.112	0.334
21/03/2019 18:00	3.323	3.366	14.049	10.3	1.66	0.071	1.454	9.443	0.303
21/03/2019 18:30	3.323	3.366	14.049	13.49	1.71	0.09	1.49	11.143	0.338
21/03/2019 19:00	3.323	3.366	14.049	14.98	1.866	0.094	1.762	11.728	0.37
21/03/2019 19:30	3.323	3.366	14.049	15.08	1.84	0.098	2.084	11.927	0.303
21/03/2019 20:00	3.323	3.366	14.049	14.93	1.676	0.09	2.178	11.836	0.281
21/03/2019 20:30	3.323	3.366	14.049	14.83	1.656	0.095	1.993	11.63	0.294
21/03/2019 21:00	3.323	3.366	14.049	14.5	1.657	0.087	1.967	11.639	0.298

21/03/2019 21:30	3.323	3.366	14.049	14.12	1.567	0.09	1.933	11.664	0.307
21/03/2019 22:00	3.323	3.366	14.049	13.28	1.489	0.09	1.868	10.497	0.258
21/03/2019 22:30	3.323	3.366	14.049	12.31	1.418	0.086	1.733	9.985	0.293
21/03/2019 23:00	3.323	3.366	14.049	11.21	1.412	0.081	1.629	9.46	0.283
21/03/2019 23:30	2.833	2.101	14.049	10.34	1.325	0.07	1.512	9.282	0.279
22/03/2019 00:00	2.833	2.101	14.049	9.24	1.311	0.07	1.404	9.003	0.264
22/03/2019 00:30	2.455	1.725	14.049	8.65	1	0.062	1	7.996	0.278
22/03/2019 01:00	2.315	1.9	14.049	8.13	1	0.053	1.141	7.817	0.235
22/03/2019 01:30	2.264	1.882	14.049	7.69	1.12	0.051	1.161	7.669	0.267
22/03/2019 02:00	2.271	1.779	14.049	7.38	1.176	0.05	1.166	7.515	0.261
22/03/2019 02:30	2.187	1.913	14.049	7.16	1.153	0.05	1.177	7.377	0.264
22/03/2019 03:00	2.173	2.003	14.049	7.17	1.063	0.05	1.166	7.281	0.252
22/03/2019 03:30	2.206	2.063	14.049	7.04	1.153	0.05	1.177	7.183	0.26
22/03/2019 04:00	2.198	2.017	14.049	7.05	1.156	0.05	1.141	6.831	0.252
22/03/2019 04:30	2.165	2.132	14.049	7.07	1.108	0.05	1.161	6.76	0.247
22/03/2019 05:00	2.191	2.226	14.049	7.18	1.156	0.05	1.166	6.97	0.265
22/03/2019 05:30	2.203	2.307	14.049	7.61	1.109	0.05	1.177	7.352	0.264
22/03/2019 06:00	2.38	2.313	14.049	8.34	1.282	0.052	1.208	7.532	0.256
22/03/2019 06:30	2.451	2.505	14.049	8.92	1.517	0.05	1.301	7.284	0.195
22/03/2019 07:00	2.475	2.388	14.049	8.48	1.56	0.05	1.323	7.3	0.223
22/03/2019 07:30	2.622	2.446	14.049	8.41	1.866	0.051	1.283	7.735	0.243
22/03/2019 08:00	2.762	2.327	14.049	8.58	1.945	0.054	1.208	8.037	0.275
22/03/2019 08:30	2.811	2.257	14.049	8.72	1.944	0.054	1.157	8.707	0.536
22/03/2019 09:00	2.931	2.263	14.049	9.06	2.045	0.059	1.714	9.077	0.567
22/03/2019 09:30	2.977	2.471	14.049	9.5	2.108	0.058	3.188	9.402	0.661
22/03/2019 10:00	3.052	2.586	14.049	9.69	2.165	0.055	1.715	9.608	0.617
22/03/2019 10:30	3.157	2.527	14.049	10.02	2.367	0.055	1.361	10.017	0.711
22/03/2019 11:00	3.404	2.5	14.049	10.34	2.48	0.068	1.399	10.348	0.774
22/03/2019 11:30	3.348	2.561	14.049	10.71	2.501	0.061	1.384	10.529	0.767

22/03/2019 12:00	3.48	2.823	14.049	10.68	2.422	0.066	1.424	10.389	0.647
22/03/2019 12:30	3.392	2.667	13.917	10.37	2.291	0.066	1.417	10.02	0.727
22/03/2019 13:00	3.279	2.59	13.693	10.14	2.286	0.059	1.406	10.231	0.678
22/03/2019 13:30	3.274	2.585	13.841	9.97	2.264	0.072	1.382	10.194	0.688
22/03/2019 14:00	3.33	2.528	13.656	9.97	2.225	0.059	1.372	9.889	0.723
22/03/2019 14:30	3.349	2.567	13.702	10.05	2.147	0.064	1.426	10.274	0.757
22/03/2019 15:00	3.319	2.677	13.867	10.06	2.122	0.062	1.402	10.352	0.748
22/03/2019 15:30	3.332	2.645	14.23	10.18	2.108	0.058	1.411	10.539	0.631
22/03/2019 16:00	3.249	2.573	14.659	9.98	1.879	0.059	1.433	10.541	0.563
22/03/2019 16:30	3.266	2.533	14.55	10.09	1.766	0.064	1.462	10.53	0.546
22/03/2019 17:00	3.1	2.267	14.576	9.99	1.757	0.063	1.465	10.602	0.644
22/03/2019 17:30	3.002	1.796	14.87	10.14	1.733	0.062	1.454	10.459	0.605
22/03/2019 18:00	2.986	1.883	15.095	10.47	1.66	0.071	1.454	9.775	0.632
22/03/2019 18:30	3.434	2.358	17.496	13.29	1.71	0.09	1.49	11.122	0.678
22/03/2019 19:00	3.698	2.598	18.627	14.71	1.866	0.094	1.762	11.763	0.617
22/03/2019 19:30	3.841	2.808	18.479	15.22	1.84	0.098	2.084	11.824	0.563
22/03/2019 20:00	3.822	2.635	18.291	15.45	1.676	0.09	2.178	11.707	0.602
22/03/2019 20:30	3.766	2.634	17.729	14.95	1.656	0.095	1.993	11.505	0.614
22/03/2019 21:00	3.641	2.649	17.108	14.78	1.657	0.087	1.967	11.147	0.598
22/03/2019 21:30	3.545	2.353	16.103	14.13	1.567	0.09	1.933	10.287	0.588
22/03/2019 22:00	3.442	2.185	15.228	13.46	1.489	0.09	1.868	10.107	0.545
22/03/2019 22:30	3.307	2.11	14.239	12.76	1.418	0.086	1.733	9.213	0.575
22/03/2019 23:00	3.085	2.077	13.161	11.55	1.412	0.081	1.629	9.043	0.554
22/03/2019 23:30	2.887	1.938	12.412	10.77	1.325	0.07	1.512	8.739	0.759
23/03/2019 00:00	2.744	1.86	11.421	9.74	1.311	0.07	1.404	8.28	0.698
23/03/2019 00:30	4.183	3.193	11.292	10.08	1.23	0.062	1.264	11.548	1.15
23/03/2019 01:00	4.183	3.193	10.86	9.32	1.201	0.053	1.237	11.092	1.15
23/03/2019 01:30	4.183	3.193	10.421	8.9	1.158	0.051	1.206	11.004	1.148
23/03/2019 02:00	4.183	3.193	9.982	8.56	1.176	0.05	1.179	10.566	1.169

23/03/2019 02:30	4.183	3.193	9.647	8.19	1.153	0.05	1.163	10.074	0.947
23/03/2019 03:00	4.183	3.193	9.15	8	1.063	0.05	1.154	10.003	0.859
23/03/2019 03:30	2.923	2.289	9.365	7.82	1.153	0.05	1.143	9.926	0.764
23/03/2019 04:00	2.923	2.289	9.197	7.84	1.156	0.05	1.141	9.72	0.737
23/03/2019 04:30	2.923	2.289	9.11	7.7	1.108	0.05	1.161	9.652	0.684
23/03/2019 05:00	2.923	2.289	8.909	7.8	1.156	0.05	1.166	9.613	0.852
23/03/2019 05:30	2.923	2.289	9.597	7.86	1.109	0.05	1.177	9.861	0.81
23/03/2019 06:00	2.923	2.289	9.752	8.02	1.282	0.052	1.208	9.914	0.779
23/03/2019 06:30	2.923	2.289	9.266	7.36	1.517	0.05	1.301	9.399	0.68
23/03/2019 07:00	2.923	2.289	9.754	7.75	1.56	0.05	1.323	9.775	0.725
23/03/2019 07:30	2.923	2.289	10.526	8.28	1.866	0.051	1.283	9.858	0.762
23/03/2019 08:00	2.923	2.289	11.613	8.71	1.945	0.054	1.208	10.632	0.83
23/03/2019 08:30	2.923	2.289	12.624	9.7	1.944	0.054	1.157	11.668	0.947
23/03/2019 09:00	2.923	2.289	13.665	10.12	2.045	0.059	1.714	12.54	1.031
23/03/2019 09:30	3.81	3.161	14.397	10.6	2.108	0.058	3.188	12.598	1.329
23/03/2019 10:00	3.783	3.302	14.659	10.96	2.165	0.055	1.715	13.632	1.386
23/03/2019 10:30	3.783	3.302	15.492	11.18	2.367	0.055	1.361	13.509	1.49
23/03/2019 11:00	3.783	3.302	16.073	11.66	2.48	0.068	1.399	13.671	1.267
23/03/2019 11:30	3.783	3.302	16.371	12.07	2.501	0.061	1.384	13.901	1.237
23/03/2019 12:00	3.783	3.302	16.339	12.17	2.422	0.066	1.424	13.612	1.365
23/03/2019 12:30	3.783	3.302	16.087	12.09	2.291	0.066	1.417	13.232	1.214
23/03/2019 13:00	3.783	3.302	15.668	11.73	2.286	0.059	1.406	12.775	1.287
23/03/2019 13:30	3.783	3.302	15.303	11.4	2.264	0.072	1.382	12.971	1.339
23/03/2019 14:00	3.783	3.302	15.63	11.17	2.225	0.059	1.372	13.313	1.445
23/03/2019 14:30	3.783	3.302	15.189	11.16	2.147	0.064	1.426	13.761	1.48
23/03/2019 15:00	4.093	3.123	15.342	11.17	2.122	0.062	1.402	13.925	1.641
23/03/2019 15:30	4.093	3.123	15.224	11.05	2.108	0.058	1.411	13.502	1.697
23/03/2019 16:00	4.093	3.123	15.254	11.21	1.879	0.059	1.433	13.679	1.619
23/03/2019 16:30	4.093	3.123	15.194	11.04	1.766	0.064	1.462	13.741	1.589

23/03/2019 17:00	4.093	3.123	15.157	11.06	1.757	0.063	1.465	13.38	1.5
23/03/2019 17:30	4.093	3.123	14.579	10.89	1.733	0.062	1.454	12.987	1.325
23/03/2019 18:00	4.093	3.123	14.737	11.16	1.66	0.071	1.454	12.77	1.342
23/03/2019 18:30	4.093	3.123	15.928	11.94	1.71	0.09	1.49	13.347	1.473
23/03/2019 19:00	4.093	3.123	18.163	14.84	1.866	0.094	1.762	14.844	1.452
23/03/2019 19:30	4.093	3.123	18.566	15.47	1.84	0.098	2.084	15.405	1.491
23/03/2019 20:00	4.093	3.123	18.348	15.58	1.676	0.09	2.178	15.532	1.347
23/03/2019 20:30	4.093	3.123	17.967	15.52	1.656	0.095	1.993	15.411	1.352
23/03/2019 21:00	4.093	3.123	17.542	15.29	1.657	0.087	1.967	15.134	1.392
23/03/2019 21:30	4.093	3.123	16.829	14.89	1.567	0.09	1.933	14.754	1.331
23/03/2019 22:00	4.093	3.123	16.064	14.34	1.489	0.09	1.868	13.863	1.27
23/03/2019 22:30	4.093	3.123	14.888	13.62	1.418	0.086	1.733	13.285	1.165
23/03/2019 23:00	4.093	3.123	14.007	12.87	1.412	0.081	1.629	12.971	1.269
23/03/2019 23:30	4.093	3.123	13.155	11.74	1.325	0.07	1.512	12.565	1.343
24/03/2019 00:00	4.093	3.123	12.161	10.93	1.311	0.07	1.404	12.196	1.268
24/03/2019 00:30	2.744	2.076	11.257	9.54	1.23	0.062	1.264	7.529	0.283
24/03/2019 01:00	2.617	1.973	10.6	9.06	1.201	0.053	1.237	7.323	0.277
24/03/2019 01:30	2.55	1.906	10.15	8.65	1.158	0.051	1.206	6.984	0.254
24/03/2019 02:00	2.536	1.942	9.759	8.28	1.176	0.05	1.179	6.878	0.281
24/03/2019 02:30	2.477	2.019	9.518	8.01	1.153	0.05	1.163	6.816	0.251
24/03/2019 03:00	2.45	2.099	9.339	7.77	1.063	0.05	1.154	6.665	0.264
24/03/2019 03:30	2.416	2.157	9.216	7.65	1.153	0.05	1.143	6.497	0.275
24/03/2019 04:00	2.381	2.049	9.081	7.52	1.156	0.05	1.141	6.45	0.257
24/03/2019 04:30	2.377	2.109	3.79	7.46	1.108	0.05	1.161	6.432	0.264
24/03/2019 05:00	2.294	2.246	1.04	7.47	1.156	0.05	1.166	8.773	0.273
24/03/2019 05:30	2.324	2.155	0.034	7.53	1.109	0.05	1.177	10.14	0.266
24/03/2019 06:00	2.378	2.242	0.034	7.48	1.282	0.052	1.208	9.93	0.239
24/03/2019 06:30	2.151	2.148	0.026	6.45	1.517	0.05	1.301	8.954	0.158
24/03/2019 07:00	2.241	2.14	0.024	6.55	1.56	0.05	1.323	9.499	0.159

24/03/2019 07:30	2.309	2.015	0.028	7.01	1.866	0.051	1.283	9.647	0.174
24/03/2019 08:00	2.413	1.9	0.025	7.49	1.945	0.054	1.208	9.102	0.159
24/03/2019 08:30	2.493	2.079	0.025	8.17	1.944	0.054	1.157	9.495	0.192
24/03/2019 09:00	2.503	2.108	0.025	8.48	2.045	0.059	1.714	9.853	0.196
24/03/2019 09:30	2.63	2.123	0.025	8.83	2.108	0.058	3.188	10.058	0.199
24/03/2019 10:00	2.72	2.121	0.025	9.02	2.165	0.055	1.715	10.801	0.195
24/03/2019 10:30	2.685	2.106	0.025	9.4	2.367	0.055	1.361	11.404	0.176
24/03/2019 11:00	2.797	2.136	0.025	9.51	2.48	0.068	1.399	11.834	0.207
24/03/2019 11:30	2.812	2.152	0.025	9.92	2.501	0.061	1.384	12.18	0.208
24/03/2019 12:00	2.838	2.11	0.025	10.08	2.422	0.066	1.424	12.427	0.141
24/03/2019 12:30	2.857	2.037	0.025	10.3	2.291	0.066	1.417	12.262	0.173
24/03/2019 13:00	2.88	2.047	0.025	10.04	2.286	0.059	1.406	12.107	0.155
24/03/2019 13:30	2.825	1.966	0.025	9.84	2.264	0.072	1.382	11.805	0.219
24/03/2019 14:00	2.756	1.982	0.025	9.54	2.225	0.059	1.372	11.627	0.194
24/03/2019 14:30	2.825	1.89	0.025	9.5	2.147	0.064	1.426	11.775	0.187
24/03/2019 15:00	2.692	1.824	0.025	9.31	2.122	0.062	1.402	11.811	0.198
24/03/2019 15:30	2.773	1.857	0.025	9.21	2.108	0.058	1.411	11.789	0.227
24/03/2019 16:00	2.755	1.868	0.025	9.24	1.879	0.059	1.433	12.303	0.196
24/03/2019 16:30	2.735	1.78	0.025	9.23	1.766	0.064	1.462	12.436	0.194
24/03/2019 17:00	2.76	1.77	0.025	9.37	1.757	0.063	1.465	12.691	0.173
24/03/2019 17:30	2.739	1.65	0.025	9.45	1.733	0.062	1.454	8.666	0.191
24/03/2019 18:00	2.769	1.642	0.025	9.94	1.66	0.071	1.454	7.872	0.254
24/03/2019 18:30	3.335	2.246	0.025	12.49	1.71	0.09	1.49	9.516	0.254
24/03/2019 19:00	3.543	2.564	0.025	14.21	1.866	0.094	1.762	10.171	0.245
24/03/2019 19:30	3.635	2.534	0.025	14.45	1.84	0.098	2.084	10.377	0.269
24/03/2019 20:00	3.622	2.487	0.025	14.52	1.676	0.09	2.178	10.146	0.288
24/03/2019 20:30	3.622	2.487	0.025	14.54	1.656	0.095	1.993	10.174	0.27
24/03/2019 21:00	3.622	2.487	0.025	14.21	1.657	0.087	1.967	9.965	0.266
24/03/2019 21:30	3.622	2.487	0.025	13.9	1.567	0.09	1.933	9.856	0.252

24/03/2019 22:00	3.622	2.487	0.025	13.38	1.489	0.09	1.868	9.148	0.254
24/03/2019 22:30	3.622	2.487	0.025	12.41	1.418	0.086	1.733	8.675	0.27
24/03/2019 23:00	3.622	2.487	0.025	11.44	1.412	0.081	1.629	8.566	0.239
24/03/2019 23:30	3.622	2.487	0.025	10.76	1.325	0.07	1.512	8.271	0.279
25/03/2019 00:00	3.622	2.487	0.025	9.74	1.311	0.07	1.404	7.641	0.248
25/03/2019 00:30	3.622	2.487	9.4	9.03	1.23	0.062	1.264	7.288	0.219
25/03/2019 01:00	3.622	2.487	8.862	8.48	1.201	0.053	1.237	6.892	0.257
25/03/2019 01:30	3.622	2.487	8.448	8.04	1.158	0.051	1.206	6.782	0.243
25/03/2019 02:00	3.622	2.487	8.075	7.69	1.176	0.05	1.179	6.538	0.249
25/03/2019 02:30	3.622	2.487	8.031	7.31	1.153	0.05	1.163	6.447	0.248
25/03/2019 03:00	3.622	2.487	7.895	7.26	1.063	0.05	1.154	6.328	0.258
25/03/2019 03:30	3.622	2.487	7.778	7.21	1.153	0.05	1.143	6.312	0.248
25/03/2019 04:00	3.622	2.487	7.527	7.14	1.156	0.05	1.141	6.3	0.252
25/03/2019 04:30	3.622	2.487	7.219	7.15	1.108	0.05	1.161	6.325	0.209
25/03/2019 05:00	3.622	2.487	7.644	7.3	1.156	0.05	1.166	6.369	0.249
25/03/2019 05:30	3.622	2.487	7.825	7.76	1.109	0.05	1.177	6.507	0.217
25/03/2019 06:00	3.622	2.487	8.214	8.52	1.282	0.052	1.208	6.918	0.244
25/03/2019 06:30	3.622	2.487	8.22	9.78	1.517	0.05	1.301	7.335	0.393
25/03/2019 07:00	3.622	2.487	8.645	8.59	1.56	0.05	1.323	7.056	0.379
25/03/2019 07:30	3.622	2.487	9.281	8.42	1.866	0.051	1.283	7.188	0.454
25/03/2019 08:00	3.622	2.487	9.655	8.32	1.945	0.054	1.208	7.693	0.434
25/03/2019 08:30	2.691	2.32	11.051	8.71	1.944	0.054	1.157	8.359	0.526
25/03/2019 09:00	2.825	2.711	11.604	9.06	2.045	0.059	1.714	8.726	0.532
25/03/2019 09:30	2.894	2.827	12.285	9.43	2.108	0.058	3.188	8.941	0.577
25/03/2019 10:00	2.942	2.748	12.842	9.57	2.165	0.055	1.715	9.358	0.6
25/03/2019 10:30	3.068	2.821	13.234	10.1	2.367	0.055	1.361	9.481	0.66
25/03/2019 11:00	3.025	2.863	13.641	10.46	2.48	0.068	1.399	9.961	0.761
25/03/2019 11:30	3.138	2.902	13.801	10.7	2.501	0.061	1.384	10.06	0.919
25/03/2019 12:00	3.184	2.924	13.67	10.92	2.422	0.066	1.424	10.167	0.914

25/03/2019 12:30	3.181	2.858	13.335	10.6	2.291	0.066	1.417	10.007	0.884
25/03/2019 13:00	3.024	2.69	11.649	10.29	2.286	0.059	1.406	9.696	0.581
25/03/2019 13:30	3.096	2.729	11.604	10.3	2.264	0.072	1.382	10.048	0.755
25/03/2019 14:00	3.27	2.678	11.885	10.2	2.225	0.059	1.372	10.101	0.837
25/03/2019 14:30	3.25	2.812	11.86	10.26	2.147	0.064	1.426	10.699	0.9
25/03/2019 15:00	3.25	2.812	12.151	10.28	2.122	0.062	1.402	10.739	1.029
25/03/2019 15:30	3.25	2.812	12.541	10.3	2.108	0.058	1.411	10.973	0.972
25/03/2019 16:00	3.25	2.812	12.427	10.08	1.879	0.059	1.433	10.949	0.934
25/03/2019 16:30	3.25	2.812	12.38	10.03	1.766	0.064	1.462	11.206	0.832
25/03/2019 17:00	3.25	2.812	12.426	9.91	1.757	0.063	1.465	11.592	0.881
25/03/2019 17:30	3.25	2.812	12.653	10.09	1.733	0.062	1.454	11.568	0.819
25/03/2019 18:00	3.25	2.812	12.808	10.42	1.66	0.071	1.454	10.98	0.757
25/03/2019 18:30	3.25	2.812	14.542	12.92	1.71	0.09	1.49	12.609	0.764
25/03/2019 19:00	3.25	2.812	15.403	14.84	1.866	0.094	1.762	13.157	0.838
25/03/2019 19:30	3.25	2.812	15.51	15.19	1.84	0.098	2.084	13.381	0.861
25/03/2019 20:00	3.25	2.812	15.441	15.23	1.676	0.09	2.178	12.92	0.824
25/03/2019 20:30	3.25	2.812	14.925	15.17	1.656	0.095	1.993	12.88	0.778
25/03/2019 21:00	3.25	2.812	14.507	14.87	1.657	0.087	1.967	12.468	0.779
25/03/2019 21:30	3.25	2.812	13.869	14.34	1.567	0.09	1.933	12.227	0.772
25/03/2019 22:00	3.25	2.812	13.051	13.46	1.489	0.09	1.868	11.661	0.775
25/03/2019 22:30	3.25	2.812	12.216	12.62	1.418	0.086	1.733	11.057	0.765
25/03/2019 23:00	3.25	2.812	11.539	11.5	1.412	0.081	1.629	10.149	0.815
25/03/2019 23:30	3.25	2.812	10.634	10.55	1.325	0.07	1.512	9.712	0.714
26/03/2019 00:00	3.25	2.812	9.9	9.65	1.311	0.07	1.404	9.619	0.718
26/03/2019 00:30	3.25	2.812	10.341	8.82	1.23	0.062	1.264	9.185	0.704
26/03/2019 01:00	3.25	2.812	9.643	8.27	1.201	0.053	1.237	8.764	0.757
26/03/2019 01:30	3.25	2.812	9.29	7.8	1.158	0.051	1.206	8.928	0.72
26/03/2019 02:00	2.339	2.033	9.121	7.66	1.176	0.05	1.179	8.727	0.747
26/03/2019 02:30	2.259	2.196	8.808	7.39	1.153	0.05	1.163	8.526	0.753

26/03/2019 03:00	2.197	2.074	8.568	7.35	1.063	0.05	1.154	8.409	0.707
26/03/2019 03:30	2.189	2.068	8.642	7.19	1.153	0.05	1.143	8.352	0.692
26/03/2019 04:00	2.165	2.266	8.398	7.14	1.156	0.05	1.141	8.253	0.723
26/03/2019 04:30	2.224	2.209	8.517	7.17	1.108	0.05	1.161	8.37	0.689
26/03/2019 05:00	2.174	2.311	8.624	7.4	1.156	0.05	1.166	8.392	0.666
26/03/2019 05:30	2.318	2.056	9.133	7.75	1.109	0.05	1.177	8.616	0.655
26/03/2019 06:00	2.396	2.171	4.489	8.64	1.282	0.052	1.208	7.409	0.634
26/03/2019 06:30	2.282	2.166	10.201	9.66	1.517	0.05	1.301	8.621	0.633
26/03/2019 07:00	2.2	2.253	10.186	8.75	1.56	0.05	1.323	8.764	0.661
26/03/2019 07:30	2.377	2.379	10.433	8.6	1.866	0.051	1.283	8.82	0.764
26/03/2019 08:00	2.397	2.38	10.547	8.52	1.945	0.054	1.208	8.755	0.618
26/03/2019 08:30	2.625	2.242	11.289	8.73	1.944	0.054	1.157	9.311	0.864
26/03/2019 09:00	2.71	2.312	11.78	8.93	2.045	0.059	1.714	9.707	0.861
26/03/2019 09:30	2.736	2.38	10.567	9.03	2.108	0.058	3.188	9.694	0.899
26/03/2019 10:00	2.852	2.426	12.384	9.39	2.165	0.055	1.715	9.99	1.088
26/03/2019 10:30	2.958	2.55	13.129	9.76	2.367	0.055	1.361	10.377	1.085
26/03/2019 11:00	2.999	2.518	12.606	10.01	2.48	0.068	1.399	10.715	1.163
26/03/2019 11:30	3.087	2.512	13.264	10.48	2.501	0.061	1.384	10.813	1.348
26/03/2019 12:00	3.087	2.512	13.959	10.69	2.422	0.066	1.424	10.644	1.459
26/03/2019 12:30	3.087	2.512	13.804	10.44	2.291	0.066	1.417	10.345	1.422
26/03/2019 13:00	3.087	2.512	13.274	10.01	2.286	0.059	1.406	10.134	1.426
26/03/2019 13:30	3.087	2.512	13.258	9.98	2.264	0.072	1.382	10.038	1.118
26/03/2019 14:00	3.087	2.512	13.293	9.75	2.225	0.059	1.372	10.259	1.174
26/03/2019 14:30	3.087	2.512	13.634	10.05	2.147	0.064	1.426	10.702	1.182
26/03/2019 15:00	3.087	2.512	13.395	10.07	2.122	0.062	1.402	11.034	1.218
26/03/2019 15:30	3.087	2.512	13.445	9.99	2.108	0.058	1.411	11.002	1.165
26/03/2019 16:00	3.087	2.512	13.62	9.94	1.879	0.059	1.433	11.185	1.161
26/03/2019 16:30	3.087	2.512	13.795	9.99	1.766	0.064	1.462	11.106	1.131
26/03/2019 17:00	2.866	2.632	13.62	9.75	1.757	0.063	1.465	10.766	1.197

26/03/2019 17:30	2.827	2.112	13.653	9.84	1.733	0.062	1.454	11.088	1.135
26/03/2019 18:00	2.728	1.936	13.854	10.37	1.66	0.071	1.454	11.074	1.194
26/03/2019 18:30	3.249	2.36	16.609	13.05	1.71	0.09	1.49	12.587	1.115
26/03/2019 19:00	3.504	2.788	18.257	14.95	1.866	0.094	1.762	13.49	1.165
26/03/2019 19:30	3.57	2.942	18.546	15.33	1.84	0.098	2.084	13.245	1.114
26/03/2019 20:00	3.571	2.948	18.217	15.55	1.676	0.09	2.178	13.233	1.132
26/03/2019 20:30	3.504	2.78	17.745	15.31	1.656	0.095	1.993	13.093	1.053
26/03/2019 21:00	3.55	2.694	17.089	14.97	1.657	0.087	1.967	12.957	1.016
26/03/2019 21:30	3.55	2.694	16.385	14.54	1.567	0.09	1.933	12.65	1.029
26/03/2019 22:00	3.55	2.694	15.497	13.73	1.489	0.09	1.868	11.886	1.006
26/03/2019 22:30	3.55	2.694	14.198	12.7	1.418	0.086	1.733	11.124	1.091
26/03/2019 23:00	3.55	2.694	13.175	11.57	1.412	0.081	1.629	10.196	1.048
26/03/2019 23:30	3.55	2.694	12.102	10.74	1.325	0.07	1.512	10.2	1.023
27/03/2019 00:00	3.55	2.694	11.241	9.74	1.311	0.07	1.404	9.676	0.978
27/03/2019 00:30	3.55	2.694	10.357	8.66	1.23	0.062	1.264	5.033	0.953
27/03/2019 01:00	3.55	2.694	9.585	8.24	1.201	0.053	1.237	6.252	0.937
27/03/2019 01:30	3.55	2.694	9.101	7.86	1.158	0.051	1.206	7.893	0.938
27/03/2019 02:00	3.55	2.694	8.847	7.61	1.176	0.05	1.179	7.498	0.929
27/03/2019 02:30	3.55	2.694	8.796	7.5	1.153	0.05	1.163	7.974	0.921
27/03/2019 03:00	3.55	2.694	8.461	7.26	1.063	0.05	1.154	7.846	0.844
27/03/2019 03:30	3.55	2.694	8.31	7.32	1.153	0.05	1.143	7.56	0.875
27/03/2019 04:00	3.55	2.694	8.464	7.15	1.156	0.05	1.141	7.33	0.789
27/03/2019 04:30	3.55	2.694	8.402	7.26	1.108	0.05	1.161	7.504	0.787
27/03/2019 05:00	3.55	2.694	8.58	7.37	1.156	0.05	1.166	7.514	0.719
27/03/2019 05:30	3.55	2.694	9.261	7.85	1.109	0.05	1.177	7.582	0.778
27/03/2019 06:00	3.55	2.694	10.037	8.97	1.282	0.052	1.208	8.248	0.767
27/03/2019 06:30	2.315	2.273	10.339	9.26	1.517	0.05	1.301	8.236	0.679
27/03/2019 07:00	2.418	2.379	10.44	8.83	1.56	0.05	1.323	8.537	0.734
27/03/2019 07:30	2.442	2.549	10.488	8.66	1.866	0.051	1.283	8.982	0.738

27/03/2019 08:00	2.591	2.558	11.645	8.68	1.945	0.054	1.208	9.312	0.846
27/03/2019 08:30	2.768	2.644	11.991	8.97	1.944	0.054	1.157	9.746	0.929
27/03/2019 09:00	2.869	2.692	12.546	9.27	2.045	0.059	1.714	10.122	0.894
27/03/2019 09:30	2.946	2.509	13.001	9.55	2.108	0.058	3.188	10.519	1.319
27/03/2019 10:00	3.109	2.773	13.803	9.86	2.165	0.055	1.715	11.266	1.211
27/03/2019 10:30	3.092	2.863	14.123	10.07	2.367	0.055	1.361	11.063	1.224
27/03/2019 11:00	3.118	2.805	14.334	10.51	2.48	0.068	1.399	11.74	1.036
27/03/2019 11:30	3.227	2.966	14.739	10.81	2.501	0.061	1.384	11.888	1.079
27/03/2019 12:00	3.33	2.858	14.746	10.81	2.422	0.066	1.424	11.412	1.01
27/03/2019 12:30	3.232	2.819	14.046	10.46	2.291	0.066	1.417	11.014	1.02
27/03/2019 13:00	3.169	2.728	13.826	10.28	2.286	0.059	1.406	11.032	0.963
27/03/2019 13:30	3.185	2.747	13.563	9.97	2.264	0.072	1.382	11.517	1.121
27/03/2019 14:00	3.213	2.781	13.45	9.97	2.225	0.059	1.372	11.354	1.202
27/03/2019 14:30	3.231	2.715	13.653	9.95	2.147	0.064	1.426	11.662	1.279
27/03/2019 15:00	3.108	2.853	13.842	10.18	2.122	0.062	1.402	11.933	1.287
27/03/2019 15:30	3.057	2.77	13.963	9.99	2.108	0.058	1.411	12.19	1.278
27/03/2019 16:00	2.898	2.621	14.208	10.09	1.879	0.059	1.433	12.403	1.233
27/03/2019 16:30	3.043	2.376	14.349	10.12	1.766	0.064	1.462	12.679	1.091
27/03/2019 17:00	3.016	2.457	14.127	10.19	1.757	0.063	1.465	12.644	1.259
27/03/2019 17:30	2.878	2.275	13.74	10.11	1.733	0.062	1.454	12.383	1.13
27/03/2019 18:00	3.02	2.33	14.397	10.67	1.66	0.071	1.454	11.388	1.129
27/03/2019 18:30	3.481	2.85	17.331	13.98	1.71	0.09	1.49	13.12	1.104
27/03/2019 19:00	3.549	2.858	18.438	15.34	1.866	0.094	1.762	13.409	1.073
27/03/2019 19:30	3.549	2.858	18.557	15.59	1.84	0.098	2.084	13.359	1.102
27/03/2019 20:00	3.549	2.858	18.299	15.56	1.676	0.09	2.178	13.182	1.061
27/03/2019 20:30	3.549	2.858	17.888	15.5	1.656	0.095	1.993	13.319	1.039
27/03/2019 21:00	3.549	2.858	17.237	14.98	1.657	0.087	1.967	13.616	0.952
27/03/2019 21:30	3.549	2.858	16.452	14.51	1.567	0.09	1.933	13.167	0.949
27/03/2019 22:00	3.549	2.858	15.426	13.83	1.489	0.09	1.868	12.942	0.965

27/03/2019 22:30	3.549	2.858	14.347	12.93	1.418	0.086	1.733	12.477	0.872
27/03/2019 23:00	3.549	2.858	13.367	11.64	1.412	0.081	1.629	11.576	0.806
27/03/2019 23:30	3.549	2.858	12.137	10.61	1.325	0.07	1.512	10.764	0.757
28/03/2019 00:00	3.549	2.858	10.925	9.38	1.311	0.07	1.404	10.285	0.769
28/03/2019 00:30	3.55	2.694	10.357	8.66	1.23	0.062	1.264	5.033	0.953
28/03/2019 01:00	3.55	2.694	9.585	8.24	1.201	0.053	1.237	6.252	0.937
28/03/2019 01:30	3.55	2.694	9.101	7.86	1.158	0.051	1.206	7.893	0.938
28/03/2019 02:00	3.55	2.694	8.847	7.61	1.176	0.05	1.179	7.498	0.929
28/03/2019 02:30	3.55	2.694	8.796	7.5	1.153	0.05	1.163	7.974	0.921
28/03/2019 03:00	3.55	2.694	8.461	7.26	1.063	0.05	1.154	7.846	0.844
28/03/2019 03:30	3.55	2.694	8.31	7.32	1.153	0.05	1.143	7.56	0.875
28/03/2019 04:00	3.55	2.694	8.464	7.15	1.156	0.05	1.141	7.33	0.789
28/03/2019 04:30	3.55	2.694	8.402	7.26	1.108	0.05	1.161	7.504	0.787
28/03/2019 05:00	3.55	2.694	8.58	7.37	1.156	0.05	1.166	7.514	0.719
28/03/2019 05:30	3.55	2.694	9.261	7.85	1.109	0.05	1.177	7.582	0.778
28/03/2019 06:00	3.55	2.694	10.037	8.97	1.282	0.052	1.208	8.248	0.767
28/03/2019 06:30	2.315	2.273	10.339	9.26	1.517	0.05	1.301	8.236	0.679
28/03/2019 07:00	2.418	2.379	10.44	8.83	1.56	0.05	1.323	8.537	0.734
28/03/2019 07:30	2.442	2.549	10.488	8.66	1.866	0.051	1.283	8.982	0.738
28/03/2019 08:00	2.591	2.558	11.645	8.68	1.945	0.054	1.208	9.312	0.846
28/03/2019 08:30	2.768	2.644	11.991	8.97	1.944	0.054	1.157	9.746	0.929
28/03/2019 09:00	2.869	2.692	12.546	9.27	2.045	0.059	1.714	10.122	0.894
28/03/2019 09:30	2.946	2.509	13.001	9.55	2.108	0.058	3.188	10.519	1.319
28/03/2019 10:00	3.109	2.773	13.803	9.86	2.165	0.055	1.715	11.266	1.211
28/03/2019 10:30	3.092	2.863	14.123	10.07	2.367	0.055	1.361	11.063	1.224
28/03/2019 11:00	3.118	2.805	14.334	10.51	2.48	0.068	1.399	11.74	1.036
28/03/2019 11:30	3.227	2.966	14.739	10.81	2.501	0.061	1.384	11.888	1.079
28/03/2019 12:00	3.33	2.858	14.746	10.81	2.422	0.066	1.424	11.412	1.01
28/03/2019 12:30	3.232	2.819	14.046	10.46	2.291	0.066	1.417	11.014	1.02

28/03/2019 13:00	3.169	2.728	13.826	10.28	2.286	0.059	1.406	11.032	0.963
28/03/2019 13:30	3.185	2.747	13.563	9.97	2.264	0.072	1.382	11.517	1.121
28/03/2019 14:00	3.213	2.781	13.45	9.97	2.225	0.059	1.372	11.354	1.202
28/03/2019 14:30	3.231	2.715	13.653	9.95	2.147	0.064	1.426	11.662	1.279
28/03/2019 15:00	3.108	2.853	13.842	10.18	2.122	0.062	1.402	11.933	1.287
28/03/2019 15:30	3.057	2.77	13.963	9.99	2.108	0.058	1.411	12.19	1.278
28/03/2019 16:00	2.898	2.621	14.208	10.09	1.879	0.059	1.433	12.403	1.233
28/03/2019 16:30	3.043	2.376	14.349	10.12	1.766	0.064	1.462	12.679	1.091
28/03/2019 17:00	3.016	2.457	14.127	10.19	1.757	0.063	1.465	12.644	1.259
28/03/2019 17:30	2.878	2.275	13.74	10.11	1.733	0.062	1.454	12.383	1.13
28/03/2019 18:00	3.02	2.33	14.397	10.67	1.66	0.071	1.454	11.388	1.129
28/03/2019 18:30	3.481	2.85	17.331	13.98	1.71	0.09	1.49	13.12	1.104
28/03/2019 19:00	3.549	2.858	18.438	15.34	1.866	0.094	1.762	13.409	1.073
28/03/2019 19:30	3.549	2.858	18.557	15.59	1.84	0.098	2.084	13.359	1.102
28/03/2019 20:00	3.549	2.858	18.299	15.56	1.676	0.09	2.178	13.182	1.061
28/03/2019 20:30	3.549	2.858	17.888	15.5	1.656	0.095	1.993	13.319	1.039
28/03/2019 21:00	3.549	2.858	17.237	14.98	1.657	0.087	1.967	13.616	0.952
28/03/2019 21:30	3.549	2.858	16.452	14.51	1.567	0.09	1.933	13.167	0.949
28/03/2019 22:00	3.549	2.858	15.426	13.83	1.489	0.09	1.868	12.942	0.965
28/03/2019 22:30	3.549	2.858	14.347	12.93	1.418	0.086	1.733	12.477	0.872
28/03/2019 23:00	3.549	2.858	13.367	11.64	1.412	0.081	1.629	11.576	0.806
28/03/2019 23:30	3.549	2.858	12.137	10.61	1.325	0.07	1.512	10.764	0.757
29/03/2019 00:00	3.549	2.858	10.925	9.38	1.311	0.07	1.404	10.285	0.769
29/03/2019 00:30	3.55	2.694	10.357	8.66	1.23	0.062	1.264	10.437	0.844
29/03/2019 01:00	3.55	2.694	9.585	8.24	1.201	0.053	1.237	10.558	0.852
29/03/2019 01:30	3.55	2.694	9.101	7.86	1.158	0.051	1.206	9.928	0.839
29/03/2019 02:00	3.55	2.694	8.847	7.61	1.176	0.05	1.179	9.527	0.759
29/03/2019 02:30	3.55	2.694	8.796	7.5	1.153	0.05	1.163	9.769	0.687
29/03/2019 03:00	3.55	2.694	8.461	7.26	1.063	0.05	1.154	9.713	0.705

29/03/2019 03:30	3.55	2.694	8.31	7.32	1.153	0.05	1.143	9.477	0.738
29/03/2019 04:00	3.55	2.694	8.464	7.15	1.156	0.05	1.141	9.035	0.742
29/03/2019 04:30	3.55	2.694	8.402	7.26	1.108	0.05	1.161	9.24	0.71
29/03/2019 05:00	3.55	2.694	8.58	7.37	1.156	0.05	1.166	9.155	0.712
29/03/2019 05:30	3.55	2.694	9.261	7.85	1.109	0.05	1.177	9.21	0.723
29/03/2019 06:00	3.55	2.694	10.037	8.97	1.282	0.052	1.208	9.353	0.719
29/03/2019 06:30	2.315	2.273	10.339	9.26	1.517	0.05	1.301	9.172	0.69
29/03/2019 07:00	2.418	2.379	10.44	8.83	1.56	0.05	1.323	8.546	0.697
29/03/2019 07:30	2.442	2.549	10.488	8.66	1.866	0.051	1.283	8.889	0.771
29/03/2019 08:00	2.591	2.558	11.645	8.68	1.945	0.054	1.208	9.259	0.838
29/03/2019 08:30	2.768	2.644	11.991	8.97	1.944	0.054	1.157	9.787	0.924
29/03/2019 09:00	2.869	2.692	12.546	9.27	2.045	0.059	1.714	9.995	1.261
29/03/2019 09:30	2.946	2.509	13.001	9.55	2.108	0.058	3.188	10.125	1.411
29/03/2019 10:00	3.109	2.773	13.803	9.86	2.165	0.055	1.715	10.493	1.46
29/03/2019 10:30	3.092	2.863	14.123	10.07	2.367	0.055	1.361	10.995	1.46
29/03/2019 11:00	3.118	2.805	14.334	10.51	2.48	0.068	1.399	11.744	1.098
29/03/2019 11:30	3.227	2.966	14.739	10.81	2.501	0.061	1.384	11.671	1.284
29/03/2019 12:00	3.33	2.858	14.746	10.81	2.422	0.066	1.424	11.228	0.94
29/03/2019 12:30	3.232	2.819	14.046	10.46	2.291	0.066	1.417	11.381	0.887
29/03/2019 13:00	3.169	2.728	13.826	10.28	2.286	0.059	1.406	11.34	0.852
29/03/2019 13:30	3.185	2.747	13.563	9.97	2.264	0.072	1.382	11.345	0.935
29/03/2019 14:00	3.213	2.781	13.45	9.97	2.225	0.059	1.372	11.938	0.972
29/03/2019 14:30	3.231	2.715	13.653	9.95	2.147	0.064	1.426	12.072	1.112
29/03/2019 15:00	3.108	2.853	13.842	10.18	2.122	0.062	1.402	12.257	1.13
29/03/2019 15:30	3.057	2.77	13.963	9.99	2.108	0.058	1.411	12.119	1.205
29/03/2019 16:00	2.898	2.621	14.208	10.09	1.879	0.059	1.433	12.08	1.3
29/03/2019 16:30	3.043	2.376	14.349	10.12	1.766	0.064	1.462	11.968	1.279
29/03/2019 17:00	3.016	2.457	14.127	10.19	1.757	0.063	1.465	12.047	1.065
29/03/2019 17:30	2.878	2.275	13.74	10.11	1.733	0.062	1.454	11.957	1.122

29/03/2019 18:00	3.02	2.33	14.397	10.67	1.66	0.071	1.454	12.472	1.125
29/03/2019 18:30	3.481	2.85	17.331	13.98	1.71	0.09	1.49	13.906	1.163
29/03/2019 19:00	3.549	2.858	18.438	15.34	1.866	0.094	1.762	13.926	1.129
29/03/2019 19:30	3.549	2.858	18.557	15.59	1.84	0.098	2.084	13.951	1.113
29/03/2019 20:00	3.549	2.858	18.299	15.56	1.676	0.09	2.178	14.008	1.093
29/03/2019 20:30	3.549	2.858	17.888	15.5	1.656	0.095	1.993	13.651	1.187
29/03/2019 21:00	3.549	2.858	17.237	14.98	1.657	0.087	1.967	13.307	1.088
29/03/2019 21:30	3.549	2.858	16.452	14.51	1.567	0.09	1.933	13.245	1.037
29/03/2019 22:00	3.549	2.858	15.426	13.83	1.489	0.09	1.868	12.753	0.932
29/03/2019 22:30	3.549	2.858	14.347	12.93	1.418	0.086	1.733	12.173	0.935
29/03/2019 23:00	3.549	2.858	13.367	11.64	1.412	0.081	1.629	11.624	0.806
29/03/2019 23:30	3.549	2.858	12.137	10.61	1.325	0.07	1.512	11.182	0.841
30/03/2019 00:00	3.549	2.858	10.925	9.38	1.311	0.07	1.404	10.461	0.775
30/03/2019 00:30	4.183	3.193	11.292	10.08	1.23	0.062	1.264	11.548	1.15
30/03/2019 01:00	4.183	3.193	10.86	9.32	1.201	0.053	1.237	11.092	1.15
30/03/2019 01:30	4.183	3.193	10.421	8.9	1.158	0.051	1.206	11.004	1.148
30/03/2019 02:00	4.183	3.193	9.982	8.56	1.176	0.05	1.179	10.566	1.169
30/03/2019 02:30	4.183	3.193	9.647	8.19	1.153	0.05	1.163	10.074	0.947
30/03/2019 03:00	4.183	3.193	9.15	8	1.063	0.05	1.154	10.003	0.859
30/03/2019 03:30	2.923	2.289	9.365	7.82	1.153	0.05	1.143	9.926	0.764
30/03/2019 04:00	2.923	2.289	9.197	7.84	1.156	0.05	1.141	9.72	0.737
30/03/2019 04:30	2.923	2.289	9.11	7.7	1.108	0.05	1.161	9.652	0.684
30/03/2019 05:00	2.923	2.289	8.909	7.8	1.156	0.05	1.166	9.613	0.852
30/03/2019 05:30	2.923	2.289	9.597	7.86	1.109	0.05	1.177	9.861	0.81
30/03/2019 06:00	2.923	2.289	9.752	8.02	1.282	0.052	1.208	9.914	0.779
30/03/2019 06:30	2.923	2.289	9.266	7.36	1.517	0.05	1.301	9.399	0.68
30/03/2019 07:00	2.923	2.289	9.754	7.75	1.56	0.05	1.323	9.775	0.725
30/03/2019 07:30	2.923	2.289	10.526	8.28	1.866	0.051	1.283	9.858	0.762
30/03/2019 08:00	2.923	2.289	11.613	8.71	1.945	0.054	1.208	10.632	0.83

30/03/2019 08:30	2.923	2.289	12.624	9.7	1.944	0.054	1.157	11.668	0.947
30/03/2019 09:00	2.923	2.289	13.665	10.12	2.045	0.059	1.714	12.54	1.031
30/03/2019 09:30	3.81	3.161	14.397	10.6	2.108	0.058	3.188	12.598	1.329
30/03/2019 10:00	3.783	3.302	14.659	10.96	2.165	0.055	1.715	13.632	1.386
30/03/2019 10:30	3.783	3.302	15.492	11.18	2.367	0.055	1.361	13.509	1.49
30/03/2019 11:00	3.783	3.302	16.073	11.66	2.48	0.068	1.399	13.671	1.267
30/03/2019 11:30	3.783	3.302	16.371	12.07	2.501	0.061	1.384	13.901	1.237
30/03/2019 12:00	3.783	3.302	16.339	12.17	2.422	0.066	1.424	13.612	1.365
30/03/2019 12:30	3.783	3.302	16.087	12.09	2.291	0.066	1.417	13.232	1.214
30/03/2019 13:00	3.783	3.302	15.668	11.73	2.286	0.059	1.406	12.775	1.287
30/03/2019 13:30	3.783	3.302	15.303	11.4	2.264	0.072	1.382	12.971	1.339
30/03/2019 14:00	3.783	3.302	15.63	11.17	2.225	0.059	1.372	13.313	1.445
30/03/2019 14:30	3.783	3.302	15.189	11.16	2.147	0.064	1.426	13.761	1.48
30/03/2019 15:00	4.093	3.123	15.342	11.17	2.122	0.062	1.402	13.925	1.641
30/03/2019 15:30	4.093	3.123	15.224	11.05	2.108	0.058	1.411	13.502	1.697
30/03/2019 16:00	4.093	3.123	15.254	11.21	1.879	0.059	1.433	13.679	1.619
30/03/2019 16:30	4.093	3.123	15.194	11.04	1.766	0.064	1.462	13.741	1.589
30/03/2019 17:00	4.093	3.123	15.157	11.06	1.757	0.063	1.465	13.38	1.5
30/03/2019 17:30	4.093	3.123	14.579	10.89	1.733	0.062	1.454	12.987	1.325
30/03/2019 18:00	4.093	3.123	14.737	11.16	1.66	0.071	1.454	12.77	1.342
30/03/2019 18:30	4.093	3.123	15.928	11.94	1.71	0.09	1.49	13.347	1.473
30/03/2019 19:00	4.093	3.123	18.163	14.84	1.866	0.094	1.762	14.844	1.452
30/03/2019 19:30	4.093	3.123	18.566	15.47	1.84	0.098	2.084	15.405	1.491
30/03/2019 20:00	4.093	3.123	18.348	15.58	1.676	0.09	2.178	15.532	1.347
30/03/2019 20:30	4.093	3.123	17.967	15.52	1.656	0.095	1.993	15.411	1.352
30/03/2019 21:00	4.093	3.123	17.542	15.29	1.657	0.087	1.967	15.134	1.392
30/03/2019 21:30	4.093	3.123	16.829	14.89	1.567	0.09	1.933	14.754	1.331
30/03/2019 22:00	4.093	3.123	16.064	14.34	1.489	0.09	1.868	13.863	1.27
30/03/2019 22:30	4.093	3.123	14.888	13.62	1.418	0.086	1.733	13.285	1.165

30/03/2019 23:00	4.093	3.123	14.007	12.87	1.412	0.081	1.629	12.971	1.269
30/03/2019 23:30	4.093	3.123	13.155	11.74	1.325	0.07	1.512	12.565	1.343
31/03/2019 00:00	4.093	3.123	12.161	10.93	1.311	0.07	1.404	12.196	1.268
31/03/2019 00:30	4.183	3.193	11.292	10.08	1.23	0.062	1.264	11.548	1.15
31/03/2019 01:00	4.183	3.193	10.86	9.32	1.201	0.053	1.237	11.092	1.15
31/03/2019 01:30	4.183	3.193	10.421	8.9	1.158	0.051	1.206	11.004	1.148
31/03/2019 02:00	4.183	3.193	9.982	8.56	1.176	0.05	1.179	10.566	1.169
31/03/2019 02:30	4.183	3.193	9.647	8.19	1.153	0.05	1.163	10.074	0.947
31/03/2019 03:00	4.183	3.193	9.15	8	1.063	0.05	1.154	10.003	0.859
31/03/2019 03:30	2.923	2.289	9.365	7.82	1.153	0.05	1.143	9.926	0.764
31/03/2019 04:00	2.923	2.289	9.197	7.84	1.156	0.05	1.141	9.72	0.737
31/03/2019 04:30	2.923	2.289	9.11	7.7	1.108	0.05	1.161	9.652	0.684
31/03/2019 05:00	2.923	2.289	8.909	7.8	1.156	0.05	1.166	9.613	0.852
31/03/2019 05:30	2.923	2.289	9.597	7.86	1.109	0.05	1.177	9.861	0.81
31/03/2019 06:00	2.923	2.289	9.752	8.02	1.282	0.052	1.208	9.914	0.779
31/03/2019 06:30	2.923	2.289	9.266	7.36	1.517	0.05	1.301	9.399	0.68
31/03/2019 07:00	2.923	2.289	9.754	7.75	1.56	0.05	1.323	9.775	0.725
31/03/2019 07:30	2.923	2.289	10.526	8.28	1.866	0.051	1.283	9.858	0.762
31/03/2019 08:00	2.923	2.289	11.613	8.71	1.945	0.054	1.208	10.632	0.83
31/03/2019 08:30	2.923	2.289	12.624	9.7	1.944	0.054	1.157	11.668	0.947
31/03/2019 09:00	2.923	2.289	13.665	10.12	2.045	0.059	1.714	12.54	1.031
31/03/2019 09:30	3.81	3.161	14.397	10.6	2.108	0.058	3.188	12.598	1.329
31/03/2019 10:00	3.783	3.302	14.659	10.96	2.165	0.055	1.715	13.632	1.386
31/03/2019 10:30	3.783	3.302	15.492	11.18	2.367	0.055	1.361	13.509	1.49
31/03/2019 11:00	3.783	3.302	16.073	11.66	2.48	0.068	1.399	13.671	1.267
31/03/2019 11:30	3.783	3.302	16.371	12.07	2.501	0.061	1.384	13.901	1.237
31/03/2019 12:00	3.783	3.302	16.339	12.17	2.422	0.066	1.424	13.612	1.365
31/03/2019 12:30	3.783	3.302	16.087	12.09	2.291	0.066	1.417	13.232	1.214
31/03/2019 13:00	3.783	3.302	15.668	11.73	2.286	0.059	1.406	12.775	1.287

31/03/2019 13:30	3.783	3.302	15.303	11.4	2.264	0.072	1.382	12.971	1.339
31/03/2019 14:00	3.783	3.302	15.63	11.17	2.225	0.059	1.372	13.313	1.445
31/03/2019 14:30	3.783	3.302	15.189	11.16	2.147	0.064	1.426	13.761	1.48
31/03/2019 15:00	4.093	3.123	15.342	11.17	2.122	0.062	1.402	13.925	1.641
31/03/2019 15:30	4.093	3.123	15.224	11.05	2.108	0.058	1.411	13.502	1.697
31/03/2019 16:00	4.093	3.123	15.254	11.21	1.879	0.059	1.433	13.679	1.619
31/03/2019 16:30	4.093	3.123	15.194	11.04	1.766	0.064	1.462	13.741	1.589
31/03/2019 17:00	4.093	3.123	15.157	11.06	1.757	0.063	1.465	13.38	1.5
31/03/2019 17:30	4.093	3.123	14.579	10.89	1.733	0.062	1.454	12.987	1.325
31/03/2019 18:00	4.093	3.123	14.737	11.16	1.66	0.071	1.454	12.77	1.342
31/03/2019 18:30	4.093	3.123	15.928	11.94	1.71	0.09	1.49	13.347	1.473
31/03/2019 19:00	4.093	3.123	18.163	14.84	1.866	0.094	1.762	14.844	1.452
31/03/2019 19:30	4.093	3.123	18.566	15.47	1.84	0.098	2.084	15.405	1.491
31/03/2019 20:00	4.093	3.123	18.348	15.58	1.676	0.09	2.178	15.532	1.347
31/03/2019 20:30	4.093	3.123	17.967	15.52	1.656	0.095	1.993	15.411	1.352
31/03/2019 21:00	4.093	3.123	17.542	15.29	1.657	0.087	1.967	15.134	1.392
31/03/2019 21:30	4.093	3.123	16.829	14.89	1.567	0.09	1.933	14.754	1.331
31/03/2019 22:00	4.093	3.123	16.064	14.34	1.489	0.09	1.868	13.863	1.27
31/03/2019 22:30	4.093	3.123	14.888	13.62	1.418	0.086	1.733	13.285	1.165
31/03/2019 23:00	4.093	3.123	14.007	12.87	1.412	0.081	1.629	12.971	1.269
31/03/2019 23:30	4.093	3.123	13.155	11.74	1.325	0.07	1.512	12.565	1.343
01/04/2019 00:00	4.093	3.123	12.161	10.93	1.311	0.07	1.404	12.196	1.268

## DEMANDA HISTORICO-DIARIO-SUB ESTACIONES CHIMBOTE UNO CASMA HIDRANDINA-ABRIL 2019

PUNTO DE MEDICIÓN	41396	41397	21535	41395	41399	41398	22402	21537	22207
EMPRESA	HIDRANDINA	HIDRANDINA	HIDRANDINA	HIDRANDINA	HIDRANDINA	HIDRANDINA	HIDRANDINA	HIDRANDINA	HIDRANDINA
EQUIPO	CASMA_TP-A053_BARRA_10	CASMA_TP-A053_BARRA_22.9	TP-A001	CHIMBOTE_SUR_TP-A054_BARRA_13.8	NEPEÑA_TP-A055_BARRA_13.8	NEPEÑA_TP-A055_BARRA_22.9	TP-A006-6.6MVA	TPA007	TP-A048
TENSION	10	22.90	13.80	13.80	13.80	22.90	13.80	13.80	13.80
FECHA HORA / SUBESTACIÓN	CASMA	CASMA	CHIMBOTE NORTE	CHIMBOTE SUR	NEPEÑA	NEPEÑA	SAN JACINTO	TRAPECIO	TRAPECIO
01/04/2019 00:30	3.549	2.858	9.981	8.61	1.23	0.062	1.264	8.405	0.652
01/04/2019 01:00	3.549	2.858	9.55	8.17	1.201	0.053	1.237	7.95	0.678
01/04/2019 01:30	3.549	2.858	9.009	7.74	1.158	0.051	1.206	7.771	0.662
01/04/2019 02:00	3.549	2.858	8.938	7.46	1.176	0.05	1.179	7.694	0.67
01/04/2019 02:30	3.549	2.858	8.707	7.26	1.153	0.05	1.163	7.641	0.674
01/04/2019 03:00	3.549	2.858	8.281	7.12	1.063	0.05	1.154	7.577	0.656
01/04/2019 03:30	3.549	2.858	8.178	6.97	1.153	0.05	1.143	7.358	0.664
01/04/2019 04:00	3.549	2.858	8.685	6.92	1.156	0.05	1.141	7.412	0.662
01/04/2019 04:30	3.549	2.858	8.33	7.02	1.108	0.05	1.161	7.37	0.666
01/04/2019 05:00	3.549	2.858	8.552	7.16	1.156	0.05	1.166	7.055	0.665

01/04/2019 05:30	3.549	2.858	9.358	7.68	1.109	0.05	1.177	7.321	0.694
01/04/2019 06:00	3.549	2.858	10.811	8.4	1.282	0.052	1.208	7.65	0.646
01/04/2019 06:30	3.549	2.858	11.181	9.72	1.517	0.05	1.301	7.417	0.613
01/04/2019 07:00	3.549	2.858	11.123	9.05	1.56	0.05	1.323	7.532	0.627
01/04/2019 07:30	3.549	2.858	11.259	8.55	1.866	0.051	1.283	7.66	0.672
01/04/2019 08:00	3.549	2.858	11.339	8.64	1.945	0.054	1.208	8.23	0.657
01/04/2019 08:30	3.549	2.858	12.037	8.84	1.944	0.054	1.157	9.013	0.794
01/04/2019 09:00	3.549	2.858	12.739	9.11	2.045	0.059	1.714	9.308	0.825
01/04/2019 09:30	3.549	2.858	13.402	9.26	2.108	0.058	3.188	9.488	0.759
01/04/2019 10:00	3.549	2.858	14.22	9.42	2.165	0.055	1.715	9.793	0.835
01/04/2019 10:30	3.549	2.858	14.282	9.73	2.367	0.055	1.361	10.525	0.801
01/04/2019 11:00	3.549	2.858	15.157	10.08	2.48	0.068	1.399	10.943	0.81
01/04/2019 11:30	3.549	2.858	15.007	10.37	2.501	0.061	1.384	10.883	0.838
01/04/2019 12:00	3.549	2.858	14.257	10.4	2.422	0.066	1.424	10.822	0.909
01/04/2019 12:30	3.549	2.858	13.922	10.11	2.291	0.066	1.417	10.467	0.812
01/04/2019 13:00	3.549	2.858	13.602	10.04	2.286	0.059	1.406	10.531	1.069
01/04/2019 13:30	3.549	2.858	13.507	9.86	2.264	0.072	1.382	10.643	1.145
01/04/2019 14:00	3.549	2.858	13.521	9.86	2.225	0.059	1.372	10.594	1.167

01/04/2019 14:30	3.549	2.858	13.787	10.09	2.147	0.064	1.426	10.597	0.915
01/04/2019 15:00	3.549	2.858	13.885	10.05	2.122	0.062	1.402	10.601	0.858
01/04/2019 15:30	3.549	2.858	13.517	9.98	2.108	0.058	1.411	10.796	0.898
01/04/2019 16:00	3.549	2.858	14.01	9.94	1.879	0.059	1.433	10.963	0.941
01/04/2019 16:30	3.549	2.858	14.102	9.87	1.766	0.064	1.462	10.723	0.909
01/04/2019 17:00	3.549	2.858	13.871	9.92	1.757	0.063	1.465	10.399	0.803
01/04/2019 17:30	3.549	2.858	13.91	10.16	1.733	0.062	1.454	10.601	0.841
01/04/2019 18:00	3.549	2.858	14.881	10.9	1.66	0.071	1.454	10.857	0.728
01/04/2019 18:30	3.549	2.858	17.304	13.68	1.71	0.09	1.49	12.297	0.813
01/04/2019 19:00	3.549	2.858	18.068	14.8	1.866	0.094	1.762	12.445	0.772
01/04/2019 19:30	3.549	2.858	18.105	15.12	1.84	0.098	2.084	12.405	0.775
01/04/2019 20:00	3.549	2.858	17.854	15.13	1.676	0.09	2.178	12.217	0.735
01/04/2019 20:30	3.549	2.858	17.469	14.98	1.656	0.095	1.993	9.326	0.705
01/04/2019 21:00	3.549	2.858	16.654	14.81	1.657	0.087	1.967	9.023	0.723
01/04/2019 21:30	3.549	2.858	16.003	15.74	1.567	0.09	1.933	8.783	0.757
01/04/2019 22:00	3.549	2.858	15.026	15	1.489	0.09	1.868	8.315	0.723
01/04/2019 22:30	3.549	2.858	14.06	14.21	1.418	0.086	1.733	8.475	0.78
01/04/2019 23:00	3.549	2.858	12.885	13.01	1.412	0.081	1.629	8.214	0.744

01/04/2019 23:30	3.549	2.858	11.885	11.83	1.325	0.07	1.512	8.042	0.705
02/04/2019 00:00	3.549	2.858	10.686	10.73	1.311	0.07	1.404	7.421	0.692
02/04/2019 00:30	3.549	2.858	10.197	9.59	1.23	0.062	1.264	7.064	0.69
02/04/2019 01:00	3.549	2.858	9.225	9.1	1.201	0.053	1.237	6.739	0.688
02/04/2019 01:30	3.549	2.858	9.298	8.03	1.158	0.051	1.206	6.307	0.688
02/04/2019 02:00	3.549	2.858	8.963	7.85	1.176	0.05	1.179	6.366	0.68
02/04/2019 02:30	3.549	2.858	8.842	7.08	1.153	0.05	1.163	7.266	0.679
02/04/2019 03:00	3.549	2.858	8.673	7.1	1.063	0.05	1.154	7.298	0.7
02/04/2019 03:30	3.549	2.858	8.625	7	1.153	0.05	1.143	7.413	0.719
02/04/2019 04:00	3.549	2.858	8.601	6.96	1.156	0.05	1.141	7.6	0.708
02/04/2019 04:30	3.549	2.858	8.549	7.01	1.108	0.05	1.161	7.361	0.687
02/04/2019 05:00	3.549	2.858	8.833	7.2	1.156	0.05	1.166	7.57	0.696
02/04/2019 05:30	3.549	2.858	9.318	7.54	1.109	0.05	1.177	7.584	0.683
02/04/2019 06:00	3.549	2.858	9.995	8.68	1.282	0.052	1.208	7.922	0.701
02/04/2019 06:30	3.549	2.858	11.181	9.71	1.517	0.05	1.301	8.099	0.624
02/04/2019 07:00	3.549	2.858	11.133	8.87	1.56	0.05	1.323	8.276	0.656
02/04/2019 07:30	3.549	2.858	10.942	8.53	1.866	0.051	1.283	8.509	0.698
02/04/2019 08:00	3.549	2.858	11.347	8.68	1.945	0.054	1.208	8.509	0.766

02/04/2019 08:30	3.549	2.858	12.04	8.84	1.944	0.054	1.157	8.509	1.653
02/04/2019 09:00	3.549	2.858	12.888	8.97	2.045	0.059	1.714	8.509	2.21
02/04/2019 09:30	3.549	2.858	13.228	9.26	2.108	0.058	3.188	8.509	3.022
02/04/2019 10:00	3.549	2.858	13.462	9.29	2.165	0.055	1.715	8.509	3.205
02/04/2019 10:30	3.549	2.858	14.146	9.73	2.367	0.055	1.361	8.509	3.145
02/04/2019 11:00	3.549	2.858	13.907	9.9	2.48	0.068	1.399	8.509	3.63
02/04/2019 11:30	3.549	2.858	14.464	10.36	2.501	0.061	1.384	8.509	3.697
02/04/2019 12:00	3.549	2.858	13.971	10.2	2.422	0.066	1.424	8.509	3.414
02/04/2019 12:30	3.549	2.858	13.277	9.95	2.291	0.066	1.417	8.509	2.937
02/04/2019 13:00	3.549	2.858	13.301	9.72	2.286	0.059	1.406	8.509	2.981
02/04/2019 13:30	3.549	2.858	12.938	9.76	2.264	0.072	1.382	8.509	3.147
02/04/2019 14:00	3.549	2.858	13.055	9.74	2.225	0.059	1.372	8.509	3.576
02/04/2019 14:30	3.549	2.858	13.071	9.83	2.147	0.064	1.426	8.509	3.994
02/04/2019 15:00	3.549	2.858	13.3	9.76	2.122	0.062	1.402	8.509	4.064
02/04/2019 15:30	3.549	2.858	13.319	9.71	2.108	0.058	1.411	8.509	3.786
02/04/2019 16:00	3.549	2.858	13.393	9.69	1.879	0.059	1.433	8.509	3.409
02/04/2019 16:30	3.549	2.858	13.537	9.71	1.766	0.064	1.462	8.509	3.447
02/04/2019 17:00	3.549	2.858	13.529	9.99	1.757	0.063	1.465	10.865	0.887

02/04/2019 17:30	3.549	2.858	13.893	10.16	1.733	0.062	1.454	10.878	0.818
02/04/2019 18:00	3.549	2.858	15.2	11.39	1.66	0.071	1.454	11.423	0.864
02/04/2019 18:30	3.549	2.858	17.417	14.11	1.71	0.09	1.49	12.254	0.849
02/04/2019 19:00	3.549	2.858	18.042	15.04	1.866	0.094	1.762	12.536	0.845
02/04/2019 19:30	3.549	2.858	18.009	15.24	1.84	0.098	2.084	12.76	0.918
02/04/2019 20:00	3.549	2.858	17.608	15.25	1.676	0.09	2.178	12.376	0.809
02/04/2019 20:30	3.549	2.858	17.314	15.08	1.656	0.095	1.993	12.284	0.824
02/04/2019 21:00	3.549	2.858	16.634	14.71	1.657	0.087	1.967	11.223	0.784
02/04/2019 21:30	3.549	2.858	15.85	14.35	1.567	0.09	1.933	10.784	0.757
02/04/2019 22:00	3.549	2.858	15.124	13.68	1.489	0.09	1.868	10.363	0.774
02/04/2019 22:30	3.549	2.858	14.056	12.71	1.418	0.086	1.733	9.632	0.715
02/04/2019 23:00	3.549	2.858	13.132	11.6	1.412	0.081	1.629	9.713	0.725
02/04/2019 23:30	3.549	2.858	12.087	10.51	1.325	0.07	1.512	9.291	0.714
03/04/2019 00:00	3.549	2.858	11.045	9.44	1.311	0.07	1.404	8.551	0.728
03/04/2019 00:30	3.549	2.858	10.197	9.59	1.23	0.062	1.264	7.064	0.69
03/04/2019 01:00	3.549	2.858	9.225	9.1	1.201	0.053	1.237	6.739	0.688
03/04/2019 01:30	3.549	2.858	9.298	8.03	1.158	0.051	1.206	6.307	0.688
03/04/2019 02:00	3.549	2.858	8.963	7.85	1.176	0.05	1.179	6.366	0.68

03/04/2019 02:30	3.549	2.858	8.842	7.08	1.153	0.05	1.163	7.266	0.679
03/04/2019 03:00	3.549	2.858	8.673	7.1	1.063	0.05	1.154	7.298	0.7
03/04/2019 03:30	3.549	2.858	8.625	7	1.153	0.05	1.143	7.413	0.719
03/04/2019 04:00	3.549	2.858	8.601	6.96	1.156	0.05	1.141	7.6	0.708
03/04/2019 04:30	3.549	2.858	8.549	7.01	1.108	0.05	1.161	7.361	0.687
03/04/2019 05:00	3.549	2.858	8.833	7.2	1.156	0.05	1.166	7.57	0.696
03/04/2019 05:30	3.549	2.858	9.318	7.54	1.109	0.05	1.177	7.584	0.683
03/04/2019 06:00	3.549	2.858	9.995	8.68	1.282	0.052	1.208	7.922	0.701
03/04/2019 06:30	3.549	2.858	11.181	9.71	1.517	0.05	1.301	8.099	0.624
03/04/2019 07:00	3.549	2.858	11.133	8.87	1.56	0.05	1.323	8.276	0.656
03/04/2019 07:30	3.549	2.858	10.942	8.53	1.866	0.051	1.283	8.509	0.698
03/04/2019 08:00	3.549	2.858	11.347	8.68	1.945	0.054	1.208	8.509	0.766
03/04/2019 08:30	3.549	2.858	12.04	8.84	1.944	0.054	1.157	8.509	1.653
03/04/2019 09:00	3.549	2.858	12.888	8.97	2.045	0.059	1.714	8.509	2.21
03/04/2019 09:30	3.549	2.858	13.228	9.26	2.108	0.058	3.188	8.509	3.022
03/04/2019 10:00	3.549	2.858	13.462	9.29	2.165	0.055	1.715	8.509	3.205
03/04/2019 10:30	3.549	2.858	14.146	9.73	2.367	0.055	1.361	8.509	3.145
03/04/2019 11:00	3.549	2.858	13.907	9.9	2.48	0.068	1.399	8.509	3.63

03/04/2019 11:30	3.549	2.858	14.464	10.36	2.501	0.061	1.384	8.509	3.697
03/04/2019 12:00	3.549	2.858	13.971	10.2	2.422	0.066	1.424	8.509	3.414
03/04/2019 12:30	3.549	2.858	13.277	9.95	2.291	0.066	1.417	8.509	2.937
03/04/2019 13:00	3.549	2.858	13.301	9.72	2.286	0.059	1.406	8.509	2.981
03/04/2019 13:30	3.549	2.858	12.938	9.76	2.264	0.072	1.382	8.509	3.147
03/04/2019 14:00	3.549	2.858	13.055	9.74	2.225	0.059	1.372	8.509	3.576
03/04/2019 14:30	3.549	2.858	13.071	9.83	2.147	0.064	1.426	8.509	3.994
03/04/2019 15:00	3.549	2.858	13.3	9.76	2.122	0.062	1.402	8.509	4.064
03/04/2019 15:30	3.549	2.858	13.319	9.71	2.108	0.058	1.411	8.509	3.786
03/04/2019 16:00	3.549	2.858	13.393	9.69	1.879	0.059	1.433	8.509	3.409
03/04/2019 16:30	3.549	2.858	13.537	9.71	1.766	0.064	1.462	8.509	3.447
03/04/2019 17:00	3.549	2.858	13.529	9.99	1.757	0.063	1.465	10.865	0.887
03/04/2019 17:30	3.549	2.858	13.893	10.16	1.733	0.062	1.454	10.878	0.818
03/04/2019 18:00	3.549	2.858	15.2	11.39	1.66	0.071	1.454	11.423	0.864
03/04/2019 18:30	3.549	2.858	17.417	14.11	1.71	0.09	1.49	12.254	0.849
03/04/2019 19:00	3.549	2.858	18.042	15.04	1.866	0.094	1.762	12.536	0.845
03/04/2019 19:30	3.549	2.858	18.009	15.24	1.84	0.098	2.084	12.76	0.918
03/04/2019 20:00	3.549	2.858	17.608	15.25	1.676	0.09	2.178	12.376	0.809

03/04/2019 20:30	3.549	2.858	17.314	15.08	1.656	0.095	1.993	12.284	0.824
03/04/2019 21:00	3.549	2.858	16.634	14.71	1.657	0.087	1.967	11.223	0.784
03/04/2019 21:30	3.549	2.858	15.85	14.35	1.567	0.09	1.933	10.784	0.757
03/04/2019 22:00	3.549	2.858	15.124	13.68	1.489	0.09	1.868	10.363	0.774
03/04/2019 22:30	3.549	2.858	14.056	12.71	1.418	0.086	1.733	9.632	0.715
03/04/2019 23:00	3.549	2.858	13.132	11.6	1.412	0.081	1.629	9.713	0.725
03/04/2019 23:30	3.549	2.858	12.087	10.51	1.325	0.07	1.512	9.291	0.714
04/04/2019 00:00	3.549	2.858	11.045	9.44	1.311	0.07	1.404	8.551	0.728
04/04/2019 00:30	3.549	2.5	10.073	8.59	1	0.062	1.15	8.824	0.692
04/04/2019 01:00	3.549	2.5	9.523	8.16	1	0.053	1.15	8.327	0.7
04/04/2019 01:30	3.549	2.51	9.253	7.81	1.12	0.051	1	8.335	0.686
04/04/2019 02:00	3.549	2.4	8.91	7.46	1.176	0.05	1.141	8.099	0.69
04/04/2019 02:30	3.549	2.31	8.597	7.22	1.153	0.05	1.161	7.768	0.673
04/04/2019 03:00	3.549	2.858	8.526	7.03	1.063	0.05	1.166	7.538	0.685
04/04/2019 03:30	3.549	2.858	8.482	7.03	1.153	0.05	1.177	7.584	0.694
04/04/2019 04:00	3.549	2.858	8.518	6.98	1.156	0.05	1.141	7.688	0.683
04/04/2019 04:30	3.549	2.858	8.349	6.97	1.108	0.05	1.161	7.758	0.673
04/04/2019 05:00	3.549	2.858	8.595	7.06	1.156	0.05	1.166	7.807	0.689

04/04/2019 05:30	3.549	2.858	8.885	7.52	1.109	0.05	1.177	7.827	0.68
04/04/2019 06:00	3.549	2.858	9.868	8.47	1.282	0.052	1.208	7.992	0.71
04/04/2019 06:30	3.549	2.858	10.666	9.45	1.517	0.05	1.301	7.799	0.631
04/04/2019 07:00	3.549	2.858	10.587	8.91	1.56	0.05	1.323	7.763	0.639
04/04/2019 07:30	3.549	2.858	10.365	8.46	1.866	0.051	1.283	7.767	0.691
04/04/2019 08:00	3.549	2.858	10.966	8.62	1.945	0.054	1.208	8.126	0.691
04/04/2019 08:30	3.549	2.858	11.481	9.07	1.944	0.054	1.157	9.059	0.722
04/04/2019 09:00	3.549	2.858	12.225	9.19	2.045	0.059	1.714	9.435	0.749
04/04/2019 09:30	3.549	2.858	12.963	9.38	2.108	0.058	3.188	9.824	1.111
04/04/2019 10:00	3.549	2.858	13.556	9.54	2.165	0.055	1.715	10.035	1.157
04/04/2019 10:30	3.549	2.858	14.324	9.71	2.367	0.055	1.361	10.415	1.156
04/04/2019 11:00	3.549	2.858	14.349	10.18	2.48	0.068	1.399	10.456	1.004
04/04/2019 11:30	3.549	2.858	14.58	10.59	2.501	0.061	1.384	11.118	0.838
04/04/2019 12:00	3.653	2.584	14.147	10.59	2.422	0.066	1.424	10.356	0.89
04/04/2019 12:30	3.652	2.466	13.679	10.37	2.291	0.066	1.417	10.128	0.822
04/04/2019 13:00	3.538	2.473	13.062	10.23	2.286	0.059	1.406	9.83	0.827
04/04/2019 13:30	3.502	2.531	13.079	10.18	2.264	0.072	1.382	10.177	0.873
04/04/2019 14:00	3.52	2.524	13.054	10.08	2.225	0.059	1.372	10.111	0.859

04/04/2019 14:30	3.492	2.674	13.059	10.2	2.147	0.064	1.426	10.298	0.903
04/04/2019 15:00	3.559	2.664	13.316	10.34	2.122	0.062	1.402	10.544	0.914
04/04/2019 15:30	3.646	2.613	13.232	10.2	2.108	0.058	1.411	10.197	1.032
04/04/2019 16:00	3.644	2.576	13.358	10.14	1.879	0.059	1.433	10.695	0.996
04/04/2019 16:30	3.708	2.634	13.443	10.09	1.766	0.064	1.462	10.402	0.971
04/04/2019 17:00	3.374	2.411	13.238	9.93	1.757	0.063	1.465	10.119	0.795
04/04/2019 17:30	3.049	1.968	13.035	9.98	1.733	0.062	1.454	10.031	0.8
04/04/2019 18:00	3.168	1.913	13.47	10.34	1.66	0.071	1.454	9.824	0.79
04/04/2019 18:30	3.64	2.644	16.24	13.31	1.71	0.09	1.49	11.4	0.648
04/04/2019 19:00	3.852	2.951	17.818	14.91	1.866	0.094	1.762	12.21	0.588
04/04/2019 19:30	3.959	2.908	18.166	15.11	1.84	0.098	2.084	12.219	0.583
04/04/2019 20:00	3.928	2.865	17.837	15.23	1.676	0.09	2.178	12.173	0.598
04/04/2019 20:30	3.829	2.653	17.357	15.13	1.656	0.095	1.993	12.009	0.572
04/04/2019 21:00	3.726	2.529	16.71	14.78	1.657	0.087	1.967	11.618	0.564
04/04/2019 21:30	3.583	2.409	16.066	14.36	1.567	0.09	1.933	11.311	0.524
04/04/2019 22:00	3.482	2.327	14.775	13.52	1.489	0.09	1.868	10.698	0.512
04/04/2019 22:30	3.305	2.211	14.189	12.55	1.418	0.086	1.733	10.279	0.51
04/04/2019 23:00	3.107	2.228	13.188	11.58	1.412	0.081	1.629	9.647	0.521

04/04/2019 23:30	2.883	2.128	11.829	10.55	1.325	0.07	1.512	9.071	0.499
05/04/2019 00:00	2.895	2.119	11.146	9.43	1.311	0.07	1.404	8.356	0.52
05/04/2019 00:30	3.549	2.5	10.073	8.59	1	0.062	1.15	8.824	0.692
05/04/2019 01:00	3.549	2.5	9.523	8.16	1	0.053	1.15	8.327	0.7
05/04/2019 01:30	3.549	2.51	9.253	7.81	1.12	0.051	1	8.335	0.686
05/04/2019 02:00	3.549	2.4	8.91	7.46	1.176	0.05	1.141	8.099	0.69
05/04/2019 02:30	3.549	2.31	8.597	7.22	1.153	0.05	1.161	7.768	0.673
05/04/2019 03:00	3.549	2.858	8.526	7.03	1.063	0.05	1.166	7.538	0.685
05/04/2019 03:30	3.549	2.858	8.482	7.03	1.153	0.05	1.177	7.584	0.694
05/04/2019 04:00	3.549	2.858	8.518	6.98	1.156	0.05	1.141	7.688	0.683
05/04/2019 04:30	3.549	2.858	8.349	6.97	1.108	0.05	1.161	7.758	0.673
05/04/2019 05:00	3.549	2.858	8.595	7.06	1.156	0.05	1.166	7.807	0.689
05/04/2019 05:30	3.549	2.858	8.885	7.52	1.109	0.05	1.177	7.827	0.68
05/04/2019 06:00	3.549	2.858	9.868	8.47	1.282	0.052	1.208	7.992	0.71
05/04/2019 06:30	3.549	2.858	10.666	9.45	1.517	0.05	1.301	7.799	0.631
05/04/2019 07:00	3.549	2.858	10.587	8.91	1.56	0.05	1.323	7.763	0.639
05/04/2019 07:30	3.549	2.858	10.365	8.46	1.866	0.051	1.283	7.767	0.691
05/04/2019 08:00	3.549	2.858	10.966	8.62	1.945	0.054	1.208	8.126	0.691

05/04/2019 08:30	3.549	2.858	11.481	9.07	1.944	0.054	1.157	9.059	0.722
05/04/2019 09:00	3.549	2.858	12.225	9.19	2.045	0.059	1.714	9.435	0.749
05/04/2019 09:30	3.549	2.858	12.963	9.38	2.108	0.058	3.188	9.824	1.111
05/04/2019 10:00	3.549	2.858	13.556	9.54	2.165	0.055	1.715	10.035	1.157
05/04/2019 10:30	3.549	2.858	14.324	9.71	2.367	0.055	1.361	10.415	1.156
05/04/2019 11:00	3.549	2.858	14.349	10.18	2.48	0.068	1.399	10.456	1.004
05/04/2019 11:30	3.549	2.858	14.58	10.59	2.501	0.061	1.384	11.118	0.838
05/04/2019 12:00	3.653	2.584	14.147	10.59	2.422	0.066	1.424	10.356	0.89
05/04/2019 12:30	3.652	2.466	13.679	10.37	2.291	0.066	1.417	10.128	0.822
05/04/2019 13:00	3.538	2.473	13.062	10.23	2.286	0.059	1.406	9.83	0.827
05/04/2019 13:30	3.502	2.531	13.079	10.18	2.264	0.072	1.382	10.177	0.873
05/04/2019 14:00	3.52	2.524	13.054	10.08	2.225	0.059	1.372	10.111	0.859
05/04/2019 14:30	3.492	2.674	13.059	10.2	2.147	0.064	1.426	10.298	0.903
05/04/2019 15:00	3.559	2.664	13.316	10.34	2.122	0.062	1.402	10.544	0.914
05/04/2019 15:30	3.646	2.613	13.232	10.2	2.108	0.058	1.411	10.197	1.032
05/04/2019 16:00	3.644	2.576	13.358	10.14	1.879	0.059	1.433	10.695	0.996
05/04/2019 16:30	3.708	2.634	13.443	10.09	1.766	0.064	1.462	10.402	0.971
05/04/2019 17:00	3.374	2.411	13.238	9.93	1.757	0.063	1.465	10.119	0.795

05/04/2019 17:30	3.049	1.968	13.035	9.98	1.733	0.062	1.454	10.031	0.8
05/04/2019 18:00	3.168	1.913	13.47	10.34	1.66	0.071	1.454	9.824	0.79
05/04/2019 18:30	3.64	2.644	16.24	13.31	1.71	0.09	1.49	11.4	0.648
05/04/2019 19:00	3.852	2.951	17.818	14.91	1.866	0.094	1.762	12.21	0.588
05/04/2019 19:30	3.959	2.908	18.166	15.11	1.84	0.098	2.084	12.219	0.583
05/04/2019 20:00	3.928	2.865	17.837	15.23	1.676	0.09	2.178	12.173	0.598
05/04/2019 20:30	3.829	2.653	17.357	15.13	1.656	0.095	1.993	12.009	0.572
05/04/2019 21:00	3.726	2.529	16.71	14.78	1.657	0.087	1.967	11.618	0.564
05/04/2019 21:30	3.583	2.409	16.066	14.36	1.567	0.09	1.933	11.311	0.524
05/04/2019 22:00	3.482	2.327	14.775	13.52	1.489	0.09	1.868	10.698	0.512
05/04/2019 22:30	3.305	2.211	14.189	12.55	1.418	0.086	1.733	10.279	0.51
05/04/2019 23:00	3.107	2.228	13.188	11.58	1.412	0.081	1.629	9.647	0.521
05/04/2019 23:30	2.883	2.128	11.829	10.55	1.325	0.07	1.512	9.071	0.499
06/04/2019 00:00	2.895	2.119	11.146	9.43	1.311	0.07	1.404	8.356	0.52
06/04/2019 00:30	4.183	3.193	11.292	10.08	1.23	0.062	1.264	11.548	1.15
06/04/2019 01:00	4.183	3.193	10.86	9.32	1.201	0.053	1.237	11.092	1.15
06/04/2019 01:30	4.183	3.193	10.421	8.9	1.158	0.051	1.206	11.004	1.148
06/04/2019 02:00	4.183	3.193	9.982	8.56	1.176	0.05	1.179	10.566	1.169

06/04/2019 02:30	4.183	3.193	9.647	8.19	1.153	0.05	1.163	10.074	0.947
06/04/2019 03:00	4.183	3.193	9.15	8	1.063	0.05	1.154	10.003	0.859
06/04/2019 03:30	2.923	2.289	9.365	7.82	1.153	0.05	1.143	9.926	0.764
06/04/2019 04:00	2.923	2.289	9.197	7.84	1.156	0.05	1.141	9.72	0.737
06/04/2019 04:30	2.923	2.289	9.11	7.7	1.108	0.05	1.161	9.652	0.684
06/04/2019 05:00	2.923	2.289	8.909	7.8	1.156	0.05	1.166	9.613	0.852
06/04/2019 05:30	2.923	2.289	9.597	7.86	1.109	0.05	1.177	9.861	0.81
06/04/2019 06:00	2.923	2.289	9.752	8.02	1.282	0.052	1.208	9.914	0.779
06/04/2019 06:30	2.923	2.289	9.266	7.36	1.517	0.05	1.301	9.399	0.68
06/04/2019 07:00	2.923	2.289	9.754	7.75	1.56	0.05	1.323	9.775	0.725
06/04/2019 07:30	2.923	2.289	10.526	8.28	1.866	0.051	1.283	9.858	0.762
06/04/2019 08:00	2.923	2.289	11.613	8.71	1.945	0.054	1.208	10.632	0.83
06/04/2019 08:30	2.923	2.289	12.624	9.7	1.944	0.054	1.157	11.668	0.947
06/04/2019 09:00	2.923	2.289	13.665	10.12	2.045	0.059	1.714	12.54	1.031
06/04/2019 09:30	3.81	3.161	14.397	10.6	2.108	0.058	3.188	12.598	1.329
06/04/2019 10:00	3.783	3.302	14.659	10.96	2.165	0.055	1.715	13.632	1.386
06/04/2019 10:30	3.783	3.302	15.492	11.18	2.367	0.055	1.361	13.509	1.49
06/04/2019 11:00	3.783	3.302	16.073	11.66	2.48	0.068	1.399	13.671	1.267

06/04/2019 11:30	3.783	3.302	16.371	12.07	2.501	0.061	1.384	13.901	1.237
06/04/2019 12:00	3.783	3.302	16.339	12.17	2.422	0.066	1.424	13.612	1.365
06/04/2019 12:30	3.783	3.302	16.087	12.09	2.291	0.066	1.417	13.232	1.214
06/04/2019 13:00	3.783	3.302	15.668	11.73	2.286	0.059	1.406	12.775	1.287
06/04/2019 13:30	3.783	3.302	15.303	11.4	2.264	0.072	1.382	12.971	1.339
06/04/2019 14:00	3.783	3.302	15.63	11.17	2.225	0.059	1.372	13.313	1.445
06/04/2019 14:30	3.783	3.302	15.189	11.16	2.147	0.064	1.426	13.761	1.48
06/04/2019 15:00	4.093	3.123	15.342	11.17	2.122	0.062	1.402	13.925	1.641
06/04/2019 15:30	4.093	3.123	15.224	11.05	2.108	0.058	1.411	13.502	1.697
06/04/2019 16:00	4.093	3.123	15.254	11.21	1.879	0.059	1.433	13.679	1.619
06/04/2019 16:30	4.093	3.123	15.194	11.04	1.766	0.064	1.462	13.741	1.589
06/04/2019 17:00	4.093	3.123	15.157	11.06	1.757	0.063	1.465	13.38	1.5
06/04/2019 17:30	4.093	3.123	14.579	10.89	1.733	0.062	1.454	12.987	1.325
06/04/2019 18:00	4.093	3.123	14.737	11.16	1.66	0.071	1.454	12.77	1.342
06/04/2019 18:30	4.093	3.123	15.928	11.94	1.71	0.09	1.49	13.347	1.473
06/04/2019 19:00	4.093	3.123	18.163	14.84	1.866	0.094	1.762	14.844	1.452
06/04/2019 19:30	4.093	3.123	18.566	15.47	1.84	0.098	2.084	15.405	1.491
06/04/2019 20:00	4.093	3.123	18.348	15.58	1.676	0.09	2.178	15.532	1.347

06/04/2019 20:30	4.093	3.123	17.967	15.52	1.656	0.095	1.993	15.411	1.352
06/04/2019 21:00	4.093	3.123	17.542	15.29	1.657	0.087	1.967	15.134	1.392
06/04/2019 21:30	4.093	3.123	16.829	14.89	1.567	0.09	1.933	14.754	1.331
06/04/2019 22:00	4.093	3.123	16.064	14.34	1.489	0.09	1.868	13.863	1.27
06/04/2019 22:30	4.093	3.123	14.888	13.62	1.418	0.086	1.733	13.285	1.165
06/04/2019 23:00	4.093	3.123	14.007	12.87	1.412	0.081	1.629	12.971	1.269
06/04/2019 23:30	4.093	3.123	13.155	11.74	1.325	0.07	1.512	12.565	1.343
07/04/2019 00:00	4.093	3.123	12.161	10.93	1.311	0.07	1.404	12.196	1.268
07/04/2019 00:30	2.744	2.076	11.257	9.54	1.23	0.062	1.264	7.529	0.283
07/04/2019 01:00	2.617	1.973	10.6	9.06	1.201	0.053	1.237	7.323	0.277
07/04/2019 01:30	2.55	1.906	10.15	8.65	1.158	0.051	1.206	6.984	0.254
07/04/2019 02:00	2.536	1.942	9.759	8.28	1.176	0.05	1.179	6.878	0.281
07/04/2019 02:30	2.477	2.019	9.518	8.01	1.153	0.05	1.163	6.816	0.251
07/04/2019 03:00	2.45	2.099	9.339	7.77	1.063	0.05	1.154	6.665	0.264
07/04/2019 03:30	2.416	2.157	9.216	7.65	1.153	0.05	1.143	6.497	0.275
07/04/2019 04:00	2.381	2.049	9.081	7.52	1.156	0.05	1.141	6.45	0.257
07/04/2019 04:30	2.377	2.109	3.79	7.46	1.108	0.05	1.161	6.432	0.264
07/04/2019 05:00	2.294	2.246	1.04	7.47	1.156	0.05	1.166	8.773	0.273

07/04/2019 05:30	2.324	2.155	0.034	7.53	1.109	0.05	1.177	10.14	0.266
07/04/2019 06:00	2.378	2.242	0.034	7.48	1.282	0.052	1.208	9.93	0.239
07/04/2019 06:30	2.151	2.148	0.026	6.45	1.517	0.05	1.301	8.954	0.158
07/04/2019 07:00	2.241	2.14	0.024	6.55	1.56	0.05	1.323	9.499	0.159
07/04/2019 07:30	2.309	2.015	0.028	7.01	1.866	0.051	1.283	9.647	0.174
07/04/2019 08:00	2.413	1.9	0.025	7.49	1.945	0.054	1.208	9.102	0.159
07/04/2019 08:30	2.493	2.079	0.025	8.17	1.944	0.054	1.157	9.495	0.192
07/04/2019 09:00	2.503	2.108	0.025	8.48	2.045	0.059	1.714	9.853	0.196
07/04/2019 09:30	2.63	2.123	0.025	8.83	2.108	0.058	3.188	10.058	0.199
07/04/2019 10:00	2.72	2.121	0.025	9.02	2.165	0.055	1.715	10.801	0.195
07/04/2019 10:30	2.685	2.106	0.025	9.4	2.367	0.055	1.361	11.404	0.176
07/04/2019 11:00	2.797	2.136	0.025	9.51	2.48	0.068	1.399	11.834	0.207
07/04/2019 11:30	2.812	2.152	0.025	9.92	2.501	0.061	1.384	12.18	0.208
07/04/2019 12:00	2.838	2.11	0.025	10.08	2.422	0.066	1.424	12.427	0.141
07/04/2019 12:30	2.857	2.037	0.025	10.3	2.291	0.066	1.417	12.262	0.173
07/04/2019 13:00	2.88	2.047	0.025	10.04	2.286	0.059	1.406	12.107	0.155
07/04/2019 13:30	2.825	1.966	0.025	9.84	2.264	0.072	1.382	11.805	0.219
07/04/2019 14:00	2.756	1.982	0.025	9.54	2.225	0.059	1.372	11.627	0.194

07/04/2019 14:30	2.825	1.89	0.025	9.5	2.147	0.064	1.426	11.775	0.187
07/04/2019 15:00	2.692	1.824	0.025	9.31	2.122	0.062	1.402	11.811	0.198
07/04/2019 15:30	2.773	1.857	0.025	9.21	2.108	0.058	1.411	11.789	0.227
07/04/2019 16:00	2.755	1.868	0.025	9.24	1.879	0.059	1.433	12.303	0.196
07/04/2019 16:30	2.735	1.78	0.025	9.23	1.766	0.064	1.462	12.436	0.194
07/04/2019 17:00	2.76	1.77	0.025	9.37	1.757	0.063	1.465	12.691	0.173
07/04/2019 17:30	2.739	1.65	0.025	9.45	1.733	0.062	1.454	8.666	0.191
07/04/2019 18:00	2.769	1.642	0.025	9.94	1.66	0.071	1.454	7.872	0.254
07/04/2019 18:30	3.335	2.246	0.025	12.49	1.71	0.09	1.49	9.516	0.254
07/04/2019 19:00	3.543	2.564	0.025	14.21	1.866	0.094	1.762	10.171	0.245
07/04/2019 19:30	3.635	2.534	0.025	14.45	1.84	0.098	2.084	10.377	0.269
07/04/2019 20:00	3.622	2.487	0.025	14.52	1.676	0.09	2.178	10.146	0.288
07/04/2019 20:30	3.622	2.487	0.025	14.54	1.656	0.095	1.993	10.174	0.27
07/04/2019 21:00	3.622	2.487	0.025	14.21	1.657	0.087	1.967	9.965	0.266
07/04/2019 21:30	3.622	2.487	0.025	13.9	1.567	0.09	1.933	9.856	0.252
07/04/2019 22:00	3.622	2.487	0.025	13.38	1.489	0.09	1.868	9.148	0.254
07/04/2019 22:30	3.622	2.487	0.025	12.41	1.418	0.086	1.733	8.675	0.27
07/04/2019 23:00	3.622	2.487	0.025	11.44	1.412	0.081	1.629	8.566	0.239

07/04/2019 23:30	3.622	2.487	0.025	10.76	1.325	0.07	1.512	8.271	0.279
08/04/2019 00:00	3.622	2.487	0.025	9.74	1.311	0.07	1.404	7.641	0.248
08/04/2019 00:30	3.549	2.858	10.299	8.4	1.23	0.062	1.264	6.625	0.283
08/04/2019 01:00	3.549	2.858	9.515	7.92	1.201	0.053	1.237	6.38	0.272
08/04/2019 01:30	3.549	2.858	9.215	7.6	1.158	0.051	1.206	6.285	0.279
08/04/2019 02:00	3.549	2.858	8.849	7.31	1.176	0.05	1.179	6.129	0.283
08/04/2019 02:30	3.549	2.858	8.718	7.21	1.153	0.05	1.163	6.022	0.274
08/04/2019 03:00	3.549	2.858	8.404	7	1.063	0.05	1.154	5.975	0.293
08/04/2019 03:30	3.549	2.858	8.589	6.9	1.153	0.05	1.143	5.877	0.294
08/04/2019 04:00	3.549	2.858	8.367	6.98	1.156	0.05	1.141	5.914	0.273
08/04/2019 04:30	3.549	2.858	8.211	6.81	1.108	0.05	1.161	6.089	0.269
08/04/2019 05:00	3.549	2.858	8.433	7	1.156	0.05	1.166	6.211	0.269
08/04/2019 05:30	3.549	2.858	9.104	7.54	1.109	0.05	1.177	6.223	0.279
08/04/2019 06:00	3.549	2.858	10.089	8.58	1.282	0.052	1.208	6.517	0.27
08/04/2019 06:30	3.549	2.858	10.944	9.63	1.517	0.05	1.301	6.576	0.145
08/04/2019 07:00	3.549	2.858	10.891	8.9	1.56	0.05	1.323	6.334	0.201
08/04/2019 07:30	3.549	2.858	10.959	8.45	1.866	0.051	1.283	6.525	0.222
08/04/2019 08:00	3.549	2.858	10.973	8.57	1.945	0.054	1.208	6.798	0.256

08/04/2019 08:30	3.549	2.858	11.669	8.77	1.944	0.054	1.157	7.374	0.257
08/04/2019 09:00	3.549	2.858	12.491	9.14	2.045	0.059	1.714	8.13	0.34
08/04/2019 09:30	3.549	2.858	12.989	9.27	2.108	0.058	3.188	8.181	0.336
08/04/2019 10:00	3.549	2.858	13.988	9.61	2.165	0.055	1.715	8.23	0.376
08/04/2019 10:30	3.549	2.858	14.28	9.81	2.367	0.055	1.361	8.998	0.43
08/04/2019 11:00	3.549	2.858	15.216	10.17	2.48	0.068	1.399	9.346	0.427
08/04/2019 11:30	3.549	2.858	15.235	10.55	2.501	0.061	1.384	9.546	0.443
08/04/2019 12:00	3.549	2.858	14.768	10.54	2.422	0.066	1.424	9.509	0.448
08/04/2019 12:30	3.549	2.858	14.369	10.23	2.291	0.066	1.417	9.29	0.416
08/04/2019 13:00	3.549	2.858	14.264	9.83	2.286	0.059	1.406	8.78	0.369
08/04/2019 13:30	3.549	2.858	13.915	9.7	2.264	0.072	1.382	9.252	0.562
08/04/2019 14:00	3.549	2.858	13.71	9.67	2.225	0.059	1.372	9.321	0.737
08/04/2019 14:30	3.549	2.858	13.888	9.96	2.147	0.064	1.426	9.881	0.685
08/04/2019 15:00	3.549	2.858	13.577	9.99	2.122	0.062	1.402	10.139	0.426
08/04/2019 15:30	3.549	2.858	13.567	9.88	2.108	0.058	1.411	10.117	0.564
08/04/2019 16:00	3.549	2.858	13.611	9.78	1.879	0.059	1.433	10.27	0.555
08/04/2019 16:30	3.549	2.858	13.566	9.81	1.766	0.064	1.462	10.301	0.414
08/04/2019 17:00	3.549	2.858	13.73	9.65	1.757	0.063	1.465	10.238	0.41

08/04/2019 17:30	3.549	2.858	14.029	9.93	1.733	0.062	1.454	10.26	0.389
08/04/2019 18:00	3.549	2.858	15.021	10.88	1.66	0.071	1.454	9.989	0.347
08/04/2019 18:30	3.549	2.858	17.654	13.89	1.71	0.09	1.49	11.379	0.452
08/04/2019 19:00	3.549	2.858	18.448	14.68	1.866	0.094	1.762	11.633	0.452
08/04/2019 19:30	3.549	2.858	18.476	15.11	1.84	0.098	2.084	11.489	0.426
08/04/2019 20:00	3.549	2.858	18.101	15.06	1.676	0.09	2.178	11.242	0.407
08/04/2019 20:30	3.549	2.858	17.484	15.03	1.656	0.095	1.993	11.15	0.424
08/04/2019 21:00	3.549	2.858	16.994	14.87	1.657	0.087	1.967	10.757	0.333
08/04/2019 21:30	3.549	2.858	16.407	14.44	1.567	0.09	1.933	10.481	0.331
08/04/2019 22:00	3.549	2.858	15.42	13.75	1.489	0.09	1.868	10.098	0.319
08/04/2019 22:30	3.549	2.858	13.91	12.84	1.418	0.086	1.733	9.441	0.325
08/04/2019 23:00	3.549	2.858	13.599	11.77	1.412	0.081	1.629	8.661	0.43
08/04/2019 23:30	3.549	2.858	12.248	10.67	1.325	0.07	1.512	8.218	0.706
09/04/2019 00:00	3.549	2.858	11.183	9.45	1.311	0.07	1.404	7.64	0.74
09/04/2019 00:30	3.549	2.5	10.302	8.7	1	0.062	1.15	7.165	0.774
09/04/2019 01:00	3.549	2.5	9.661	8.09	1	0.053	1.15	6.87	0.672
09/04/2019 01:30	3.549	2.51	9.151	7.78	1.12	0.051	1	6.598	0.684
09/04/2019 02:00	3.549	2.4	8.818	7.42	1.176	0.05	1.141	6.535	0.697

09/04/2019 02:30	3.549	2.31	8.678	7.19	1.153	0.05	1.161	6.42	0.727
09/04/2019 03:00	3.549	2.858	8.397	7.15	1.063	0.05	1.166	6.33	0.701
09/04/2019 03:30	3.549	2.858	8.399	6.91	1.153	0.05	1.177	6.463	0.702
09/04/2019 04:00	3.549	2.858	8.344	6.97	1.156	0.05	1.141	6.291	0.697
09/04/2019 04:30	3.549	2.858	8.291	7.04	1.108	0.05	1.161	6.39	0.711
09/04/2019 05:00	3.549	2.858	8.865	6.98	1.156	0.05	1.166	6.59	0.723
09/04/2019 05:30	3.549	2.858	9.192	7.4	1.109	0.05	1.177	6.676	0.735
09/04/2019 06:00	3.549	2.858	10.07	8.25	1.282	0.052	1.208	6.892	0.799
09/04/2019 06:30	3.549	2.858	10.526	8.85	1.517	0.05	1.301	6.803	0.758
09/04/2019 07:00	3.549	2.858	10.812	8.79	1.56	0.05	1.323	6.52	0.555
09/04/2019 07:30	3.549	2.858	10.833	8.24	1.866	0.051	1.283	6.864	0.704
09/04/2019 08:00	3.549	2.858	10.555	8.43	1.945	0.054	1.208	7.362	0.777
09/04/2019 08:30	3.549	2.858	11.576	8.6	1.944	0.054	1.157	7.964	0.805
09/04/2019 09:00	3.549	2.858	12.338	8.83	2.045	0.059	1.714	8.129	0.878
09/04/2019 09:30	3.549	2.858	12.464	9.14	2.108	0.058	3.188	8.701	0.857
09/04/2019 10:00	3.549	2.858	13.181	9.17	2.165	0.055	1.715	8.879	0.972
09/04/2019 10:30	3.549	2.858	13.679	9.75	2.367	0.055	1.361	9.211	0.999
09/04/2019 11:00	3.549	2.858	14.235	9.83	2.48	0.068	1.399	9.999	1.11

09/04/2019 11:30	3.549	2.858	14.717	10.03	2.501	0.061	1.384	10.216	1.318
09/04/2019 12:00	3.653	2.584	14.285	10.44	2.422	0.066	1.424	10.106	1.307
09/04/2019 12:30	3.652	2.466	13.801	10.07	2.291	0.066	1.417	9.656	0.908
09/04/2019 13:00	3.538	2.473	13.661	9.96	2.286	0.059	1.406	9.147	0.94
09/04/2019 13:30	3.502	2.531	13.315	9.8	2.264	0.072	1.382	9.264	0.965
09/04/2019 14:00	3.52	2.524	13.372	9.76	2.225	0.059	1.372	9.481	1.249
09/04/2019 14:30	3.492	2.674	13.442	9.88	2.147	0.064	1.426	10.045	1.321
09/04/2019 15:00	3.559	2.664	13.583	9.84	2.122	0.062	1.402	9.87	1.21
09/04/2019 15:30	3.646	2.613	13.5	10.02	2.108	0.058	1.411	10.043	1.211
09/04/2019 16:00	3.644	2.576	13.671	9.73	1.879	0.059	1.433	10.222	1.204
09/04/2019 16:30	3.708	2.634	13.495	9.88	1.766	0.064	1.462	10.058	1.261
09/04/2019 17:00	3.374	2.411	13.528	9.53	1.757	0.063	1.465	10.298	1.217
09/04/2019 17:30	3.049	1.968	13.545	9.62	1.733	0.062	1.454	9.62	1.127
09/04/2019 18:00	3.168	1.913	14.182	10.23	1.66	0.071	1.454	9.44	1.136
09/04/2019 18:30	3.64	2.644	17.377	13.18	1.71	0.09	1.49	11.277	1.369
09/04/2019 19:00	3.852	2.951	18.532	14.77	1.866	0.094	1.762	11.451	1.515
09/04/2019 19:30	3.959	2.908	18.435	14.97	1.84	0.098	2.084	11.291	1.147
09/04/2019 20:00	3.928	2.865	17.985	15.03	1.676	0.09	2.178	11.435	1.134

09/04/2019 20:30	3.829	2.653	13.655	14.82	1.656	0.095	1.993	11.491	1.132
09/04/2019 21:00	3.726	2.529	12.937	14.83	1.657	0.087	1.967	10.847	1.078
09/04/2019 21:30	3.583	2.409	15.759	14.29	1.567	0.09	1.933	10.661	1.038
09/04/2019 22:00	3.482	2.327	14.78	13.67	1.489	0.09	1.868	9.991	1.023
09/04/2019 22:30	3.305	2.211	13.978	12.58	1.418	0.086	1.733	9.426	1.009
09/04/2019 23:00	3.107	2.228	12.959	11.67	1.412	0.081	1.629	8.72	1.011
09/04/2019 23:30	2.883	2.128	11.64	10.4	1.325	0.07	1.512	7.928	0.892
10/04/2019 00:00	2.895	2.119	10.896	9.46	1.311	0.07	1.404	7.556	0.907
10/04/2019 00:30	3.549	2.5	10.054	8.37	1	0.062	1.15	6.836	0.818
10/04/2019 01:00	3.549	2.5	9.314	7.97	1	0.053	1.15	6.547	0.78
10/04/2019 01:30	3.549	2.51	9.027	7.67	1.12	0.051	1	6.411	0.782
10/04/2019 02:00	3.549	2.4	8.681	7.24	1.176	0.05	1.141	6.282	0.765
10/04/2019 02:30	3.549	2.31	8.51	7.04	1.153	0.05	1.161	6.288	0.77
10/04/2019 03:00	3.549	2.858	8.305	7.01	1.063	0.05	1.166	6.246	0.757
10/04/2019 03:30	3.549	2.858	8.208	6.9	1.153	0.05	1.177	6.06	0.727
10/04/2019 04:00	3.549	2.858	8.204	6.98	1.156	0.05	1.141	6.123	0.708
10/04/2019 04:30	3.549	2.858	7.991	6.9	1.108	0.05	1.161	6.195	0.721
10/04/2019 05:00	3.549	2.858	8.432	7.07	1.156	0.05	1.166	6.357	0.737

10/04/2019 05:30	3.549	2.858	9.162	7.64	1.109	0.05	1.177	6.547	0.705
10/04/2019 06:00	3.549	2.858	10.277	8.62	1.282	0.052	1.208	6.724	0.701
10/04/2019 06:30	3.549	2.858	11.025	9.42	1.517	0.05	1.301	6.847	0.653
10/04/2019 07:00	3.549	2.858	11.006	8.8	1.56	0.05	1.323	6.63	0.661
10/04/2019 07:30	3.549	2.858	11.192	8.5	1.866	0.051	1.283	6.674	0.681
10/04/2019 08:00	3.549	2.858	11.795	8.53	1.945	0.054	1.208	7.064	0.679
10/04/2019 08:30	3.549	2.858	12.147	8.66	1.944	0.054	1.157	8.055	0.805
10/04/2019 09:00	3.549	2.858	12.626	8.85	2.045	0.059	1.714	8.669	0.811
10/04/2019 09:30	3.549	2.858	13.145	9.12	2.108	0.058	3.188	8.62	0.767
10/04/2019 10:00	3.549	2.858	13.57	9.43	2.165	0.055	1.715	9.05	0.722
10/04/2019 10:30	3.549	2.858	14.371	9.58	2.367	0.055	1.361	9.27	0.715
10/04/2019 11:00	3.549	2.858	14.84	10.1	2.48	0.068	1.399	9.466	0.687
10/04/2019 11:30	3.549	2.858	14.737	10.39	2.501	0.061	1.384	9.968	0.866
10/04/2019 12:00	3.653	2.584	14.396	10.39	2.422	0.066	1.424	9.814	1.042
10/04/2019 12:30	3.652	2.466	14.039	10	2.291	0.066	1.417	9.259	0.947
10/04/2019 13:00	3.538	2.473	13.595	9.67	2.286	0.059	1.406	9.393	0.91
10/04/2019 13:30	3.502	2.531	13.626	9.77	2.264	0.072	1.382	9.477	0.694
10/04/2019 14:00	3.52	2.524	13.472	9.63	2.225	0.059	1.372	9.927	0.739

10/04/2019 14:30	3.492	2.674	13.722	9.73	2.147	0.064	1.426	10.12	0.755
10/04/2019 15:00	3.559	2.664	13.989	9.84	2.122	0.062	1.402	10.619	0.781
10/04/2019 15:30	3.646	2.613	14.029	9.91	2.108	0.058	1.411	10.381	0.736
10/04/2019 16:00	3.644	2.576	13.88	9.86	1.879	0.059	1.433	10.586	0.718
10/04/2019 16:30	3.708	2.634	13.958	9.78	1.766	0.064	1.462	10.505	0.681
10/04/2019 17:00	3.374	2.411	13.213	9.69	1.757	0.063	1.465	10.051	0.63
10/04/2019 17:30	3.049	1.968	13.57	9.7	1.733	0.062	1.454	10.436	0.617
10/04/2019 18:00	3.168	1.913	14.469	10.59	1.66	0.071	1.454	9.971	0.572
10/04/2019 18:30	3.64	2.644	17.353	13.95	1.71	0.09	1.49	11.777	0.687
10/04/2019 19:00	3.852	2.951	18.177	14.84	1.866	0.094	1.762	12.028	0.696
10/04/2019 19:30	3.959	2.908	18.273	15.22	1.84	0.098	2.084	12.196	0.678
10/04/2019 20:00	3.928	2.865	18.044	15.05	1.676	0.09	2.178	11.955	0.601
10/04/2019 20:30	3.829	2.653	17.687	15	1.656	0.095	1.993	11.68	0.584
10/04/2019 21:00	3.726	2.529	16.994	14.53	1.657	0.087	1.967	11.639	0.557
10/04/2019 21:30	3.583	2.409	16.045	13.98	1.567	0.09	1.933	11.304	0.578
10/04/2019 22:00	3.482	2.327	15.416	13.2	1.489	0.09	1.868	10.419	0.567
10/04/2019 22:30	3.305	2.211	13.846	12.48	1.418	0.086	1.733	9.974	0.564
10/04/2019 23:00	3.107	2.228	13.059	11.27	1.412	0.081	1.629	8.989	0.551

10/04/2019 23:30	2.883	2.128	11.693	10.17	1.325	0.07	1.512	8.405	0.504
11/04/2019 00:00	2.895	2.119	10.69	9.23	1.311	0.07	1.404	7.883	0.521
11/04/2019 00:30	3.623	2.921	10.158	8.59	1.23	0.062	1.264	7.597	0.547
11/04/2019 01:00	2.266	2.095	9.57	8.01	1.201	0.053	1.237	7.077	0.547
11/04/2019 01:30	2.266	2.095	9.217	8.55	1.158	0.051	1.206	5.744	0.549
11/04/2019 02:00	2.266	2.095	9.154	8.21	1.176	0.05	1.179	5.543	0.543
11/04/2019 02:30	2.266	2.095	8.892	7.98	1.153	0.05	1.163	5.26	0.539
11/04/2019 03:00	2.266	2.095	8.681	7.75	1.063	0.05	1.154	5.102	0.531
11/04/2019 03:30	2.266	2.095	8.522	7.73	1.153	0.05	1.143	5.114	0.536
11/04/2019 04:00	2.266	2.095	8.106	7.63	1.156	0.05	1.141	5.165	0.547
11/04/2019 04:30	2.266	2.095	8.379	7.83	1.108	0.05	1.161	5.233	0.537
11/04/2019 05:00	2.266	2.095	8.612	7.84	1.156	0.05	1.166	5.243	0.529
11/04/2019 05:30	2.266	2.095	9.261	8.19	1.109	0.05	1.177	5.43	0.542
11/04/2019 06:00	2.266	2.095	10.189	9.21	1.282	0.052	1.208	5.626	0.523
11/04/2019 06:30	2.266	2.095	10.595	9.7	1.517	0.05	1.301	5.262	0.456
11/04/2019 07:00	2.205	2.551	11.184	9.47	1.56	0.05	1.323	5.155	0.242
11/04/2019 07:30	2.205	2.551	11.308	9.35	1.866	0.051	1.283	5.42	0.26
11/04/2019 08:00	2.205	2.551	11.445	9.23	1.945	0.054	1.208	5.644	0.259

11/04/2019 08:30	2.205	2.551	11.936	9.62	1.944	0.054	1.157	5.322	0.185
11/04/2019 09:00	2.205	2.551	12.4	10.12	2.045	0.059	1.714	5.763	0.251
11/04/2019 09:30	2.205	2.551	13.048	10.39	2.108	0.058	3.188	5.95	0.518
11/04/2019 10:00	2.205	2.551	13.615	10.56	2.165	0.055	1.715	6.109	0.561
11/04/2019 10:30	2.205	2.551	14.231	10.83	2.367	0.055	1.361	6.599	0.597
11/04/2019 11:00	2.205	2.551	15.002	11.22	2.48	0.068	1.399	6.742	0.272
11/04/2019 11:30	3.235	2.794	15.117	11.5	2.501	0.061	1.384	6.986	0.252
11/04/2019 12:00	3.235	2.794	14.55	11.47	2.422	0.066	1.424	6.778	0.226
11/04/2019 12:30	3.235	2.794	13.549	10.94	2.291	0.066	1.417	6.502	0.219
11/04/2019 13:00	3.235	2.794	13.261	10.69	2.286	0.059	1.406	6.292	0.211
11/04/2019 13:30	3.235	2.794	13.31	10.75	2.264	0.072	1.382	6.411	0.213
11/04/2019 14:00	3.235	2.794	12.93	10.65	2.225	0.059	1.372	6.321	0.207
11/04/2019 14:30	3.235	2.794	13.414	10.82	2.147	0.064	1.426	6.671	0.258
11/04/2019 15:00	3.235	2.794	13.565	10.92	2.122	0.062	1.402	6.721	0.271
11/04/2019 15:30	3.235	2.794	13.588	10.87	2.108	0.058	1.411	6.733	0.244
11/04/2019 16:00	3.235	2.794	13.799	10.83	1.879	0.059	1.433	6.683	0.294
11/04/2019 16:30	3.023	2.544	13.754	10.77	1.766	0.064	1.462	7.201	0.276
11/04/2019 17:00	3.023	2.544	13.686	10.69	1.757	0.063	1.465	7.714	0.418

11/04/2019 17:30	3.023	2.544	13.418	10.76	1.733	0.062	1.454	7.721	0.315
11/04/2019 18:00	3.023	2.544	14.647	11.31	1.66	0.071	1.454	7.704	0.52
11/04/2019 18:30	3.023	2.544	17.674	15.05	1.71	0.09	1.49	9.232	0.76
11/04/2019 19:00	3.023	2.544	18.336	15.97	1.866	0.094	1.762	9.392	0.456
11/04/2019 19:30	3.023	2.544	18.52	16.31	1.84	0.098	2.084	9.393	0.409
11/04/2019 20:00	3.023	2.544	18.088	16.43	1.676	0.09	2.178	9.28	0.497
11/04/2019 20:30	3.023	2.544	17.084	16.17	1.656	0.095	1.993	9.142	0.38
11/04/2019 21:00	3.023	2.544	16.996	15.74	1.657	0.087	1.967	8.585	0.348
11/04/2019 21:30	3.023	2.544	16.073	15.44	1.567	0.09	1.933	8.269	0.376
11/04/2019 22:00	3.023	2.544	15.093	14.72	1.489	0.09	1.868	7.751	0.383
11/04/2019 22:30	3.023	2.544	14.505	13.78	1.418	0.086	1.733	7.148	0.336
11/04/2019 23:00	3.023	2.544	13.097	12.66	1.412	0.081	1.629	6.556	0.329
11/04/2019 23:30	3.023	2.544	11.957	11.55	1.325	0.07	1.512	6.342	0.32
12/04/2019 00:00	3.023	2.544	10.611	10.35	1.311	0.07	1.404	5.85	0.302
12/04/2019 00:30	3.549	2.5	10.073	8.59	1	0.062	1.15	8.824	0.692
12/04/2019 01:00	3.549	2.5	9.523	8.16	1	0.053	1.15	8.327	0.7
12/04/2019 01:30	3.549	2.51	9.253	7.81	1.12	0.051	1	8.335	0.686
12/04/2019 02:00	3.549	2.4	8.91	7.46	1.176	0.05	1.141	8.099	0.69

12/04/2019 02:30	3.549	2.31	8.597	7.22	1.153	0.05	1.161	7.768	0.673
12/04/2019 03:00	3.549	2.858	8.526	7.03	1.063	0.05	1.166	7.538	0.685
12/04/2019 03:30	3.549	2.858	8.482	7.03	1.153	0.05	1.177	7.584	0.694
12/04/2019 04:00	3.549	2.858	8.518	6.98	1.156	0.05	1.141	7.688	0.683
12/04/2019 04:30	3.549	2.858	8.349	6.97	1.108	0.05	1.161	7.758	0.673
12/04/2019 05:00	3.549	2.858	8.595	7.06	1.156	0.05	1.166	7.807	0.689
12/04/2019 05:30	3.549	2.858	8.885	7.52	1.109	0.05	1.177	7.827	0.68
12/04/2019 06:00	3.549	2.858	9.868	8.47	1.282	0.052	1.208	7.992	0.71
12/04/2019 06:30	3.549	2.858	10.666	9.45	1.517	0.05	1.301	7.799	0.631
12/04/2019 07:00	3.549	2.858	10.587	8.91	1.56	0.05	1.323	7.763	0.639
12/04/2019 07:30	3.549	2.858	10.365	8.46	1.866	0.051	1.283	7.767	0.691
12/04/2019 08:00	3.549	2.858	10.966	8.62	1.945	0.054	1.208	8.126	0.691
12/04/2019 08:30	3.549	2.858	11.481	9.07	1.944	0.054	1.157	9.059	0.722
12/04/2019 09:00	3.549	2.858	12.225	9.19	2.045	0.059	1.714	9.435	0.749
12/04/2019 09:30	3.549	2.858	12.963	9.38	2.108	0.058	3.188	9.824	1.111
12/04/2019 10:00	3.549	2.858	13.556	9.54	2.165	0.055	1.715	10.035	1.157
12/04/2019 10:30	3.549	2.858	14.324	9.71	2.367	0.055	1.361	10.415	1.156
12/04/2019 11:00	3.549	2.858	14.349	10.18	2.48	0.068	1.399	10.456	1.004

12/04/2019 11:30	3.549	2.858	14.58	10.59	2.501	0.061	1.384	11.118	0.838
12/04/2019 12:00	3.653	2.584	14.147	10.59	2.422	0.066	1.424	10.356	0.89
12/04/2019 12:30	3.652	2.466	13.679	10.37	2.291	0.066	1.417	10.128	0.822
12/04/2019 13:00	3.538	2.473	13.062	10.23	2.286	0.059	1.406	9.83	0.827
12/04/2019 13:30	3.502	2.531	13.079	10.18	2.264	0.072	1.382	10.177	0.873
12/04/2019 14:00	3.52	2.524	13.054	10.08	2.225	0.059	1.372	10.111	0.859
12/04/2019 14:30	3.492	2.674	13.059	10.2	2.147	0.064	1.426	10.298	0.903
12/04/2019 15:00	3.559	2.664	13.316	10.34	2.122	0.062	1.402	10.544	0.914
12/04/2019 15:30	3.646	2.613	13.232	10.2	2.108	0.058	1.411	10.197	1.032
12/04/2019 16:00	3.644	2.576	13.358	10.14	1.879	0.059	1.433	10.695	0.996
12/04/2019 16:30	3.708	2.634	13.443	10.09	1.766	0.064	1.462	10.402	0.971
12/04/2019 17:00	3.374	2.411	13.238	9.93	1.757	0.063	1.465	10.119	0.795
12/04/2019 17:30	3.049	1.968	13.035	9.98	1.733	0.062	1.454	10.031	0.8
12/04/2019 18:00	3.168	1.913	13.47	10.34	1.66	0.071	1.454	9.824	0.79
12/04/2019 18:30	3.64	2.644	16.24	13.31	1.71	0.09	1.49	11.4	0.648
12/04/2019 19:00	3.852	2.951	17.818	14.91	1.866	0.094	1.762	12.21	0.588
12/04/2019 19:30	3.959	2.908	18.166	15.11	1.84	0.098	2.084	12.219	0.583
12/04/2019 20:00	3.928	2.865	17.837	15.23	1.676	0.09	2.178	12.173	0.598

12/04/2019 20:30	3.829	2.653	17.357	15.13	1.656	0.095	1.993	12.009	0.572
12/04/2019 21:00	3.726	2.529	16.71	14.78	1.657	0.087	1.967	11.618	0.564
12/04/2019 21:30	3.583	2.409	16.066	14.36	1.567	0.09	1.933	11.311	0.524
12/04/2019 22:00	3.482	2.327	14.775	13.52	1.489	0.09	1.868	10.698	0.512
12/04/2019 22:30	3.305	2.211	14.189	12.55	1.418	0.086	1.733	10.279	0.51
12/04/2019 23:00	3.107	2.228	13.188	11.58	1.412	0.081	1.629	9.647	0.521
12/04/2019 23:30	2.883	2.128	11.829	10.55	1.325	0.07	1.512	9.071	0.499
13/04/2019 00:00	2.895	2.119	11.146	9.43	1.311	0.07	1.404	8.356	0.52
13/04/2019 00:30	2.075	2.052	10.49	8.64	1	0.062	1.15	6.617	0.584
13/04/2019 01:00	2.092	2.052	9.29	8.04	1	0.053	1.15	6.3	0.583
13/04/2019 01:30	2.092	2.052	9.551	7.83	1.12	0.051	1	6.081	0.64
13/04/2019 02:00	2.092	2.052	9.098	7.42	1.176	0.05	1.141	5.855	0.552
13/04/2019 02:30	2.092	2.052	8.923	7.27	1.153	0.05	1.161	5.958	0.57
13/04/2019 03:00	2.092	2.052	8.751	7	1.063	0.05	1.166	5.779	0.545
13/04/2019 03:30	2.092	2.052	8.553	7	1.153	0.05	1.177	5.808	0.589
13/04/2019 04:00	2.092	2.052	8.474	6.91	1.156	0.05	1.141	5.63	0.571
13/04/2019 04:30	2.092	2.052	8.376	6.97	1.108	0.05	1.161	5.628	0.54
13/04/2019 05:00	2.092	2.052	8.468	7.06	1.156	0.05	1.166	5.993	0.526

13/04/2019 05:30	2.092	2.052	8.853	7.25	1.109	0.05	1.177	6.183	0.53
13/04/2019 06:00	2.092	2.052	8.985	7.26	1.282	0.052	1.208	6.054	0.471
13/04/2019 06:30	2.092	2.052	8.876	6.74	1.517	0.05	1.301	5.427	0.43
13/04/2019 07:00	2.092	2.052	9.875	7.24	1.56	0.05	1.323	5.704	0.438
13/04/2019 07:30	2.092	2.052	10.034	7.66	1.866	0.051	1.283	5.865	0.437
13/04/2019 08:00	2.317	2.256	10.879	8.3	1.945	0.054	1.208	6.237	0.459
13/04/2019 08:30	2.548	2.303	11.569	8.71	1.944	0.054	1.157	6.476	0.519
13/04/2019 09:00	2.577	2.272	12.72	9.11	2.045	0.059	1.714	7.265	0.53
13/04/2019 09:30	2.577	2.272	13.438	9.36	2.108	0.058	3.188	7.839	0.555
13/04/2019 10:00	2.577	2.272	13.551	9.52	2.165	0.055	1.715	8.182	0.633
13/04/2019 10:30	2.577	2.272	13.847	9.77	2.367	0.055	1.361	8.987	0.62
13/04/2019 11:00	2.577	2.272	13.984	10.07	2.48	0.068	1.399	9.238	0.637
13/04/2019 11:30	2.577	2.272	14.497	10.58	2.501	0.061	1.384	8.994	0.656
13/04/2019 12:00	2.577	2.272	14.647	10.62	2.422	0.066	1.424	8.772	0.632
13/04/2019 12:30	2.577	2.272	14.229	10.62	2.291	0.066	1.417	8.502	0.641
13/04/2019 13:00	2.577	2.272	13.218	10.14	2.286	0.059	1.406	8.113	0.564
13/04/2019 13:30	3.254	2.537	13.419	9.8	2.264	0.072	1.382	7.971	0.556
13/04/2019 14:00	3.256	2.417	12.793	9.57	2.225	0.059	1.372	7.913	0.566

13/04/2019 14:30	3.256	2.417	12.387	9.42	2.147	0.064	1.426	8.193	0.633
13/04/2019 15:00	3.256	2.417	12.514	9.3	2.122	0.062	1.402	8.204	0.977
13/04/2019 15:30	3.256	2.417	12.209	9.45	2.108	0.058	1.411	8.102	0.888
13/04/2019 16:00	3.256	2.417	12.246	9.35	1.879	0.059	1.433	8.018	0.56
13/04/2019 16:30	3.256	2.417	12.38	9.51	1.766	0.064	1.462	7.897	0.509
13/04/2019 17:00	3.256	2.417	12.265	9.4	1.757	0.063	1.465	7.918	0.491
13/04/2019 17:30	3.256	2.417	12.36	9.44	1.733	0.062	1.454	7.499	0.468
13/04/2019 18:00	3.256	2.417	13.316	10.24	1.66	0.071	1.454	7.711	0.477
13/04/2019 18:30	3.256	2.417	16.691	13.29	1.71	0.09	1.49	9.594	0.558
13/04/2019 19:00	3.256	2.417	17.54	14.03	1.866	0.094	1.762	9.75	0.563
13/04/2019 19:30	3.256	2.417	16.738	14.11	1.84	0.098	2.084	9.846	0.872
13/04/2019 20:00	3.256	2.417	17.016	14.04	1.676	0.09	2.178	9.533	0.853
13/04/2019 20:30	3.256	2.417	16.666	13.91	1.656	0.095	1.993	9.292	0.513
13/04/2019 21:00	3.256	2.417	15.876	13.75	1.657	0.087	1.967	9.062	0.507
13/04/2019 21:30	3.256	2.417	15.308	13.29	1.567	0.09	1.933	8.858	0.509
13/04/2019 22:00	3.09	2.391	14.89	12.85	1.489	0.09	1.868	8.646	0.517
13/04/2019 22:30	2.731	2.239	14.114	12.11	1.418	0.086	1.733	7.953	0.508
13/04/2019 23:00	2.634	2.224	12.946	11.41	1.412	0.081	1.629	7.528	0.502

13/04/2019 23:30	2.562	2.221	12.294	10.83	1.325	0.07	1.512	7.091	0.503
14/04/2019 00:00	2.562	2.221	11.742	10.02	1.311	0.07	1.404	6.724	0.518
14/04/2019 00:30	2.075	2.052	10.49	8.64	1	0.062	1.15	6.617	0.584
14/04/2019 01:00	2.092	2.052	9.29	8.04	1	0.053	1.15	6.3	0.583
14/04/2019 01:30	2.092	2.052	9.551	7.83	1.12	0.051	1	6.081	0.64
14/04/2019 02:00	2.092	2.052	9.098	7.42	1.176	0.05	1.141	5.855	0.552
14/04/2019 02:30	2.092	2.052	8.923	7.27	1.153	0.05	1.161	5.958	0.57
14/04/2019 03:00	2.092	2.052	8.751	7	1.063	0.05	1.166	5.779	0.545
14/04/2019 03:30	2.092	2.052	8.553	7	1.153	0.05	1.177	5.808	0.589
14/04/2019 04:00	2.092	2.052	8.474	6.91	1.156	0.05	1.141	5.63	0.571
14/04/2019 04:30	2.092	2.052	8.376	6.97	1.108	0.05	1.161	5.628	0.54
14/04/2019 05:00	2.092	2.052	8.468	7.06	1.156	0.05	1.166	5.993	0.526
14/04/2019 05:30	2.092	2.052	8.853	7.25	1.109	0.05	1.177	6.183	0.53
14/04/2019 06:00	2.092	2.052	8.985	7.26	1.282	0.052	1.208	6.054	0.471
14/04/2019 06:30	2.092	2.052	8.876	6.74	1.517	0.05	1.301	5.427	0.43
14/04/2019 07:00	2.092	2.052	9.875	7.24	1.56	0.05	1.323	5.704	0.438
14/04/2019 07:30	2.092	2.052	10.034	7.66	1.866	0.051	1.283	5.865	0.437
14/04/2019 08:00	2.317	2.256	10.879	8.3	1.945	0.054	1.208	6.237	0.459

14/04/2019 08:30	2.548	2.303	11.569	8.71	1.944	0.054	1.157	6.476	0.519
14/04/2019 09:00	2.577	2.272	12.72	9.11	2.045	0.059	1.714	7.265	0.53
14/04/2019 09:30	2.577	2.272	13.438	9.36	2.108	0.058	3.188	7.839	0.555
14/04/2019 10:00	2.577	2.272	13.551	9.52	2.165	0.055	1.715	8.182	0.633
14/04/2019 10:30	2.577	2.272	13.847	9.77	2.367	0.055	1.361	8.987	0.62
14/04/2019 11:00	2.577	2.272	13.984	10.07	2.48	0.068	1.399	9.238	0.637
14/04/2019 11:30	2.577	2.272	14.497	10.58	2.501	0.061	1.384	8.994	0.656
14/04/2019 12:00	2.577	2.272	14.647	10.62	2.422	0.066	1.424	8.772	0.632
14/04/2019 12:30	2.577	2.272	14.229	10.62	2.291	0.066	1.417	8.502	0.641
14/04/2019 13:00	2.577	2.272	13.218	10.14	2.286	0.059	1.406	8.113	0.564
14/04/2019 13:30	3.254	2.537	13.419	9.8	2.264	0.072	1.382	7.971	0.556
14/04/2019 14:00	3.256	2.417	12.793	9.57	2.225	0.059	1.372	7.913	0.566
14/04/2019 14:30	3.256	2.417	12.387	9.42	2.147	0.064	1.426	8.193	0.633
14/04/2019 15:00	3.256	2.417	12.514	9.3	2.122	0.062	1.402	8.204	0.977
14/04/2019 15:30	3.256	2.417	12.209	9.45	2.108	0.058	1.411	8.102	0.888
14/04/2019 16:00	3.256	2.417	12.246	9.35	1.879	0.059	1.433	8.018	0.56
14/04/2019 16:30	3.256	2.417	12.38	9.51	1.766	0.064	1.462	7.897	0.509
14/04/2019 17:00	3.256	2.417	12.265	9.4	1.757	0.063	1.465	7.918	0.491

14/04/2019 17:30	3.256	2.417	12.36	9.44	1.733	0.062	1.454	7.499	0.468
14/04/2019 18:00	3.256	2.417	13.316	10.24	1.66	0.071	1.454	7.711	0.477
14/04/2019 18:30	3.256	2.417	16.691	13.29	1.71	0.09	1.49	9.594	0.558
14/04/2019 19:00	3.256	2.417	17.54	14.03	1.866	0.094	1.762	9.75	0.563
14/04/2019 19:30	3.256	2.417	16.738	14.11	1.84	0.098	2.084	9.846	0.872
14/04/2019 20:00	3.256	2.417	17.016	14.04	1.676	0.09	2.178	9.533	0.853
14/04/2019 20:30	3.256	2.417	16.666	13.91	1.656	0.095	1.993	9.292	0.513
14/04/2019 21:00	3.256	2.417	15.876	13.75	1.657	0.087	1.967	9.062	0.507
14/04/2019 21:30	3.256	2.417	15.308	13.29	1.567	0.09	1.933	8.858	0.509
14/04/2019 22:00	3.09	2.391	14.89	12.85	1.489	0.09	1.868	8.646	0.517
14/04/2019 22:30	2.731	2.239	14.114	12.11	1.418	0.086	1.733	7.953	0.508
14/04/2019 23:00	2.634	2.224	12.946	11.41	1.412	0.081	1.629	7.528	0.502
14/04/2019 23:30	2.562	2.221	12.294	10.83	1.325	0.07	1.512	7.091	0.503
15/04/2019 00:00	2.562	2.221	11.742	10.02	1.311	0.07	1.404	6.724	0.518
15/04/2019 00:30	2.075	1.804	9.8	8.1	1	0.062	1.15	6.384	0.364
15/04/2019 01:00	2.092	1.804	9.377	7.63	1	0.053	1.15	6.13	0.368
15/04/2019 01:30	2.092	1.804	8.851	7.32	1.12	0.051	1	5.963	0.383
15/04/2019 02:00	2.092	1.804	8.7	7.11	1.176	0.05	1.141	5.796	0.391

15/04/2019 02:30	2.092	1.804	8.469	6.92	1.153	0.05	1.161	5.72	0.37
15/04/2019 03:00	2.092	1.804	8.002	6.77	1.063	0.05	1.166	5.72	0.387
15/04/2019 03:30	2.092	1.804	8.238	6.8	1.153	0.05	1.177	5.666	0.374
15/04/2019 04:00	2.092	1.804	8.276	6.77	1.156	0.05	1.141	5.622	0.376
15/04/2019 04:30	2.092	1.804	8.384	6.77	1.108	0.05	1.161	5.843	0.376
15/04/2019 05:00	2.092	1.804	8.479	7.06	1.156	0.05	1.166	5.83	0.367
15/04/2019 05:30	2.092	1.804	8.951	7.5	1.109	0.05	1.177	6.23	0.376
15/04/2019 06:00	2.092	1.804	9.966	8.79	1.282	0.052	1.208	6.378	0.349
15/04/2019 06:30	2.092	1.804	10.532	9.27	1.517	0.05	1.301	6.113	0.314
15/04/2019 07:00	2.092	1.804	10.579	8.81	1.56	0.05	1.323	6.088	0.328
15/04/2019 07:30	2.092	1.804	10.996	8.51	1.866	0.051	1.283	6.214	0.331
15/04/2019 08:00	2.317	1.804	11.079	8.47	1.945	0.054	1.208	6.451	0.423
15/04/2019 08:30	2.548	1.174	11.773	8.64	1.944	0.054	1.157	7.121	0.625
15/04/2019 09:00	2.577	1.146	12.138	8.84	2.045	0.059	1.714	7.556	0.806
15/04/2019 09:30	2.577	1.146	12.875	9.04	2.108	0.058	3.188	7.951	0.959
15/04/2019 10:00	2.577	1.146	13.239	9.14	2.165	0.055	1.715	8.402	0.893
15/04/2019 10:30	2.577	1.146	13.498	9.52	2.367	0.055	1.361	8.579	0.641
15/04/2019 11:00	2.577	1.146	14.188	9.76	2.48	0.068	1.399	9.026	0.679

15/04/2019 11:30	2.577	1.146	14.447	10.06	2.501	0.061	1.384	9.307	0.754
15/04/2019 12:00	2.577	1.146	13.521	9.92	2.422	0.066	1.424	9.157	0.746
15/04/2019 12:30	2.577	1.146	13.386	9.85	2.291	0.066	1.417	8.697	0.679
15/04/2019 13:00	2.577	1.146	13.063	9.59	2.286	0.059	1.406	8.407	0.738
15/04/2019 13:30	3.254	1.146	13.009	9.47	2.264	0.072	1.382	8.547	1.02
15/04/2019 14:00	3.256	1.146	13.08	9.33	2.225	0.059	1.372	8.796	1.139
15/04/2019 14:30	3.256	1.146	13.161	9.27	2.147	0.064	1.426	9.003	0.898
15/04/2019 15:00	3.256	1.146	13.278	9.39	2.122	0.062	1.402	9.316	0.866
15/04/2019 15:30	3.256	1.146	13.853	9.51	2.108	0.058	1.411	9.456	0.726
15/04/2019 16:00	3.256	2.372	12.809	9.35	1.879	0.059	1.433	9.405	0.571
15/04/2019 16:30	3.256	2.342	13.584	9.32	1.766	0.064	1.462	9.162	0.511
15/04/2019 17:00	3.256	2.342	13.201	9.21	1.757	0.063	1.465	8.904	0.418
15/04/2019 17:30	3.256	2.342	13.085	9.39	1.733	0.062	1.454	8.375	0.34
15/04/2019 18:00	3.256	2.342	13.172	10.72	1.66	0.071	1.454	8.999	0.498
15/04/2019 18:30	3.256	2.342	13.172	13.9	1.71	0.09	1.49	10.316	0.718
15/04/2019 19:00	3.256	2.342	13.172	14.59	1.866	0.094	1.762	10.399	0.382
15/04/2019 19:30	3.256	2.342	13.172	14.69	1.84	0.098	2.084	10.434	0.369
15/04/2019 20:00	3.256	2.342	13.172	14.79	1.676	0.09	2.178	10.322	0.357

15/04/2019 20:30	3.256	2.342	13.172	14.72	1.656	0.095	1.993	9.984	0.35
15/04/2019 21:00	3.256	2.342	13.172	14.52	1.657	0.087	1.967	9.739	0.317
15/04/2019 21:30	3.256	2.342	13.172	14.06	1.567	0.09	1.933	9.539	0.349
15/04/2019 22:00	3.09	2.342	13.172	13.12	1.489	0.09	1.868	8.734	0.394
15/04/2019 22:30	2.731	2.342	13.172	12.12	1.418	0.086	1.733	8.202	0.356
15/04/2019 23:00	2.634	2.342	13.172	11	1.412	0.081	1.629	7.716	0.354
15/04/2019 23:30	2.562	2.342	11.64	9.9	1.325	0.07	1.512	7.412	0.328
16/04/2019 00:00	2.562	2.342	11.64	9.09	1.311	0.07	1.404	7.099	0.318
16/04/2019 00:30	3.5	2.342	9.8	8.21	1	0.062	1.15	6.679	0.295
16/04/2019 01:00	3.5	2.342	9.377	7.65	1	0.053	1.15	6.362	0.293
16/04/2019 01:30	3.5	2.342	8.851	7.35	1.12	0.051	1	6.008	0.307
16/04/2019 02:00	3.5	2.342	8.7	7.14	1.176	0.05	1.141	5.886	0.296
16/04/2019 02:30	3.5	2.342	8.469	6.95	1.153	0.05	1.161	6.025	0.298
16/04/2019 03:00	1.799	1.983	8.002	6.92	1.063	0.05	1.166	5.846	0.292
16/04/2019 03:30	1.799	1.983	8.238	6.71	1.153	0.05	1.177	5.818	0.298
16/04/2019 04:00	1.799	1.983	8.276	6.7	1.156	0.05	1.141	5.799	0.285
16/04/2019 04:30	1.799	1.983	8.384	6.7	1.108	0.05	1.161	5.867	0.296
16/04/2019 05:00	1.799	1.983	8.479	6.91	1.156	0.05	1.166	5.965	0.28

16/04/2019 05:30	1.799	1.983	8.951	7.23	1.109	0.05	1.177	6.012	0.284
16/04/2019 06:00	1.799	1.983	9.966	8.47	1.282	0.052	1.208	6.426	0.245
16/04/2019 06:30	1.799	1.983	10.532	8.83	1.517	0.05	1.301	6.116	0.212
16/04/2019 07:00	1.799	1.983	10.579	8.43	1.56	0.05	1.323	6.268	0.19
16/04/2019 07:30	1.799	1.983	10.996	8.11	1.866	0.051	1.283	6.291	0.205
16/04/2019 08:00	1.799	1.983	11.079	8.23	1.945	0.054	1.208	6.593	0.271
16/04/2019 08:30	1.799	1.983	11.773	8.42	1.944	0.054	1.157	7.756	0.307
16/04/2019 09:00	1.799	1.983	12.138	8.8	2.045	0.059	1.714	8.483	0.324
16/04/2019 09:30	2.934	2.463	12.875	9	2.108	0.058	3.188	8.575	0.548
16/04/2019 10:00	2.934	2.463	13.239	9.16	2.165	0.055	1.715	8.898	0.499
16/04/2019 10:30	2.934	2.463	13.498	9.56	2.367	0.055	1.361	9.093	0.702
16/04/2019 11:00	2.934	2.463	14.188	9.88	2.48	0.068	1.399	9.481	0.97
16/04/2019 11:30	2.934	2.463	14.447	10.5	2.501	0.061	1.384	9.665	0.915
16/04/2019 12:00	2.934	2.463	13.521	10.3	2.422	0.066	1.424	9.375	0.88
16/04/2019 12:30	2.934	2.463	13.386	9.93	2.291	0.066	1.417	9.205	0.826
16/04/2019 13:00	2.934	2.463	13.063	9.5	2.286	0.059	1.406	9.477	0.846
16/04/2019 13:30	2.934	2.463	13.009	9.56	2.264	0.072	1.382	9.271	0.8
16/04/2019 14:00	3.35	2.433	13.08	9.63	2.225	0.059	1.372	9.266	0.845

16/04/2019 14:30	3.35	2.433	13.161	9.91	2.147	0.064	1.426	9.694	0.728
16/04/2019 15:00	3.35	2.433	13.278	9.82	2.122	0.062	1.402	9.818	0.834
16/04/2019 15:30	3.35	2.433	13.853	9.86	2.108	0.058	1.411	10.192	0.834
16/04/2019 16:00	3.35	2.433	12.809	9.45	1.879	0.059	1.433	9.609	0.752
16/04/2019 16:30	3.35	2.433	13.584	9.49	1.766	0.064	1.462	9.07	1.044
16/04/2019 17:00	3.35	2.433	13.201	9.47	1.757	0.063	1.465	8.991	0.979
16/04/2019 17:30	3.35	2.433	13.085	9.57	1.733	0.062	1.454	8.333	0.516
16/04/2019 18:00	3.35	2.433	13.172	10.97	1.66	0.071	1.454	8.902	0.536
16/04/2019 18:30	3.35	2.433	13.172	14.19	1.71	0.09	1.49	10.257	0.631
16/04/2019 19:00	3.35	2.433	13.172	14.9	1.866	0.094	1.762	10.497	0.574
16/04/2019 19:30	3.35	2.433	13.172	15.08	1.84	0.098	2.084	10.637	0.595
16/04/2019 20:00	3.35	2.433	13.172	14.95	1.676	0.09	2.178	10.446	0.589
16/04/2019 20:30	3.35	2.433	13.172	14.85	1.656	0.095	1.993	10.154	0.369
16/04/2019 21:00	3.35	2.433	13.172	14.51	1.657	0.087	1.967	9.834	0.344
16/04/2019 21:30	3.35	2.433	13.172	14.03	1.567	0.09	1.933	9.367	0.338
16/04/2019 22:00	3.35	2.433	13.172	13.35	1.489	0.09	1.868	8.972	0.325
16/04/2019 22:30	3.35	2.433	13.172	11.96	1.418	0.086	1.733	8.235	0.318
16/04/2019 23:00	3.35	2.433	13.172	11.15	1.412	0.081	1.629	7.97	0.325

16/04/2019 23:30	3.35	2.433	11.64	9.83	1.325	0.07	1.512	7.433	0.531
17/04/2019 00:00	3.35	2.433	11.64	8.98	1.311	0.07	1.404	7.028	0.533
17/04/2019 00:30	3.5	2.433	9.8	8.24	1	0.062	1.15	6.726	0.525
17/04/2019 01:00	3.5	2.433	9.377	7.82	1	0.053	1.15	6.403	0.53
17/04/2019 01:30	3.5	2.433	8.851	7.37	1.12	0.051	1	6.093	0.456
17/04/2019 02:00	3.5	1.971	8.7	7.27	1.176	0.05	1.141	6.073	0.517
17/04/2019 02:30	3.5	1.971	8.469	6.92	1.153	0.05	1.161	6.031	0.507
17/04/2019 03:00	1.799	1.971	8.002	6.99	1.063	0.05	1.166	5.871	0.509
17/04/2019 03:30	1.799	1.971	8.238	6.76	1.153	0.05	1.177	5.836	0.517
17/04/2019 04:00	1.799	1.971	8.276	6.85	1.156	0.05	1.141	5.737	0.318
17/04/2019 04:30	1.799	1.971	8.384	6.88	1.108	0.05	1.161	5.758	0.514
17/04/2019 05:00	1.799	1.971	8.479	7.08	1.156	0.05	1.166	5.952	0.482
17/04/2019 05:30	1.799	1.971	8.951	7.61	1.109	0.05	1.177	6.09	0.495
17/04/2019 06:00	1.799	1.971	9.966	8.46	1.282	0.052	1.208	6.164	0.432
17/04/2019 06:30	1.799	1.971	10.532	8.86	1.517	0.05	1.301	5.953	0.423
17/04/2019 07:00	1.799	1.971	10.579	8.63	1.56	0.05	1.323	6.13	0.404
17/04/2019 07:30	1.799	1.971	10.996	8.62	1.866	0.051	1.283	6.208	0.425
17/04/2019 08:00	1.799	1.971	11.079	9.07	1.945	0.054	1.208	5.511	0.448

17/04/2019 08:30	1.799	2.473	11.773	9.18	1.944	0.054	1.157	6.459	0.496
17/04/2019 09:00	1.799	2.473	12.138	9.27	2.045	0.059	1.714	6.991	0.535
17/04/2019 09:30	2.934	2.473	12.875	9.52	2.108	0.058	3.188	7.239	0.67
17/04/2019 10:00	2.934	2.473	13.239	9.69	2.165	0.055	1.715	8.135	0.734
17/04/2019 10:30	2.934	2.473	13.498	10.02	2.367	0.055	1.361	8.833	0.906
17/04/2019 11:00	2.934	2.473	14.188	10.81	2.48	0.068	1.399	9.087	1.055
17/04/2019 11:30	2.934	2.473	14.447	11.08	2.501	0.061	1.384	9.378	1.082
17/04/2019 12:00	2.934	2.473	13.521	10.93	2.422	0.066	1.424	8.71	1.003
17/04/2019 12:30	2.934	2.473	13.386	10.64	2.291	0.066	1.417	8.802	0.897
17/04/2019 13:00	2.934	2.804	13.063	10.35	2.286	0.059	1.406	7.773	0.888
17/04/2019 13:30	2.934	2.804	13.009	10.15	2.264	0.072	1.382	8.099	0.871
17/04/2019 14:00	3.35	2.804	13.08	10.13	2.225	0.059	1.372	8.071	0.535
17/04/2019 14:30	3.35	2.804	13.161	10.22	2.147	0.064	1.426	8.223	0.744
17/04/2019 15:00	3.35	2.804	13.278	10.12	2.122	0.062	1.402	8.266	0.783
17/04/2019 15:30	3.35	2.804	13.853	10.07	2.108	0.058	1.411	8.359	0.797
17/04/2019 16:00	3.35	2.804	12.809	9.9	1.879	0.059	1.433	9.049	0.752
17/04/2019 16:30	3.35	2.804	13.584	9.83	1.766	0.064	1.462	9.16	0.656
17/04/2019 17:00	3.35	2.804	13.201	9.73	1.757	0.063	1.465	8.714	0.619

17/04/2019 17:30	3.35	2.804	13.085	9.88	1.733	0.062	1.454	8.37	0.548
17/04/2019 18:00	3.35	2.804	13.172	10.73	1.66	0.071	1.454	8.911	0.857
17/04/2019 18:30	3.35	2.804	13.172	13.98	1.71	0.09	1.49	10.327	0.96
17/04/2019 19:00	3.35	2.804	13.172	14.76	1.866	0.094	1.762	10.497	0.62
17/04/2019 19:30	3.35	2.804	13.172	14.78	1.84	0.098	2.084	10.618	0.613
17/04/2019 20:00	3.35	2.804	13.172	14.73	1.676	0.09	2.178	10.44	0.576
17/04/2019 20:30	3.35	2.804	13.172	14.55	1.656	0.095	1.993	10.111	0.571
17/04/2019 21:00	3.35	2.804	13.172	14.25	1.657	0.087	1.967	9.896	0.35
17/04/2019 21:30	3.35	2.804	13.172	13.85	1.567	0.09	1.933	9.614	0.349
17/04/2019 22:00	3.35	2.804	13.172	13.23	1.489	0.09	1.868	8.98	0.358
17/04/2019 22:30	3.35	2.804	13.172	12.38	1.418	0.086	1.733	8.657	0.344
17/04/2019 23:00	3.35	2.804	13.172	11.48	1.412	0.081	1.629	8.452	0.342
17/04/2019 23:30	3.35	2.804	11.64	10.56	1.325	0.07	1.512	8.082	0.33
18/04/2019 00:00	3.35	2.804	11.64	9.49	1.311	0.07	1.404	7.561	0.322
18/04/2019 00:30	3.5	2.342	9.8	8.21	1	0.062	1.15	6.679	0.295
18/04/2019 01:00	3.5	2.342	9.377	7.65	1	0.053	1.15	6.362	0.293
18/04/2019 01:30	3.5	2.342	8.851	7.35	1.12	0.051	1	6.008	0.307
18/04/2019 02:00	3.5	2.342	8.7	7.14	1.176	0.05	1.141	5.886	0.296

18/04/2019 02:30	3.5	2.342	8.469	6.95	1.153	0.05	1.161	6.025	0.298
18/04/2019 03:00	1.799	1.983	8.002	6.92	1.063	0.05	1.166	5.846	0.292
18/04/2019 03:30	1.799	1.983	8.238	6.71	1.153	0.05	1.177	5.818	0.298
18/04/2019 04:00	1.799	1.983	8.276	6.7	1.156	0.05	1.141	5.799	0.285
18/04/2019 04:30	1.799	1.983	8.384	6.7	1.108	0.05	1.161	5.867	0.296
18/04/2019 05:00	1.799	1.983	8.479	6.91	1.156	0.05	1.166	5.965	0.28
18/04/2019 05:30	1.799	1.983	8.951	7.23	1.109	0.05	1.177	6.012	0.284
18/04/2019 06:00	1.799	1.983	9.966	8.47	1.282	0.052	1.208	6.426	0.245
18/04/2019 06:30	1.799	1.983	10.532	8.83	1.517	0.05	1.301	6.116	0.212
18/04/2019 07:00	1.799	1.983	10.579	8.43	1.56	0.05	1.323	6.268	0.19
18/04/2019 07:30	1.799	1.983	10.996	8.11	1.866	0.051	1.283	6.291	0.205
18/04/2019 08:00	1.799	1.983	11.079	8.23	1.945	0.054	1.208	6.593	0.271
18/04/2019 08:30	1.799	1.983	11.773	8.42	1.944	0.054	1.157	7.756	0.307
18/04/2019 09:00	1.799	1.983	12.138	8.8	2.045	0.059	1.714	8.483	0.324
18/04/2019 09:30	2.934	2.463	12.875	9	2.108	0.058	3.188	8.575	0.548
18/04/2019 10:00	2.934	2.463	13.239	9.16	2.165	0.055	1.715	8.898	0.499
18/04/2019 10:30	2.934	2.463	13.498	9.56	2.367	0.055	1.361	9.093	0.702
18/04/2019 11:00	2.934	2.463	14.188	9.88	2.48	0.068	1.399	9.481	0.97

18/04/2019 11:30	2.934	2.463	14.447	10.5	2.501	0.061	1.384	9.665	0.915
18/04/2019 12:00	2.934	2.463	13.521	10.3	2.422	0.066	1.424	9.375	0.88
18/04/2019 12:30	2.934	2.463	13.386	9.93	2.291	0.066	1.417	9.205	0.826
18/04/2019 13:00	2.934	2.463	13.063	9.5	2.286	0.059	1.406	9.477	0.846
18/04/2019 13:30	2.934	2.463	13.009	9.56	2.264	0.072	1.382	9.271	0.8
18/04/2019 14:00	3.35	2.433	13.08	9.63	2.225	0.059	1.372	9.266	0.845
18/04/2019 14:30	3.35	2.433	13.161	9.91	2.147	0.064	1.426	9.694	0.728
18/04/2019 15:00	3.35	2.433	13.278	9.82	2.122	0.062	1.402	9.818	0.834
18/04/2019 15:30	3.35	2.433	13.853	9.86	2.108	0.058	1.411	10.192	0.834
18/04/2019 16:00	3.35	2.433	12.809	9.45	1.879	0.059	1.433	9.609	0.752
18/04/2019 16:30	3.35	2.433	13.584	9.49	1.766	0.064	1.462	9.07	1.044
18/04/2019 17:00	3.35	2.433	13.201	9.47	1.757	0.063	1.465	8.991	0.979
18/04/2019 17:30	3.35	2.433	13.085	9.57	1.733	0.062	1.454	8.333	0.516
18/04/2019 18:00	3.35	2.433	13.172	10.97	1.66	0.071	1.454	8.902	0.536
18/04/2019 18:30	3.35	2.433	13.172	14.19	1.71	0.09	1.49	10.257	0.631
18/04/2019 19:00	3.35	2.433	13.172	14.9	1.866	0.094	1.762	10.497	0.574
18/04/2019 19:30	3.35	2.433	13.172	15.08	1.84	0.098	2.084	10.637	0.595
18/04/2019 20:00	3.35	2.433	13.172	14.95	1.676	0.09	2.178	10.446	0.589

18/04/2019 20:30	3.35	2.433	13.172	14.85	1.656	0.095	1.993	10.154	0.369
18/04/2019 21:00	3.35	2.433	13.172	14.51	1.657	0.087	1.967	9.834	0.344
18/04/2019 21:30	3.35	2.433	13.172	14.03	1.567	0.09	1.933	9.367	0.338
18/04/2019 22:00	3.35	2.433	13.172	13.35	1.489	0.09	1.868	8.972	0.325
18/04/2019 22:30	3.35	2.433	13.172	11.96	1.418	0.086	1.733	8.235	0.318
18/04/2019 23:00	3.35	2.433	13.172	11.15	1.412	0.081	1.629	7.97	0.325
18/04/2019 23:30	3.35	2.433	11.64	9.83	1.325	0.07	1.512	7.433	0.531
19/04/2019 00:00	3.35	2.433	11.64	8.98	1.311	0.07	1.404	7.028	0.533
19/04/2019 00:30	2.399	2.427	10.535	9.11	1	0.062	1.15	6.135	0.348
19/04/2019 01:00	2.399	2.427	10.07	8.42	1	0.053	1.15	5.848	0.278
19/04/2019 01:30	2.399	2.427	9.385	8.15	1.12	0.051	1	5.698	0.287
19/04/2019 02:00	2.399	2.427	8.802	7.74	1.176	0.05	1.141	5.4	0.269
19/04/2019 02:30	2.399	2.427	8.716	7.48	1.153	0.05	1.161	5.444	0.282
19/04/2019 03:00	2.399	2.427	8.461	7.34	1.063	0.05	1.166	5.35	0.285
19/04/2019 03:30	2.399	2.427	8.359	7.22	1.153	0.05	1.177	5.748	0.297
19/04/2019 04:00	1.822	1.918	8.373	7.11	1.156	0.05	1.141	5.421	0.28
19/04/2019 04:30	1.822	1.918	8.129	7.08	1.108	0.05	1.161	5.473	0.279
19/04/2019 05:00	1.822	1.918	8.281	7.11	1.156	0.05	1.166	5.53	0.274

19/04/2019 05:30	1.822	1.918	8.666	7.26	1.109	0.05	1.177	5.712	0.269
19/04/2019 06:00	1.822	1.918	8.797	5.43	1.282	0.052	1.208	5.701	0.251
19/04/2019 06:30	1.822	1.918	8.206	5.81	1.517	0.05	1.301	4.831	0.516
19/04/2019 07:00	1.822	1.918	8.573	6.31	1.56	0.05	1.323	4.999	0.496
19/04/2019 07:30	1.822	1.918	8.942	6.76	1.866	0.051	1.283	5.204	0.177
19/04/2019 08:00	1.822	1.918	9.557	7.55	1.945	0.054	1.208	4.928	0.198
19/04/2019 08:30	1.822	1.918	9.93	8.04	1.944	0.054	1.157	5.397	0.254
19/04/2019 09:00	1.822	1.918	10.251	8.51	2.045	0.059	1.714	5.598	0.334
19/04/2019 09:30	2.362	2.319	10.711	8.73	2.108	0.058	3.188	5.695	0.389
19/04/2019 10:00	2.362	2.319	10.904	9	2.165	0.055	1.715	6.233	0.373
19/04/2019 10:30	2.362	2.319	11.13	9.1	2.367	0.055	1.361	6.597	0.309
19/04/2019 11:00	2.362	2.319	11.921	5.42	2.48	0.068	1.399	6.777	0.298
19/04/2019 11:30	2.362	2.319	12.476	5.59	2.501	0.061	1.384	7.006	0.432
19/04/2019 12:00	2.362	2.319	12.138	9.73	2.422	0.066	1.424	7.077	0.43
19/04/2019 12:30	2.362	2.319	12.03	10.14	2.291	0.066	1.417	6.929	0.416
19/04/2019 13:00	2.362	2.319	11.648	9.89	2.286	0.059	1.406	6.844	0.28
19/04/2019 13:30	2.362	2.319	11.347	9.39	2.264	0.072	1.382	6.649	0.286
19/04/2019 14:00	2.362	2.319	11.114	9.08	2.225	0.059	1.372	6.491	0.292

19/04/2019 14:30	2.362	2.319	11.02	8.71	2.147	0.064	1.426	6.395	0.289
19/04/2019 15:00	2.362	2.319	10.755	8.55	2.122	0.062	1.402	6.455	0.301
19/04/2019 15:30	2.234	2.202	10.855	8.55	2.108	0.058	1.411	6.438	0.299
19/04/2019 16:00	2.28	2.129	10.886	8.64	1.879	0.059	1.433	6.461	0.292
19/04/2019 16:30	2.28	2.129	11.002	8.62	1.766	0.064	1.462	6.501	0.267
19/04/2019 17:00	2.28	2.129	10.984	8.68	1.757	0.063	1.465	6.558	0.258
19/04/2019 17:30	2.28	2.129	10.983	8.86	1.733	0.062	1.454	6.594	0.227
19/04/2019 18:00	2.28	2.129	12.447	10.15	1.66	0.071	1.454	7.347	0.26
19/04/2019 18:30	2.28	2.129	14.716	13.08	1.71	0.09	1.49	8.884	0.312
19/04/2019 19:00	2.28	2.129	15.649	13.56	1.866	0.094	1.762	9.014	0.323
19/04/2019 19:30	2.28	2.129	15.604	13.67	1.84	0.098	2.084	9.127	0.337
19/04/2019 20:00	2.28	2.129	15.481	13.61	1.676	0.09	2.178	8.973	0.32
19/04/2019 20:30	2.28	2.129	15.142	13.39	1.656	0.095	1.993	9.033	0.319
19/04/2019 21:00	2.28	2.129	14.609	7.81	1.657	0.087	1.967	8.806	0.31
19/04/2019 21:30	2.28	2.129	14.445	7.44	1.567	0.09	1.933	8.483	0.324
19/04/2019 22:00	2.28	2.129	14.027	7.76	1.489	0.09	1.868	8.382	0.358
19/04/2019 22:30	2.28	2.129	13.195	9.89	1.418	0.086	1.733	7.878	0.373
19/04/2019 23:00	2.28	2.129	12.539	10.48	1.412	0.081	1.629	7.467	0.376

19/04/2019 23:30	2.28	2.129	11.692	10.51	1.325	0.07	1.512	7.313	0.362
20/04/2019 00:00	2.28	2.129	10.905	9.46	1.311	0.07	1.404	6.748	0.357
20/04/2019 00:30	2.6	2.129	10.121	8.77	1.685	0	0.815	6.331	0.318
20/04/2019 01:00	2.6	2.111	9.655	8.15	1.665	0	0.787	6.091	0.265
20/04/2019 01:30	2.5	1.967	9.071	7.73	1.618	0	0.768	5.857	0.291
20/04/2019 02:00	2.4	2.02	8.706	7.32	1.593	0	0.756	5.713	0.292
20/04/2019 02:30	2.4	2.019	8.851	7.21	1.598	0	0.74	5.609	0.252
20/04/2019 03:00	2.4	1.995	8.417	7.15	1.661	0	0.738	5.657	0.246
20/04/2019 03:30	2.3	2.138	8.235	7.03	1.505	0	0.724	5.725	0.24
20/04/2019 04:00	2.3	2.193	8.098	7	1.688	0	0.753	5.538	0.245
20/04/2019 04:30	2.3	2.287	8.215	7.01	1.74	0	0.82	5.69	0.246
20/04/2019 05:00	2.3	2.27	8.194	6.96	1.633	0	0.834	5.623	0.225
20/04/2019 05:30	2.3	2.314	8.338	7.02	1.722	0	0.921	5.554	0.228
20/04/2019 06:00	2.3	2.357	8.891	7.17	2.078	0	1.009	5.427	0.201
20/04/2019 06:30	2.1	2.42	8.508	6.35	2.059	0	0.997	4.762	0.156
20/04/2019 07:00	2.1	2.439	9.117	6.88	2.097	0	0.977	5.322	0.155
20/04/2019 07:30	2.3	2.572	9.988	7.58	2.226	0	1.058	5.721	0.149
20/04/2019 08:00	2.5	2.49	10.556	8.12	2.288	0	1.095	5.725	0.175

20/04/2019 08:30	2.6	2.362	10.863	8.73	2.392	0	1.081	6.216	0.52
20/04/2019 09:00	2.7	2.636	11.87	9.18	2.431	0	1.138	6.747	0.845
20/04/2019 09:30	2.8	3.083	12.373	9.37	2.422	0	1.178	7.082	0.87
20/04/2019 10:00	2.9	3.212	12.772	9.79	2.447	0	1.198	7.788	0.586
20/04/2019 10:30	2.9	3.346	13.597	10.07	2.415	0	1.165	8.109	0.702
20/04/2019 11:00	2.9	3.348	13.844	10.31	2.411	0	1.232	8.264	0.67
20/04/2019 11:30	3	3.454	14.133	10.51	2.306	0	1.226	8.638	0.675
20/04/2019 12:00	3	3.429	14.482	10.84	2.295	0	1.252	8.343	0.697
20/04/2019 12:30	3.1	3.396	13.963	10.74	2.206	0	1.249	8.23	0.561
20/04/2019 13:00	3.1	3.3	13.695	10.4	2.068	0	1.236	7.799	0.484
20/04/2019 13:30	3	3.254	13.217	10.03	2.056	0	1.184	7.831	0.497
20/04/2019 14:00	3	2.94	13.037	9.61	1.998	0	1.167	7.79	0.542
20/04/2019 14:30	3	2.715	12.799	9.58	2.04	0	1.144	7.721	0.605
20/04/2019 15:00	3	3.227	12.8	9.81	1.895	0	1.142	7.852	0.496
20/04/2019 15:30	3.1	3.327	12.544	9.66	1.993	0	1.101	8.036	0.676
20/04/2019 16:00	3.1	3.27	12.37	9.67	2	0	1.154	7.773	0.559
20/04/2019 16:30	2.9	3.211	12.416	9.54	1.995	0	1.115	7.637	0.547
20/04/2019 17:00	3	3.076	12.385	9.64	2.017	0	1.078	7.603	0.499

20/04/2019 17:30	3	2.876	12.577	9.88	1.783	0	1.124	7.277	0.456
20/04/2019 18:00	3	2.681	13.843	11.04	1.459	0	1.133	7.561	0.453
20/04/2019 18:30	3.1	2.882	16.768	13.88	1.493	0	1.331	9.198	0.89
20/04/2019 19:00	3.6	3.407	17.283	14.23	1.67	0	1.724	9.556	0.536
20/04/2019 19:30	3.7	3.352	17.063	14.25	1.693	0	1.857	9.466	0.525
20/04/2019 20:00	3.7	2.733	17.083	14.23	1.673	0	1.818	9.348	0.506
20/04/2019 20:30	3.7	2.614	16.695	13.96	1.653	0	1.762	9.288	0.511
20/04/2019 21:00	3.6	2.517	16.238	13.84	1.629	0	1.744	8.986	0.522
20/04/2019 21:30	3.5	2.457	15.231	13.36	1.579	0	1.616	8.639	0.521
20/04/2019 22:00	3.4	2.451	14.639	12.71	1.496	0	1.504	8.204	0.496
20/04/2019 22:30	3.3	2.334	13.642	12.39	1.346	0	1.379	7.739	0.492
20/04/2019 23:00	3.2	2.186	13.38	11.57	1.301	0	1.26	7.344	0.486
20/04/2019 23:30	3.1	2.112	12.469	11.11	1.495	0	1.178	7.129	0.469
21/04/2019 00:00	2.9	2.005	11.497	9.97	1.563	0	1.083	6.924	0.458
21/04/2019 00:30	2.6	1.966	11.027	9.39	1.685	0	0.815	6.745	0.504
21/04/2019 01:00	2.6	1.966	10.233	8.65	1.665	0	0.787	6.288	0.472
21/04/2019 01:30	2.5	1.966	9.575	8.21	1.618	0	0.768	6.316	0.463
21/04/2019 02:00	2.4	1.966	9.004	7.95	1.593	0	0.756	6.085	0.477

21/04/2019 02:30	2.4	1.966	9.105	7.68	1.598	0	0.74	6.123	0.477
21/04/2019 03:00	2.4	1.966	8.767	7.46	1.661	0	0.738	5.839	0.476
21/04/2019 03:30	2.3	1.966	8.734	7.31	1.505	0	0.724	5.753	0.461
21/04/2019 04:00	2.3	1.954	8.615	7.26	1.688	0	0.753	5.78	0.481
21/04/2019 04:30	2.3	1.954	8.616	7.14	1.74	0	0.82	6.072	0.467
21/04/2019 05:00	2.3	1.954	8.691	7.01	1.633	0	0.834	6.185	0.471
21/04/2019 05:30	2.3	1.954	8.611	7.09	1.722	0	0.921	6.203	0.453
21/04/2019 06:00	2.3	1.954	8.702	7	2.078	0	1.009	6.154	0.249
21/04/2019 06:30	2.1	1.719	8.129	5.96	2.059	0	0.997	5.434	0.418
21/04/2019 07:00	2.1	1.719	8.485	6.28	2.097	0	0.977	5.346	0.366
21/04/2019 07:30	2.3	1.719	8.715	6.7	2.226	0	1.058	5.705	0.389
21/04/2019 08:00	2.5	1.719	9.112	7.45	2.288	0	1.095	6.044	0.395
21/04/2019 08:30	2.6	1.719	9.783	8.06	2.392	0	1.081	6.369	0.407
21/04/2019 09:00	2.7	1.719	10.295	8.54	2.431	0	1.138	6.781	0.415
21/04/2019 09:30	2.8	1.719	10.562	8.65	2.422	0	1.178	6.824	0.411
21/04/2019 10:00	2.9	1.719	11.106	8.92	2.447	0	1.198	7.137	0.445
21/04/2019 10:30	2.9	1.719	11.349	9.31	2.415	0	1.165	7.575	0.481
21/04/2019 11:00	2.9	1.719	11.977	9.49	2.411	0	1.232	7.773	0.471

21/04/2019 11:30	3	1.719	12.166	9.87	2.306	0	1.226	7.903	0.448
21/04/2019 12:00	3	1.719	12.442	10.19	2.295	0	1.252	8.102	0.451
21/04/2019 12:30	3.1	1.719	12.265	10.21	2.206	0	1.249	8.036	0.474
21/04/2019 13:00	3.1	1.719	11.713	10.21	2.068	0	1.236	7.694	0.458
21/04/2019 13:30	3	1.719	11.595	9.69	2.056	0	1.184	7.521	0.47
21/04/2019 14:00	3	1.719	11.476	9.41	1.998	0	1.167	7.46	0.453
21/04/2019 14:30	3	1.719	11.395	9.16	2.04	0	1.144	7.403	0.454
21/04/2019 15:00	3	1.719	11.315	9.26	1.895	0	1.142	7.562	0.447
21/04/2019 15:30	3.1	1.719	11.192	9.18	1.993	0	1.101	7.701	0.411
21/04/2019 16:00	3.1	1.719	11.24	9.33	2	0	1.154	7.496	0.471
21/04/2019 16:30	2.9	1.719	11.301	9.25	1.995	0	1.115	7.537	0.427
21/04/2019 17:00	3	1.633	11.484	9.42	2.017	0	1.078	7.427	0.453
21/04/2019 17:30	3	1.633	11.572	9.43	1.783	0	1.124	7.492	0.407
21/04/2019 18:00	3	1.633	13.016	10.32	1.459	0	1.133	7.711	0.442
21/04/2019 18:30	3.1	1.633	15.545	13.7	1.493	0	1.331	9.398	0.536
21/04/2019 19:00	3.6	1.633	16.347	14.11	1.67	0	1.724	9.711	0.63
21/04/2019 19:30	3.7	1.633	16.34	14.43	1.693	0	1.857	9.965	0.606
21/04/2019 20:00	3.7	1.633	16.203	14.18	1.673	0	1.818	10.008	0.52

21/04/2019 20:30	3.7	1.633	15.88	13.96	1.653	0	1.762	9.789	0.514
21/04/2019 21:00	3.6	1.633	15.515	13.77	1.629	0	1.744	9.733	0.45
21/04/2019 21:30	3.5	1.633	15.071	13.51	1.579	0	1.616	9.578	0.457
21/04/2019 22:00	3.4	1.633	14.598	13.07	1.496	0	1.504	9.237	0.471
21/04/2019 22:30	3.3	1.633	13.707	12.11	1.346	0	1.379	8.679	0.468
21/04/2019 23:00	3.2	1.633	12.741	11.13	1.301	0	1.26	8.391	0.451
21/04/2019 23:30	3.1	1.633	11.87	10.12	1.495	0	1.178	7.784	0.445
22/04/2019 00:00	2.9	1.633	10.755	9.3	1.563	0	1.083	7.306	0.458
22/04/2019 00:30	2.056	1.633	10.357	8.67	1.685	0	0.815	6.747	0.417
22/04/2019 01:00	2.056	1.633	9.721	8.03	1.665	0	0.787	6.584	0.442
22/04/2019 01:30	2.056	1.633	9.22	7.63	1.618	0	0.768	6.316	0.429
22/04/2019 02:00	2.056	1.633	9.131	7.3	1.593	0	0.756	6.193	0.438
22/04/2019 02:30	2.056	1.633	8.737	7.17	1.598	0	0.74	6.09	0.432
22/04/2019 03:00	2.056	1.633	8.472	6.99	1.661	0	0.738	6.087	0.428
22/04/2019 03:30	2.056	1.633	8.414	6.91	1.505	0	0.724	5.853	0.451
22/04/2019 04:00	2.056	1.633	8.408	6.94	1.688	0	0.753	5.837	0.48
22/04/2019 04:30	2.056	1.633	8.347	6.92	1.74	0	0.82	5.882	0.46
22/04/2019 05:00	2.056	1.633	8.681	7.06	1.633	0	0.834	6.056	0.467

22/04/2019 05:30	2.056	1.633	9.09	7.58	1.722	0	0.921	6.151	0.466
22/04/2019 06:00	2.056	1.633	10.174	8.59	2.078	0	1.009	6.197	0.429
22/04/2019 06:30	2.056	1.633	9.24	9.23	2.059	0	0.997	5.975	0.392
22/04/2019 07:00	2.056	1.633	8.309	8.83	2.097	0	0.977	6.181	0.403
22/04/2019 07:30	2.431	2.176	9.825	8.58	2.226	0	1.058	6.15	0.449
22/04/2019 08:00	2.431	2.176	10.306	8.75	2.288	0	1.095	6.56	0.47
22/04/2019 08:30	2.431	2.176	11.454	8.86	2.392	0	1.081	7.17	0.532
22/04/2019 09:00	2.431	2.176	12.071	8.97	2.431	0	1.138	7.509	0.57
22/04/2019 09:30	2.431	2.176	12.386	9.17	2.422	0	1.178	7.679	0.62
22/04/2019 10:00	2.431	2.176	13.075	9.24	2.447	0	1.198	8.08	0.608
22/04/2019 10:30	2.431	2.176	13.685	9.51	2.415	0	1.165	8.269	0.693
22/04/2019 11:00	2.431	2.176	14.241	10.01	2.411	0	1.232	8.951	0.623
22/04/2019 11:30	2.431	2.176	14.497	10.53	2.306	0	1.226	9.16	0.806
22/04/2019 12:00	2.431	2.176	14.164	10.58	2.295	0	1.252	9.194	0.724
22/04/2019 12:30	2.431	2.176	13.814	10.13	2.206	0	1.249	8.867	0.774
22/04/2019 13:00	2.431	2.176	12.646	9.9	2.068	0	1.236	8.653	0.725
22/04/2019 13:30	2.431	2.176	12.976	10.01	2.056	0	1.184	8.635	0.773
22/04/2019 14:00	2.431	2.176	12.829	9.7	1.998	0	1.167	8.983	0.778

22/04/2019 14:30	3.637	2.455	12.822	9.82	2.04	0	1.144	9.284	1.202
22/04/2019 15:00	3.679	2.322	13.34	9.89	1.895	0	1.142	9.483	1.215
22/04/2019 15:30	3.493	2.397	13.222	10.2	1.993	0	1.101	9.632	1.122
22/04/2019 16:00	3.493	2.397	13.606	10.05	2	0	1.154	9.697	0.969
22/04/2019 16:30	3.493	2.397	12.93	9.97	1.995	0	1.115	9.238	0.785
22/04/2019 17:00	3.493	2.397	13.431	10.07	2.017	0	1.078	9.014	0.737
22/04/2019 17:30	3.493	2.397	13.481	10.16	1.783	0	1.124	8.665	0.617
22/04/2019 18:00	3.493	2.397	14.859	10.97	1.459	0	1.133	8.938	0.582
22/04/2019 18:30	3.493	2.397	17.4	14.07	1.493	0	1.331	10.211	0.633
22/04/2019 19:00	3.493	2.397	17.913	15	1.67	0	1.724	10.497	0.946
22/04/2019 19:30	3.493	2.397	17.888	15.42	1.693	0	1.857	10.356	0.922
22/04/2019 20:00	3.493	2.397	17.568	15.33	1.673	0	1.818	10.239	0.618
22/04/2019 20:30	3.493	2.397	17.352	15.06	1.653	0	1.762	9.937	0.534
22/04/2019 21:00	3.493	2.397	16.774	14.76	1.629	0	1.744	9.693	0.54
22/04/2019 21:30	3.493	2.397	15.988	14.44	1.579	0	1.616	9.258	0.521
22/04/2019 22:00	3.493	2.397	15.1	13.53	1.496	0	1.504	8.342	0.518
22/04/2019 22:30	3.493	2.397	14.048	12.77	1.346	0	1.379	7.804	0.521
22/04/2019 23:00	3.493	2.397	13.007	11.67	1.301	0	1.26	7.317	0.527

22/04/2019 23:30	3.493	2.397	12	10.79	1.495	0	1.178	7.174	0.526
23/04/2019 00:00	3.493	2.397	10.973	9.83	1.563	0	1.083	6.497	0.524
23/04/2019 00:30	2.056	2.397	10.226	9.06	1.685	0	0.73	6.222	0.52
23/04/2019 01:00	2.056	2.397	9.631	8.47	1.665	0	0.7	5.99	0.507
23/04/2019 01:30	2.056	2.397	9.105	8.02	1.618	0	0.74	6.258	0.433
23/04/2019 02:00	2.056	2.182	8.732	7.68	1.593	0	0.742	5.999	0.497
23/04/2019 02:30	2.056	2.253	8.573	7.55	1.598	0	0.74	5.901	0.493
23/04/2019 03:00	2.056	2.253	8.604	7.32	1.661	0	0.738	6.061	0.507
23/04/2019 03:30	2.056	2.253	8.505	7.16	1.505	0	0.724	6.04	0.502
23/04/2019 04:00	2.056	2.253	8.115	7.23	1.688	0	0.753	6.035	0.488
23/04/2019 04:30	2.056	2.253	8.547	7.32	1.74	0	0.82	6.245	0.501
23/04/2019 05:00	2.056	2.253	8.78	7.45	1.633	0	0.834	6.505	0.646
23/04/2019 05:30	2.056	2.253	9.337	7.82	1.722	0	0.921	6.585	0.515
23/04/2019 06:00	2.056	2.253	10.18	8.7	2.078	0	1.009	6.542	0.474
23/04/2019 06:30	2.056	2.253	10.578	9.38	2.059	0	0.997	6.439	0.409
23/04/2019 07:00	2.056	2.253	10.602	9.06	2.097	0	0.977	6.531	0.424
23/04/2019 07:30	2.431	2.253	11.053	8.74	2.226	0	1.058	6.746	0.465
23/04/2019 08:00	2.431	2.253	11.381	8.8	2.288	0	1.095	7.075	0.457

23/04/2019 08:30	2.431	2.253	12.137	9.2	2.392	0	1.081	7.769	0.581
23/04/2019 09:00	2.431	2.253	12.711	9.21	2.431	0	1.138	8.083	0.689
23/04/2019 09:30	2.431	2.253	12.885	9.59	2.422	0	1.178	8.734	0.77
23/04/2019 10:00	2.431	2.253	13.884	9.94	2.447	0	1.198	9.066	0.747
23/04/2019 10:30	2.431	2.253	14.381	10.13	2.415	0	1.165	9.934	0.674
23/04/2019 11:00	2.431	2.661	14.556	10.22	2.411	0	1.232	10.669	0.688
23/04/2019 11:30	2.431	2.652	15.084	10.69	2.306	0	1.226	10.672	0.763
23/04/2019 12:00	2.431	2.833	14.731	10.62	2.295	0	1.252	9.47	0.743
23/04/2019 12:30	2.431	2.772	14.037	10.35	2.206	0	1.249	9.28	0.708
23/04/2019 13:00	2.431	2.498	13.968	10.14	2.068	0	1.236	9.222	0.921
23/04/2019 13:30	2.431	2.6	13.35	9.95	2.056	0	1.184	9.196	1.06
23/04/2019 14:00	2.431	2.575	13.877	10.05	1.998	0	1.167	9.698	1.05
23/04/2019 14:30	3.637	2.575	13.93	10.1	2.04	0	1.144	10.146	1.091
23/04/2019 15:00	3.679	2.575	13.911	10.15	1.895	0	1.142	10.228	1.205
23/04/2019 15:30	3.493	2.575	13.623	10.27	1.993	0	1.101	10.584	1.574
23/04/2019 16:00	3.493	2.575	13.609	10.24	2	0	1.154	9.643	1.21
23/04/2019 16:30	3.493	2.575	13.751	10.18	1.995	0	1.115	9.457	0.921
23/04/2019 17:00	3.493	2.575	13.95	10	2.017	0	1.078	8.88	0.781

23/04/2019 17:30	3.493	2.575	14.075	9.89	1.783	0	1.124	9.023	0.642
23/04/2019 18:00	3.493	2.575	14.987	10.85	1.459	0	1.133	9.385	0.601
23/04/2019 18:30	3.493	2.575	17.71	14.24	1.493	0	1.331	10.822	0.645
23/04/2019 19:00	3.493	2.575	18.429	15.2	1.67	0	1.724	10.874	0.666
23/04/2019 19:30	3.493	2.575	18.438	15.47	1.693	0	1.857	10.835	0.664
23/04/2019 20:00	3.493	2.575	18.134	15.45	1.673	0	1.818	10.599	0.658
23/04/2019 20:30	3.493	2.575	17.635	15.38	1.653	0	1.762	10.255	0.657
23/04/2019 21:00	3.493	2.575	16.869	14.88	1.629	0	1.744	9.96	0.629
23/04/2019 21:30	3.493	2.575	16.029	14.28	1.579	0	1.616	9.441	0.587
23/04/2019 22:00	3.493	2.575	15.293	13.67	1.496	0	1.504	8.944	0.548
23/04/2019 22:30	3.493	2.575	14.141	12.64	1.346	0	1.379	8.092	0.553
23/04/2019 23:00	3.493	2.575	13.111	11.62	1.301	0	1.26	8.168	0.557
23/04/2019 23:30	3.493	2.575	12.035	10.67	1.495	0	1.178	7.724	0.551
24/04/2019 00:00	3.493	2.575	11.018	9.66	1.563	0	1.083	7.061	0.54
24/04/2019 00:30	2.056	2.397	10.226	9.06	1.685	0	0.73	6.222	0.52
24/04/2019 01:00	2.056	2.397	9.631	8.47	1.665	0	0.7	5.99	0.507
24/04/2019 01:30	2.056	2.397	9.105	8.02	1.618	0	0.74	6.258	0.433
24/04/2019 02:00	2.056	2.182	8.732	7.68	1.593	0	0.742	5.999	0.497

24/04/2019 02:30	2.056	2.253	8.573	7.55	1.598	0	0.74	5.901	0.493
24/04/2019 03:00	2.056	2.253	8.604	7.32	1.661	0	0.738	6.061	0.507
24/04/2019 03:30	2.056	2.253	8.505	7.16	1.505	0	0.724	6.04	0.502
24/04/2019 04:00	2.056	2.253	8.115	7.23	1.688	0	0.753	6.035	0.488
24/04/2019 04:30	2.056	2.253	8.547	7.32	1.74	0	0.82	6.245	0.501
24/04/2019 05:00	2.056	2.253	8.78	7.45	1.633	0	0.834	6.505	0.646
24/04/2019 05:30	2.056	2.253	9.337	7.82	1.722	0	0.921	6.585	0.515
24/04/2019 06:00	2.056	2.253	10.18	8.7	2.078	0	1.009	6.542	0.474
24/04/2019 06:30	2.056	2.253	10.578	9.38	2.059	0	0.997	6.439	0.409
24/04/2019 07:00	2.056	2.253	10.602	9.06	2.097	0	0.977	6.531	0.424
24/04/2019 07:30	2.431	2.253	11.053	8.74	2.226	0	1.058	6.746	0.465
24/04/2019 08:00	2.431	2.253	11.381	8.8	2.288	0	1.095	7.075	0.457
24/04/2019 08:30	2.431	2.253	12.137	9.2	2.392	0	1.081	7.769	0.581
24/04/2019 09:00	2.431	2.253	12.711	9.21	2.431	0	1.138	8.083	0.689
24/04/2019 09:30	2.431	2.253	12.885	9.59	2.422	0	1.178	8.734	0.77
24/04/2019 10:00	2.431	2.253	13.884	9.94	2.447	0	1.198	9.066	0.747
24/04/2019 10:30	2.431	2.253	14.381	10.13	2.415	0	1.165	9.934	0.674
24/04/2019 11:00	2.431	2.661	14.556	10.22	2.411	0	1.232	10.669	0.688

24/04/2019 11:30	2.431	2.652	15.084	10.69	2.306	0	1.226	10.672	0.763
24/04/2019 12:00	2.431	2.833	14.731	10.62	2.295	0	1.252	9.47	0.743
24/04/2019 12:30	2.431	2.772	14.037	10.35	2.206	0	1.249	9.28	0.708
24/04/2019 13:00	2.431	2.498	13.968	10.14	2.068	0	1.236	9.222	0.921
24/04/2019 13:30	2.431	2.6	13.35	9.95	2.056	0	1.184	9.196	1.06
24/04/2019 14:00	2.431	2.575	13.877	10.05	1.998	0	1.167	9.698	1.05
24/04/2019 14:30	3.637	2.575	13.93	10.1	2.04	0	1.144	10.146	1.091
24/04/2019 15:00	3.679	2.575	13.911	10.15	1.895	0	1.142	10.228	1.205
24/04/2019 15:30	3.493	2.575	13.623	10.27	1.993	0	1.101	10.584	1.574
24/04/2019 16:00	3.493	2.575	13.609	10.24	2	0	1.154	9.643	1.21
24/04/2019 16:30	3.493	2.575	13.751	10.18	1.995	0	1.115	9.457	0.921
24/04/2019 17:00	3.493	2.575	13.95	10	2.017	0	1.078	8.88	0.781
24/04/2019 17:30	3.493	2.575	14.075	9.89	1.783	0	1.124	9.023	0.642
24/04/2019 18:00	3.493	2.575	14.987	10.85	1.459	0	1.133	9.385	0.601
24/04/2019 18:30	3.493	2.575	17.71	14.24	1.493	0	1.331	10.822	0.645
24/04/2019 19:00	3.493	2.575	18.429	15.2	1.67	0	1.724	10.874	0.666
24/04/2019 19:30	3.493	2.575	18.438	15.47	1.693	0	1.857	10.835	0.664
24/04/2019 20:00	3.493	2.575	18.134	15.45	1.673	0	1.818	10.599	0.658

24/04/2019 20:30	3.493	2.575	17.635	15.38	1.653	0	1.762	10.255	0.657
24/04/2019 21:00	3.493	2.575	16.869	14.88	1.629	0	1.744	9.96	0.629
24/04/2019 21:30	3.493	2.575	16.029	14.28	1.579	0	1.616	9.441	0.587
24/04/2019 22:00	3.493	2.575	15.293	13.67	1.496	0	1.504	8.944	0.548
24/04/2019 22:30	3.493	2.575	14.141	12.64	1.346	0	1.379	8.092	0.553
24/04/2019 23:00	3.493	2.575	13.111	11.62	1.301	0	1.26	8.168	0.557
24/04/2019 23:30	3.493	2.575	12.035	10.67	1.495	0	1.178	7.724	0.551
25/04/2019 00:00	3.493	2.575	11.018	9.66	1.563	0	1.083	7.061	0.54
25/04/2019 00:30	2.056	2.397	10.226	9.06	1.685	0	0.73	6.222	0.52
25/04/2019 01:00	2.056	2.397	9.631	8.47	1.665	0	0.7	5.99	0.507
25/04/2019 01:30	2.056	2.397	9.105	8.02	1.618	0	0.74	6.258	0.433
25/04/2019 02:00	2.056	2.182	8.732	7.68	1.593	0	0.742	5.999	0.497
25/04/2019 02:30	2.056	2.253	8.573	7.55	1.598	0	0.74	5.901	0.493
25/04/2019 03:00	2.056	2.253	8.604	7.32	1.661	0	0.738	6.061	0.507
25/04/2019 03:30	2.056	2.253	8.505	7.16	1.505	0	0.724	6.04	0.502
25/04/2019 04:00	2.056	2.253	8.115	7.23	1.688	0	0.753	6.035	0.488
25/04/2019 04:30	2.056	2.253	8.547	7.32	1.74	0	0.82	6.245	0.501
25/04/2019 05:00	2.056	2.253	8.78	7.45	1.633	0	0.834	6.505	0.646

25/04/2019 05:30	2.056	2.253	9.337	7.82	1.722	0	0.921	6.585	0.515
25/04/2019 06:00	2.056	2.253	10.18	8.7	2.078	0	1.009	6.542	0.474
25/04/2019 06:30	2.056	2.253	10.578	9.38	2.059	0	0.997	6.439	0.409
25/04/2019 07:00	2.056	2.253	10.602	9.06	2.097	0	0.977	6.531	0.424
25/04/2019 07:30	2.431	2.253	11.053	8.74	2.226	0	1.058	6.746	0.465
25/04/2019 08:00	2.431	2.253	11.381	8.8	2.288	0	1.095	7.075	0.457
25/04/2019 08:30	2.431	2.253	12.137	9.2	2.392	0	1.081	7.769	0.581
25/04/2019 09:00	2.431	2.253	12.711	9.21	2.431	0	1.138	8.083	0.689
25/04/2019 09:30	2.431	2.253	12.885	9.59	2.422	0	1.178	8.734	0.77
25/04/2019 10:00	2.431	2.253	13.884	9.94	2.447	0	1.198	9.066	0.747
25/04/2019 10:30	2.431	2.253	14.381	10.13	2.415	0	1.165	9.934	0.674
25/04/2019 11:00	2.431	2.661	14.556	10.22	2.411	0	1.232	10.669	0.688
25/04/2019 11:30	2.431	2.652	15.084	10.69	2.306	0	1.226	10.672	0.763
25/04/2019 12:00	2.431	2.833	14.731	10.62	2.295	0	1.252	9.47	0.743
25/04/2019 12:30	2.431	2.772	14.037	10.35	2.206	0	1.249	9.28	0.708
25/04/2019 13:00	2.431	2.498	13.968	10.14	2.068	0	1.236	9.222	0.921
25/04/2019 13:30	2.431	2.6	13.35	9.95	2.056	0	1.184	9.196	1.06
25/04/2019 14:00	2.431	2.575	13.877	10.05	1.998	0	1.167	9.698	1.05

25/04/2019 14:30	3.637	2.575	13.93	10.1	2.04	0	1.144	10.146	1.091
25/04/2019 15:00	3.679	2.575	13.911	10.15	1.895	0	1.142	10.228	1.205
25/04/2019 15:30	3.493	2.575	13.623	10.27	1.993	0	1.101	10.584	1.574
25/04/2019 16:00	3.493	2.575	13.609	10.24	2	0	1.154	9.643	1.21
25/04/2019 16:30	3.493	2.575	13.751	10.18	1.995	0	1.115	9.457	0.921
25/04/2019 17:00	3.493	2.575	13.95	10	2.017	0	1.078	8.88	0.781
25/04/2019 17:30	3.493	2.575	14.075	9.89	1.783	0	1.124	9.023	0.642
25/04/2019 18:00	3.493	2.575	14.987	10.85	1.459	0	1.133	9.385	0.601
25/04/2019 18:30	3.493	2.575	17.71	14.24	1.493	0	1.331	10.822	0.645
25/04/2019 19:00	3.493	2.575	18.429	15.2	1.67	0	1.724	10.874	0.666
25/04/2019 19:30	3.493	2.575	18.438	15.47	1.693	0	1.857	10.835	0.664
25/04/2019 20:00	3.493	2.575	18.134	15.45	1.673	0	1.818	10.599	0.658
25/04/2019 20:30	3.493	2.575	17.635	15.38	1.653	0	1.762	10.255	0.657
25/04/2019 21:00	3.493	2.575	16.869	14.88	1.629	0	1.744	9.96	0.629
25/04/2019 21:30	3.493	2.575	16.029	14.28	1.579	0	1.616	9.441	0.587
25/04/2019 22:00	3.493	2.575	15.293	13.67	1.496	0	1.504	8.944	0.548
25/04/2019 22:30	3.493	2.575	14.141	12.64	1.346	0	1.379	8.092	0.553
25/04/2019 23:00	3.493	2.575	13.111	11.62	1.301	0	1.26	8.168	0.557

25/04/2019 23:30	3.493	2.575	12.035	10.67	1.495	0	1.178	7.724	0.551
26/04/2019 00:00	3.493	2.575	11.018	9.66	1.563	0	1.083	7.061	0.54
26/04/2019 00:30	2.056	2.397	10.226	9.06	1.685	0	0.73	6.222	0.52
26/04/2019 01:00	2.056	2.397	9.631	8.47	1.665	0	0.7	5.99	0.507
26/04/2019 01:30	2.056	2.397	9.105	8.02	1.618	0	0.74	6.258	0.433
26/04/2019 02:00	2.056	2.182	8.732	7.68	1.593	0	0.742	5.999	0.497
26/04/2019 02:30	2.056	2.253	8.573	7.55	1.598	0	0.74	5.901	0.493
26/04/2019 03:00	2.056	2.253	8.604	7.32	1.661	0	0.738	6.061	0.507
26/04/2019 03:30	2.056	2.253	8.505	7.16	1.505	0	0.724	6.04	0.502
26/04/2019 04:00	2.056	2.253	8.115	7.23	1.688	0	0.753	6.035	0.488
26/04/2019 04:30	2.056	2.253	8.547	7.32	1.74	0	0.82	6.245	0.501
26/04/2019 05:00	2.056	2.253	8.78	7.45	1.633	0	0.834	6.505	0.646
26/04/2019 05:30	2.056	2.253	9.337	7.82	1.722	0	0.921	6.585	0.515
26/04/2019 06:00	2.056	2.253	10.18	8.7	2.078	0	1.009	6.542	0.474
26/04/2019 06:30	2.056	2.253	10.578	9.38	2.059	0	0.997	6.439	0.409
26/04/2019 07:00	2.056	2.253	10.602	9.06	2.097	0	0.977	6.531	0.424
26/04/2019 07:30	2.431	2.253	11.053	8.74	2.226	0	1.058	6.746	0.465
26/04/2019 08:00	2.431	2.253	11.381	8.8	2.288	0	1.095	7.075	0.457

26/04/2019 08:30	2.431	2.253	12.137	9.2	2.392	0	1.081	7.769	0.581
26/04/2019 09:00	2.431	2.253	12.711	9.21	2.431	0	1.138	8.083	0.689
26/04/2019 09:30	2.431	2.253	12.885	9.59	2.422	0	1.178	8.734	0.77
26/04/2019 10:00	2.431	2.253	13.884	9.94	2.447	0	1.198	9.066	0.747
26/04/2019 10:30	2.431	2.253	14.381	10.13	2.415	0	1.165	9.934	0.674
26/04/2019 11:00	2.431	2.661	14.556	10.22	2.411	0	1.232	10.669	0.688
26/04/2019 11:30	2.431	2.652	15.084	10.69	2.306	0	1.226	10.672	0.763
26/04/2019 12:00	2.431	2.833	14.731	10.62	2.295	0	1.252	9.47	0.743
26/04/2019 12:30	2.431	2.772	14.037	10.35	2.206	0	1.249	9.28	0.708
26/04/2019 13:00	2.431	2.498	13.968	10.14	2.068	0	1.236	9.222	0.921
26/04/2019 13:30	2.431	2.6	13.35	9.95	2.056	0	1.184	9.196	1.06
26/04/2019 14:00	2.431	2.575	13.877	10.05	1.998	0	1.167	9.698	1.05
26/04/2019 14:30	3.637	2.575	13.93	10.1	2.04	0	1.144	10.146	1.091
26/04/2019 15:00	3.679	2.575	13.911	10.15	1.895	0	1.142	10.228	1.205
26/04/2019 15:30	3.493	2.575	13.623	10.27	1.993	0	1.101	10.584	1.574
26/04/2019 16:00	3.493	2.575	13.609	10.24	2	0	1.154	9.643	1.21
26/04/2019 16:30	3.493	2.575	13.751	10.18	1.995	0	1.115	9.457	0.921
26/04/2019 17:00	3.493	2.575	13.95	10	2.017	0	1.078	8.88	0.781

26/04/2019 17:30	3.493	2.575	14.075	9.89	1.783	0	1.124	9.023	0.642
26/04/2019 18:00	3.493	2.575	14.987	10.85	1.459	0	1.133	9.385	0.601
26/04/2019 18:30	3.493	2.575	17.71	14.24	1.493	0	1.331	10.822	0.645
26/04/2019 19:00	3.493	2.575	18.429	15.2	1.67	0	1.724	10.874	0.666
26/04/2019 19:30	3.493	2.575	18.438	15.47	1.693	0	1.857	10.835	0.664
26/04/2019 20:00	3.493	2.575	18.134	15.45	1.673	0	1.818	10.599	0.658
26/04/2019 20:30	3.493	2.575	17.635	15.38	1.653	0	1.762	10.255	0.657
26/04/2019 21:00	3.493	2.575	16.869	14.88	1.629	0	1.744	9.96	0.629
26/04/2019 21:30	3.493	2.575	16.029	14.28	1.579	0	1.616	9.441	0.587
26/04/2019 22:00	3.493	2.575	15.293	13.67	1.496	0	1.504	8.944	0.548
26/04/2019 22:30	3.493	2.575	14.141	12.64	1.346	0	1.379	8.092	0.553
26/04/2019 23:00	3.493	2.575	13.111	11.62	1.301	0	1.26	8.168	0.557
26/04/2019 23:30	3.493	2.575	12.035	10.67	1.495	0	1.178	7.724	0.551
27/04/2019 00:00	3.493	2.575	11.018	9.66	1.563	0	1.083	7.061	0.54
27/04/2019 00:30	2.157	2.162	8.735	8.8	1.685	0	0.815	6.104	0.309
27/04/2019 01:00	2.093	2.055	8.299	8.26	1.665	0	0.787	5.865	0.293
27/04/2019 01:30	2.01	2.056	8.031	7.91	1.618	0	0.768	5.498	0.287
27/04/2019 02:00	1.941	2.057	7.598	7.64	1.593	0	0.756	5.362	0.304

27/04/2019 02:30	1.885	2.109	7.399	7.4	1.598	0	0.74	5.32	0.322
27/04/2019 03:00	1.859	2.053	7.2	7.17	1.661	0	0.738	5.115	0.329
27/04/2019 03:30	1.815	2.199	7.168	7.06	1.505	0	0.724	5.239	0.333
27/04/2019 04:00	1.821	2.214	7.068	7.02	1.688	0	0.753	5.082	0.3
27/04/2019 04:30	1.922	2.207	7.144	7.04	1.74	0	0.82	5.105	0.293
27/04/2019 05:00	1.904	2.307	7.354	7.1	1.633	0	0.834	5.282	0.3
27/04/2019 05:30	2.063	2.346	7.353	7.2	1.722	0	0.921	5.313	0.3
27/04/2019 06:00	2.158	2.425	7.733	7.35	2.078	0	1.009	5.37	0.323
27/04/2019 06:30	1.996	2.413	7.848	7.19	2.059	0	0.997	5.007	0.242
27/04/2019 07:00	2.208	2.175	8.166	7.22	2.097	0	0.977	5.07	0.264
27/04/2019 07:30	2.368	2.169	8.348	7.75	2.226	0	1.058	5.631	0.31
27/04/2019 08:00	2.528	2.105	8.746	8.09	2.288	0	1.095	6.208	0.275
27/04/2019 08:30	2.566	2.233	9.107	8.68	2.392	0	1.081	6.772	0.414
27/04/2019 09:00	2.62	2.362	9.474	9.05	2.431	0	1.138	7.15	0.484
27/04/2019 09:30	2.946	2.379	10.214	9.06	2.422	0	1.178	7.852	0.509
27/04/2019 10:00	2.954	2.431	10.339	9.17	2.447	0	1.198	8.215	0.786
27/04/2019 10:30	2.969	2.54	11.109	9.28	2.415	0	1.165	8.378	0.792
27/04/2019 11:00	2.975	2.481	11.495	8.03	2.411	0	1.232	8.961	0.927

27/04/2019 11:30	3.049	2.493	11.599	9.93	2.306	0	1.226	8.925	0.902
27/04/2019 12:00	3.23	2.525	11.554	10.25	2.295	0	1.252	8.832	0.755
27/04/2019 12:30	3.192	2.516	11.553	10.21	2.206	0	1.249	8.769	0.841
27/04/2019 13:00	3.047	2.577	11.307	10.12	2.068	0	1.236	8.315	0.785
27/04/2019 13:30	2.993	2.659	10.874	9.82	2.056	0	1.184	8.106	0.775
27/04/2019 14:00	2.948	2.612	10.483	9.41	1.998	0	1.167	8.161	0.846
27/04/2019 14:30	2.886	2.648	10.661	9.31	2.04	0	1.144	8.648	0.646
27/04/2019 15:00	2.791	2.448	10.396	9.11	1.895	0	1.142	9.121	0.754
27/04/2019 15:30	2.791	2.43	10.866	8.99	1.993	0	1.101	9.395	0.94
27/04/2019 16:00	2.775	2.405	10.07	9.08	2	0	1.154	9.223	1
27/04/2019 16:30	2.793	2.365	10.236	8.85	1.995	0	1.115	9.164	1.014
27/04/2019 17:00	2.669	2.245	10.557	8.99	2.017	0	1.078	9.004	1.243
27/04/2019 17:30	2.625	1.984	10.622	9.33	1.783	0	1.124	8.631	1.297
27/04/2019 18:00	2.84	2.106	11.378	10.34	1.459	0	1.133	8.558	0.986
27/04/2019 18:30	3.423	2.48	13.976	13.26	1.493	0	1.331	10.118	0.871
27/04/2019 19:00	3.471	2.592	14.433	13.99	1.67	0	1.724	10.154	0.671
27/04/2019 19:30	3.47	2.6	14.383	14.02	1.693	0	1.857	10.187	0.564
27/04/2019 20:00	3.454	2.588	14.334	14.01	1.673	0	1.818	9.947	0.593

27/04/2019 20:30	3.295	2.299	13.997	13.8	1.653	0	1.762	9.738	0.565
27/04/2019 21:00	3.297	2.425	13.79	13.61	1.629	0	1.744	9.309	0.5
27/04/2019 21:30	3.233	2.308	13.242	13.27	1.579	0	1.616	8.986	0.538
27/04/2019 22:00	3.071	2.203	12.443	12.78	1.496	0	1.504	8.636	0.489
27/04/2019 22:30	2.694	2.183	11.858	12.31	1.346	0	1.379	8.315	0.458
27/04/2019 23:00	2.642	2.289	11.338	11.52	1.301	0	1.26	7.895	0.443
27/04/2019 23:30	2.416	2.096	10.535	10.87	1.495	0	1.178	7.914	0.416
28/04/2019 00:00	2.263	2.179	10.056	9.93	1.563	0	1.083	7.63	0.425
28/04/2019 00:30	2.174	2.262	9.001	9.13	1.685	0	0.815	6.988	0.421
28/04/2019 01:00	1.985	2.259	8.715	8.46	1.665	0	0.787	6.745	0.391
28/04/2019 01:30	1.897	2.196	8.009	8.11	1.618	0	0.768	6.438	0.382
28/04/2019 02:00	1.92	2.095	7.72	7.66	1.593	0	0.756	6.261	0.384
28/04/2019 02:30	1.885	2.176	7.491	7.38	1.598	0	0.74	6.233	0.389
28/04/2019 03:00	1.827	2.188	7.427	7.22	1.661	0	0.738	6.058	0.366
28/04/2019 03:30	1.812	2.186	7.133	7.02	1.505	0	0.724	5.866	0.385
28/04/2019 04:00	1.775	2.243	7.251	6.95	1.688	0	0.753	5.788	0.398
28/04/2019 04:30	1.659	2.241	7.376	6.88	1.74	0	0.82	5.962	0.385
28/04/2019 05:00	1.675	2.173	7.365	6.79	1.633	0	0.834	5.897	0.392

28/04/2019 05:30	1.688	2.338	7.578	7.01	1.722	0	0.921	5.889	0.369
28/04/2019 06:00	1.861	2.089	7.529	7.02	2.078	0	1.009	5.742	0.34
28/04/2019 06:30	1.629	1.922	8.278	6.03	2.059	0	0.997	4.941	0.254
28/04/2019 07:00	1.729	1.802	8.417	6.32	2.097	0	0.977	5.211	0.254
28/04/2019 07:30	1.713	1.94	8.588	6.9	2.226	0	1.058	5.411	0.274
28/04/2019 08:00	1.88	1.792	8.972	7.48	2.288	0	1.095	5.291	0.23
28/04/2019 08:30	1.938	1.886	9.396	8.04	2.392	0	1.081	5.757	0.284
28/04/2019 09:00	1.985	1.812	9.953	8.14	2.431	0	1.138	5.897	0.368
28/04/2019 09:30	2.097	1.821	10.33	8.38	2.422	0	1.178	6.03	0.572
28/04/2019 10:00	2.23	1.847	10.706	8.52	2.447	0	1.198	6.231	0.482
28/04/2019 10:30	2.223	1.888	10.937	8.93	2.415	0	1.165	6.197	0.574
28/04/2019 11:00	2.225	1.911	11.374	8.95	2.411	0	1.232	6.252	0.65
28/04/2019 11:30	2.247	1.678	11.868	9.43	2.306	0	1.226	6.637	1.014
28/04/2019 12:00	2.391	1.704	11.934	9.81	2.295	0	1.252	6.71	1.174
28/04/2019 12:30	2.425	1.594	11.91	9.88	2.206	0	1.249	6.761	0.782
28/04/2019 13:00	2.361	1.59	11.656	9.78	2.068	0	1.236	6.654	0.787
28/04/2019 13:30	2.275	1.48	11.279	9.54	2.056	0	1.184	6.762	1.032
28/04/2019 14:00	2.145	1.525	10.927	9.35	1.998	0	1.167	6.811	0.788

28/04/2019 14:30	2.155	1.568	10.848	9.11	2.04	0	1.144	6.958	0.623
28/04/2019 15:00	2.091	1.535	10.918	8.99	1.895	0	1.142	7.143	0.611
28/04/2019 15:30	2.118	1.55	10.866	8.86	1.993	0	1.101	7.483	0.76
28/04/2019 16:00	2.087	1.566	11.005	8.92	2	0	1.154	9.065	0.764
28/04/2019 16:30	2.089	1.473	11.003	8.94	1.995	0	1.115	9.836	0.715
28/04/2019 17:00	2.067	1.367	11.167	9.09	2.017	0	1.078	11.136	0.75
28/04/2019 17:30	2.137	1.374	11.427	9.36	1.783	0	1.124	12.292	1.18
28/04/2019 18:00	2.42	1.576	13.215	10.7	1.459	0	1.133	13.236	1.112
28/04/2019 18:30	2.797	2.019	15.594	13.46	1.493	0	1.331	15.38	1.214
28/04/2019 19:00	2.885	2.01	15.984	14.27	1.67	0	1.724	16.141	1.182
28/04/2019 19:30	2.918	2.056	16.104	14.15	1.693	0	1.857	16.536	1.504
28/04/2019 20:00	2.9	1.966	15.736	13.88	1.673	0	1.818	17.256	1.733
28/04/2019 20:30	2.901	1.862	15.756	13.64	1.653	0	1.762	17.956	2.01
28/04/2019 21:00	2.819	1.818	15.306	13.51	1.629	0	1.744	18.023	2.692
28/04/2019 21:30	2.746	1.621	14.607	13.24	1.579	0	1.616	17.872	2.939
28/04/2019 22:00	2.618	1.545	13.876	12.59	1.496	0	1.504	17.109	3.135
28/04/2019 22:30	2.408	1.574	13.173	11.89	1.346	0	1.379	16.654	3.451
28/04/2019 23:00	2.269	1.543	12.606	10.93	1.301	0	1.26	16.464	3.732

28/04/2019 23:30	2.098	1.489	11.324	10.08	1.495	0	1.178	16.435	3.68
29/04/2019 00:00	1.947	1.389	10.547	9.22	1.563	0	1.083	16.298	3.858
29/04/2019 00:30	2.174	2.262	9.001	9.13	1.685	0	0.815	6.988	0.421
29/04/2019 01:00	1.985	2.259	8.715	8.46	1.665	0	0.787	6.745	0.391
29/04/2019 01:30	1.897	2.196	8.009	8.11	1.618	0	0.768	6.438	0.382
29/04/2019 02:00	1.92	2.095	7.72	7.66	1.593	0	0.756	6.261	0.384
29/04/2019 02:30	1.885	2.176	7.491	7.38	1.598	0	0.74	6.233	0.389
29/04/2019 03:00	1.827	2.188	7.427	7.22	1.661	0	0.738	6.058	0.366
29/04/2019 03:30	1.812	2.186	7.133	7.02	1.505	0	0.724	5.866	0.385
29/04/2019 04:00	1.775	2.243	7.251	6.95	1.688	0	0.753	5.788	0.398
29/04/2019 04:30	1.659	2.241	7.376	6.88	1.74	0	0.82	5.962	0.385
29/04/2019 05:00	1.675	2.173	7.365	6.79	1.633	0	0.834	5.897	0.392
29/04/2019 05:30	1.688	2.338	7.578	7.01	1.722	0	0.921	5.889	0.369
29/04/2019 06:00	1.861	2.089	7.529	7.02	2.078	0	1.009	5.742	0.34
29/04/2019 06:30	1.629	1.922	8.278	6.03	2.059	0	0.997	4.941	0.254
29/04/2019 07:00	1.729	1.802	8.417	6.32	2.097	0	0.977	5.211	0.254
29/04/2019 07:30	1.713	1.94	8.588	6.9	2.226	0	1.058	5.411	0.274
29/04/2019 08:00	1.88	1.792	8.972	7.48	2.288	0	1.095	5.291	0.23

29/04/2019 08:30	1.938	1.886	9.396	8.04	2.392	0	1.081	5.757	0.284
29/04/2019 09:00	1.985	1.812	9.953	8.14	2.431	0	1.138	5.897	0.368
29/04/2019 09:30	2.097	1.821	10.33	8.38	2.422	0	1.178	6.03	0.572
29/04/2019 10:00	2.23	1.847	10.706	8.52	2.447	0	1.198	6.231	0.482
29/04/2019 10:30	2.223	1.888	10.937	8.93	2.415	0	1.165	6.197	0.574
29/04/2019 11:00	2.225	1.911	11.374	8.95	2.411	0	1.232	6.252	0.65
29/04/2019 11:30	2.247	1.678	11.868	9.43	2.306	0	1.226	6.637	1.014
29/04/2019 12:00	2.391	1.704	11.934	9.81	2.295	0	1.252	6.71	1.174
29/04/2019 12:30	2.425	1.594	11.91	9.88	2.206	0	1.249	6.761	0.782
29/04/2019 13:00	2.361	1.59	11.656	9.78	2.068	0	1.236	6.654	0.787
29/04/2019 13:30	2.275	1.48	11.279	9.54	2.056	0	1.184	6.762	1.032
29/04/2019 14:00	2.145	1.525	10.927	9.35	1.998	0	1.167	6.811	0.788
29/04/2019 14:30	2.155	1.568	10.848	9.11	2.04	0	1.144	6.958	0.623
29/04/2019 15:00	2.091	1.535	10.918	8.99	1.895	0	1.142	7.143	0.611
29/04/2019 15:30	2.118	1.55	10.866	8.86	1.993	0	1.101	7.483	0.76
29/04/2019 16:00	2.087	1.566	11.005	8.92	2	0	1.154	9.065	0.764
29/04/2019 16:30	2.089	1.473	11.003	8.94	1.995	0	1.115	9.836	0.715
29/04/2019 17:00	2.067	1.367	11.167	9.09	2.017	0	1.078	11.136	0.75

29/04/2019 17:30	2.137	1.374	11.427	9.36	1.783	0	1.124	12.292	1.18
29/04/2019 18:00	2.42	1.576	13.215	10.7	1.459	0	1.133	13.236	1.112
29/04/2019 18:30	2.797	2.019	15.594	13.46	1.493	0	1.331	15.38	1.214
29/04/2019 19:00	2.885	2.01	15.984	14.27	1.67	0	1.724	16.141	1.182
29/04/2019 19:30	2.918	2.056	16.104	14.15	1.693	0	1.857	16.536	1.504
29/04/2019 20:00	2.9	1.966	15.736	13.88	1.673	0	1.818	17.256	1.733
29/04/2019 20:30	2.901	1.862	15.756	13.64	1.653	0	1.762	17.956	2.01
29/04/2019 21:00	2.819	1.818	15.306	13.51	1.629	0	1.744	18.023	2.692
29/04/2019 21:30	2.746	1.621	14.607	13.24	1.579	0	1.616	17.872	2.939
29/04/2019 22:00	2.618	1.545	13.876	12.59	1.496	0	1.504	17.109	3.135
29/04/2019 22:30	2.408	1.574	13.173	11.89	1.346	0	1.379	16.654	3.451
29/04/2019 23:00	2.269	1.543	12.606	10.93	1.301	0	1.26	16.464	3.732
29/04/2019 23:30	2.098	1.489	11.324	10.08	1.495	0	1.178	16.435	3.68
30/04/2019 00:00	1.947	1.389	10.547	9.22	1.563	0	1.083	16.298	3.858
30/04/2019 00:30	2.216	2.163	10.062	8.44	1.685	0	0.815	20.927	3.968
30/04/2019 01:00	2.011	2.112	9.575	7.84	1.665	0	0.787	20.619	4.486
30/04/2019 01:30	1.9	2.154	9.141	7.59	1.618	0	0.768	20.178	4.475
30/04/2019 02:00	1.843	2.179	8.72	7.24	1.593	0	0.756	20.131	4.529

30/04/2019 02:30	1.896	2.159	8.637	6.95	1.598	0	0.74	19.971	4.424
30/04/2019 03:00	1.923	2.246	8.451	6.94	1.661	0	0.738	20.329	4.251
30/04/2019 03:30	1.835	1.998	8.328	6.7	1.505	0	0.724	20.459	4.005
30/04/2019 04:00	1.812	1.979	8.219	6.89	1.688	0	0.753	20.135	3.961
30/04/2019 04:30	1.865	2.033	8.133	6.89	1.74	0	0.82	20.708	3.685
30/04/2019 05:00	2.079	1.996	8.436	6.99	1.633	0	0.834	20.165	3.853
30/04/2019 05:30	2.091	2.121	8.973	7.29	1.722	0	0.921	19.634	3.674
30/04/2019 06:00	2.045	2.23	9.674	8.3	2.078	0	1.009	19.879	3.771
30/04/2019 06:30	2.131	2.115	10.295	9.01	2.059	0	0.997	18.628	3.166
30/04/2019 07:00	2.361	2.001	10.492	8.51	2.097	0	0.977	18.3	2.858
30/04/2019 07:30	2.493	1.983	10.676	8.42	2.226	0	1.058	18.613	2.767
30/04/2019 08:00	2.534	2.127	10.93	8.57	2.288	0	1.095	18.502	3.039
30/04/2019 08:30	2.589	2.295	11.734	8.71	2.392	0	1.081	19.67	3.038
30/04/2019 09:00	2.68	2.446	12.216	8.71	2.431	0	1.138	19.919	3.207
30/04/2019 09:30	2.709	2.651	12.849	9.24	2.422	0	1.178	20.487	2.976
30/04/2019 10:00	3.153	2.862	13.565	9.41	2.447	0	1.198	21.074	1.682
30/04/2019 10:30	3.078	2.913	13.737	9.66	2.415	0	1.165	21.632	1.952
30/04/2019 11:00	3.182	2.876	14.713	10.01	2.411	0	1.232	21.91	2.333

30/04/2019 11:30	3.182	2.876	14.362	10.14	2.306	0	1.226	22.268	3.251
30/04/2019 12:00	3.182	2.876	14.148	10.24	2.295	0	1.252	20.688	3.528
30/04/2019 12:30	3.182	2.876	13.719	9.89	2.206	0	1.249	20.009	3.249
30/04/2019 13:00	3.182	2.876	13.322	9.52	2.068	0	1.236	20.966	3.596
30/04/2019 13:30	3.182	2.876	13.089	9.53	2.056	0	1.184	21.323	3.398
30/04/2019 14:00	3.182	2.876	13.193	9.28	1.998	0	1.167	21.254	3.658
30/04/2019 14:30	3.182	2.876	13.263	9.35	2.04	0	1.144	21.541	3.653
30/04/2019 15:00	3.182	2.876	13.517	9.44	1.895	0	1.142	21.26	3.729
30/04/2019 15:30	3.182	2.876	13.714	9.53	1.993	0	1.101	21.237	3.875
30/04/2019 16:00	3.182	2.876	13.15	9.42	2	0	1.154	21.424	3.83
30/04/2019 16:30	2.818	2.394	13.004	9.39	1.995	0	1.115	21.052	3.849
30/04/2019 17:00	2.752	1.651	13.039	9.4	2.017	0	1.078	20.721	3.369
30/04/2019 17:30	2.699	1.318	12.957	9.73	1.783	0	1.124	18.789	3.348
30/04/2019 18:00	3.016	1.957	14.846	11.22	1.459	0	1.133	19.401	3.373
30/04/2019 18:30	3.437	2.499	17.292	14.04	1.493	0	1.331	21.353	3.738
30/04/2019 19:00	3.537	2.653	17.821	14.62	1.67	0	1.724	22.267	3.624
30/04/2019 19:30	3.453	2.575	17.635	14.79	1.693	0	1.857	22.294	3.638
30/04/2019 20:00	3.395	2.514	17.598	14.65	1.673	0	1.818	22.746	3.235

30/04/2019 20:30	3.343	2.355	17.018	14.42	1.653	0	1.762	23.37	3.388
30/04/2019 21:00	3.321	2.221	16.071	14.07	1.629	0	1.744	22.564	3.322
30/04/2019 21:30	3.237	2.209	15.67	13.69	1.579	0	1.616	22.984	3.564
30/04/2019 22:00	3.167	2.216	14.873	13.09	1.496	0	1.504	22.114	3.803
30/04/2019 22:30	2.956	2.043	13.912	12.24	1.346	0	1.379	21.956	3.992
30/04/2019 23:00	2.814	2.057	12.987	11.27	1.301	0	1.26	21.526	4.311
30/04/2019 23:30	2.57	1.915	11.946	10.35	1.495	0	1.178	20.953	4.17
01/05/2019 00:00	2.405	1.968	10.66	9.58	1.563	0	1.083	19.667	4.329

**DEMANDA HISTORICO-DIARIO- SUB ESTACIONES CHIMBOTE UNO CASMA  
HIDRANDINA-MAYO 2019**

41398	22402	21537	22207
HIDRANDINA	HIDRANDINA	HIDRANDINA	HIDRANDINA
NEPEÑA_TP-A055_BARRA_22.9	TP-A006-6.6MVA	TPA007	TP-A048
22.90	13.80	13.80	13.80
NEPEÑA	SAN JACINTO	TRAPECIO	TRAPECIO
0	0.815	19.591	4.356
0	0.787	18.085	4.316
0	0.768	16.861	4.6
0	0.756	15.982	4.442
0	0.74	14.615	4.536
0	0.738	13.746	4.455
0	0.724	12.723	4.484
0	0.753	12.431	4.093
0	0.82	11.412	4.098
0	0.834	11.333	3.842
0	0.921	11.3	4.132
0	1.009	11.033	3.936
0	0.997	9.345	3.675
0	0.977	8.945	2.95
0	1.058	8.598	2.991
0	1.095	8.37	2.875
0	1.081	8.174	2.907
0	1.138	8.111	2.636
0	1.178	8.445	2.843
0	1.198	8.599	2.837
0	1.165	8.501	2.564
0	1.232	9.257	2.279
0	1.226	9.053	1.959
0	1.252	9.076	1.256
0	1.249	8.446	1.314
0	1.236	8.403	1.399
0	1.184	8.355	1.4
0	1.167	8.565	1.174
0	1.144	9.012	1.053
0	1.142	10.02	0.814
0	1.101	10.067	0.754
0	1.154	10.724	0.883
0	1.115	12.229	1.353
0	1.078	15.31	1.666
0	1.124	16.812	2.131

0	1.133	19.636	3.121
0	1.331	21.985	3.45
0	1.724	22.098	3.32
0	1.857	22.349	3.354
0	1.818	22.811	3.705
0	1.762	22.638	4.131
0	1.744	22.962	4.022
0	1.616	22.7	3.958
0	1.504	21.905	4.263
0	1.379	21.268	4.334
0	1.26	21.398	4.464
0	1.178	20.176	4.117
0	1.083	19.685	4.236
0	0.815	20.007	3.648
0	0.787	19.254	4.149
0	0.768	19.197	4.173
0	0.756	19.627	4.16
0	0.74	18.983	4.035
0	0.738	18.763	4.192
0	0.724	18.483	4.132
0	0.753	17.751	4.195
0	0.82	18.117	3.966
0	0.834	17.636	4.118
0	0.921	17.214	4.005
0	1.009	17.494	3.561
0	0.997	17.615	3.617
0	0.977	17.732	3.577
0	1.058	17.456	3.202
0	1.095	17.269	3.012
0	1.081	17.902	2.922
0	1.138	16.642	2.702
0	1.178	15.956	2.212
0	1.198	15.876	1.896
0	1.165	14.987	1.679
0	1.232	15.46	1.489
0	1.226	15.17	1.343
0	1.252	14.078	0.801
0	1.249	13.012	1.052
0	1.236	12.909	1.052
0	1.184	12.527	1.174
0	1.167	12.947	1.213
0	1.144	14.722	1.283
0	1.142	14.825	1.005
0	1.101	15.399	0.863
0	1.154	17.684	1.082

0	1.115	18.317	1.126
0	1.078	18.728	1.215
0	1.124	19.867	1.445
0	1.133	20.989	2.372
0	1.331	22.338	3.243
0	1.724	22.841	3.496
0	1.857	22.252	3.431
0	1.818	22.494	3.654
0	1.762	22.961	3.499
0	1.744	22.647	3.384
0	1.616	21.911	3.466
0	1.504	20.9	3.376
0	1.379	20.23	3.392
0	1.26	20	2.705
0	1.178	18.845	2.666
0	1.083	17.502	2.812
0	0.815	20.007	3.648
0	0.787	19.254	4.149
0	0.768	19.197	4.173
0	0.756	19.627	4.16
0	0.74	18.983	4.035
0	0.738	18.763	4.192
0	0.724	18.483	4.132
0	0.753	17.751	4.195
0	0.82	18.117	3.966
0	0.834	17.636	4.118
0	0.921	17.214	4.005
0	1.009	17.494	3.561
0	0.997	17.615	3.617
0	0.977	17.732	3.577
0	1.058	17.456	3.202
0	1.095	17.269	3.012
0	1.081	17.902	2.922
0	1.138	16.642	2.702
0	1.178	15.956	2.212
0	1.198	15.876	1.896
0	1.165	14.987	1.679
0	1.232	15.46	1.489
0	1.226	15.17	1.343
0	1.252	14.078	0.801
0	1.249	13.012	1.052
0	1.236	12.909	1.052
0	1.184	12.527	1.174
0	1.167	12.947	1.213
0	1.144	14.722	1.283

0	1.142	14.825	1.005
0	1.101	15.399	0.863
0	1.154	17.684	1.082
0	1.115	18.317	1.126
0	1.078	18.728	1.215
0	1.124	19.867	1.445
0	1.133	20.989	2.372
0	1.331	22.338	3.243
0	1.724	22.841	3.496
0	1.857	22.252	3.431
0	1.818	22.494	3.654
0	1.762	22.961	3.499
0	1.744	22.647	3.384
0	1.616	21.911	3.466
0	1.504	20.9	3.376
0	1.379	20.23	3.392
0	1.26	20	2.705
0	1.178	18.845	2.666
0	1.083	17.502	2.812
0	0.815	20.007	3.648
0	0.787	19.254	4.149
0	0.768	19.197	4.173
0	0.756	19.627	4.16
0	0.74	18.983	4.035
0	0.738	18.763	4.192
0	0.724	18.483	4.132
0	0.753	17.751	4.195
0	0.82	18.117	3.966
0	0.834	17.636	4.118
0	0.921	17.214	4.005
0	1.009	17.494	3.561
0	0.997	17.615	3.617
0	0.977	17.732	3.577
0	1.058	17.456	3.202
0	1.095	17.269	3.012
0	1.081	17.902	2.922
0	1.138	16.642	2.702
0	1.178	15.956	2.212
0	1.198	15.876	1.896
0	1.165	14.987	1.679
0	1.232	15.46	1.489
0	1.226	15.17	1.343
0	1.252	14.078	0.801
0	1.249	13.012	1.052
0	1.236	12.909	1.052

0	1.184	12.527	1.174
0	1.167	12.947	1.213
0	1.144	14.722	1.283
0	1.142	14.825	1.005
0	1.101	15.399	0.863
0	1.154	17.684	1.082
0	1.115	18.317	1.126
0	1.078	18.728	1.215
0	1.124	19.867	1.445
0	1.133	20.989	2.372
0	1.331	22.338	3.243
0	1.724	22.841	3.496
0	1.857	22.252	3.431
0	1.818	22.494	3.654
0	1.762	22.961	3.499
0	1.744	22.647	3.384
0	1.616	21.911	3.466
0	1.504	20.9	3.376
0	1.379	20.23	3.392
0	1.26	20	2.705
0	1.178	18.845	2.666
0	1.083	17.502	2.812
0	0.815	20.007	3.648
0	0.787	19.254	4.149
0	0.768	19.197	4.173
0	0.756	19.627	4.16
0	0.74	18.983	4.035
0	0.738	18.763	4.192
0	0.724	18.483	4.132
0	0.753	17.751	4.195
0	0.82	18.117	3.966
0	0.834	17.636	4.118
0	0.921	17.214	4.005
0	1.009	17.494	3.561
0	0.997	17.615	3.617
0	0.977	17.732	3.577
0	1.058	17.456	3.202
0	1.095	17.269	3.012
0	1.081	17.902	2.922
0	1.138	16.642	2.702
0	1.178	15.956	2.212
0	1.198	15.876	1.896
0	1.165	14.987	1.679
0	1.232	15.46	1.489
0	1.226	15.17	1.343

0	1.252	14.078	0.801
0	1.249	13.012	1.052
0	1.236	12.909	1.052
0	1.184	12.527	1.174
0	1.167	12.947	1.213
0	1.144	14.722	1.283
0	1.142	14.825	1.005
0	1.101	15.399	0.863
0	1.154	17.684	1.082
0	1.115	18.317	1.126
0	1.078	18.728	1.215
0	1.124	19.867	1.445
0	1.133	20.989	2.372
0	1.331	22.338	3.243
0	1.724	22.841	3.496
0	1.857	22.252	3.431
0	1.818	22.494	3.654
0	1.762	22.961	3.499
0	1.744	22.647	3.384
0	1.616	21.911	3.466
0	1.504	20.9	3.376
0	1.379	20.23	3.392
0	1.26	20	2.705
0	1.178	18.845	2.666
0	1.083	17.502	2.812
0	0.815	16.01	4.07
0	0.787	15.584	3.404
0	0.768	14.972	3.347
0	0.756	13.985	3.19
0	0.74	12.677	3.413
0	0.738	12.546	3.205
0	0.724	11.34	3.185
0	0.753	10.284	2.795
0	0.82	10.32	2.168
0	0.834	9.087	1.693
0	0.921	9.449	1.425
0	1.009	9.414	1.242
0	0.997	9.434	0.972
0	0.977	9.032	0.763
0	1.058	8.606	0.341
0	1.095	9.002	0.291
0	1.081	9.291	0.562
0	1.138	9.525	0.754
0	1.178	10.649	0.774
0	1.198	11.154	0.795

0	1.165	11.191	0.889
0	1.232	11.003	0.561
0	1.226	11.218	0.585
0	1.252	10.611	0.538
0	1.249	10.084	0.543
0	1.236	10.781	0.74
0	1.184	10.834	0.823
0	1.167	10.811	0.556
0	1.144	11.676	0.573
0	1.142	11.895	0.517
0	1.101	11.835	0.486
0	1.154	11.738	0.906
0	1.115	12.2	0.99
0	1.078	12.897	1.017
0	1.124	13.935	1.061
0	1.133	15.999	1.269
0	1.331	18.806	1.545
0	1.724	19.676	2.186
0	1.857	20.862	2.704
0	1.818	21.874	3.36
0	1.762	22.022	3.776
0	1.744	22.279	4.06
0	1.616	22.836	4.474
0	1.504	22.632	4.662
0	1.379	22.725	4.715
0	1.26	22.054	4.434
0	1.178	22.01	4.407
0	1.083	21.366	4.513
0	0.815	20.773	4.322
0	0.787	20.148	3.775
0	0.768	20.111	3.619
0	0.756	19.573	3.372
0	0.74	19.508	3.116
0	0.738	18.743	3.067
0	0.724	18.976	2.843
0	0.753	18.164	1.808
0	0.82	18.005	1.385
0	0.834	17.437	1.11
0	0.921	17.653	0.755
0	1.009	17.58	0.695
0	0.997	16.875	0.58
0	0.977	16.136	0.69
0	1.058	16.086	1.374
0	1.095	15.595	2.097
0	1.081	15.945	2.952

0	1.138	15.968	3.509
0	1.178	16.24	3.843
0	1.198	16.787	4.192
0	1.165	17.01	3.761
0	1.232	17.542	3.819
0	1.226	17.622	3.944
0	1.252	16.374	3.829
0	1.249	14.92	4.055
0	1.236	13.876	3.931
0	1.184	14.375	4.106
0	1.167	14.088	4.615
0	1.144	14.117	4.9
0	1.142	15.439	4.537
0	1.101	16.659	4.618
0	1.154	18.542	4.445
0	1.115	19.552	4.592
0	1.078	20.805	4.569
0	1.124	22.274	4.766
0	1.133	23.186	4.802
0	1.331	24.513	4.303
0	1.724	25.311	4.53
0	1.857	24.734	4.35
0	1.818	24.851	4.692
0	1.762	24.757	4.75
0	1.744	24.272	4.518
0	1.616	24.4	4.715
0	1.504	23.376	4.652
0	1.379	22.834	4.466
0	1.26	22.335	4.69
0	1.178	21.081	4.731
0	1.083	20.163	4.474
0	0.815	20.773	4.322
0	0.787	20.148	3.775
0	0.768	20.111	3.619
0	0.756	19.573	3.372
0	0.74	19.508	3.116
0	0.738	18.743	3.067
0	0.724	18.976	2.843
0	0.753	18.164	1.808
0	0.82	18.005	1.385
0	0.834	17.437	1.11
0	0.921	17.653	0.755
0	1.009	17.58	0.695
0	0.997	16.875	0.58
0	0.977	16.136	0.69

0	1.058	16.086	1.374
0	1.095	15.595	2.097
0	1.081	15.945	2.952
0	1.138	15.968	3.509
0	1.178	16.24	3.843
0	1.198	16.787	4.192
0	1.165	17.01	3.761
0	1.232	17.542	3.819
0	1.226	17.622	3.944
0	1.252	16.374	3.829
0	1.249	14.92	4.055
0	1.236	13.876	3.931
0	1.184	14.375	4.106
0	1.167	14.088	4.615
0	1.144	14.117	4.9
0	1.142	15.439	4.537
0	1.101	16.659	4.618
0	1.154	18.542	4.445
0	1.115	19.552	4.592
0	1.078	20.805	4.569
0	1.124	22.274	4.766
0	1.133	23.186	4.802
0	1.331	24.513	4.303
0	1.724	25.311	4.53
0	1.857	24.734	4.35
0	1.818	24.851	4.692
0	1.762	24.757	4.75
0	1.744	24.272	4.518
0	1.616	24.4	4.715
0	1.504	23.376	4.652
0	1.379	22.834	4.466
0	1.26	22.335	4.69
0	1.178	21.081	4.731
0	1.083	20.163	4.474
0	0.815	20.007	3.648
0	0.787	19.254	4.149
0	0.768	19.197	4.173
0	0.756	19.627	4.16
0	0.74	18.983	4.035
0	0.738	18.763	4.192
0	0.724	18.483	4.132
0	0.753	17.751	4.195
0	0.82	18.117	3.966
0	0.834	17.636	4.118
0	0.921	17.214	4.005

0	1.009	17.494	3.561
0	0.997	17.615	3.617
0	0.977	17.732	3.577
0	1.058	17.456	3.202
0	1.095	17.269	3.012
0	1.081	17.902	2.922
0	1.138	16.642	2.702
0	1.178	15.956	2.212
0	1.198	15.876	1.896
0	1.165	14.987	1.679
0	1.232	15.46	1.489
0	1.226	15.17	1.343
0	1.252	14.078	0.801
0	1.249	13.012	1.052
0	1.236	12.909	1.052
0	1.184	12.527	1.174
0	1.167	12.947	1.213
0	1.144	14.722	1.283
0	1.142	14.825	1.005
0	1.101	15.399	0.863
0	1.154	17.684	1.082
0	1.115	18.317	1.126
0	1.078	18.728	1.215
0	1.124	19.867	1.445
0	1.133	20.989	2.372
0	1.331	22.338	3.243
0	1.724	22.841	3.496
0	1.857	22.252	3.431
0	1.818	22.494	3.654
0	1.762	22.961	3.499
0	1.744	22.647	3.384
0	1.616	21.911	3.466
0	1.504	20.9	3.376
0	1.379	20.23	3.392
0	1.26	20	2.705
0	1.178	18.845	2.666
0	1.083	17.502	2.812
0	0.815	20.007	3.648
0	0.787	19.254	4.149
0	0.768	19.197	4.173
0	0.756	19.627	4.16
0	0.74	18.983	4.035
0	0.738	18.763	4.192
0	0.724	18.483	4.132
0	0.753	17.751	4.195

0	0.82	18.117	3.966
0	0.834	17.636	4.118
0	0.921	17.214	4.005
0	1.009	17.494	3.561
0	0.997	17.615	3.617
0	0.977	17.732	3.577
0	1.058	17.456	3.202
0	1.095	17.269	3.012
0	1.081	17.902	2.922
0	1.138	16.642	2.702
0	1.178	15.956	2.212
0	1.198	15.876	1.896
0	1.165	14.987	1.679
0	1.232	15.46	1.489
0	1.226	15.17	1.343
0	1.252	14.078	0.801
0	1.249	13.012	1.052
0	1.236	12.909	1.052
0	1.184	12.527	1.174
0	1.167	12.947	1.213
0	1.144	14.722	1.283
0	1.142	14.825	1.005
0	1.101	15.399	0.863
0	1.154	17.684	1.082
0	1.115	18.317	1.126
0	1.078	18.728	1.215
0	1.124	19.867	1.445
0	1.133	20.989	2.372
0	1.331	22.338	3.243
0	1.724	22.841	3.496
0	1.857	22.252	3.431
0	1.818	22.494	3.654
0	1.762	22.961	3.499
0	1.744	22.647	3.384
0	1.616	21.911	3.466
0	1.504	20.9	3.376
0	1.379	20.23	3.392
0	1.26	20	2.711
0	1.178	18.845	2.666
0	1.083	17.502	2.812
0	0.815	16.01	4.07
0	0.787	15.584	3.404
0	0.768	14.972	3.347
0	0.756	13.985	3.19
0	0.74	12.677	3.413

0	0.738	12.546	3.205
0	0.724	11.34	3.185
0	0.753	10.284	2.795
0	0.82	10.32	2.168
0	0.834	9.087	1.693
0	0.921	9.449	1.425
0	1.009	9.414	1.242
0	0.997	9.434	0.972
0	0.977	9.032	0.763
0	1.058	8.606	0.341
0	1.095	9.002	0.291
0	1.081	9.291	0.562
0	1.138	9.525	0.754
0	1.178	10.649	0.774
0	1.198	11.154	0.795
0	1.165	11.191	0.889
0	1.232	11.003	0.561
0	1.226	11.218	0.585
0	1.252	10.611	0.538
0	1.249	10.084	0.543
0	1.236	10.781	0.74
0	1.184	10.834	0.823
0	1.167	10.811	0.556
0	1.144	11.676	0.573
0	1.142	11.895	0.517
0	1.101	11.835	0.486
0	1.154	11.738	0.906
0	1.115	12.2	0.99
0	1.078	12.897	1.017
0	1.124	13.935	1.061
0	1.133	15.999	1.269
0	1.331	18.806	1.545
0	1.724	19.676	2.186
0	1.857	20.862	2.704
0	1.818	21.874	3.36
0	1.762	22.022	3.776
0	1.744	22.279	4.06
0	1.616	22.836	4.474
0	1.504	22.632	4.662
0	1.379	22.725	4.715
0	1.26	22.054	4.434
0	1.178	22.01	4.407
0	1.083	21.366	4.513
0	0.815	6.667	0.588
0	0.787	6.227	0.886

0	0.768	6.011	0.752
0	0.756	5.849	0.438
0	0.74	5.748	0.532
0	0.738	5.716	0.505
0	0.724	5.592	0.49
0	0.753	5.561	0.399
0	0.82	5.595	0.498
0	0.834	5.619	0.612
0	0.921	5.774	0.608
0	1.009	5.507	0.507
0	0.997	4.771	0.433
0	0.977	5.029	0.287
0	1.058	5.455	0.207
0	1.095	5.625	0.235
0	1.081	5.909	0.246
0	1.138	6.09	0.243
0	1.178	6.313	0.258
0	1.198	6.915	0.231
0	1.165	7.04	0.249
0	1.232	7.25	0.258
0	1.226	7.176	0.244
0	1.252	7.224	0.258
0	1.249	7.218	0.268
0	1.236	7.137	0.194
0	1.184	6.87	0.219
0	1.167	6.69	0.227
0	1.144	6.745	0.222
0	1.142	6.701	0.228
0	1.101	6.367	0.208
0	1.154	6.369	0.22
0	1.115	6.49	0.243
0	1.078	6.614	0.219
0	1.124	6.879	0.217
0	1.133	8.321	0.262
0	1.331	8.97	0.272
0	1.724	9.168	0.281
0	1.857	9.627	0.306
0	1.818	9.405	0.281
0	1.762	9.6	0.313
0	1.744	9.522	0.293
0	1.616	9.23	0.313
0	1.504	8.642	0.302
0	1.379	8.22	0.296
0	1.26	7.873	0.3
0	1.178	7.412	0.32

0	1.083	7.27	0.287
0	0.815	6.703	0.298
0	0.787	6.537	0.297
0	0.768	6.191	0.283
0	0.756	6.148	0.303
0	0.74	6.125	0.293
0	0.738	5.946	0.297
0	0.724	6.01	0.305
0	0.753	5.855	0.296
0	0.82	5.961	0.3
0	0.834	5.918	0.296
0	0.921	6.21	0.275
0	1.009	6.517	0.322
0	0.997	6.135	0.261
0	0.977	6.234	0.239
0	1.058	6.467	0.262
0	1.095	6.841	0.251
0	1.081	7.471	0.407
0	1.138	8.147	0.425
0	1.178	8.349	0.564
0	1.198	9.151	0.746
0	1.165	9.114	1.111
0	1.232	9.756	1.175
0	1.226	9.66	1.267
0	1.252	9.431	1.113
0	1.249	9.094	0.738
0	1.236	9.045	0.823
0	1.184	8.854	0.692
0	1.167	8.973	0.837
0	1.144	9.152	0.878
0	1.142	9.029	0.692
0	1.101	9.074	0.817
0	1.154	8.936	0.927
0	1.115	8.82	0.855
0	1.078	9.098	0.885
0	1.124	8.78	0.863
0	1.133	10.183	0.632
0	1.331	10.62	0.7
0	1.724	10.397	0.655
0	1.857	10.542	0.66
0	1.818	10.812	0.653
0	1.762	10.722	0.848
0	1.744	10.478	0.894
0	1.616	9.774	0.836
0	1.504	9.416	0.663

0	1.379	8.876	0.73
0	1.26	8.329	0.654
0	1.178	7.698	0.754
0	1.083	7.167	0.647
0	0.815	6.841	0.634
0	0.787	6.584	0.642
0	0.768	6.321	0.695
0	0.756	6.183	0.617
0	0.74	6.005	0.584
0	0.738	6.015	0.551
0	0.724	6.473	0.495
0	0.753	6.103	0.508
0	0.82	6.422	0.496
0	0.834	6.546	0.515
0	0.921	6.683	0.864
0	1.009	6.867	0.478
0	0.997	6.567	0.427
0	0.977	6.345	0.473
0	1.058	6.482	0.466
0	1.095	6.905	0.49
0	1.081	7.273	0.529
0	1.138	7.766	0.671
0	1.178	8.262	0.654
0	1.198	8.092	0.692
0	1.165	8.417	0.612
0	1.232	9.007	0.667
0	1.226	9.43	0.667
0	1.252	8.95	0.708
0	1.249	8.756	0.577
0	1.236	8.384	0.652
0	1.184	8.362	0.679
0	1.167	8.653	0.695
0	1.144	9.012	0.766
0	1.142	9.12	0.722
0	1.101	9.442	0.578
0	1.154	9.463	0.654
0	1.115	9.3	0.605
0	1.078	8.971	0.433
0	1.124	9.069	0.386
0	1.133	10.362	0.451
0	1.331	11.482	0.417
0	1.724	11.63	0.495
0	1.857	11.955	0.515
0	1.818	12.625	0.555
0	1.762	14.055	0.535

0	1.744	15.638	0.83
0	1.616	16.544	0.779
0	1.504	18.091	1.005
0	1.379	19.162	1.057
0	1.26	19.898	1.289
0	1.178	19.099	1.78
0	1.083	18.894	2.53
0	0.815	18.116	3.393
0	0.787	17.636	3.758
0	0.768	18.481	4.195
0	0.756	17.137	4.337
0	0.74	17.484	4.165
0	0.738	16.781	3.973
0	0.724	16.579	3.916
0	0.753	16.704	3.158
0	0.82	16.43	3.067
0	0.834	15.929	3.092
0	0.921	15.611	3.414
0	1.009	15.685	3.729
0	0.997	15.755	3.368
0	0.977	15.107	3.302
0	1.058	14.413	3.768
0	1.095	13.943	3.38
0	1.081	13.582	3.094
0	1.138	13.624	3.42
0	1.178	13.598	3.278
0	1.198	14.119	2.629
0	1.165	15.618	2.267
0	1.232	16.341	2.131
0	1.226	17.426	1.872
0	1.252	17.118	2.123
0	1.249	17.436	3.134
0	1.236	19.519	3.612
0	1.184	20.111	3.809
0	1.167	21.438	4.281
0	1.144	22.563	4.454
0	1.142	23.186	4.333
0	1.101	24.008	4.225
0	1.154	23.988	4.316
0	1.115	24.481	4.51
0	1.078	24.155	4.649
0	1.124	25.262	4.585
0	1.133	26.602	4.673
0	1.331	27.228	5.062
0	1.724	27.804	4.963

0	1.857	27.197	5.109
0	1.818	27.972	4.795
0	1.762	28.783	3.984
0	1.744	27.63	5.013
0	1.616	27.061	5.028
0	1.504	27.029	4.893
0	1.379	26.993	5.267
0	1.26	26.146	4.995
0	1.178	25.469	5.094
0	1.083	25.124	5.234
0	0.815	20.007	3.648
0	0.787	19.254	4.149
0	0.768	19.197	4.173
0	0.756	19.627	4.16
0	0.74	18.983	4.035
0	0.738	18.763	4.192
0	0.724	18.483	4.132
0	0.753	17.751	4.195
0	0.82	18.117	3.966
0	0.834	17.636	4.118
0	0.921	17.214	4.005
0	1.009	17.494	3.561
0	0.997	17.615	3.617
0	0.977	17.732	3.577
0	1.058	17.456	3.202
0	1.095	17.269	3.012
0	1.081	17.902	2.922
0	1.138	16.642	2.702
0	1.178	15.956	2.212
0	1.198	15.876	1.896
0	1.165	14.987	1.679
0	1.232	15.46	1.489
0	1.226	15.17	1.343
0	1.252	14.078	0.801
0	1.249	13.012	1.052
0	1.236	12.909	1.052
0	1.184	12.527	1.174
0	1.167	12.947	1.213
0	1.144	14.722	1.283
0	1.142	14.825	1.005
0	1.101	15.399	0.863
0	1.154	17.684	1.082
0	1.115	18.317	1.126
0	1.078	18.728	1.215
0	1.124	19.867	1.445

0	1.133	20.989	2.372
0	1.331	22.338	3.243
0	1.724	22.841	3.496
0	1.857	22.252	3.431
0	1.818	22.494	3.654
0	1.762	22.961	3.499
0	1.744	22.647	3.384
0	1.616	21.911	3.466
0	1.504	20.9	3.376
0	1.379	20.23	3.392
0	1.26	20	2.705
0	1.178	18.845	2.666
0	1.083	17.502	2.812
0	1.514	20.706	4.801
0	1.475	20.806	4.538
0	1.44	20.922	4.424
0	1.42	21.33	4.331
0	1.404	20.436	4.602
0	1.402	20.556	4.599
0	1.393	20.555	4.494
0	1.394	20.9	4.359
0	1.404	21.557	4.512
0	1.503	21.85	4.032
0	1.625	22.402	4.344
0	1.675	23.355	4.597
0	1.572	23.884	5.144
0	1.583	23.324	4.837
0	1.646	23.507	4.844
0	1.678	23.832	4.755
0	1.635	23.534	5.022
0	1.691	23.953	4.967
0	1.684	23.455	5.182
0	1.741	22.222	5.063
0	1.755	21.696	4.907
0	1.788	21.157	5.115
0	1.779	20.211	5.059
0	1.794	19.613	2.018
0	1.693	17.946	2.422
0	1.651	17.232	3.928
0	1.662	16.09	3.885
0	1.646	15.747	4.467
0	1.64	15.755	4.805
0	1.662	16.217	4.995
0	1.647	16.691	5.24
0	1.646	16.976	4.821

0	1.614	16.033	4.752
0	1.646	16.868	4.996
0	1.688	17.597	4.696
0	1.864	19.967	2.904
0	2.318	22.221	2.726
0	2.472	23.726	3.44
0	2.45	24.189	4.1
0	2.49	23.976	4.506
0	2.479	24.148	4.043
0	2.353	24.445	4.31
0	2.307	24.305	4.142
0	2.16	23.818	4.232
0	2.045	23.063	4.345
0	1.922	22.904	4.104
0	1.818	22.344	3.989
0	1.748	21.582	4.331
0	1.514	20.95	3.628
0	1.475	20.401	3.892
0	1.44	20.277	3.551
0	1.42	20.24	3.692
0	1.404	20.579	3.801
0	1.402	20.436	3.647
0	1.393	20.519	3.839
0	1.394	20.681	3.817
0	1.404	20.533	3.987
0	1.503	20.276	4.071
0	1.625	20.321	4.176
0	1.675	20.829	3.737
0	1.572	20.042	3.902
0	1.583	20.136	4.504
0	1.646	20.489	4.334
0	1.678	20.004	4.848
0	1.635	21.06	4.686
0	1.691	21.283	4.911
0	1.684	20.49	4.92
0	1.741	20.748	4.902
0	1.755	20.217	4.957
0	1.788	19.328	5.049
0	1.779	18.192	4.913
0	1.794	17.637	4.359
0	1.693	16.88	4.209
0	1.651	16.107	4.112
0	1.662	15.257	3.931
0	1.646	16.076	2.467
0	1.64	17.134	2.574

0	1.662	17.591	2.619
0	1.647	17.628	3.413
0	1.646	17.652	3.699
0	1.614	16.935	4.228
0	1.646	16.836	3.934
0	1.688	17.136	3.931
0	1.864	18.668	3.99
0	2.318	18.786	4.08
0	2.472	18.9	4.044
0	2.45	19.571	4.559
0	2.49	18.983	4.256
0	2.479	19.082	4.062
0	2.353	20.085	4.29
0	2.307	19.172	4.085
0	2.16	18.03	3.559
0	2.045	17.29	3.58
0	1.922	16.943	3.728
0	1.818	16.899	3.459
0	1.748	16.079	2.983
0	1.514	20.95	3.628
0	1.475	20.401	3.892
0	1.44	20.277	3.551
0	1.42	20.24	3.692
0	1.404	20.579	3.801
0	1.402	20.436	3.647
0	1.393	20.519	3.839
0	1.394	20.681	3.817
0	1.404	20.533	3.987
0	1.503	20.276	4.071
0	1.625	20.321	4.176
0	1.675	20.829	3.737
0	1.572	20.042	3.902
0	1.583	20.136	4.504
0	1.646	20.489	4.334
0	1.678	20.004	4.848
0	1.635	21.06	4.686
0	1.691	21.283	4.911
0	1.684	20.49	4.92
0	1.741	20.748	4.902
0	1.755	20.217	4.957
0	1.788	19.328	5.049
0	1.779	18.192	4.913
0	1.794	17.637	4.359
0	1.693	16.88	4.209
0	1.651	16.107	4.112

0	1.662	15.257	3.931
0	1.646	16.076	2.467
0	1.64	17.134	2.574
0	1.662	17.591	2.619
0	1.647	17.628	3.413
0	1.646	17.652	3.699
0	1.614	16.935	4.228
0	1.646	16.836	3.934
0	1.688	17.136	3.931
0	1.864	18.668	3.99
0	2.318	18.786	4.08
0	2.472	18.9	4.044
0	2.45	19.571	4.559
0	2.49	18.983	4.256
0	2.479	19.082	4.062
0	2.353	20.085	4.29
0	2.307	19.172	4.085
0	2.16	18.03	3.559
0	2.045	17.29	3.58
0	1.922	16.943	3.728
0	1.818	16.899	3.459
0	1.748	16.079	2.983
0	1.514	7.601	0.679
0	1.475	7.345	0.696
0	1.44	6.663	0.647
0	1.42	6.293	0.679
0	1.404	5.974	0.645
0	1.402	6.024	0.634
0	1.393	5.872	0.633
0	1.394	5.99	0.672
0	1.404	6.18	0.644
0	1.503	6.065	0.657
0	1.625	6.306	0.646
0	1.675	6.435	0.605
0	1.572	6.341	0.633
0	1.583	6.536	0.538
0	1.646	6.67	0.512
0	1.678	6.899	0.59
0	1.635	8.007	0.916
0	1.691	8.39	1.17
0	1.684	8.688	1.13
0	1.741	9.098	1.147
0	1.755	9.523	1.191
0	1.788	9.317	1.082
0	1.779	9.725	0.819

0	1.794	8.742	0.772
0	1.693	8.637	0.822
0	1.651	8.611	0.722
0	1.662	8.383	0.892
0	1.646	8.665	1.036
0	1.64	8.606	1.299
0	1.662	9.288	1.114
0	1.647	9.315	0.763
0	1.646	8.879	0.935
0	1.614	8.967	0.807
0	1.646	8.819	0.784
0	1.688	9.061	1.042
0	1.864	9.979	1.007
0	2.318	10.892	1.037
0	2.472	10.902	0.745
0	2.45	10.978	0.734
0	2.49	11.01	0.738
0	2.479	11.008	0.712
0	2.353	10.414	0.818
0	2.307	9.972	0.81
0	2.16	9.257	0.789
0	2.045	8.786	0.773
0	1.922	8.417	0.807
0	1.818	8.192	0.814
0	1.748	7.873	0.618
0	1.514	7.415	0.695
0	1.475	7.469	0.684
0	1.44	7.088	0.613
0	1.42	6.849	0.62
0	1.404	7.103	0.577
0	1.402	7.213	0.577
0	1.393	6.971	0.567
0	1.394	7.061	0.591
0	1.404	7.046	0.557
0	1.503	7.064	0.565
0	1.625	7.179	0.57
0	1.675	7.224	0.557
0	1.572	6.858	0.47
0	1.583	6.98	0.473
0	1.646	7.089	0.481
0	1.678	7.281	0.475
0	1.635	8.012	0.57
0	1.691	8.249	0.575
0	1.684	8.33	0.582
0	1.741	8.391	0.657

0	1.755	8.709	0.604
0	1.788	8.927	0.633
0	1.779	9.277	0.978
0	1.794	8.697	1.016
0	1.693	8.293	0.92
0	1.651	8.317	0.564
0	1.662	8.834	0.593
0	1.646	8.902	0.696
0	1.64	8.971	0.742
0	1.662	8.901	0.721
0	1.647	9.572	0.678
0	1.646	8.733	0.68
0	1.614	8.532	0.677
0	1.646	8.724	0.685
0	1.688	8.882	0.785
0	1.864	9.981	0.708
0	2.318	11.143	0.822
0	2.472	11.099	1.065
0	2.45	11.1	1.078
0	2.49	10.791	1.024
0	2.479	10.786	1.014
0	2.353	10.674	0.684
0	2.307	10.407	0.817
0	2.16	10.43	0.795
0	2.045	9.462	0.758
0	1.922	8.832	0.654
0	1.818	8.574	0.57
0	1.748	7.867	0.561
0	1.514	7.415	0.695
0	1.475	7.469	0.684
0	1.44	7.088	0.613
0	1.42	6.849	0.62
0	1.404	7.103	0.577
0	1.402	7.213	0.577
0	1.393	6.971	0.567
0	1.394	7.061	0.591
0	1.404	7.046	0.557
0	1.503	7.064	0.565
0	1.625	7.179	0.57
0	1.675	7.224	0.557
0	1.572	6.858	0.47
0	1.583	6.98	0.473
0	1.646	7.089	0.481
0	1.678	7.281	0.475
0	1.635	8.012	0.57

0	1.691	8.249	0.575
0	1.684	8.33	0.582
0	1.741	8.391	0.657
0	1.755	8.709	0.604
0	1.788	8.927	0.633
0	1.779	9.277	0.978
0	1.794	8.697	1.016
0	1.693	8.293	0.92
0	1.651	8.317	0.564
0	1.662	8.834	0.593
0	1.646	8.902	0.696
0	1.64	8.971	0.742
0	1.662	8.901	0.721
0	1.647	9.572	0.678
0	1.646	8.733	0.68
0	1.614	8.532	0.677
0	1.646	8.724	0.685
0	1.688	8.882	0.785
0	1.864	9.981	0.708
0	2.318	11.143	0.822
0	2.472	11.099	1.065
0	2.45	11.1	1.078
0	2.49	10.791	1.024
0	2.479	10.786	1.014
0	2.353	10.674	0.684
0	2.307	10.407	0.817
0	2.16	10.43	0.795
0	2.045	9.462	0.758
0	1.922	8.832	0.654
0	1.818	8.574	0.57
0	1.748	7.867	0.561
0	1.514	12.372	3.079
0	1.475	11.182	2.898
0	1.44	9.843	2.897
0	1.42	9.417	2.807
0	1.404	7.865	2.485
0	1.402	7.584	1.982
0	1.393	7.373	1.729
0	1.394	7.197	1.238
0	1.404	7.243	0.768
0	1.503	8.871	0.626
0	1.625	10.335	0.637
0	1.675	10.807	0.65
0	1.572	11.443	0.575
0	1.583	11.428	0.567

0	1.646	11.848	0.504
0	1.678	12.449	0.609
0	1.635	13.163	0.779
0	1.691	14.738	0.798
0	1.684	14.661	1.38
0	1.741	16.295	2.006
0	1.755	17.119	2.713
0	1.788	19.258	3.666
0	1.779	20.465	4.23
0	1.794	21.883	4.163
0	1.693	23.974	4.452
0	1.651	23.693	4.611
0	1.662	24.002	4.444
0	1.646	25.243	4.304
0	1.64	25.365	4.491
0	1.662	25.842	4.595
0	1.647	26.204	4.808
0	1.646	24.49	4.872
0	1.614	25.352	4.68
0	1.646	25.648	4.778
0	1.688	26.689	4.642
0	1.864	27.653	4.89
0	2.318	29.253	3.514
0	2.472	29.489	3.278
0	2.45	29.231	3.536
0	2.49	29.29	3.477
0	2.479	29.47	3.297
0	2.353	29.125	3.642
0	2.307	28.595	4.172
0	2.16	27.45	4.87
0	2.045	26.371	5.096
0	1.922	25.876	4.886
0	1.818	24.942	5.14
0	1.748	24.509	5.006
0	1.614	24.114	4.951
0	1.53	23.338	5.063
0	1.495	22.881	4.785
0	1.462	22.428	4.85
0	1.457	21.746	4.603
0	1.446	21.489	4.771
0	1.451	20.935	4.913
0	1.471	21.187	4.64
0	1.508	20.879	4.378
0	1.572	20.335	4.127
0	1.64	20.146	4.095

0	1.884	20.13	3.742
0	1.853	19.375	3.438
0	1.407	18.533	2.889
0	1.512	18.404	2.852
0	1.49	18.021	2.932
0	1.543	16.986	2.558
0	1.592	17.153	1.997
0	1.591	16.986	1.344
0	1.602	17.476	1.271
0	1.669	18.501	2.259
0	1.935	19.93	3.182
0	1.915	21.876	4.268
0	2.058	22.859	4.26
0	2.01	23.732	4.619
0	1.941	24.462	4.485
0	1.922	25.206	4.603
0	1.92	25.153	4.808
0	2.001	26.285	5.024
0	2.021	26.664	5.042
0	2.087	27.061	4.933
0	2.036	26.639	5.146
0	2.14	27.551	5.216
0	2.061	27.252	5.25
0	2.067	27.306	5.306
0	2.245	27.929	4.838
0	2.738	29.772	2.995
0	2.901	29.685	3.082
0	2.738	29.423	3.344
0	2.694	29.553	3.214
0	2.582	29.561	3.206
0	2.472	29.109	3.658
0	2.375	28.806	3.961
0	2.241	28.144	4.623
0	2.074	27.689	5.078
0	1.953	26.981	5.256
0	1.832	26.284	5.257
0	1.763	25.496	5.223
0	0.815	16.01	4.07
0	0.787	15.584	3.404
0	0.768	14.972	3.347
0	0.756	13.985	3.19
0	0.74	12.677	3.413
0	0.738	12.546	3.205
0	0.724	11.34	3.185
0	0.753	10.284	2.795

0	0.82	10.32	2.168
0	0.834	9.087	1.693
0	0.921	9.449	1.425
0	1.009	9.414	1.242
0	0.997	9.434	0.972
0	0.977	9.032	0.763
0	1.058	8.606	0.341
0	1.095	9.002	0.291
0	1.081	9.291	0.562
0	1.138	9.525	0.754
0	1.178	10.649	0.774
0	1.198	11.154	0.795
0	1.165	11.191	0.889
0	1.232	11.003	0.561
0	1.226	11.218	0.585
0	1.252	10.611	0.538
0	1.249	10.084	0.543
0	1.236	10.781	0.74
0	1.184	10.834	0.823
0	1.167	10.811	0.556
0	1.144	11.676	0.573
0	1.142	11.895	0.517
0	1.101	11.835	0.486
0	1.154	11.738	0.906
0	1.115	12.2	0.99
0	1.078	12.897	1.017
0	1.124	13.935	1.061
0	1.133	15.999	1.269
0	1.331	18.806	1.545
0	1.724	19.676	2.186
0	1.857	20.862	2.704
0	1.818	21.874	3.36
0	1.762	22.022	3.776
0	1.744	22.279	4.06
0	1.616	22.836	4.474
0	1.504	22.632	4.662
0	1.379	22.725	4.715
0	1.26	22.054	4.434
0	1.178	22.01	4.407
0	1.083	21.366	4.513
0	0.815	16.01	4.07
0	0.787	15.584	3.404
0	0.768	14.972	3.347
0	0.756	13.985	3.19
0	0.74	12.677	3.413

0	0.738	12.546	3.205
0	0.724	11.34	3.185
0	0.753	10.284	2.795
0	0.82	10.32	2.168
0	0.834	9.087	1.693
0	0.921	9.449	1.425
0	1.009	9.414	1.242
0	0.997	9.434	0.972
0	0.977	9.032	0.763
0	1.058	8.606	0.341
0	1.095	9.002	0.291
0	1.081	9.291	0.562
0	1.138	9.525	0.754
0	1.178	10.649	0.774
0	1.198	11.154	0.795
0	1.165	11.191	0.889
0	1.232	11.003	0.561
0	1.226	11.218	0.585
0	1.252	10.611	0.538
0	1.249	10.084	0.543
0	1.236	10.781	0.74
0	1.184	10.834	0.823
0	1.167	10.811	0.556
0	1.144	11.676	0.573
0	1.142	11.895	0.517
0	1.101	11.835	0.486
0	1.154	11.738	0.906
0	1.115	12.2	0.99
0	1.078	12.897	1.017
0	1.124	13.935	1.061
0	1.133	15.999	1.269
0	1.331	18.806	1.545
0	1.724	19.676	2.186
0	1.857	20.862	2.704
0	1.818	21.874	3.36
0	1.762	22.022	3.776
0	1.744	22.279	4.06
0	1.616	22.836	4.474
0	1.504	22.632	4.662
0	1.379	22.725	4.715
0	1.26	22.054	4.434
0	1.178	22.01	4.407
0	1.083	21.366	4.513
0	0.815	19.636	4.866
0	0.787	19.464	4.749

0	0.768	18.644	4.659
0	0.756	18.326	4.389
0	0.74	17.995	4.352
0	0.738	17.189	4.122
0	0.724	16.469	4.35
0	0.753	14.855	3.73
0	0.82	14.079	3.753
0	0.834	13.129	3.512
0	0.921	11.945	2.713
0	1.009	11.974	2.047
0	0.997	11.842	1.765
0	0.977	11.093	1.018
0	1.058	10.534	0.939
0	1.095	10.829	1.051
0	1.081	11.016	1.178
0	1.138	11.489	1.267
0	1.178	12.381	1.338
0	1.198	12.935	1.146
0	1.165	13.78	1.21
0	1.232	14.349	1.11
0	1.226	15.148	1.094
0	1.252	15.998	1.722
0	1.249	17.124	2.34
0	1.236	17.092	3.066
0	1.184	18.67	3.75
0	1.167	18.521	3.784
0	1.144	19.378	4.091
0	1.142	19.925	4.292
0	1.101	20.109	4.402
0	1.154	19.384	4.185
0	1.115	19.106	4.028
0	1.078	18.795	3.915
0	1.124	18.734	3.317
0	1.133	20.753	2.618
0	1.331	21.545	2.024
0	1.724	21.254	1.623
0	1.857	20.816	1.522
0	1.818	19.529	1.626
0	1.762	18.567	1.969
0	1.744	18.55	2.657
0	1.616	17.364	3.873
0	1.504	16.433	4.23
0	1.379	15.863	4.678
0	1.26	15.223	4.703
0	1.178	14.938	5.025

0	1.083	15.293	4.734
0	1.602	16.157	4.621
0	1.574	16.731	4.639
0	1.552	17.147	5.006
0	1.541	17.355	4.853
0	1.526	17.561	4.698
0	1.521	17.483	4.551
0	1.508	16.996	4.727
0	1.526	16.909	4.474
0	1.737	16.523	4.537
0	1.781	16.094	4.747
0	1.845	16.126	4.824
0	2.116	16.876	4.828
0	2.028	16.859	4.485
0	2.043	16.227	4.313
0	2.14	16.315	4.355
0	2.149	16.452	4.14
0	2.195	16.505	3.816
0	2.089	16.448	3.524
0	1.973	16.62	3.073
0	2.168	16.449	2.196
0	2.153	16.255	2.194
0	2.115	17.016	1.628
0	2.083	17.133	1.28
0	2.061	17.473	1.153
0	1.774	17.22	1.344
0	1.66	18.121	1.399
0	1.521	20.214	2.106
0	1.519	21.118	2.983
0	1.499	23.034	3.867
0	1.534	24.136	4.223
0	1.523	24.373	4.236
0	1.613	25.271	4.554
0	1.543	24.736	4.711
0	1.547	25.291	4.587
0	1.486	26.095	4.716
0	1.561	26.616	5.268
0	1.948	27.973	4.794
0	2.153	27.205	5.304
0	2.221	28.291	4.476
0	2.155	28.331	4.436
0	2.124	28.359	4.408
0	1.99	28.348	4.419
0	1.882	28.149	4.61
0	1.759	27.627	4.592

0	1.591	26.813	4.316
0	1.462	26.689	4.525
0	1.374	26.04	4.587
0	1.083	25.552	4.569
0	1.602	16.157	4.621
0	1.574	16.731	4.639
0	1.552	17.147	5.006
0	1.541	17.355	4.853
0	1.526	17.561	4.698
0	1.521	17.483	4.551
0	1.508	16.996	4.727
0	1.526	16.909	4.474
0	1.737	16.523	4.537
0	1.781	16.094	4.747
0	1.845	16.126	4.824
0	2.116	16.876	4.828
0	2.028	16.859	4.485
0	2.043	16.227	4.313
0	2.14	16.315	4.355
0	2.149	16.452	4.14
0	2.195	16.505	3.816
0	2.089	16.448	3.524
0	1.973	16.62	3.073
0	2.168	16.449	2.196
0	2.153	16.255	2.194
0	2.115	17.016	1.628
0	2.083	17.133	1.28
0	2.061	17.473	1.153
0	1.774	17.22	1.344
0	1.66	18.121	1.399
0	1.521	20.214	2.106
0	1.519	21.118	2.983
0	1.499	23.034	3.867
0	1.534	24.136	4.223
0	1.523	24.373	4.236
0	1.613	25.271	4.554
0	1.543	24.736	4.711
0	1.547	25.291	4.587
0	1.486	26.095	4.716
0	1.561	26.616	5.268
0	1.948	27.973	4.794
0	2.153	27.205	5.304
0	2.221	28.291	4.476
0	2.155	28.331	4.436
0	2.124	28.359	4.408

0	1.99	28.348	4.419
0	1.882	28.149	4.61
0	1.759	27.627	4.592
0	1.591	26.813	4.316
0	1.462	26.689	4.525
0	1.374	26.04	4.587
0	1.083	25.552	4.569
0	0.815	20.007	3.648
0	0.787	19.254	4.149
0	0.768	19.197	4.173
0	0.756	19.627	4.16
0	0.74	18.983	4.035
0	0.738	18.763	4.192
0	0.724	18.483	4.132
0	0.753	17.751	4.195
0	0.82	18.117	3.966
0	0.834	17.636	4.118
0	0.921	17.214	4.005
0	1.009	17.494	3.561
0	0.997	17.615	3.617
0	0.977	17.732	3.577
0	1.058	17.456	3.202
0	1.095	17.269	3.012
0	1.081	17.902	2.922
0	1.138	16.642	2.702
0	1.178	15.956	2.212
0	1.198	15.876	1.896
0	1.165	14.987	1.679
0	1.232	15.46	1.489
0	1.226	15.17	1.343
0	1.252	14.078	0.801
0	1.249	13.012	1.052
0	1.236	12.909	1.052
0	1.184	12.527	1.174
0	1.167	12.947	1.213
0	1.144	14.722	1.283
0	1.142	14.825	1.005
0	1.101	15.399	0.863
0	1.154	17.684	1.082
0	1.115	18.317	1.126
0	1.078	18.728	1.215
0	1.124	19.867	1.445
0	1.133	20.989	2.372
0	1.331	22.338	3.243
0	1.724	22.841	3.496

0	1.857	22.252	3.431
0	1.818	22.494	3.654
0	1.762	22.961	3.499
0	1.744	22.647	3.384
0	1.616	21.911	3.466
0	1.504	20.9	3.376
0	1.379	20.23	3.392
0	1.26	20	2.705
0	1.178	18.845	2.666
0	1.083	17.502	2.812
0	0.815	19.726	4.685
0	0.787	18.727	4.661
0	0.768	17.126	4.598
0	0.756	15.743	4.572
0	0.74	15.398	4.88
0	0.738	15.048	4.177
0	0.724	15.123	4.212
0	0.753	14.245	4.028
0	0.82	14.115	4.617
0	0.834	13.569	4.518
0	0.921	13.929	4.228
0	1.009	14.18	3.604
0	0.997	13.848	2.685
0	0.977	13.658	2.205
0	1.058	14.053	1.434
0	1.095	14.03	1.773
0	1.081	14.303	1.562
0	1.138	15.078	1.553
0	1.178	15.434	1.427
0	1.198	15.186	1.155
0	1.165	15.914	0.993
0	1.232	16.511	1.075
0	1.226	17.192	1.436
0	1.252	18.643	1.629
0	1.249	19.057	1.771
0	1.236	20.674	2.359
0	1.184	22.414	3.672
0	1.167	22.611	2.831
0	1.144	23.886	2.913
0	1.142	24.029	2.446
0	1.101	24.291	3.699
0	1.154	24.215	4.247
0	1.115	24.045	4.249
0	1.078	24.236	4.267
0	1.124	23.732	4.601

0	1.133	24.27	4.986
0	1.331	24.283	5.08
0	1.724	23.882	4.917
0	1.857	22.752	4.921
0	1.818	22.456	5.074
0	1.762	21.767	5.119
0	1.744	20.804	4.822
0	1.616	20.914	5.102
0	1.504	20.065	4.862
0	1.379	19.695	4.975
0	1.26	19.236	4.814
0	1.178	18.798	4.761
0	1.083	18.012	4.513

**DEMANDA HISTORICO-DIARIO-SUB ESTACIONES CHIMBOTE UNO CASMA  
HIDRANDINA-JUNIO 2019**

41399	41398	22402	21537	22207
HIDRANDINA	HIDRANDINA	HIDRANDINA	HIDRANDINA	HIDRANDINA
NEPEÑA_TP- A055_BARRA_13.8	NEPEÑA_TP- A055_BARRA_22.9	TP-A006- 6.6MVA	TPA007	TP-A048
13.80	22.90	13.80	13.80	13.80
NEPEÑA	NEPEÑA	SAN JACINTO	TRAPECIO	TRAPECIO
1.685	0	0.815	16.01	4.07
1.665	0	0.787	15.584	3.404
1.618	0	0.768	14.972	3.347
1.593	0	0.756	13.985	3.19
1.598	0	0.74	12.677	3.413
1.661	0	0.738	12.546	3.205
1.505	0	0.724	11.34	3.185
1.688	0	0.753	10.284	2.795
1.74	0	0.82	10.32	2.168
1.633	0	0.834	9.087	1.693
1.722	0	0.921	9.449	1.425
2.078	0	1.009	9.414	1.242
2.059	0	0.997	9.434	0.972
2.097	0	0.977	9.032	0.763
2.226	0	1.058	8.606	0.341
2.288	0	1.095	9.002	0.291
2.392	0	1.081	9.291	0.562
2.431	0	1.138	9.525	0.754
2.422	0	1.178	10.649	0.774
2.447	0	1.198	11.154	0.795
2.415	0	1.165	11.191	0.889
2.411	0	1.232	11.003	0.561
2.306	0	1.226	11.218	0.585
2.295	0	1.252	10.611	0.538
2.206	0	1.249	10.084	0.543
2.068	0	1.236	10.781	0.74
2.056	0	1.184	10.834	0.823
1.998	0	1.167	10.811	0.556
2.04	0	1.144	11.676	0.573
1.895	0	1.142	11.895	0.517
1.993	0	1.101	11.835	0.486
2	0	1.154	11.738	0.906
1.995	0	1.115	12.2	0.99

2.017	0	1.078	12.897	1.017
1.783	0	1.124	13.935	1.061
1.459	0	1.133	15.999	1.269
1.493	0	1.331	18.806	1.545
1.67	0	1.724	19.676	2.186
1.693	0	1.857	20.862	2.704
1.673	0	1.818	21.874	3.36
1.653	0	1.762	22.022	3.776
1.629	0	1.744	22.279	4.06
1.579	0	1.616	22.836	4.474
1.496	0	1.504	22.632	4.662
1.346	0	1.379	22.725	4.715
1.301	0	1.26	22.054	4.434
1.495	0	1.178	22.01	4.407
1.563	0	1.083	21.366	4.513
1.685	0	0.815	16.01	4.07
1.665	0	0.787	15.584	3.404
1.618	0	0.768	14.972	3.347
1.593	0	0.756	13.985	3.19
1.598	0	0.74	12.677	3.413
1.661	0	0.738	12.546	3.205
1.505	0	0.724	11.34	3.185
1.688	0	0.753	10.284	2.795
1.74	0	0.82	10.32	2.168
1.633	0	0.834	9.087	1.693
1.722	0	0.921	9.449	1.425
2.078	0	1.009	9.414	1.242
2.059	0	0.997	9.434	0.972
2.097	0	0.977	9.032	0.763
2.226	0	1.058	8.606	0.341
2.288	0	1.095	9.002	0.291
2.392	0	1.081	9.291	0.562
2.431	0	1.138	9.525	0.754
2.422	0	1.178	10.649	0.774
2.447	0	1.198	11.154	0.795
2.415	0	1.165	11.191	0.889
2.411	0	1.232	11.003	0.561
2.306	0	1.226	11.218	0.585
2.295	0	1.252	10.611	0.538
2.206	0	1.249	10.084	0.543
2.068	0	1.236	10.781	0.74
2.056	0	1.184	10.834	0.823
1.998	0	1.167	10.811	0.556
2.04	0	1.144	11.676	0.573
1.895	0	1.142	11.895	0.517

1.993	0	1.101	11.835	0.486
2	0	1.154	11.738	0.906
1.995	0	1.115	12.2	0.99
2.017	0	1.078	12.897	1.017
1.783	0	1.124	13.935	1.061
1.459	0	1.133	15.999	1.269
1.493	0	1.331	18.806	1.545
1.67	0	1.724	19.676	2.186
1.693	0	1.857	20.862	2.704
1.673	0	1.818	21.874	3.36
1.653	0	1.762	22.022	3.776
1.629	0	1.744	22.279	4.06
1.579	0	1.616	22.836	4.474
1.496	0	1.504	22.632	4.662
1.346	0	1.379	22.725	4.715
1.301	0	1.26	22.054	4.434
1.495	0	1.178	22.01	4.407
1.563	0	1.083	21.366	4.513
1.685	0	0.815	11.238	11.089
1.665	0	0.787	11.238	10.686
1.618	0	0.768	11.238	10.246
1.593	0	0.756	11.238	10.426
1.598	0	0.74	11.238	9.92
1.661	0	0.738	11.238	10.158
1.505	0	0.724	11.238	10.049
1.688	0	0.753	11.238	9.678
1.74	0	0.82	11.238	9.168
1.633	0	0.834	11.238	8.54
1.722	0	0.921	11.238	8.462
2.078	0	1.009	11.238	8.339
2.059	0	0.997	11.238	7.919
2.097	0	0.977	11.238	7.232
2.226	0	1.058	11.238	5.907
2.288	0	1.095	11.238	7.044
2.392	0	1.081	11.238	7.387
2.431	0	1.138	11.238	7.683
2.422	0	1.178	11.238	7.354
2.447	0	1.198	11.238	7.414
2.415	0	1.165	11.238	6.736
2.411	0	1.232	11.238	6.11
2.306	0	1.226	11.238	5.539
2.295	0	1.252	11.238	3.953
2.206	0	1.249	11.238	4.156
2.068	0	1.236	11.238	3.654
2.056	0	1.184	11.238	3.409

1.998	0	1.167	11.238	3.518
2.04	0	1.144	11.238	3.851
1.895	0	1.142	11.238	3.613
1.993	0	1.101	11.238	3.906
2	0	1.154	11.238	3.212
1.995	0	1.115	11.238	3.696
2.017	0	1.078	11.238	4.211
1.783	0	1.124	11.238	5.196
1.459	0	1.133	11.238	6.836
1.493	0	1.331	11.238	7.796
1.67	0	1.724	11.238	7.924
1.693	0	1.857	11.238	8.806
1.673	0	1.818	11.238	9.032
1.653	0	1.762	11.238	8.787
1.629	0	1.744	11.238	8.231
1.579	0	1.616	11.238	7.626
1.496	0	1.504	11.238	6.665
1.346	0	1.379	11.238	5.843
1.301	0	1.26	11.238	5.018
1.495	0	1.178	11.238	4.33
1.563	0	1.083	11.238	4.014
1.487	0	1.891	11.238	3.743
1.479	0	1.867	11.238	3.441
1.452	0	1.765	11.238	3.097
1.471	0	1.757	11.238	2.91
1.464	0	1.755	11.238	2.6
1.465	0	1.739	11.238	2.186
1.568	0	1.737	11.238	1.86
1.56	0	1.75	11.238	1.678
1.659	0	1.792	11.238	0.976
1.644	0	1.88	11.238	1.074
1.752	0	1.948	11.238	0.913
1.858	0	2.08	11.238	0.993
1.884	0	2.236	11.238	0.703
1.807	0	2.142	11.238	0.769
1.899	0	2.223	11.238	0.401
1.988	0	2.254	11.238	-0.06
1.993	0	2.274	11.238	0.407
2.138	0	2.329	11.238	0.27
2.33	0	2.353	11.238	-0.132
2.509	0	2.36	11.238	0.309
2.631	0	2.41	11.238	0.126
2.699	0	2.454	11.238	0.757
2.697	0	2.435	11.238	1.152
2.667	0	2.417	11.238	0.362

2.617	0	2.4	11.238	-0.315
2.696	0	2.256	11.238	-0.502
2.561	0	2.131	11.238	-0.557
2.599	0	2.254	11.238	-0.019
2.797	0	2.278	11.238	0.585
2.813	0	2.281	11.238	1.685
2.771	0	2.248	11.238	2.699
2.623	0	2.226	11.238	2.817
2.676	0	1.88	11.238	2.895
2.566	0	1.695	11.238	4.379
2.26	0	1.693	11.238	5.876
1.867	0	1.829	11.238	8.085
1.878	0	2.223	11.238	9.947
2.11	0	2.454	11.238	10.413
2.089	0	2.349	11.238	10.983
2.05	0	2.36	11.238	11.16
2.008	0	2.241	11.238	10.648
1.894	0	2.179	11.238	10.674
1.933	0	2.104	11.238	11.366
1.836	0	1.919	11.238	10.172
1.7	0	1.798	11.238	9.455
1.626	0	1.618	11.238	8.92
1.765	0	1.462	11.238	8.796
1.713	0	1.383	11.238	8.465
1.487	0	1.891	11.238	7.473
1.479	0	1.867	11.238	7.147
1.452	0	1.765	11.238	5.594
1.471	0	1.757	11.238	5.69
1.464	0	1.755	11.238	4.245
1.465	0	1.739	11.238	3.453
1.568	0	1.737	11.238	2.562
1.56	0	1.75	11.238	2.22
1.659	0	1.792	11.238	2.445
1.644	0	1.88	11.238	2.444
1.752	0	1.948	11.238	2.314
1.858	0	2.08	11.238	1.819
1.884	0	2.236	11.238	0.564
1.807	0	2.142	11.238	-0.591
1.899	0	2.223	11.238	-0.739
1.988	0	2.254	11.238	-0.55
1.993	0	2.274	11.238	0.511
2.138	0	2.329	11.238	1.198
2.33	0	2.353	11.238	0.942
2.509	0	2.36	11.238	0.736
2.631	0	2.41	11.238	0.773

2.699	0	2.454	11.238	1.282
2.697	0	2.435	11.238	1.402
2.667	0	2.417	11.238	0.539
2.617	0	2.4	11.238	0.193
2.696	0	2.256	11.238	0.345
2.561	0	2.131	11.238	0.014
2.599	0	2.254	11.238	0.987
2.797	0	2.278	11.238	2.104
2.813	0	2.281	11.238	3.415
2.771	0	2.248	11.238	4.736
2.623	0	2.226	11.238	5.223
2.676	0	1.88	11.238	5.644
2.566	0	1.695	11.238	5.957
2.26	0	1.693	11.238	5.897
1.867	0	1.829	11.238	7.538
1.878	0	2.223	11.238	8.842
2.11	0	2.454	11.238	9.713
2.089	0	2.349	11.238	10.499
2.05	0	2.36	11.238	10.107
2.008	0	2.241	11.238	10.135
1.894	0	2.179	11.238	9.593
1.933	0	2.104	11.238	9.079
1.836	0	1.919	11.238	7.54
1.7	0	1.798	11.238	6.609
1.626	0	1.618	11.238	5.587
1.765	0	1.462	11.238	4.688
1.713	0	1.383	11.238	3.636
1.685	0	0.815	20.007	3.648
1.665	0	0.787	19.254	4.149
1.618	0	0.768	19.197	4.173
1.593	0	0.756	19.627	4.16
1.598	0	0.74	18.983	4.035
1.661	0	0.738	18.763	4.192
1.505	0	0.724	18.483	4.132
1.688	0	0.753	17.751	4.195
1.74	0	0.82	18.117	3.966
1.633	0	0.834	17.636	4.118
1.722	0	0.921	17.214	4.005
2.078	0	1.009	17.494	3.561
2.059	0	0.997	17.615	3.617
2.097	0	0.977	17.732	3.577
2.226	0	1.058	17.456	3.202
2.288	0	1.095	17.269	3.012
2.392	0	1.081	17.902	2.922
2.431	0	1.138	16.642	2.702

2.422	0	1.178	15.956	2.212
2.447	0	1.198	15.876	1.896
2.415	0	1.165	14.987	1.679
2.411	0	1.232	15.46	1.489
2.306	0	1.226	15.17	1.343
2.295	0	1.252	14.078	0.801
2.206	0	1.249	13.012	1.052
2.068	0	1.236	12.909	1.052
2.056	0	1.184	12.527	1.174
1.998	0	1.167	12.947	1.213
2.04	0	1.144	14.722	1.283
1.895	0	1.142	14.825	1.005
1.993	0	1.101	15.399	0.863
2	0	1.154	17.684	1.082
1.995	0	1.115	18.317	1.126
2.017	0	1.078	18.728	1.215
1.783	0	1.124	19.867	1.445
1.459	0	1.133	20.989	2.372
1.493	0	1.331	22.338	3.243
1.67	0	1.724	22.841	3.496
1.693	0	1.857	22.252	3.431
1.673	0	1.818	22.494	3.654
1.653	0	1.762	22.961	3.499
1.629	0	1.744	22.647	3.384
1.579	0	1.616	21.911	3.466
1.496	0	1.504	20.9	3.376
1.346	0	1.379	20.23	3.392
1.301	0	1.26	20	2.705
1.495	0	1.178	18.845	2.666
1.563	0	1.083	17.502	2.812
1.487	0	1.891	11.238	7.473
1.479	0	1.867	11.238	7.147
1.452	0	1.765	11.238	5.594
1.471	0	1.757	11.238	5.69
1.464	0	1.755	11.238	4.245
1.465	0	1.739	11.238	3.453
1.568	0	1.737	11.238	2.562
1.56	0	1.75	11.238	2.22
1.659	0	1.792	11.238	2.445
1.644	0	1.88	11.238	2.444
1.752	0	1.948	11.238	2.314
1.858	0	2.08	11.238	1.819
1.884	0	2.236	11.238	0.564
1.807	0	2.142	11.238	-0.591
1.899	0	2.223	11.238	-0.739

1.988	0	2.254	11.238	-0.55
1.993	0	2.274	11.238	0.511
2.138	0	2.329	11.238	1.198
2.33	0	2.353	11.238	0.942
2.509	0	2.36	11.238	0.736
2.631	0	2.41	11.238	0.773
2.699	0	2.454	11.238	1.282
2.697	0	2.435	11.238	1.402
2.667	0	2.417	11.238	0.539
2.617	0	2.4	11.238	0.193
2.696	0	2.256	11.238	0.345
2.561	0	2.131	11.238	0.014
2.599	0	2.254	11.238	0.987
2.797	0	2.278	11.238	2.104
2.813	0	2.281	11.238	3.415
2.771	0	2.248	11.238	4.736
2.623	0	2.226	11.238	5.223
2.676	0	1.88	11.238	5.644
2.566	0	1.695	11.238	5.957
2.26	0	1.693	11.238	5.897
1.867	0	1.829	11.238	7.538
1.878	0	2.223	11.238	8.842
2.11	0	2.454	11.238	9.713
2.089	0	2.349	11.238	10.499
2.05	0	2.36	11.238	10.107
2.008	0	2.241	11.238	10.135
1.894	0	2.179	11.238	9.593
1.933	0	2.104	11.238	9.079
1.836	0	1.919	11.238	7.54
1.7	0	1.798	11.238	6.609
1.626	0	1.618	11.238	5.587
1.765	0	1.462	11.238	4.688
1.713	0	1.383	11.238	3.636
1.487	0	1.891	11.238	5.859
1.479	0	1.867	11.238	5.341
1.452	0	1.765	11.238	4.16
1.471	0	1.757	11.238	3.336
1.464	0	1.755	11.238	2.719
1.465	0	1.739	11.238	2.479
1.568	0	1.737	11.238	2.252
1.56	0	1.75	11.238	2.02
1.659	0	1.792	11.238	2.108
1.644	0	1.88	11.238	2.283
1.752	0	1.948	11.238	1.802
1.858	0	2.08	11.238	1.316

1.884	0	2.236	11.238	0.378
1.807	0	2.142	11.238	-0.288
1.899	0	2.223	11.238	-0.234
1.988	0	2.254	11.238	0.177
1.993	0	2.274	11.238	1.207
2.138	0	2.329	11.238	1.99
2.33	0	2.353	11.238	1.217
2.509	0	2.36	11.238	1.781
2.631	0	2.41	11.238	1.739
2.699	0	2.454	11.238	2.1
2.697	0	2.435	11.238	2.504
2.667	0	2.417	11.238	2.017
2.617	0	2.4	11.238	2.116
2.696	0	2.256	11.238	3.268
2.561	0	2.131	11.238	3.721
2.599	0	2.254	11.238	4.202
2.797	0	2.278	11.238	4.626
2.813	0	2.281	11.238	4.628
2.771	0	2.248	11.238	4.483
2.623	0	2.226	11.238	5.152
2.676	0	1.88	11.238	6.47
2.566	0	1.695	11.238	7.25
2.26	0	1.693	11.238	7.446
1.867	0	1.829	11.238	8.966
1.878	0	2.223	11.238	10.003
2.11	0	2.454	11.238	9.568
2.089	0	2.349	11.238	9.326
2.05	0	2.36	11.238	9.711
2.008	0	2.241	11.238	9.649
1.894	0	2.179	11.238	9.74
1.933	0	2.104	11.238	9.652
1.836	0	1.919	11.238	8.442
1.7	0	1.798	11.238	8.76
1.626	0	1.618	11.238	8.391
1.765	0	1.462	11.238	8.373
1.713	0	1.383	11.238	7.259
1.487	0	1.891	11.238	6.98
1.479	0	1.867	11.238	6.639
1.452	0	1.765	11.238	5.381
1.471	0	1.757	11.238	4.925
1.464	0	1.755	11.238	4.009
1.465	0	1.739	11.238	3.536
1.568	0	1.737	11.238	2.506
1.56	0	1.75	11.238	1.557
1.659	0	1.792	11.238	0.445

1.644	0	1.88	11.238	-0.25
1.752	0	1.948	11.238	-0.705
1.858	0	2.08	11.238	-1.23
1.884	0	2.236	11.238	-4.898
1.807	0	2.142	11.238	-4.638
1.899	0	2.223	11.238	-4.312
1.988	0	2.254	11.238	-4.281
1.993	0	2.274	11.238	-2.442
2.138	0	2.329	11.238	-2.602
2.33	0	2.353	11.238	-2.659
2.509	0	2.36	11.238	-2.506
2.631	0	2.41	11.238	-2.318
2.699	0	2.454	11.238	-2.308
2.697	0	2.435	11.238	-2.338
2.667	0	2.417	11.238	-2.287
2.617	0	2.4	11.238	-2.453
2.696	0	2.256	11.238	-2.977
2.561	0	2.131	11.238	-3.238
2.599	0	2.254	11.238	-3.481
2.797	0	2.278	11.238	-3.512
2.813	0	2.281	11.238	-2.934
2.771	0	2.248	11.238	-2.691
2.623	0	2.226	11.238	-2.43
2.676	0	1.88	11.238	-2.55
2.566	0	1.695	11.238	-1.471
2.26	0	1.693	11.238	-0.852
1.867	0	1.829	11.238	1.233
1.878	0	2.223	11.238	3.014
2.11	0	2.454	11.238	3.337
2.089	0	2.349	11.238	4.377
2.05	0	2.36	11.238	5.154
2.008	0	2.241	11.238	6.172
1.894	0	2.179	11.238	6.451
1.933	0	2.104	11.238	7.574
1.836	0	1.919	11.238	7.657
1.7	0	1.798	11.238	7.626
1.626	0	1.618	11.238	7.333
1.765	0	1.462	11.238	7.644
1.713	0	1.383	11.238	6.181
1.487	0	1.891	11.238	5.799
1.479	0	1.867	11.238	4.93
1.452	0	1.765	11.238	3.909
1.471	0	1.757	11.238	3.24
1.464	0	1.755	11.238	2.902
1.465	0	1.739	11.238	2.324

1.568	0	1.737	11.238	2.026
1.56	0	1.75	11.238	1.893
1.659	0	1.792	11.238	1.698
1.644	0	1.88	11.238	1.925
1.752	0	1.948	11.238	2.008
1.858	0	2.08	11.238	2.254
1.884	0	2.236	11.238	2.157
1.807	0	2.142	11.238	2.014
1.899	0	2.223	11.238	1.94
1.988	0	2.254	11.238	1.864
1.993	0	2.274	11.238	2.112
2.138	0	2.329	11.238	1.664
2.33	0	2.353	11.238	1.68
2.509	0	2.36	11.238	1.714
2.631	0	2.41	11.238	1.701
2.699	0	2.454	11.238	1.887
2.697	0	2.435	11.238	1.736
2.667	0	2.417	11.238	1.3
2.617	0	2.4	11.238	-0.262
2.696	0	2.256	11.238	-0.692
2.561	0	2.131	11.238	-0.838
2.599	0	2.254	11.238	-1.085
2.797	0	2.278	11.238	-0.768
2.813	0	2.281	11.238	-1.293
2.771	0	2.248	11.238	-1.236
2.623	0	2.226	11.238	-1.129
2.676	0	1.88	11.238	-1.029
2.566	0	1.695	11.238	-0.163
2.26	0	1.693	11.238	0.425
1.867	0	1.829	11.238	1.693
1.878	0	2.223	11.238	2.732
2.11	0	2.454	11.238	2.76
2.089	0	2.349	11.238	2.968
2.05	0	2.36	11.238	2.873
2.008	0	2.241	11.238	3.008
1.894	0	2.179	11.238	2.606
1.933	0	2.104	11.238	2.436
1.836	0	1.919	11.238	2.3
1.7	0	1.798	11.238	1.825
1.626	0	1.618	11.238	1.51
1.765	0	1.462	11.238	0.858
1.713	0	1.383	11.238	0.839
1.476	0	1.908	11.238	0.441
1.495	0	1.862	11.238	0.155
1.576	0	1.836	11.238	-0.118

1.519	0	1.823	11.238	-0.407
1.594	0	1.818	11.238	-0.41
1.564	0	1.814	11.238	-0.317
1.59	0	1.821	11.238	0.32
1.556	0	1.849	11.238	0.029
1.574	0	1.915	11.238	-0.274
1.557	0	2.021	11.238	-0.111
1.494	0	2.089	11.238	-0.271
1.83	0	2.274	11.238	-0.237
1.814	0	2.241	11.238	-0.625
1.816	0	2.239	11.238	-0.565
1.855	0	2.234	11.238	-0.568
1.996	0	2.175	11.238	0.113
2.167	0	2.215	11.238	0.854
2.203	0	2.217	11.238	0.514
2.16	0	2.241	11.238	0.665
2.396	0	2.314	11.238	1.083
2.587	0	2.291	11.238	1.631
2.511	0	2.362	11.238	2.229
2.479	0	2.285	11.238	1.968
2.484	0	2.287	11.238	2.019
2.393	0	2.248	11.238	1.08
2.323	0	2.179	11.238	0.97
2.569	0	2.221	11.238	0.908
2.546	0	2.259	11.238	0.985
2.576	0	2.259	11.238	1.428
2.499	0	2.278	11.238	1.634
2.486	0	2.247	11.238	1.231
2.423	0	2.247	11.238	1.198
2.26	0	2.21	11.238	1.538
1.999	0	2.164	11.238	2.123
1.693	0	2.173	11.238	1.68
1.549	0	2.285	11.238	2.719
1.498	0	2.73	11.238	2.801
1.78	0	3.007	11.238	3.174
1.911	0	2.93	11.238	3.299
1.902	0	2.875	11.238	3.308
1.864	0	2.871	11.238	3.263
1.783	0	2.796	11.238	3.635
1.821	0	2.661	11.238	4.207
1.767	0	2.443	11.238	3.395
1.725	0	2.234	11.238	2.924
1.636	0	2.098	11.238	1.968
1.59	0	1.977	11.238	1.171
1.516	0	1.886	11.238	0.358

1.315	0	1.68	11.238	-0.16
1.323	0	1.653	11.238	-1.047
1.308	0	1.625	11.238	-1.76
1.295	0	1.636	11.238	-2.13
1.268	0	1.616	11.238	-2.723
1.285	0	1.603	11.238	-3.282
1.346	0	1.596	11.238	-4.185
1.325	0	1.664	11.238	-4.211
1.37	0	1.711	11.238	-4.228
1.28	0	1.825	11.238	-3.856
1.392	0	1.887	11.238	-3.665
1.583	0	1.997	11.238	-3.398
1.653	0	1.911	11.238	-3.649
1.767	0	1.851	11.238	-3.676
1.963	0	1.832	11.238	-3.734
2.136	0	1.878	11.238	-3.508
2.203	0	1.968	11.238	-2.672
2.225	0	2.127	11.238	-2.161
2.293	0	2.133	11.238	-1.869
2.343	0	2.164	11.238	-1.435
2.417	0	1.92	11.238	-1.389
2.368	0	1.97	11.238	-1.042
2.365	0	1.992	11.238	-0.909
2.311	0	1.942	11.238	-1.179
2.334	0	1.88	11.238	-1.598
2.116	0	1.884	11.238	-1.456
2.207	0	1.948	11.238	-0.887
2.155	0	1.984	11.238	-0.1
2.325	0	2.113	11.238	0.157
2.12	0	2.168	11.238	1.084
2.094	0	2.146	11.238	1.916
2.04	0	2.109	11.238	2.535
2.034	0	2.113	11.238	3.721
1.966	0	2.093	11.238	4.999
1.814	0	2.071	11.238	5.625
1.678	0	2.133	11.238	6.561
1.502	0	2.642	11.238	7.462
1.6	0	2.886	11.238	7.326
1.658	0	2.838	11.238	7.473
1.757	0	2.842	11.238	7.12
1.736	0	2.771	11.238	6.767
1.695	0	2.538	11.238	6.62
1.741	0	2.446	11.238	5.854
1.587	0	2.323	11.238	4.893
1.425	0	2.116	11.238	4.392

1.491	0	1.97	11.238	4.192
1.503	0	1.842	11.238	3.287
1.485	0	1.744	11.238	2.244
1.315	0	1.68	11.238	-0.16
1.323	0	1.653	11.238	-1.047
1.308	0	1.625	11.238	-1.76
1.295	0	1.636	11.238	-2.13
1.268	0	1.616	11.238	-2.723
1.285	0	1.603	11.238	-3.282
1.346	0	1.596	11.238	-4.185
1.325	0	1.664	11.238	-4.211
1.37	0	1.711	11.238	-4.228
1.28	0	1.825	11.238	-3.856
1.392	0	1.887	11.238	-3.665
1.583	0	1.997	11.238	-3.398
1.653	0	1.911	11.238	-3.649
1.767	0	1.851	11.238	-3.676
1.963	0	1.832	11.238	-3.734
2.136	0	1.878	11.238	-3.508
2.203	0	1.968	11.238	-2.672
2.225	0	2.127	11.238	-2.161
2.293	0	2.133	11.238	-1.869
2.343	0	2.164	11.238	-1.435
2.417	0	1.92	11.238	-1.389
2.368	0	1.97	11.238	-1.042
2.365	0	1.992	11.238	-0.909
2.311	0	1.942	11.238	-1.179
2.334	0	1.88	11.238	-1.598
2.116	0	1.884	11.238	-1.456
2.207	0	1.948	11.238	-0.887
2.155	0	1.984	11.238	-0.1
2.325	0	2.113	11.238	0.157
2.12	0	2.168	11.238	1.084
2.094	0	2.146	11.238	1.916
2.04	0	2.109	11.238	2.535
2.034	0	2.113	11.238	3.721
1.966	0	2.093	11.238	4.999
1.814	0	2.071	11.238	5.625
1.678	0	2.133	11.238	6.561
1.502	0	2.642	11.238	7.462
1.6	0	2.886	11.238	7.326
1.658	0	2.838	11.238	7.473
1.757	0	2.842	11.238	7.12
1.736	0	2.771	11.238	6.767
1.695	0	2.538	11.238	6.62

1.741	0	2.446	11.238	5.854
1.587	0	2.323	11.238	4.893
1.425	0	2.116	11.238	4.392
1.491	0	1.97	11.238	4.192
1.503	0	1.842	11.238	3.287
1.485	0	1.744	11.238	2.244
1.487	0	1.891	11.238	0.011
1.479	0	1.867	11.238	-0.716
1.452	0	1.765	11.238	-2.723
1.471	0	1.757	11.238	-3.14
1.464	0	1.755	11.238	-3.481
1.465	0	1.739	11.238	-3.407
1.568	0	1.737	11.238	-3.321
1.56	0	1.75	11.238	-3.543
1.659	0	1.792	11.238	-3.606
1.644	0	1.88	11.238	-3.784
1.752	0	1.948	11.238	-3.549
1.858	0	2.08	11.238	-3.361
1.884	0	2.236	11.238	-3.669
1.807	0	2.142	11.238	-3.933
1.899	0	2.223	11.238	-3.737
1.988	0	2.254	11.238	-3.233
1.993	0	2.274	11.238	-2.908
2.138	0	2.329	11.238	-2.221
2.33	0	2.353	11.238	-1.906
2.509	0	2.36	11.238	-1.578
2.631	0	2.41	11.238	-1.683
2.699	0	2.454	11.238	-1.502
2.697	0	2.435	11.238	-1.164
2.667	0	2.417	11.238	-1.67
2.617	0	2.4	11.238	-1.738
2.696	0	2.256	11.238	-2.019
2.561	0	2.131	11.238	-1.323
2.599	0	2.254	11.238	-0.829
2.797	0	2.278	11.238	-0.517
2.813	0	2.281	11.238	0.671
2.771	0	2.248	11.238	1.485
2.623	0	2.226	11.238	3.52
2.676	0	1.88	11.238	4.441
2.566	0	1.695	11.238	5.163
2.26	0	1.693	11.238	6.169
1.867	0	1.829	11.238	8.233
1.878	0	2.223	11.238	10.108
2.11	0	2.454	11.238	10.924
2.089	0	2.349	11.238	10.797

2.05	0	2.36	11.238	10.561
2.008	0	2.241	11.238	10.552
1.894	0	2.179	11.238	9.62
1.933	0	2.104	11.238	10.177
1.836	0	1.919	11.238	10.051
1.7	0	1.798	11.238	8.872
1.626	0	1.618	11.238	8.324
1.765	0	1.462	11.238	7.335
1.713	0	1.383	11.238	6.142
1.487	0	1.891	11.238	5.859
1.479	0	1.867	11.238	5.341
1.452	0	1.765	11.238	4.16
1.471	0	1.757	11.238	3.344
1.464	0	1.755	11.238	2.719
1.465	0	1.739	11.238	2.479
1.568	0	1.737	11.238	2.252
1.56	0	1.75	11.238	2.02
1.659	0	1.792	11.238	2.108
1.644	0	1.88	11.238	2.283
1.752	0	1.948	11.238	1.802
1.858	0	2.08	11.238	1.316
1.884	0	2.236	11.238	0.378
1.807	0	2.142	11.238	-0.288
1.899	0	2.223	11.238	-0.234
1.988	0	2.254	11.238	0.177
1.993	0	2.274	11.238	1.207
2.138	0	2.329	11.238	1.99
2.33	0	2.353	11.238	1.217
2.509	0	2.36	11.238	1.781
2.631	0	2.41	11.238	1.739
2.699	0	2.454	11.238	2.1
2.697	0	2.435	11.238	2.504
2.667	0	2.417	11.238	2.017
2.617	0	2.4	11.238	2.116
2.696	0	2.256	11.238	3.268
2.561	0	2.131	11.238	3.721
2.599	0	2.254	11.238	4.202
2.797	0	2.278	11.238	4.626
2.813	0	2.281	11.238	4.628
2.771	0	2.248	11.238	4.483
2.623	0	2.226	11.238	5.152
2.676	0	1.88	11.238	6.47
2.566	0	1.695	11.238	7.25
2.26	0	1.693	11.238	7.446
1.867	0	1.829	11.238	8.966

1.878	0	2.223	11.238	10.003
2.11	0	2.454	11.238	9.568
2.089	0	2.349	11.238	9.326
2.05	0	2.36	11.238	9.711
2.008	0	2.241	11.238	9.649
1.894	0	2.179	11.238	9.74
1.933	0	2.104	11.238	9.652
1.836	0	1.919	11.238	8.442
1.7	0	1.798	11.238	8.76
1.626	0	1.618	11.238	8.391
1.765	0	1.462	11.238	8.373
1.713	0	1.383	11.238	7.259
1.487	0	1.891	11.238	5.859
1.479	0	1.867	11.238	5.341
1.452	0	1.765	11.238	4.16
1.471	0	1.757	11.238	3.336
1.464	0	1.755	11.238	2.719
1.465	0	1.739	11.238	2.479
1.568	0	1.737	11.238	2.252
1.56	0	1.75	11.238	2.02
1.659	0	1.792	11.238	2.108
1.644	0	1.88	11.238	2.283
1.752	0	1.948	11.238	1.802
1.858	0	2.08	11.238	1.316
1.884	0	2.236	11.238	0.378
1.807	0	2.142	11.238	-0.288
1.899	0	2.223	11.238	-0.234
1.988	0	2.254	11.238	0.177
1.993	0	2.274	11.238	1.207
2.138	0	2.329	11.238	1.99
2.33	0	2.353	11.238	1.217
2.509	0	2.36	11.238	1.781
2.631	0	2.41	11.238	1.739
2.699	0	2.454	11.238	2.1
2.697	0	2.435	11.238	2.504
2.667	0	2.417	11.238	2.017
2.617	0	2.4	11.238	2.116
2.696	0	2.256	11.238	3.268
2.561	0	2.131	11.238	3.721
2.599	0	2.254	11.238	4.202
2.797	0	2.278	11.238	4.626
2.813	0	2.281	11.238	4.628
2.771	0	2.248	11.238	4.483
2.623	0	2.226	11.238	5.152
2.676	0	1.88	11.238	6.47

2.566	0	1.695	11.238	7.25
2.26	0	1.693	11.238	7.446
1.867	0	1.829	11.238	8.966
1.878	0	2.223	11.238	10.003
2.11	0	2.454	11.238	9.568
2.089	0	2.349	11.238	9.326
2.05	0	2.36	11.238	9.711
2.008	0	2.241	11.238	9.649
1.894	0	2.179	11.238	9.74
1.933	0	2.104	11.238	9.652
1.836	0	1.919	11.238	8.442
1.7	0	1.798	11.238	8.76
1.626	0	1.618	11.238	8.391
1.765	0	1.462	11.238	8.373
1.713	0	1.383	11.238	7.259
1.487	0	1.891	11.238	-3.297
1.479	0	1.867	11.238	-3.485
1.452	0	1.765	11.238	-3.511
1.471	0	1.757	11.238	-3.781
1.464	0	1.755	11.238	-4.178
1.465	0	1.739	11.238	-4.084
1.568	0	1.737	11.238	-4.248
1.56	0	1.75	11.238	-4.23
1.659	0	1.792	11.238	-3.942
1.644	0	1.88	11.238	-3.764
1.752	0	1.948	11.238	-3.51
1.858	0	2.08	11.238	-3.706
1.884	0	2.236	11.238	-3.763
1.807	0	2.142	11.238	-3.76
1.899	0	2.223	11.238	-3.756
1.988	0	2.254	11.238	-3.29
1.993	0	2.274	11.238	-2.883
2.138	0	2.329	11.238	-2.544
2.33	0	2.353	11.238	-1.775
2.509	0	2.36	11.238	-2.05
2.631	0	2.41	11.238	-2.034
2.699	0	2.454	11.238	-1.712
2.697	0	2.435	11.238	-0.585
2.667	0	2.417	11.238	-1.305
2.617	0	2.4	11.238	-1.287
2.696	0	2.256	11.238	-1.288
2.561	0	2.131	11.238	-0.615
2.599	0	2.254	11.238	-0.024
2.797	0	2.278	11.238	0.149
2.813	0	2.281	11.238	0.649

2.771	0	2.248	11.238	1.484
2.623	0	2.226	11.238	1.674
2.676	0	1.88	11.238	1.792
2.566	0	1.695	11.238	-1.669
2.26	0	1.693	11.238	-0.865
1.867	0	1.829	11.238	-0.802
1.878	0	2.223	11.238	-0.437
2.11	0	2.454	11.238	-0.834
2.089	0	2.349	11.238	-0.119
2.05	0	2.36	11.238	0.265
2.008	0	2.241	11.238	0.174
1.894	0	2.179	11.238	-0.552
1.933	0	2.104	11.238	-1.079
1.836	0	1.919	11.238	-1.907
1.7	0	1.798	11.238	-2.487
1.626	0	1.618	11.238	-2.754
1.765	0	1.462	11.238	-2.937
1.713	0	1.383	11.238	-3.119
1.487	0	1.891	11.238	-3.484
1.479	0	1.867	11.238	-3.322
1.452	0	1.765	11.238	-2.628
1.471	0	1.757	11.238	-2.984
1.464	0	1.755	11.238	-3.055
1.465	0	1.739	11.238	-3.117
1.568	0	1.737	11.238	-3.091
1.56	0	1.75	11.238	-2.908
1.659	0	1.792	11.238	-2.691
1.644	0	1.88	11.238	-2.421
1.752	0	1.948	11.238	-2.452
1.858	0	2.08	11.238	-2.039
1.884	0	2.236	11.238	-1.665
1.807	0	2.142	11.238	-1.881
1.899	0	2.223	11.238	-1.467
1.988	0	2.254	11.238	-1.586
1.993	0	2.274	11.238	-0.578
2.138	0	2.329	11.238	-0.074
2.33	0	2.353	11.238	0.274
2.509	0	2.36	11.238	0.332
2.631	0	2.41	11.238	0.839
2.699	0	2.454	11.238	1.261
2.697	0	2.435	11.238	1.693
2.667	0	2.417	11.238	1.297
2.617	0	2.4	11.238	0.975
2.696	0	2.256	11.238	0.69
2.561	0	2.131	11.238	0.613

2.599	0	2.254	11.238	1.325
2.797	0	2.278	11.238	1.75
2.813	0	2.281	11.238	1.87
2.771	0	2.248	11.238	2.352
2.623	0	2.226	11.238	2.267
2.676	0	1.88	11.238	2.199
2.566	0	1.695	11.238	2.177
2.26	0	1.693	11.238	3.12
1.867	0	1.829	11.238	3.659
1.878	0	2.223	11.238	4.171
2.11	0	2.454	11.238	4.018
2.089	0	2.349	11.238	3.723
2.05	0	2.36	11.238	3.768
2.008	0	2.241	11.238	3.558
1.894	0	2.179	11.238	3.154
1.933	0	2.104	11.238	2.91
1.836	0	1.919	11.238	2.336
1.7	0	1.798	11.238	1.446
1.626	0	1.618	11.238	0.747
1.765	0	1.462	11.238	0.163
1.713	0	1.383	11.238	-0.781
1.487	0	1.891	11.238	-3.484
1.479	0	1.867	11.238	-3.322
1.452	0	1.765	11.238	-2.628
1.471	0	1.757	11.238	-2.984
1.464	0	1.755	11.238	-3.055
1.465	0	1.739	11.238	-3.117
1.568	0	1.737	11.238	-3.091
1.56	0	1.75	11.238	-2.908
1.659	0	1.792	11.238	-2.691
1.644	0	1.88	11.238	-2.421
1.752	0	1.948	11.238	-2.452
1.858	0	2.08	11.238	-2.039
1.884	0	2.236	11.238	-1.665
1.807	0	2.142	11.238	-1.881
1.899	0	2.223	11.238	-1.467
1.988	0	2.254	11.238	-1.586
1.993	0	2.274	11.238	-0.578
2.138	0	2.329	11.238	-0.074
2.33	0	2.353	11.238	0.274
2.509	0	2.36	11.238	0.332
2.631	0	2.41	11.238	0.839
2.699	0	2.454	11.238	1.261
2.697	0	2.435	11.238	1.693
2.667	0	2.417	11.238	1.297

2.617	0	2.4	11.238	0.975
2.696	0	2.256	11.238	0.69
2.561	0	2.131	11.238	0.613
2.599	0	2.254	11.238	1.325
2.797	0	2.278	11.238	1.75
2.813	0	2.281	11.238	1.87
2.771	0	2.248	11.238	2.352
2.623	0	2.226	11.238	2.267
2.676	0	1.88	11.238	2.199
2.566	0	1.695	11.238	2.177
2.26	0	1.693	11.238	3.12
1.867	0	1.829	11.238	3.659
1.878	0	2.223	11.238	4.171
2.11	0	2.454	11.238	4.018
2.089	0	2.349	11.238	3.723
2.05	0	2.36	11.238	3.768
2.008	0	2.241	11.238	3.558
1.894	0	2.179	11.238	3.154
1.933	0	2.104	11.238	2.91
1.836	0	1.919	11.238	2.336
1.7	0	1.798	11.238	1.446
1.626	0	1.618	11.238	0.747
1.765	0	1.462	11.238	0.163
1.713	0	1.383	11.238	-0.781
1.871	0	1.578	7.156	-1.624
1.782	0	1.55	6.778	-2.025
1.915	0	1.525	6.566	-2.741
1.911	0	1.517	6.359	-2.857
1.894	0	1.503	6.242	-3.252
1.768	0	1.501	6.175	-3.248
1.738	0	1.512	6.111	-3.181
1.798	0	1.521	6.247	-3.125
1.877	0	1.592	6.194	-2.95
1.952	0	1.719	6.226	-3.108
2.056	0	1.796	6.48	-2.76
2.165	0	1.988	6.578	-2.561
2.133	0	1.86	6.331	-2.531
2.157	0	1.986	6.398	-2.635
2.275	0	2.01	6.821	-2.535
2.785	0	1.897	7.142	-1.959
2.928	0	1.937	6.627	-1.427
3.066	0	2.074	6.808	-0.805
3.238	0	2.063	7.014	-0.828
3.299	0	2.107	7.076	-0.798
3.304	0	2.148	7.432	-0.916

3.239	0	2.192	7.918	-0.782
3.281	0	2.208	7.935	-0.254
3.233	0	2.23	7.639	-0.835
3.209	0	2.159	7.275	-0.994
3.231	0	2.1	7.235	-1.385
3.214	0	2.149	6.522	-1.29
3.229	0	2.122	6.815	-0.506
3.327	0	2.177	7.055	-0.364
3.313	0	2.16	7.111	0.101
3.337	0	2.17	7.085	0.301
3.423	0	2.151	8.051	0.215
3.168	0	2.124	9.213	0.371
2.892	0	2.111	9.059	0.558
2.505	0	2.179	8.824	0.755
2.262	0	2.356	8.66	1.188
2.331	0	2.802	10.13	1.758
2.407	0	2.945	10.748	1.98
2.263	0	2.842	10.775	1.775
2.446	0	2.749	10.598	1.649
2.367	0	2.518	10.342	1.448
2.304	0	2.406	10.078	1.082
2.224	0	2.276	9.723	0.978
2.184	0	2.17	9.237	0.044
1.798	0	1.984	8.741	-0.775
1.744	0	1.864	8.024	-1.269
1.899	0	1.759	7.857	-1.653
1.913	0	1.635	7.21	-1.656
1.871	0	1.578	7.156	-2.024
1.782	0	1.55	6.778	-2.088
1.915	0	1.525	6.566	-2.03
1.911	0	1.517	6.359	-1.793
1.894	0	1.503	6.242	-1.847
1.768	0	1.501	6.175	-1.644
1.738	0	1.512	6.111	-1.027
1.798	0	1.521	6.247	-1.196
1.877	0	1.592	6.194	-1.05
1.952	0	1.719	6.226	-0.953
2.056	0	1.796	6.48	-1.049
2.165	0	1.988	6.578	-1.372
2.133	0	1.86	6.331	-1.167
2.157	0	1.986	6.398	-1.178
2.275	0	2.01	6.821	-1.268
2.785	0	1.897	7.142	-1.105
2.928	0	1.937	6.627	-0.678
3.066	0	2.074	6.808	-0.4

3.238	0	2.063	7.014	-0.088
3.299	0	2.107	7.076	-0.057
3.304	0	2.148	7.432	0.325
3.239	0	2.192	7.918	0.088
3.281	0	2.208	7.935	0.36
3.233	0	2.23	7.639	0.325
3.209	0	2.159	7.275	-0.314
3.231	0	2.1	7.235	-0.598
3.214	0	2.149	6.522	-0.712
3.229	0	2.122	6.815	0.231
3.327	0	2.177	7.055	0.188
3.313	0	2.16	7.111	0.5
3.337	0	2.17	7.085	0.207
3.423	0	2.151	8.051	0.365
3.168	0	2.124	9.213	0.206
2.892	0	2.111	9.059	0.474
2.505	0	2.179	8.824	0.668
2.262	0	2.356	8.66	1.917
2.331	0	2.802	10.13	2.262
2.407	0	2.945	10.748	2.42
2.263	0	2.842	10.775	2.314
2.446	0	2.749	10.598	2.72
2.367	0	2.518	10.342	3
2.304	0	2.406	10.078	3.081
2.224	0	2.276	9.723	2.94
2.184	0	2.17	9.237	2.884
1.798	0	1.984	8.741	2.186
1.744	0	1.864	8.024	1.872
1.899	0	1.759	7.857	1.709
1.913	0	1.635	7.21	1.756
1.751	0	1.693	6.53	1.066
1.718	0	1.647	6.255	0.433
1.676	0	1.627	6.004	0.572
1.66	0	1.602	5.833	0.023
1.645	0	1.583	5.716	0.294
1.634	0	1.572	5.674	0.742
1.663	0	1.567	5.596	0.615
1.718	0	1.572	5.647	0.801
1.77	0	1.583	5.608	0.284
1.828	0	1.629	5.553	0.15
1.952	0	1.693	5.526	-0.25
2.078	0	1.906	5.562	-0.77
2.012	0	1.787	4.937	-1.566
2.065	0	1.867	4.928	-1.795
2.123	0	2.056	5.416	-2.164

2.203	0	2.1	5.872	-1.608
2.191	0	2.131	6.102	-1.555
2.314	0	2.149	6.454	-1.364
2.402	0	2.135	6.702	-1.039
2.48	0	2.179	7.16	-1.071
2.511	0	2.212	7.474	-0.879
2.56	0	2.006	7.74	-0.683
2.524	0	1.887	8.009	-0.201
2.544	0	1.842	8.156	-0.149
2.502	0	1.818	8.044	-0.505
2.49	0	1.761	7.918	-0.809
2.51	0	1.724	7.645	-0.768
2.557	0	1.851	7.583	-1.189
2.345	0	1.897	7.494	-1.133
2.439	0	1.873	7.601	-0.968
2.339	0	1.909	7.709	-0.574
2.257	0	2.049	7.723	-0.915
2.213	0	1.931	7.825	-0.855
2.129	0	1.9	7.588	-0.853
2.019	0	1.946	7.516	-0.946
1.881	0	2.047	7.29	-0.207
1.764	0	2.52	8.704	0.777
1.866	0	2.714	9.399	0.562
1.883	0	2.743	9.455	0.383
1.711	0	2.501	9.42	0.252
1.627	0	2.377	9.353	0.17
1.621	0	2.171	9.157	-0.219
1.767	0	2.109	8.826	-0.453
1.695	0	1.999	8.495	-0.741
1.604	0	1.897	8.067	-1.36
1.535	0	1.814	7.591	-1.604
1.536	0	1.732	7.261	-1.833
1.49	0	1.653	7.128	-2.601
1.645	0	1.583	5.5	2.871
1.634	0	1.572	5.5	3.171
1.663	0	1.567	5	3.523
1.718	0	1.572	5	3.78
1.77	0	1.583	5	3.767
1.828	0	1.629	5.553	4.017
1.952	0	1.693	5.526	4.285
2.078	0	1.572	5.647	3.795
2.012	0	1.583	5.608	3.412
1.828	0	1.629	5.553	3.166
1.952	0	1.693	5.526	3.051
2.078	0	1.906	5.562	3.361

2.012	0	1.787	4.937	3.734
2.065	0	1.867	4.928	3.781
2.123	0	2.056	5.416	4.039
2.203	0	2.1	5.872	3.924
2.191	0	2.131	6.102	4.391
2.314	0	2.149	6.454	3.943
2.402	0	2.135	6.702	3.834
2.48	0	2.179	7.16	3.296
2.511	0	2.212	7.474	3.245
2.56	0	2.006	7.74	3.024
2.524	0	1.887	8.009	2.931
2.544	0	1.842	8.156	2.919
2.502	0	1.818	8.044	2.927
2.49	0	1.761	7.918	3.038
2.51	0	1.724	7.645	3.121
2.557	0	1.851	7.583	2.85
2.345	0	1.897	7.494	3.024
2.439	0	1.873	7.601	2.876
2.339	0	1.909	7.709	2.837
2.257	0	2.049	7.723	2.983
2.213	0	1.931	7.825	2.673
2.129	0	1.9	7.588	2.611
2.019	0	1.946	7.516	2.391
1.881	0	2.047	7.29	1.531
1.764	0	2.52	8.704	0.407
1.866	0	2.714	9.399	0.218
1.883	0	2.743	9.455	0.161
1.711	0	2.501	9.42	-0.197
1.627	0	2.377	9.353	-0.115
1.621	0	2.171	9.157	-0.106
1.767	0	2.109	8.826	-0.14
1.695	0	1.999	8.495	-0.199
1.604	0	1.897	8.067	0.048
1.535	0	1.814	7.591	0.188
1.536	0	1.732	7.261	0.635
1.49	0	1.653	7.128	0.873
1.645	0	1.583	5.5	2.871
1.634	0	1.572	5.5	3.171
1.663	0	1.567	5	3.523
1.718	0	1.572	5	3.78
1.77	0	1.583	5	3.767
1.828	0	1.629	5.553	4.017
1.952	0	1.693	5.526	4.285
2.078	0	1.572	5.647	3.795
2.012	0	1.583	5.608	3.412

1.828	0	1.629	5.553	3.166
1.952	0	1.693	5.526	3.051
2.078	0	1.906	5.562	3.361
2.012	0	1.787	4.937	3.734
2.065	0	1.867	4.928	3.781
2.123	0	2.056	5.416	4.039
2.203	0	2.1	5.872	3.924
2.191	0	2.131	6.102	4.391
2.314	0	2.149	6.454	3.943
2.402	0	2.135	6.702	3.834
2.48	0	2.179	7.16	3.296
2.511	0	2.212	7.474	3.245
2.56	0	2.006	7.74	3.024
2.524	0	1.887	8.009	2.931
2.544	0	1.842	8.156	2.919
2.502	0	1.818	8.044	2.927
2.49	0	1.761	7.918	3.038
2.51	0	1.724	7.645	3.121
2.557	0	1.851	7.583	2.85
2.345	0	1.897	7.494	3.024
2.439	0	1.873	7.601	2.876
2.339	0	1.909	7.709	2.837
2.257	0	2.049	7.723	2.983
2.213	0	1.931	7.825	2.673
2.129	0	1.9	7.588	2.611
2.019	0	1.946	7.516	2.391
1.881	0	2.047	7.29	1.531
1.764	0	2.52	8.704	0.407
1.866	0	2.714	9.399	0.218
1.883	0	2.743	9.455	0.161
1.711	0	2.501	9.42	-0.197
1.627	0	2.377	9.353	-0.115
1.621	0	2.171	9.157	-0.106
1.767	0	2.109	8.826	-0.14
1.695	0	1.999	8.495	-0.199
1.604	0	1.897	8.067	0.048
1.535	0	1.814	7.591	0.188
1.536	0	1.732	7.261	0.635
1.49	0	1.653	7.128	0.873
1.645	0	1.583	5.5	2.871
1.634	0	1.572	5.5	3.171
1.663	0	1.567	5	3.523
1.718	0	1.572	5	3.78
1.77	0	1.583	5	3.767
1.828	0	1.629	5.553	4.017

1.952	0	1.693	5.526	4.285
2.078	0	1.572	5.647	3.795
2.012	0	1.583	5.608	3.412
1.828	0	1.629	5.553	3.166
1.952	0	1.693	5.526	3.051
2.078	0	1.906	5.562	3.361
2.012	0	1.787	4.937	3.734
2.065	0	1.867	4.928	3.781
2.123	0	2.056	5.416	4.039
2.203	0	2.1	5.872	3.924
2.191	0	2.131	6.102	4.391
2.314	0	2.149	6.454	3.943
2.402	0	2.135	6.702	3.834
2.48	0	2.179	7.16	3.296
2.511	0	2.212	7.474	3.245
2.56	0	2.006	7.74	3.024
2.524	0	1.887	8.009	2.931
2.544	0	1.842	8.156	2.919
2.502	0	1.818	8.044	2.927
2.49	0	1.761	7.918	3.038
2.51	0	1.724	7.645	3.121
2.557	0	1.851	7.583	2.85
2.345	0	1.897	7.494	3.024
2.439	0	1.873	7.601	2.876
2.339	0	1.909	7.709	2.837
2.257	0	2.049	7.723	2.983
2.213	0	1.931	7.825	2.673
2.129	0	1.9	7.588	2.611
2.019	0	1.946	7.516	2.391
1.881	0	2.047	7.29	1.531
1.764	0	2.52	8.704	0.407
1.866	0	2.714	9.399	0.218
1.883	0	2.743	9.455	0.161
1.711	0	2.501	9.42	-0.197
1.627	0	2.377	9.353	-0.115
1.621	0	2.171	9.157	-0.106
1.767	0	2.109	8.826	-0.14
1.695	0	1.999	8.495	-0.199
1.604	0	1.897	8.067	0.048
1.535	0	1.814	7.591	0.188
1.536	0	1.732	7.261	0.635
1.49	0	1.653	7.128	0.873
1.645	0	1.583	5.5	2.871
1.634	0	1.572	5.5	3.171
1.663	0	1.567	5	3.523

1.718	0	1.572	5	3.78
1.77	0	1.583	5	3.767
1.828	0	1.629	5.553	4.017
1.952	0	1.693	5.526	4.285
2.078	0	1.572	5.647	3.795
2.012	0	1.583	5.608	3.412
1.828	0	1.629	5.553	3.166
1.952	0	1.693	5.526	3.051
2.078	0	1.906	5.562	3.361
2.012	0	1.787	4.937	3.734
2.065	0	1.867	4.928	3.781
2.123	0	2.056	5.416	4.039
2.203	0	2.1	5.872	3.924
2.191	0	2.131	6.102	4.391
2.314	0	2.149	6.454	3.943
2.402	0	2.135	6.702	3.834
2.48	0	2.179	7.16	3.296
2.511	0	2.212	7.474	3.245
2.56	0	2.006	7.74	3.024
2.524	0	1.887	8.009	2.931
2.544	0	1.842	8.156	2.919
2.502	0	1.818	8.044	2.927
2.49	0	1.761	7.918	3.038
2.51	0	1.724	7.645	3.121
2.557	0	1.851	7.583	2.85
2.345	0	1.897	7.494	3.024
2.439	0	1.873	7.601	2.876
2.339	0	1.909	7.709	2.837
2.257	0	2.049	7.723	2.983
2.213	0	1.931	7.825	2.673
2.129	0	1.9	7.588	2.611
2.019	0	1.946	7.516	2.391
1.881	0	2.047	7.29	1.531
1.764	0	2.52	8.704	0.407
1.866	0	2.714	9.399	0.218
1.883	0	2.743	9.455	0.161
1.711	0	2.501	9.42	-0.197
1.627	0	2.377	9.353	-0.115
1.621	0	2.171	9.157	-0.106
1.767	0	2.109	8.826	-0.14
1.695	0	1.999	8.495	-0.199
1.604	0	1.897	8.067	0.048
1.535	0	1.814	7.591	0.188
1.536	0	1.732	7.261	0.635
1.49	0	1.653	7.128	0.873

1.645	0	1.583	5.5	2.871
1.634	0	1.572	5.5	3.171
1.663	0	1.567	5	3.523
1.718	0	1.572	5	3.78
1.77	0	1.583	5	3.767
1.828	0	1.629	5.553	4.017
1.952	0	1.693	5.526	4.285
2.078	0	1.572	5.647	3.795
2.012	0	1.583	5.608	3.412
1.828	0	1.629	5.553	3.166
1.952	0	1.693	5.526	3.051
2.078	0	1.906	5.562	3.361
2.012	0	1.787	4.937	3.734
2.065	0	1.867	4.928	3.781
2.123	0	2.056	5.416	4.039
2.203	0	2.1	5.872	3.924
2.191	0	2.131	6.102	4.391
2.314	0	2.149	6.454	3.943
2.402	0	2.135	6.702	3.834
2.48	0	2.179	7.16	3.296
2.511	0	2.212	7.474	3.245
2.56	0	2.006	7.74	3.024
2.524	0	1.887	8.009	2.931
2.544	0	1.842	8.156	2.919
2.502	0	1.818	8.044	2.927
2.49	0	1.761	7.918	3.038
2.51	0	1.724	7.645	3.121
2.557	0	1.851	7.583	2.85
2.345	0	1.897	7.494	3.024
2.439	0	1.873	7.601	2.876
2.339	0	1.909	7.709	2.837
2.257	0	2.049	7.723	2.983
2.213	0	1.931	7.825	2.673
2.129	0	1.9	7.588	2.611
2.019	0	1.946	7.516	2.391
1.881	0	2.047	7.29	1.531
1.764	0	2.52	8.704	0.407
1.866	0	2.714	9.399	0.218
1.883	0	2.743	9.455	0.161
1.711	0	2.501	9.42	-0.197
1.627	0	2.377	9.353	-0.115
1.621	0	2.171	9.157	-0.106
1.767	0	2.109	8.826	-0.14
1.695	0	1.999	8.495	-0.199
1.604	0	1.897	8.067	0.048

1.535	0	1.814	7.591	0.188
1.536	0	1.732	7.261	0.635
1.49	0	1.653	7.128	0.873
1.645	0	1.583	5.5	2.871
1.634	0	1.572	5.5	3.171
1.663	0	1.567	5	3.523
1.718	0	1.572	5	3.78
1.77	0	1.583	5	3.767
1.828	0	1.629	5.553	4.017
1.952	0	1.693	5.526	4.285
2.078	0	1.572	5.647	3.795
2.012	0	1.583	5.608	3.412
1.828	0	1.629	5.553	3.166
1.952	0	1.693	5.526	3.051
2.078	0	1.906	5.562	3.361
2.012	0	1.787	4.937	3.734
2.065	0	1.867	4.928	3.781
2.123	0	2.056	5.416	4.039
2.203	0	2.1	5.872	3.924
2.191	0	2.131	6.102	4.391
2.314	0	2.149	6.454	3.943
2.402	0	2.135	6.702	3.834
2.48	0	2.179	7.16	3.296
2.511	0	2.212	7.474	3.245
2.56	0	2.006	7.74	3.024
2.524	0	1.887	8.009	2.931
2.544	0	1.842	8.156	2.919
2.502	0	1.818	8.044	2.927
2.49	0	1.761	7.918	3.038
2.51	0	1.724	7.645	3.121
2.557	0	1.851	7.583	2.85
2.345	0	1.897	7.494	3.024
2.439	0	1.873	7.601	2.876
2.339	0	1.909	7.709	2.837
2.257	0	2.049	7.723	2.983
2.213	0	1.931	7.825	2.673
2.129	0	1.9	7.588	2.611
2.019	0	1.946	7.516	2.391
1.881	0	2.047	7.29	1.531
1.764	0	2.52	8.704	0.407
1.866	0	2.714	9.399	0.218
1.883	0	2.743	9.455	0.161
1.711	0	2.501	9.42	-0.197
1.627	0	2.377	9.353	-0.115
1.621	0	2.171	9.157	-0.106

1.767	0	2.109	8.826	-0.14
1.695	0	1.999	8.495	-0.199
1.604	0	1.897	8.067	0.048
1.535	0	1.814	7.591	0.188
1.536	0	1.732	7.261	0.635
1.49	0	1.653	7.128	0.873
1.685	0	0.815	19.726	4.685
1.665	0	0.787	18.727	4.661
1.618	0	0.768	17.126	4.598
1.593	0	0.756	15.743	4.572
1.598	0	0.74	15.398	4.88
1.661	0	0.738	15.048	4.177
1.505	0	0.724	15.123	4.212
1.688	0	0.753	14.245	4.028
1.74	0	0.82	14.115	4.617
1.633	0	0.834	13.569	4.518
1.722	0	0.921	13.929	4.228
2.078	0	1.009	14.18	3.604
2.059	0	0.997	13.848	2.685
2.097	0	0.977	13.658	2.205
2.226	0	1.058	14.053	1.434
2.288	0	1.095	14.03	1.773
2.392	0	1.081	14.303	1.562
2.431	0	1.138	15.078	1.553
2.422	0	1.178	15.434	1.427
2.447	0	1.198	15.186	1.155
2.415	0	1.165	15.914	0.993
2.411	0	1.232	16.511	1.075
2.306	0	1.226	17.192	1.436
2.295	0	1.252	18.643	1.629
2.206	0	1.249	19.057	1.771
2.068	0	1.236	20.674	2.359
2.056	0	1.184	22.414	3.672
1.998	0	1.167	22.611	2.831
2.04	0	1.144	23.886	2.913
1.895	0	1.142	24.029	2.446
1.993	0	1.101	24.291	3.699
2	0	1.154	24.215	4.247
1.995	0	1.115	24.045	4.249
2.017	0	1.078	24.236	4.267
1.783	0	1.124	23.732	4.601
1.459	0	1.133	24.27	4.986
1.493	0	1.331	24.283	5.08
1.67	0	1.724	23.882	4.917
1.693	0	1.857	22.752	4.921

1.673	0	1.818	22.456	5.074
1.653	0	1.762	21.767	5.119
1.629	0	1.744	20.804	4.822
1.579	0	1.616	20.914	5.102
1.496	0	1.504	20.065	4.862
1.346	0	1.379	19.695	4.975
1.301	0	1.26	19.236	4.814
1.495	0	1.178	18.798	4.761
1.563	0	1.083	18.012	4.513
1.685	0	0.815	19.726	4.685
1.665	0	0.787	18.727	4.661
1.618	0	0.768	17.126	4.598
1.593	0	0.756	15.743	4.572
1.598	0	0.74	15.398	4.88
1.661	0	0.738	15.048	4.177
1.505	0	0.724	15.123	4.212
1.688	0	0.753	14.245	4.028
1.74	0	0.82	14.115	4.617
1.633	0	0.834	13.569	4.518
1.722	0	0.921	13.929	4.228
2.078	0	1.009	14.18	3.604
2.059	0	0.997	13.848	2.685
2.097	0	0.977	13.658	2.205
2.226	0	1.058	14.053	1.434
2.288	0	1.095	14.03	1.773
2.392	0	1.081	14.303	1.562
2.431	0	1.138	15.078	1.553
2.422	0	1.178	15.434	1.427
2.447	0	1.198	15.186	1.155
2.415	0	1.165	15.914	0.993
2.411	0	1.232	16.511	1.075
2.306	0	1.226	17.192	1.436
2.295	0	1.252	18.643	1.629
2.206	0	1.249	19.057	1.771
2.068	0	1.236	20.674	2.359
2.056	0	1.184	22.414	3.672
1.998	0	1.167	22.611	2.831
2.04	0	1.144	23.886	2.913
1.895	0	1.142	24.029	2.446
1.993	0	1.101	24.291	3.699
2	0	1.154	24.215	4.247
1.995	0	1.115	24.045	4.249
2.017	0	1.078	24.236	4.267
1.783	0	1.124	23.732	4.601
1.459	0	1.133	24.27	4.986

1.493	0	1.331	24.283	5.08
1.67	0	1.724	23.882	4.917
1.693	0	1.857	22.752	4.921
1.673	0	1.818	22.456	5.074
1.653	0	1.762	21.767	5.119
1.629	0	1.744	20.804	4.822
1.579	0	1.616	20.914	5.102
1.496	0	1.504	20.065	4.862
1.346	0	1.379	19.695	4.975
1.301	0	1.26	19.236	4.814
1.495	0	1.178	18.798	4.761
1.563	0	1.083	18.012	4.513

**DEMANDA HISTORICO-DIARIO-SUB ESTACIONES CHIMBOTE UNO CASMA  
HIDRANDINA-JULIO 2019**

41399	41398	22402	21537	22207
HIDRANDINA	HIDRANDINA	HIDRANDINA	HIDRANDINA	HIDRANDINA
NEPEÑA_TP- A055_BARRA_13.8	NEPEÑA_TP- A055_BARRA_22.9	TP-A006- 6.6MVA	TPA007	TP-A048
13.80	22.90	13.80	13.80	13.80
NEPEÑA	NEPEÑA	SAN JACINTO	TRAPECIO	TRAPECIO
1.645	0	1.583	5.5	2.871
1.634	0	1.572	5.5	3.171
1.663	0	1.567	5	3.523
1.718	0	1.572	5	3.78
1.77	0	1.583	5	3.767
1.828	0	1.629	5.553	4.017
1.952	0	1.693	5.526	4.285
2.078	0	1.572	5.647	3.795
2.012	0	1.583	5.608	3.412
1.828	0	1.629	5.553	3.166
1.952	0	1.693	5.526	3.051
2.078	0	1.906	5.562	3.361
2.012	0	1.787	4.937	3.734
2.065	0	1.867	4.928	3.781
2.123	0	2.056	5.416	4.039
2.203	0	2.1	5.872	3.924
2.191	0	2.131	6.102	4.391
2.314	0	2.149	6.454	3.943
2.402	0	2.135	6.702	3.834
2.48	0	2.179	7.16	3.296
2.511	0	2.212	7.474	3.245
2.56	0	2.006	7.74	3.024
2.524	0	1.887	8.009	2.931
2.544	0	1.842	8.156	2.919
2.502	0	1.818	8.044	2.927
2.49	0	1.761	7.918	3.038
2.51	0	1.724	7.645	3.121
2.557	0	1.851	7.583	2.85
2.345	0	1.897	7.494	3.024
2.439	0	1.873	7.601	2.876
2.339	0	1.909	7.709	2.837
2.257	0	2.049	7.723	2.983

2.213	0	1.931	7.825	2.673
2.129	0	1.9	7.588	2.611
2.019	0	1.946	7.516	2.391
1.881	0	2.047	7.29	1.531
1.764	0	2.52	8.704	0.407
1.866	0	2.714	9.399	0.218
1.883	0	2.743	9.455	0.161
1.711	0	2.501	9.42	-0.197
1.627	0	2.377	9.353	-0.115
1.621	0	2.171	9.157	-0.106
1.767	0	2.109	8.826	-0.14
1.695	0	1.999	8.495	-0.199
1.604	0	1.897	8.067	0.048
1.535	0	1.814	7.591	0.188
1.536	0	1.732	7.261	0.635
1.49	0	1.653	7.128	0.873
1.645	0	1.583	6.611	0.779
1.634	0	1.572	6.421	0.785
1.663	0	1.567	6.337	0.776
1.718	0	1.572	6.227	0.763
1.77	0	1.583	6.024	0.725
1.828	0	1.629	5.964	0.721
1.952	0	1.693	6.011	0.739
2.078	0	1.572	6.269	0.518
2.012	0	1.583	6.495	0.706
1.828	0	1.629	6.541	0.703
1.952	0	1.693	6.591	0.712
2.078	0	1.906	6.827	0.722
2.012	0	1.787	7.066	0.6
2.065	0	1.867	7.188	0.584
2.123	0	2.056	7.129	0.663
2.203	0	2.1	7.281	0.625
2.191	0	2.131	7.671	0.718
2.314	0	2.149	8.131	0.78
2.402	0	2.135	8.615	0.847
2.48	0	2.179	8.856	0.963
2.511	0	2.212	9.006	1.142
2.56	0	2.006	9.279	1.238
2.524	0	1.887	9.426	1.298
2.544	0	1.842	9.166	1.296
2.502	0	1.818	8.708	1.189
2.49	0	1.761	8.478	0.909
2.51	0	1.724	8.854	0.841
2.557	0	1.851	8.884	0.904
2.345	0	1.897	9.078	0.949

2.439	0	1.873	8.963	0.756
2.339	0	1.909	9.067	0.705
2.257	0	2.049	9.138	0.8
2.213	0	1.931	9.306	0.794
2.129	0	1.9	9.343	0.77
2.019	0	1.946	9.394	0.686
1.881	0	2.047	10.993	0.761
1.764	0	2.52	11.139	0.864
1.866	0	2.714	11.438	0.731
1.883	0	2.743	11.733	0.727
1.711	0	2.501	11.548	0.778
1.627	0	2.377	11.404	0.736
1.621	0	2.171	11.37	0.751
1.767	0	2.109	11.388	0.792
1.695	0	1.999	10.715	0.736
1.604	0	1.897	10.247	0.705
1.535	0	1.814	9.765	0.759
1.536	0	1.732	9.285	0.775
1.49	0	1.653	8.65	0.749
1.645	0	1.583	8.219	0.763
1.634	0	1.572	7.887	0.718
1.663	0	1.567	7.631	0.716
1.718	0	1.572	7.391	0.7
1.77	0	1.583	7.271	0.686
1.828	0	1.629	7.335	0.707
1.952	0	1.693	7.184	0.721
2.078	0	1.572	7.103	0.705
2.012	0	1.583	7.029	0.754
1.828	0	1.629	7.205	0.706
1.952	0	1.693	7.35	0.722
2.078	0	1.906	7.719	0.705
2.012	0	1.787	8.021	0.65
2.065	0	1.867	7.864	0.697
2.123	0	2.056	7.879	0.674
2.203	0	2.1	7.731	0.684
2.191	0	2.131	8.3	0.739
2.314	0	2.149	8.471	0.979
2.402	0	2.135	8.816	0.992
2.48	0	2.179	8.952	0.955
2.511	0	2.212	9.132	1.457
2.56	0	2.006	9.278	1.298
2.524	0	1.887	9.347	1.423
2.544	0	1.842	9.038	1.345
2.502	0	1.818	8.958	0.97
2.49	0	1.761	8.628	0.798

2.51	0	1.724	9.012	0.908
2.557	0	1.851	9.203	0.933
2.345	0	1.897	8.974	0.927
2.439	0	1.873	9.603	1.026
2.339	0	1.909	9.838	0.949
2.257	0	2.049	9.634	0.893
2.213	0	1.931	9.672	0.861
2.129	0	1.9	10.013	0.956
2.019	0	1.946	10.342	0.743
1.881	0	2.047	10.96	0.762
1.764	0	2.52	11.262	0.777
1.866	0	2.714	11.539	0.754
1.883	0	2.743	11.244	0.798
1.711	0	2.501	11.174	0.758
1.627	0	2.377	11.275	0.752
1.621	0	2.171	11.176	0.75
1.767	0	2.109	11.051	0.719
1.695	0	1.999	10.575	0.753
1.604	0	1.897	10.058	0.711
1.535	0	1.814	9.702	0.737
1.536	0	1.732	8.957	0.709
1.49	0	1.653	8.459	0.715
1.645	0	1.583	7.796	0.703
1.634	0	1.572	7.554	0.709
1.663	0	1.567	7.267	0.679
1.718	0	1.572	7.055	0.683
1.77	0	1.583	6.893	0.66
1.828	0	1.629	6.857	0.699
1.952	0	1.693	6.86	0.694
2.078	0	1.572	6.711	0.69
2.012	0	1.583	6.827	0.707
1.828	0	1.629	6.996	0.695
1.952	0	1.693	6.995	0.707
2.078	0	1.906	6.992	0.677
2.012	0	1.787	7.749	0.751
2.065	0	1.867	7.656	0.664
2.123	0	2.056	7.592	0.657
2.203	0	2.1	7.721	0.742
2.191	0	2.131	8.334	0.805
2.314	0	2.149	8.402	1.024
2.402	0	2.135	8.965	1.186
2.48	0	2.179	9.09	1.426
2.511	0	2.212	9.338	1.45
2.56	0	2.006	9.729	1.064
2.524	0	1.887	9.829	1.07

2.544	0	1.842	9.339	0.864
2.502	0	1.818	8.898	0.876
2.49	0	1.761	8.712	0.822
2.51	0	1.724	9.249	0.901
2.557	0	1.851	8.936	1.383
2.345	0	1.897	9.514	1.441
2.439	0	1.873	10.163	1.277
2.339	0	1.909	10.171	1.082
2.257	0	2.049	9.961	0.796
2.213	0	1.931	9.937	0.775
2.129	0	1.9	10.325	0.797
2.019	0	1.946	10.623	0.76
1.881	0	2.047	11.354	0.789
1.764	0	2.52	12.225	0.819
1.866	0	2.714	12.364	0.814
1.883	0	2.743	12.605	0.824
1.711	0	2.501	12.23	0.827
1.627	0	2.377	12.065	0.798
1.621	0	2.171	11.896	0.771
1.767	0	2.109	11.566	0.758
1.695	0	1.999	11.103	0.752
1.604	0	1.897	10.476	0.787
1.535	0	1.814	9.763	0.76
1.536	0	1.732	9.268	0.729
1.49	0	1.653	8.59	0.725
1.645	0	1.583	7.948	0.727
1.634	0	1.572	7.566	0.707
1.663	0	1.567	7.399	0.728
1.718	0	1.572	7.167	0.696
1.77	0	1.583	7.136	0.727
1.828	0	1.629	7.018	0.74
1.952	0	1.693	6.916	0.737
2.078	0	1.572	6.781	0.731
2.012	0	1.583	6.974	0.702
1.828	0	1.629	6.987	0.731
1.952	0	1.693	6.763	0.704
2.078	0	1.906	2.052	0.655
2.012	0	1.787	0.042	0.037
2.065	0	1.867	0	0
2.123	0	2.056	0	0
2.203	0	2.1	0	0
2.191	0	2.131	0	0
2.314	0	2.149	0	0
2.402	0	2.135	0	0
2.48	0	2.179	0	0

2.511	0	2.212	0	0
2.56	0	2.006	0	0
2.524	0	1.887	0	0
2.544	0	1.842	0	0
2.502	0	1.818	0	0
2.49	0	1.761	0	0
2.51	0	1.724	0	0
2.557	0	1.851	0	0
2.345	0	1.897	0	0
2.439	0	1.873	0	0
2.339	0	1.909	0	0
2.257	0	2.049	0.026	0.014
2.213	0	1.931	0.018	0.369
2.129	0	1.9	0.019	0.331
2.019	0	1.946	1.374	0.315
1.881	0	2.047	8.639	0.314
1.764	0	2.52	10.155	0.363
1.866	0	2.714	10.466	0.403
1.883	0	2.743	10.418	0.356
1.711	0	2.501	10.535	0.351
1.627	0	2.377	10.156	0.36
1.621	0	2.171	9.986	0.345
1.767	0	2.109	9.914	0.335
1.695	0	1.999	9.705	0.355
1.604	0	1.897	9	0.33
1.535	0	1.814	8.613	0.328
1.536	0	1.732	8.126	0.746
1.49	0	1.653	7.585	0.567
1.871	0	1.578	7.156	-2.024
1.782	0	1.55	6.778	-2.088
1.915	0	1.525	6.566	-2.03
1.911	0	1.517	6.359	-1.793
1.894	0	1.503	6.242	-1.847
1.768	0	1.501	6.175	-1.644
1.738	0	1.512	6.111	-1.027
1.798	0	1.521	6.247	-1.196
1.877	0	1.592	6.194	-1.05
1.952	0	1.719	6.226	-0.953
2.056	0	1.796	6.48	-1.049
2.165	0	1.988	6.578	-1.372
2.133	0	1.86	6.331	-1.167
2.157	0	1.986	6.398	-1.178
2.275	0	2.01	6.821	-1.268
2.785	0	1.897	7.142	-1.105
2.928	0	1.937	6.627	-0.678

3.066	0	2.074	6.808	-0.4
3.238	0	2.063	7.014	-0.088
3.299	0	2.107	7.076	-0.057
3.304	0	2.148	7.432	0.325
3.239	0	2.192	7.918	0.088
3.281	0	2.208	7.935	0.36
3.233	0	2.23	7.639	0.325
3.209	0	2.159	7.275	-0.314
3.231	0	2.1	7.235	-0.598
3.214	0	2.149	6.522	-0.712
3.229	0	2.122	6.815	0.231
3.327	0	2.177	7.055	0.188
3.313	0	2.16	7.111	0.5
3.337	0	2.17	7.085	0.207
3.423	0	2.151	8.051	0.365
3.168	0	2.124	9.213	0.206
2.892	0	2.111	9.059	0.474
2.505	0	2.179	8.824	0.668
2.262	0	2.356	8.66	1.917
2.331	0	2.802	10.13	2.262
2.407	0	2.945	10.748	2.42
2.263	0	2.842	10.775	2.314
2.446	0	2.749	10.598	2.72
2.367	0	2.518	10.342	3
2.304	0	2.406	10.078	3.081
2.224	0	2.276	9.723	2.94
2.184	0	2.17	9.237	2.884
1.798	0	1.984	8.741	2.186
1.744	0	1.864	8.024	1.872
1.899	0	1.759	7.857	1.709
1.913	0	1.635	7.21	1.756
1.871	0	1.578	7.156	-2.024
1.782	0	1.55	6.778	-2.088
1.915	0	1.525	6.566	-2.03
1.911	0	1.517	6.359	-1.793
1.894	0	1.503	6.242	-1.847
1.768	0	1.501	6.175	-1.644
1.738	0	1.512	6.111	-1.027
1.798	0	1.521	6.247	-1.196
1.877	0	1.592	6.194	-1.05
1.952	0	1.719	6.226	-0.953
2.056	0	1.796	6.48	-1.049
2.165	0	1.988	6.578	-1.372
2.133	0	1.86	6.331	-1.167
2.157	0	1.986	6.398	-1.178

2.275	0	2.01	6.821	-1.268
2.785	0	1.897	7.142	-1.105
2.928	0	1.937	6.627	-0.678
3.066	0	2.074	6.808	-0.4
3.238	0	2.063	7.014	-0.088
3.299	0	2.107	7.076	-0.057
3.304	0	2.148	7.432	0.325
3.239	0	2.192	7.918	0.088
3.281	0	2.208	7.935	0.36
3.233	0	2.23	7.639	0.325
3.209	0	2.159	7.275	-0.314
3.231	0	2.1	7.235	-0.598
3.214	0	2.149	6.522	-0.712
3.229	0	2.122	6.815	0.231
3.327	0	2.177	7.055	0.188
3.313	0	2.16	7.111	0.5
3.337	0	2.17	7.085	0.207
3.423	0	2.151	8.051	0.365
3.168	0	2.124	9.213	0.206
2.892	0	2.111	9.059	0.474
2.505	0	2.179	8.824	0.668
2.262	0	2.356	8.66	1.917
2.331	0	2.802	10.13	2.262
2.407	0	2.945	10.748	2.42
2.263	0	2.842	10.775	2.314
2.446	0	2.749	10.598	2.72
2.367	0	2.518	10.342	3
2.304	0	2.406	10.078	3.081
2.224	0	2.276	9.723	2.94
2.184	0	2.17	9.237	2.884
1.798	0	1.984	8.741	2.186
1.744	0	1.864	8.024	1.872
1.899	0	1.759	7.857	1.709
1.913	0	1.635	7.21	1.756
1.871	0	1.578	5.821	0.683
1.782	0	1.55	5.596	0.676
1.915	0	1.525	5.512	0.677
1.911	0	1.517	5.38	0.688
1.894	0	1.503	5.308	0.708
1.768	0	1.501	5.209	0.676
1.738	0	1.512	5.327	0.683
1.798	0	1.521	5.22	0.684
1.877	0	1.592	5.32	0.668
1.952	0	1.719	5.474	0.703
2.056	0	1.796	5.594	0.696

2.165	0	1.988	5.621	0.7
2.133	0	1.86	5.735	0.648
2.157	0	1.986	5.593	0.632
2.275	0	2.01	5.664	0.66
2.785	0	1.897	6.216	0.643
2.928	0	1.937	6.848	0.687
3.066	0	2.074	7.124	1.131
3.238	0	2.063	7.403	1.083
3.299	0	2.107	8.907	1.116
3.304	0	2.148	9.145	0.881
3.239	0	2.192	9.192	0.947
3.281	0	2.208	9.547	0.947
3.233	0	2.23	8.511	0.707
3.209	0	2.159	8.018	0.771
3.231	0	2.1	8.197	0.811
3.214	0	2.149	8.586	0.809
3.229	0	2.122	8.807	1.052
3.327	0	2.177	8.83	1.351
3.313	0	2.16	9.16	1.226
3.337	0	2.17	9.743	0.997
3.423	0	2.151	10.07	0.903
3.168	0	2.124	10.648	0.979
2.892	0	2.111	11.488	0.852
2.505	0	2.179	11.769	0.994
2.262	0	2.356	12.883	1.14
2.331	0	2.802	13.647	1.193
2.407	0	2.945	14.305	1.266
2.263	0	2.842	14.438	1.827
2.446	0	2.749	14.975	1.744
2.367	0	2.518	16.007	1.763
2.304	0	2.406	16.729	2.24
2.224	0	2.276	16.54	2.506
2.184	0	2.17	15.755	3.041
1.798	0	1.984	16.316	3.518
1.744	0	1.864	17.097	3.751
1.899	0	1.759	17.011	4.046
1.913	0	1.635	15.763	4.199
1.871	0	1.578	12.464	4.571
1.782	0	1.55	11.142	4.332
1.915	0	1.525	10.178	4.409
1.911	0	1.517	9.566	4.269
1.894	0	1.503	9.302	4.075
1.768	0	1.501	8.516	3.884
1.738	0	1.512	8.327	3.885
1.798	0	1.521	7.812	3.603

1.877	0	1.592	7.832	3.536
1.952	0	1.719	7.37	3.762
2.056	0	1.796	7.4	3.806
2.165	0	1.988	7.511	3.816
2.133	0	1.86	7.495	3.12
2.157	0	1.986	7.127	2.073
2.275	0	2.01	6.786	1.732
2.785	0	1.897	6.631	1.411
2.928	0	1.937	7.006	1.201
3.066	0	2.074	7.359	0.69
3.238	0	2.063	7.538	0.704
3.299	0	2.107	7.444	0.765
3.304	0	2.148	7.348	0.749
3.239	0	2.192	7.6	0.757
3.281	0	2.208	7.914	0.753
3.233	0	2.23	7.375	0.787
3.209	0	2.159	7.278	0.779
3.231	0	2.1	7.458	0.765
3.214	0	2.149	7.751	0.758
3.229	0	2.122	7.981	0.839
3.327	0	2.177	8.608	0.835
3.313	0	2.16	8.961	0.777
3.337	0	2.17	9.892	0.827
3.423	0	2.151	9.757	1.033
3.168	0	2.124	10.898	1.152
2.892	0	2.111	10.917	1.191
2.505	0	2.179	12.429	1.267
2.262	0	2.356	13.255	1.036
2.331	0	2.802	16.013	1.247
2.407	0	2.945	16.117	1.292
2.263	0	2.842	16.305	1.212
2.446	0	2.749	16.905	1.541
2.367	0	2.518	18.123	2.297
2.304	0	2.406	18.794	3.236
2.224	0	2.276	18.383	3.979
2.184	0	2.17	18.556	3.859
1.798	0	1.984	17.361	3.908
1.744	0	1.864	16.473	3.92
1.899	0	1.759	16.865	4.432
1.913	0	1.635	15.812	4.41
1.871	0	1.578	14.918	4.045
1.782	0	1.55	14.063	4.158
1.915	0	1.525	13.318	4.022
1.911	0	1.517	12.006	4.022
1.894	0	1.503	11.659	3.92

1.768	0	1.501	11.238	4.216
1.738	0	1.512	10.936	4.106
1.798	0	1.521	9.987	3.984
1.877	0	1.592	9.315	3.821
1.952	0	1.719	8.659	3.391
2.056	0	1.796	8.65	3.452
2.165	0	1.988	8.686	3.308
2.133	0	1.86	7.725	2.386
2.157	0	1.986	7.492	1.883
2.275	0	2.01	7.212	1.58
2.785	0	1.897	7.033	1.356
2.928	0	1.937	7.595	1.11
3.066	0	2.074	7.643	0.921
3.238	0	2.063	7.468	0.925
3.299	0	2.107	7.079	0.854
3.304	0	2.148	7.464	0.916
3.239	0	2.192	7.741	0.956
3.281	0	2.208	7.794	0.953
3.233	0	2.23	7.186	0.963
3.209	0	2.159	7.33	0.826
3.231	0	2.1	7.401	0.854
3.214	0	2.149	8.069	0.855
3.229	0	2.122	8.038	0.925
3.327	0	2.177	8.505	1.064
3.313	0	2.16	8.988	0.957
3.337	0	2.17	10.524	1.298
3.423	0	2.151	10.613	1.253
3.168	0	2.124	11.503	1.319
2.892	0	2.111	12.404	1.45
2.505	0	2.179	13.212	1.424
2.262	0	2.356	14.668	1.538
2.331	0	2.802	16.944	1.582
2.407	0	2.945	18.481	1.703
2.263	0	2.842	18.1	1.749
2.446	0	2.749	17.78	1.81
2.367	0	2.518	17.798	1.822
2.304	0	2.406	17.784	2.145
2.224	0	2.276	17.301	2.905
2.184	0	2.17	16.9	3.606
1.798	0	1.984	16.299	3.819
1.744	0	1.864	15.472	3.993
1.899	0	1.759	14.797	3.88
1.913	0	1.635	13.688	4.033
1.871	0	1.578	7.156	-2.024
1.782	0	1.55	6.778	-2.088

1.915	0	1.525	6.566	-2.03
1.911	0	1.517	6.359	-1.793
1.894	0	1.503	6.242	-1.847
1.768	0	1.501	6.175	-1.644
1.738	0	1.512	6.111	-1.027
1.798	0	1.521	6.247	-1.196
1.877	0	1.592	6.194	-1.05
1.952	0	1.719	6.226	-0.953
2.056	0	1.796	6.48	-1.049
2.165	0	1.988	6.578	-1.372
2.133	0	1.86	6.331	-1.167
2.157	0	1.986	6.398	-1.178
2.275	0	2.01	6.821	-1.268
2.785	0	1.897	7.142	-1.105
2.928	0	1.937	6.627	-0.678
3.066	0	2.074	6.808	-0.4
3.238	0	2.063	7.014	-0.088
3.299	0	2.107	7.076	-0.057
3.304	0	2.148	7.432	0.325
3.239	0	2.192	7.918	0.088
3.281	0	2.208	7.935	0.36
3.233	0	2.23	7.639	0.325
3.209	0	2.159	7.275	-0.314
3.231	0	2.1	7.235	-0.598
3.214	0	2.149	6.522	-0.712
3.229	0	2.122	6.815	0.231
3.327	0	2.177	7.055	0.188
3.313	0	2.16	7.111	0.5
3.337	0	2.17	7.085	0.207
3.423	0	2.151	8.051	0.365
3.168	0	2.124	9.213	0.206
2.892	0	2.111	9.059	0.474
2.505	0	2.179	8.824	0.668
2.262	0	2.356	8.66	1.917
2.331	0	2.802	10.13	2.262
2.407	0	2.945	10.748	2.42
2.263	0	2.842	10.775	2.314
2.446	0	2.749	10.598	2.72
2.367	0	2.518	10.342	3
2.304	0	2.406	10.078	3.081
2.224	0	2.276	9.723	2.94
2.184	0	2.17	9.237	2.884
1.798	0	1.984	8.741	2.186
1.744	0	1.864	8.024	1.872
1.899	0	1.759	7.857	1.709

1.913	0	1.635	7.21	1.756
1.871	0	1.578	14.918	4.045
1.782	0	1.55	14.063	4.158
1.915	0	1.525	13.318	4.022
1.911	0	1.517	12.006	4.022
1.894	0	1.503	11.659	3.92
1.768	0	1.501	11.238	4.216
1.738	0	1.512	10.936	4.106
1.798	0	1.521	9.987	3.984
1.877	0	1.592	9.315	3.821
1.952	0	1.719	8.659	3.391
2.056	0	1.796	8.65	3.452
2.165	0	1.988	8.686	3.308
2.133	0	1.86	7.725	2.386
2.157	0	1.986	7.492	1.883
2.275	0	2.01	7.212	1.58
2.785	0	1.897	7.033	1.356
2.928	0	1.937	7.595	1.11
3.066	0	2.074	7.643	0.921
3.238	0	2.063	7.468	0.925
3.299	0	2.107	7.079	0.854
3.304	0	2.148	7.464	0.916
3.239	0	2.192	7.741	0.956
3.281	0	2.208	7.794	0.953
3.233	0	2.23	7.186	0.963
3.209	0	2.159	7.33	0.826
3.231	0	2.1	7.401	0.854
3.214	0	2.149	8.069	0.855
3.229	0	2.122	8.038	0.925
3.327	0	2.177	8.505	1.064
3.313	0	2.16	8.988	0.957
3.337	0	2.17	10.524	1.298
3.423	0	2.151	10.613	1.253
3.168	0	2.124	11.503	1.319
2.892	0	2.111	12.404	1.45
2.505	0	2.179	13.212	1.424
2.262	0	2.356	14.668	1.538
2.331	0	2.802	16.944	1.582
2.407	0	2.945	18.481	1.703
2.263	0	2.842	18.1	1.749
2.446	0	2.749	17.78	1.81
2.367	0	2.518	17.798	1.822
2.304	0	2.406	17.784	2.145
2.224	0	2.276	17.301	2.905
2.184	0	2.17	16.9	3.606

1.798	0	1.984	16.299	3.819
1.744	0	1.864	15.472	3.993
1.899	0	1.759	14.797	3.88
1.913	0	1.635	13.688	4.033
1.645	0	1.583	5.5	2.871
1.634	0	1.572	5.5	3.171
1.663	0	1.567	5	3.523
1.718	0	1.572	5	3.78
1.77	0	1.583	5	3.767
1.828	0	1.629	5.553	4.017
1.952	0	1.693	5.526	4.285
2.078	0	1.572	5.647	3.795
2.012	0	1.583	5.608	3.412
1.828	0	1.629	5.553	3.166
1.952	0	1.693	5.526	3.051
2.078	0	1.906	5.562	3.361
2.012	0	1.787	4.937	3.734
2.065	0	1.867	4.928	3.781
2.123	0	2.056	5.416	4.039
2.203	0	2.1	5.872	3.924
2.191	0	2.131	6.102	4.391
2.314	0	2.149	6.454	3.943
2.402	0	2.135	6.702	3.834
2.48	0	2.179	7.16	3.296
2.511	0	2.212	7.474	3.245
2.56	0	2.006	7.74	3.024
2.524	0	1.887	8.009	2.931
2.544	0	1.842	8.156	2.919
2.502	0	1.818	8.044	2.927
2.49	0	1.761	7.918	3.038
2.51	0	1.724	7.645	3.121
2.557	0	1.851	7.583	2.85
2.345	0	1.897	7.494	3.024
2.439	0	1.873	7.601	2.876
2.339	0	1.909	7.709	2.837
2.257	0	2.049	7.723	2.983
2.213	0	1.931	7.825	2.673
2.129	0	1.9	7.588	2.611
2.019	0	1.946	7.516	2.391
1.881	0	2.047	7.29	1.531
1.764	0	2.52	8.704	0.407
1.866	0	2.714	9.399	0.218
1.883	0	2.743	9.455	0.161
1.711	0	2.501	9.42	-0.197
1.627	0	2.377	9.353	-0.115

1.621	0	2.171	9.157	-0.106
1.767	0	2.109	8.826	-0.14
1.695	0	1.999	8.495	-0.199
1.604	0	1.897	8.067	0.048
1.535	0	1.814	7.591	0.188
1.536	0	1.732	7.261	0.635
1.49	0	1.653	7.128	0.873
1.871	0	1.578	14.918	4.045
1.782	0	1.55	14.063	4.158
1.915	0	1.525	13.318	4.022
1.911	0	1.517	12.006	4.022
1.894	0	1.503	11.659	3.92
1.768	0	1.501	11.238	4.216
1.738	0	1.512	10.936	4.106
1.798	0	1.521	9.987	3.984
1.877	0	1.592	9.315	3.821
1.952	0	1.719	8.659	3.391
2.056	0	1.796	8.65	3.452
2.165	0	1.988	8.686	3.308
2.133	0	1.86	7.725	2.386
2.157	0	1.986	7.492	1.883
2.275	0	2.01	7.212	1.58
2.785	0	1.897	7.033	1.356
2.928	0	1.937	7.595	1.11
3.066	0	2.074	7.643	0.921
3.238	0	2.063	7.468	0.925
3.299	0	2.107	7.079	0.854
3.304	0	2.148	7.464	0.916
3.239	0	2.192	7.741	0.956
3.281	0	2.208	7.794	0.953
3.233	0	2.23	7.186	0.963
3.209	0	2.159	7.33	0.826
3.231	0	2.1	7.401	0.854
3.214	0	2.149	8.069	0.855
3.229	0	2.122	8.038	0.925
3.327	0	2.177	8.505	1.064
3.313	0	2.16	8.988	0.957
3.337	0	2.17	10.524	1.298
3.423	0	2.151	10.613	1.253
3.168	0	2.124	11.503	1.319
2.892	0	2.111	12.404	1.45
2.505	0	2.179	13.212	1.424
2.262	0	2.356	14.668	1.538
2.331	0	2.802	16.944	1.582
2.407	0	2.945	18.481	1.703

2.263	0	2.842	18.1	1.749
2.446	0	2.749	17.78	1.81
2.367	0	2.518	17.798	1.822
2.304	0	2.406	17.784	2.145
2.224	0	2.276	17.301	2.905
2.184	0	2.17	16.9	3.606
1.798	0	1.984	16.299	3.819
1.744	0	1.864	15.472	3.993
1.899	0	1.759	14.797	3.88
1.913	0	1.635	13.688	4.033
1.871	0	1.578	7.405	1.047
1.782	0	1.55	7.091	1.35
1.915	0	1.525	7.218	1.304
1.911	0	1.517	7.031	1.301
1.894	0	1.503	6.948	1.273
1.768	0	1.501	6.881	0.87
1.738	0	1.512	6.798	0.926
1.798	0	1.521	6.719	0.863
1.877	0	1.592	6.702	0.849
1.952	0	1.719	6.744	0.865
2.056	0	1.796	6.793	0.855
2.165	0	1.988	6.966	0.861
2.133	0	1.86	6.994	0.761
2.157	0	1.986	6.831	0.728
2.275	0	2.01	6.858	0.808
2.785	0	1.897	7.147	0.733
2.928	0	1.937	7.649	0.799
3.066	0	2.074	8.513	0.898
3.238	0	2.063	8.709	0.811
3.299	0	2.107	9.122	0.848
3.304	0	2.148	9.789	0.841
3.239	0	2.192	9.93	0.846
3.281	0	2.208	9.515	0.941
3.233	0	2.23	8.748	1.234
3.209	0	2.159	8.614	1.243
3.231	0	2.1	9.147	1.14
3.214	0	2.149	9.184	1.295
3.229	0	2.122	9.943	0.892
3.327	0	2.177	10.063	1.012
3.313	0	2.16	10.75	1.129
3.337	0	2.17	10.696	1.195
3.423	0	2.151	10.206	1.046
3.168	0	2.124	10.564	1.15
2.892	0	2.111	11.397	0.99
2.505	0	2.179	12.665	1.044

2.262	0	2.356	13.985	1.194
2.331	0	2.802	15.471	1.29
2.407	0	2.945	15.686	1.232
2.263	0	2.842	16.302	1.128
2.446	0	2.749	16.166	1.422
2.367	0	2.518	16.212	1.433
2.304	0	2.406	15.983	1.738
2.224	0	2.276	15.735	1.719
2.184	0	2.17	14.962	2.286
1.798	0	1.984	14.56	2.543
1.744	0	1.864	13.789	3.089
1.899	0	1.759	13.356	3.435
1.913	0	1.635	12.189	3.473
1.871	0	1.578	11.386	3.411
1.782	0	1.55	10.569	3.398
1.915	0	1.525	9.828	3.865
1.911	0	1.517	9.694	3.607
1.894	0	1.503	9.331	3.471
1.768	0	1.501	9.047	3.604
1.738	0	1.512	8.867	3.493
1.798	0	1.521	9.047	2.652
1.877	0	1.592	8.333	2.203
1.952	0	1.719	8.105	1.907
2.056	0	1.796	7.863	1.67
2.165	0	1.988	7.453	1.364
2.133	0	1.86	7.612	0.99
2.157	0	1.986	7.535	0.945
2.275	0	2.01	7.381	0.885
2.785	0	1.897	7.235	0.688
2.928	0	1.937	7.688	0.786
3.066	0	2.074	8.936	0.78
3.238	0	2.063	9.191	0.978
3.299	0	2.107	9.056	0.981
3.304	0	2.148	8.57	1.113
3.239	0	2.192	8.98	1.014
3.281	0	2.208	10.243	1.023
3.233	0	2.23	10.814	1
3.209	0	2.159	10.411	0.96
3.231	0	2.1	10.829	1.055
3.214	0	2.149	12.052	1.067
3.229	0	2.122	14.076	1.181
3.327	0	2.177	16.008	1.37
3.313	0	2.16	15.959	1.46
3.337	0	2.17	16.43	1.542
3.423	0	2.151	16.448	1.592

3.168	0	2.124	16.361	1.431
2.892	0	2.111	16.346	1.162
2.505	0	2.179	16.525	1.172
2.262	0	2.356	16.17	1.541
2.331	0	2.802	17.974	1.752
2.407	0	2.945	17.811	1.561
2.263	0	2.842	17.956	1.75
2.446	0	2.749	17.761	1.422
2.367	0	2.518	17.834	1.4
2.304	0	2.406	16.817	1.371
2.224	0	2.276	16.167	1.461
2.184	0	2.17	15.078	1.862
1.798	0	1.984	13.788	2.306
1.744	0	1.864	13.069	3.098
1.899	0	1.759	12.113	3.637
1.913	0	1.635	10.737	3.751
1.871	0	1.578	14.918	4.045
1.782	0	1.55	14.063	4.158
1.915	0	1.525	13.318	4.022
1.911	0	1.517	12.006	4.022
1.894	0	1.503	11.659	3.92
1.768	0	1.501	11.238	4.216
1.738	0	1.512	10.936	4.106
1.798	0	1.521	9.987	3.984
1.877	0	1.592	9.315	3.821
1.952	0	1.719	8.659	3.391
2.056	0	1.796	8.65	3.452
2.165	0	1.988	8.686	3.308
2.133	0	1.86	7.725	2.386
2.157	0	1.986	7.492	1.883
2.275	0	2.01	7.212	1.58
2.785	0	1.897	7.033	1.356
2.928	0	1.937	7.595	1.11
3.066	0	2.074	7.643	0.921
3.238	0	2.063	7.468	0.925
3.299	0	2.107	7.079	0.854
3.304	0	2.148	7.464	0.916
3.239	0	2.192	7.741	0.956
3.281	0	2.208	7.794	0.953
3.233	0	2.23	7.186	0.963
3.209	0	2.159	7.33	0.826
3.231	0	2.1	7.401	0.854
3.214	0	2.149	8.069	0.855
3.229	0	2.122	8.038	0.925
3.327	0	2.177	8.505	1.064

3.313	0	2.16	8.988	0.957
3.337	0	2.17	10.524	1.298
3.423	0	2.151	10.613	1.253
3.168	0	2.124	11.503	1.319
2.892	0	2.111	12.404	1.45
2.505	0	2.179	13.212	1.424
2.262	0	2.356	14.668	1.538
2.331	0	2.802	16.944	1.582
2.407	0	2.945	18.481	1.703
2.263	0	2.842	18.1	1.749
2.446	0	2.749	17.78	1.81
2.367	0	2.518	17.798	1.822
2.304	0	2.406	17.784	2.145
2.224	0	2.276	17.301	2.905
2.184	0	2.17	16.9	3.606
1.798	0	1.984	16.299	3.819
1.744	0	1.864	15.472	3.993
1.899	0	1.759	14.797	3.88
1.913	0	1.635	13.688	4.033
1.871	0	1.578	14.918	4.045
1.782	0	1.55	14.063	4.158
1.915	0	1.525	13.318	4.022
1.911	0	1.517	12.006	4.022
1.894	0	1.503	11.659	3.92
1.768	0	1.501	11.238	4.216
1.738	0	1.512	10.936	4.106
1.798	0	1.521	9.987	3.984
1.877	0	1.592	9.315	3.821
1.952	0	1.719	8.659	3.391
2.056	0	1.796	8.65	3.452
2.165	0	1.988	8.686	3.308
2.133	0	1.86	7.725	2.386
2.157	0	1.986	7.492	1.883
2.275	0	2.01	7.212	1.58
2.785	0	1.897	7.033	1.356
2.928	0	1.937	7.595	1.11
3.066	0	2.074	7.643	0.921
3.238	0	2.063	7.468	0.925
3.299	0	2.107	7.079	0.854
3.304	0	2.148	7.464	0.916
3.239	0	2.192	7.741	0.956
3.281	0	2.208	7.794	0.953
3.233	0	2.23	7.186	0.963
3.209	0	2.159	7.33	0.826
3.231	0	2.1	7.401	0.854

3.214	0	2.149	8.069	0.855
3.229	0	2.122	8.038	0.925
3.327	0	2.177	8.505	1.064
3.313	0	2.16	8.988	0.957
3.337	0	2.17	10.524	1.298
3.423	0	2.151	10.613	1.253
3.168	0	2.124	11.503	1.319
2.892	0	2.111	12.404	1.45
2.505	0	2.179	13.212	1.424
2.262	0	2.356	14.668	1.538
2.331	0	2.802	16.944	1.582
2.407	0	2.945	18.481	1.703
2.263	0	2.842	18.1	1.749
2.446	0	2.749	17.78	1.81
2.367	0	2.518	17.798	1.822
2.304	0	2.406	17.784	2.145
2.224	0	2.276	17.301	2.905
2.184	0	2.17	16.9	3.606
1.798	0	1.984	16.299	3.819
1.744	0	1.864	15.472	3.993
1.899	0	1.759	14.797	3.88
1.913	0	1.635	13.688	4.033
1.871	0	1.578	7.405	1.047
1.782	0	1.55	7.091	1.35
1.915	0	1.525	7.218	1.304
1.911	0	1.517	7.031	1.301
1.894	0	1.503	6.948	1.273
1.768	0	1.501	6.881	0.87
1.738	0	1.512	6.798	0.926
1.798	0	1.521	6.719	0.863
1.877	0	1.592	6.702	0.849
1.952	0	1.719	6.744	0.865
2.056	0	1.796	6.793	0.855
2.165	0	1.988	6.966	0.861
2.133	0	1.86	6.994	0.761
2.157	0	1.986	6.831	0.728
2.275	0	2.01	6.858	0.808
2.785	0	1.897	7.147	0.733
2.928	0	1.937	7.649	0.799
3.066	0	2.074	8.513	0.898
3.238	0	2.063	8.709	0.811
3.299	0	2.107	9.122	0.848
3.304	0	2.148	9.789	0.841
3.239	0	2.192	9.93	0.846
3.281	0	2.208	9.515	0.941

3.233	0	2.23	8.748	1.234
3.209	0	2.159	8.614	1.243
3.231	0	2.1	9.147	1.14
3.214	0	2.149	9.184	1.295
3.229	0	2.122	9.943	0.892
3.327	0	2.177	10.063	1.012
3.313	0	2.16	10.75	1.129
3.337	0	2.17	10.696	1.195
3.423	0	2.151	10.206	1.046
3.168	0	2.124	10.564	1.15
2.892	0	2.111	11.397	0.99
2.505	0	2.179	12.665	1.044
2.262	0	2.356	13.985	1.194
2.331	0	2.802	15.471	1.29
2.407	0	2.945	15.686	1.232
2.263	0	2.842	16.302	1.128
2.446	0	2.749	16.166	1.422
2.367	0	2.518	16.212	1.433
2.304	0	2.406	15.983	1.738
2.224	0	2.276	15.735	1.719
2.184	0	2.17	14.962	2.286
1.798	0	1.984	14.56	2.543
1.744	0	1.864	13.789	3.089
1.899	0	1.759	13.356	3.435
1.913	0	1.635	12.189	3.473
1.645	0	1.583	5.5	2.871
1.634	0	1.572	5.5	3.171
1.663	0	1.567	5	3.523
1.718	0	1.572	5	3.78
1.77	0	1.583	5	3.767
1.828	0	1.629	5.553	4.017
1.952	0	1.693	5.526	4.285
2.078	0	1.572	5.647	3.795
2.012	0	1.583	5.608	3.412
1.828	0	1.629	5.553	3.166
1.952	0	1.693	5.526	3.051
2.078	0	1.906	5.562	3.361
2.012	0	1.787	4.937	3.734
2.065	0	1.867	4.928	3.781
2.123	0	2.056	5.416	4.039
2.203	0	2.1	5.872	3.924
2.191	0	2.131	6.102	4.391
2.314	0	2.149	6.454	3.943
2.402	0	2.135	6.702	3.834
2.48	0	2.179	7.16	3.296

2.511	0	2.212	7.474	3.245
2.56	0	2.006	7.74	3.024
2.524	0	1.887	8.009	2.931
2.544	0	1.842	8.156	2.919
2.502	0	1.818	8.044	2.927
2.49	0	1.761	7.918	3.038
2.51	0	1.724	7.645	3.121
2.557	0	1.851	7.583	2.85
2.345	0	1.897	7.494	3.024
2.439	0	1.873	7.601	2.876
2.339	0	1.909	7.709	2.837
2.257	0	2.049	7.723	2.983
2.213	0	1.931	7.825	2.673
2.129	0	1.9	7.588	2.611
2.019	0	1.946	7.516	2.391
1.881	0	2.047	7.29	1.531
1.764	0	2.52	8.704	0.407
1.866	0	2.714	9.399	0.218
1.883	0	2.743	9.455	0.161
1.711	0	2.501	9.42	-0.197
1.627	0	2.377	9.353	-0.115
1.621	0	2.171	9.157	-0.106
1.767	0	2.109	8.826	-0.14
1.695	0	1.999	8.495	-0.199
1.604	0	1.897	8.067	0.048
1.535	0	1.814	7.591	0.188
1.536	0	1.732	7.261	0.635
1.49	0	1.653	7.128	0.873
1.871	0	1.578	14.918	4.045
1.782	0	1.55	14.063	4.158
1.915	0	1.525	13.318	4.022
1.911	0	1.517	12.006	4.022
1.894	0	1.503	11.659	3.92
1.768	0	1.501	11.238	4.216
1.738	0	1.512	10.936	4.106
1.798	0	1.521	9.987	3.984
1.877	0	1.592	9.315	3.821
1.952	0	1.719	8.659	3.391
2.056	0	1.796	8.65	3.452
2.165	0	1.988	8.686	3.308
2.133	0	1.86	7.725	2.386
2.157	0	1.986	7.492	1.883
2.275	0	2.01	7.212	1.58
2.785	0	1.897	7.033	1.356
2.928	0	1.937	7.595	1.11

3.066	0	2.074	7.643	0.921
3.238	0	2.063	7.468	0.925
3.299	0	2.107	7.079	0.854
3.304	0	2.148	7.464	0.916
3.239	0	2.192	7.741	0.956
3.281	0	2.208	7.794	0.953
3.233	0	2.23	7.186	0.963
3.209	0	2.159	7.33	0.826
3.231	0	2.1	7.401	0.854
3.214	0	2.149	8.069	0.855
3.229	0	2.122	8.038	0.925
3.327	0	2.177	8.505	1.064
3.313	0	2.16	8.988	0.957
3.337	0	2.17	10.524	1.298
3.423	0	2.151	10.613	1.253
3.168	0	2.124	11.503	1.319
2.892	0	2.111	12.404	1.45
2.505	0	2.179	13.212	1.424
2.262	0	2.356	14.668	1.538
2.331	0	2.802	16.944	1.582
2.407	0	2.945	18.481	1.703
2.263	0	2.842	18.1	1.749
2.446	0	2.749	17.78	1.81
2.367	0	2.518	17.798	1.822
2.304	0	2.406	17.784	2.145
2.224	0	2.276	17.301	2.905
2.184	0	2.17	16.9	3.606
1.798	0	1.984	16.299	3.819
1.744	0	1.864	15.472	3.993
1.899	0	1.759	14.797	3.88
1.913	0	1.635	13.688	4.033
1.871	0	1.578	12.614	0.792
1.782	0	1.55	12.313	0.859
1.915	0	1.525	11.806	0.773
1.911	0	1.517	11.775	0.823
1.894	0	1.503	11.766	0.828
1.768	0	1.501	12.124	0.92
1.738	0	1.512	11.643	0.849
1.798	0	1.521	11.436	1.045
1.877	0	1.592	11.668	1.009
1.952	0	1.719	11.501	0.732
2.056	0	1.796	11.719	0.729
2.165	0	1.988	12.175	0.734
2.133	0	1.86	11.894	0.693
2.157	0	1.986	11.338	0.656

2.275	0	2.01	11.344	0.726
2.785	0	1.897	11.316	0.854
2.928	0	1.937	11.914	1.076
3.066	0	2.074	12.502	1.13
3.238	0	2.063	12.787	1.073
3.299	0	2.107	12.858	0.904
3.304	0	2.148	12.881	0.944
3.239	0	2.192	13.491	1.074
3.281	0	2.208	13.498	1.366
3.233	0	2.23	13.701	1.25
3.209	0	2.159	13.076	1.185
3.231	0	2.1	12.736	1.174
3.214	0	2.149	12.918	1.182
3.229	0	2.122	12.232	1.131
3.327	0	2.177	12.123	1.327
3.313	0	2.16	11.325	1.241
3.337	0	2.17	11.38	0.851
3.423	0	2.151	10.525	0.823
3.168	0	2.124	10.695	0.829
2.892	0	2.111	10.452	0.818
2.505	0	2.179	10.529	1.043
2.262	0	2.356	11.268	1.137
2.331	0	2.802	12.03	1.223
2.407	0	2.945	12.014	1.165
2.263	0	2.842	12.19	1.171
2.446	0	2.749	11.886	1.212
2.367	0	2.518	11.67	0.84
2.304	0	2.406	11.577	0.899
2.224	0	2.276	10.645	0.982
2.184	0	2.17	10.36	0.983
1.798	0	1.984	9.437	1.095
1.744	0	1.864	8.524	1.266
1.899	0	1.759	7.711	1.255
1.913	0	1.635	7.064	1.179
1.871	0	1.578	11.386	3.411
1.782	0	1.55	10.569	3.398
1.915	0	1.525	9.828	3.865
1.911	0	1.517	9.694	3.607
1.894	0	1.503	9.331	3.471
1.768	0	1.501	9.047	3.604
1.738	0	1.512	8.867	3.493
1.798	0	1.521	9.047	2.652
1.877	0	1.592	8.333	2.203
1.952	0	1.719	8.105	1.907
2.056	0	1.796	7.863	1.67

2.165	0	1.988	7.453	1.364
2.133	0	1.86	7.612	0.99
2.157	0	1.986	7.535	0.945
2.275	0	2.01	7.381	0.885
2.785	0	1.897	7.235	0.688
2.928	0	1.937	7.688	0.786
3.066	0	2.074	8.936	0.78
3.238	0	2.063	9.191	0.978
3.299	0	2.107	9.056	0.981
3.304	0	2.148	8.57	1.113
3.239	0	2.192	8.98	1.014
3.281	0	2.208	10.243	1.023
3.233	0	2.23	10.814	1
3.209	0	2.159	10.411	0.96
3.231	0	2.1	10.829	1.055
3.214	0	2.149	12.052	1.067
3.229	0	2.122	14.076	1.181
3.327	0	2.177	16.008	1.37
3.313	0	2.16	15.959	1.46
3.337	0	2.17	16.43	1.542
3.423	0	2.151	16.448	1.592
3.168	0	2.124	16.361	1.431
2.892	0	2.111	16.346	1.162
2.505	0	2.179	16.525	1.172
2.262	0	2.356	16.17	1.541
2.331	0	2.802	17.974	1.752
2.407	0	2.945	17.811	1.561
2.263	0	2.842	17.956	1.75
2.446	0	2.749	17.761	1.422
2.367	0	2.518	17.834	1.4
2.304	0	2.406	16.817	1.371
2.224	0	2.276	16.167	1.461
2.184	0	2.17	15.078	1.862
1.798	0	1.984	13.788	2.306
1.744	0	1.864	13.069	3.098
1.899	0	1.759	12.113	3.637
1.913	0	1.635	10.737	3.751
1.915	0	1.525	11.806	0.773
1.911	0	1.517	11.775	0.823
1.894	0	1.503	11.766	0.828
1.768	0	1.501	12.124	0.92
1.738	0	1.512	11.643	0.849
1.798	0	1.521	11.436	1.045
1.877	0	1.592	11.668	1.009
1.952	0	1.719	11.501	0.732

2.056	0	1.796	11.719	0.729
2.165	0	1.988	12.175	0.734
2.133	0	1.86	11.894	0.693
2.157	0	1.986	11.338	0.656
2.275	0	2.01	11.344	0.726
2.785	0	1.897	11.316	0.854
2.928	0	1.937	11.914	1.076
3.066	0	2.074	12.502	1.13
3.238	0	2.063	12.787	1.073
3.299	0	2.107	12.858	0.904
3.304	0	2.148	12.881	0.944
3.239	0	2.192	13.491	1.074
3.281	0	2.208	13.498	1.366
3.233	0	2.23	13.701	1.25
3.209	0	2.159	13.076	1.185
3.231	0	2.1	12.736	1.174
3.214	0	2.149	12.918	1.182
3.229	0	2.122	12.232	1.131
3.327	0	2.177	12.123	1.327
3.313	0	2.16	11.325	1.241
3.337	0	2.17	11.38	0.851
3.423	0	2.151	10.525	0.823
3.168	0	2.124	10.695	0.829
2.892	0	2.111	10.452	0.818
2.505	0	2.179	10.529	1.043
2.262	0	2.356	11.268	1.137
2.331	0	2.802	12.03	1.223
2.407	0	2.945	12.014	1.165
2.263	0	2.842	12.19	1.171
2.446	0	2.749	11.886	1.212
2.367	0	2.518	11.67	0.84
2.304	0	2.406	11.577	0.899
2.224	0	2.276	10.645	0.982
2.184	0	2.17	10.36	0.983
1.798	0	1.984	9.437	1.095
1.744	0	1.864	8.524	1.266
1.899	0	1.759	7.711	1.255
1.913	0	1.635	7.064	1.179
1.899	0	1.759	7.711	1.255
1.913	0	1.635	7.064	1.179
1.871	0	1.578	7.156	-2.024
1.782	0	1.55	6.778	-2.088
1.915	0	1.525	6.566	-2.03
1.911	0	1.517	6.359	-1.793
1.894	0	1.503	6.242	-1.847

1.768	0	1.501	6.175	-1.644
1.738	0	1.512	6.111	-1.027
1.798	0	1.521	6.247	-1.196
1.877	0	1.592	6.194	-1.05
1.952	0	1.719	6.226	-0.953
2.056	0	1.796	6.48	-1.049
2.165	0	1.988	6.578	-1.372
2.133	0	1.86	6.331	-1.167
2.157	0	1.986	6.398	-1.178
2.275	0	2.01	6.821	-1.268
2.785	0	1.897	7.142	-1.105
2.928	0	1.937	6.627	-0.678
3.066	0	2.074	6.808	-0.4
3.238	0	2.063	7.014	-0.088
3.299	0	2.107	7.076	-0.057
3.304	0	2.148	7.432	0.325
3.239	0	2.192	7.918	0.088
3.281	0	2.208	7.935	0.36
3.233	0	2.23	7.639	0.325
3.209	0	2.159	7.275	-0.314
3.231	0	2.1	7.235	-0.598
3.214	0	2.149	6.522	-0.712
3.229	0	2.122	6.815	0.231
3.327	0	2.177	7.055	0.188
3.313	0	2.16	7.111	0.5
3.337	0	2.17	7.085	0.207
3.423	0	2.151	8.051	0.365
3.168	0	2.124	9.213	0.206
2.892	0	2.111	9.059	0.474
2.505	0	2.179	8.824	0.668
2.262	0	2.356	8.66	1.917
2.331	0	2.802	10.13	2.262
2.407	0	2.945	10.748	2.42
2.263	0	2.842	10.775	2.314
2.446	0	2.749	10.598	2.72
2.367	0	2.518	10.342	3
2.304	0	2.406	10.078	3.081
2.224	0	2.276	9.723	2.94
2.184	0	2.17	9.237	2.884
1.798	0	1.984	8.741	2.186
1.744	0	1.864	8.024	1.872
1.899	0	1.759	7.857	1.709
1.913	0	1.635	7.21	1.756
1.871	0	1.578	7.156	-2.024
1.782	0	1.55	6.778	-2.088

1.915	0	1.525	6.566	-2.03
1.911	0	1.517	6.359	-1.793
1.894	0	1.503	6.242	-1.847
1.768	0	1.501	6.175	-1.644
1.738	0	1.512	6.111	-1.027
1.798	0	1.521	6.247	-1.196
1.877	0	1.592	6.194	-1.05
1.952	0	1.719	6.226	-0.953
2.056	0	1.796	6.48	-1.049
2.165	0	1.988	6.578	-1.372
2.133	0	1.86	6.331	-1.167
2.157	0	1.986	6.398	-1.178
2.275	0	2.01	6.821	-1.268
2.785	0	1.897	7.142	-1.105
2.928	0	1.937	6.627	-0.678
3.066	0	2.074	6.808	-0.4
3.238	0	2.063	7.014	-0.088
3.299	0	2.107	7.076	-0.057
3.304	0	2.148	7.432	0.325
3.239	0	2.192	7.918	0.088
3.281	0	2.208	7.935	0.36
3.233	0	2.23	7.639	0.325
3.209	0	2.159	7.275	-0.314
3.231	0	2.1	7.235	-0.598
3.214	0	2.149	6.522	-0.712
3.229	0	2.122	6.815	0.231
3.327	0	2.177	7.055	0.188
3.313	0	2.16	7.111	0.5
3.337	0	2.17	7.085	0.207
3.423	0	2.151	8.051	0.365
3.168	0	2.124	9.213	0.206
2.892	0	2.111	9.059	0.474
2.505	0	2.179	8.824	0.668
2.262	0	2.356	8.66	1.917
2.331	0	2.802	10.13	2.262
2.407	0	2.945	10.748	2.42
2.263	0	2.842	10.775	2.314
2.446	0	2.749	10.598	2.72
2.367	0	2.518	10.342	3
2.304	0	2.406	10.078	3.081
2.224	0	2.276	9.723	2.94
2.184	0	2.17	9.237	2.884
1.798	0	1.984	8.741	2.186
1.744	0	1.864	8.024	1.872
1.899	0	1.759	7.857	1.709

1.913	0	1.635	7.211	1.756
1.871	0	1.578	12.614	0.792
1.782	0	1.55	12.313	0.859
1.915	0	1.525	11.806	0.773
1.911	0	1.517	11.775	0.823
1.894	0	1.503	11.766	0.828
1.768	0	1.501	12.124	0.92
1.738	0	1.512	11.643	0.849
1.798	0	1.521	11.436	1.045
1.877	0	1.592	11.668	1.009
1.952	0	1.719	11.501	0.732
2.056	0	1.796	11.719	0.729
2.165	0	1.988	12.175	0.734
2.133	0	1.86	11.894	0.693
2.157	0	1.986	11.338	0.656
2.275	0	2.01	11.344	0.726
2.785	0	1.897	11.316	0.854
2.928	0	1.937	11.914	1.076
3.066	0	2.074	12.502	1.13
3.238	0	2.063	12.787	1.073
3.299	0	2.107	12.858	0.904
3.304	0	2.148	12.881	0.944
3.239	0	2.192	13.491	1.074
3.281	0	2.208	13.498	1.366
3.233	0	2.23	13.701	1.25
3.209	0	2.159	13.076	1.185
3.231	0	2.1	12.736	1.174
3.214	0	2.149	12.918	1.182
3.229	0	2.122	12.232	1.131
3.327	0	2.177	12.123	1.327
3.313	0	2.16	11.325	1.241
3.337	0	2.17	11.38	0.851
3.423	0	2.151	10.525	0.823
3.168	0	2.124	10.695	0.829
2.892	0	2.111	10.452	0.818
2.505	0	2.179	10.529	1.043
2.262	0	2.356	11.268	1.137
2.331	0	2.802	12.03	1.223
2.407	0	2.945	12.014	1.165
2.263	0	2.842	12.19	1.171
2.446	0	2.749	11.886	1.212
2.367	0	2.518	11.67	0.84
2.304	0	2.406	11.577	0.899
2.224	0	2.276	10.645	0.982
2.184	0	2.17	10.36	0.983

1.798	0	1.984	9.437	1.095
1.744	0	1.864	8.524	1.266
1.899	0	1.759	7.711	1.255
1.913	0	1.635	7.064	1.179
1.871	0	1.578	14.918	4.045
1.782	0	1.55	14.063	4.158
1.915	0	1.525	13.318	4.022
1.911	0	1.517	12.006	4.022
1.894	0	1.503	11.659	3.92
1.768	0	1.501	11.238	4.216
1.738	0	1.512	10.936	4.106
1.798	0	1.521	9.987	3.984
1.877	0	1.592	9.315	3.821
1.952	0	1.719	8.659	3.391
2.056	0	1.796	8.65	3.452
2.165	0	1.988	8.686	3.308
2.133	0	1.86	7.725	2.386
2.157	0	1.986	7.492	1.883
2.275	0	2.01	7.212	1.58
2.785	0	1.897	7.033	1.356
2.928	0	1.937	7.595	1.11
3.066	0	2.074	7.643	0.921
3.238	0	2.063	7.468	0.925
3.299	0	2.107	7.079	0.854
3.304	0	2.148	7.464	0.916
3.239	0	2.192	7.741	0.956
3.281	0	2.208	7.794	0.953
3.233	0	2.23	7.186	0.963
3.209	0	2.159	7.33	0.826
3.231	0	2.1	7.401	0.854
3.214	0	2.149	8.069	0.855
3.229	0	2.122	8.038	0.925
3.327	0	2.177	8.505	1.064
3.313	0	2.16	8.988	0.957
3.337	0	2.17	10.524	1.298
3.423	0	2.151	10.613	1.253
3.168	0	2.124	11.503	1.319
2.892	0	2.111	12.404	1.45
2.505	0	2.179	13.212	1.424
2.262	0	2.356	14.668	1.538
2.331	0	2.802	16.944	1.582
2.407	0	2.945	18.481	1.703
2.263	0	2.842	18.1	1.749
2.446	0	2.749	17.78	1.81
2.367	0	2.518	17.798	1.822

2.304	0	2.406	17.784	2.145
2.224	0	2.276	17.301	2.905
2.184	0	2.17	16.9	3.606
1.798	0	1.984	16.299	3.819
1.744	0	1.864	15.472	3.993
1.899	0	1.759	14.797	3.88
1.913	0	1.635	13.688	4.033
1.871	0	1.578	11.386	3.411
1.782	0	1.55	10.569	3.398
1.915	0	1.525	9.828	3.865
1.911	0	1.517	9.694	3.607
1.894	0	1.503	9.331	3.471
1.768	0	1.501	9.047	3.604
1.738	0	1.512	8.867	3.493
1.798	0	1.521	9.047	2.652
1.877	0	1.592	8.333	2.203
1.952	0	1.719	8.105	1.907
2.056	0	1.796	7.863	1.67
2.165	0	1.988	7.453	1.364
2.133	0	1.86	7.612	0.99
2.157	0	1.986	7.535	0.945
2.275	0	2.01	7.381	0.885
2.785	0	1.897	7.235	0.688
2.928	0	1.937	7.688	0.786
3.066	0	2.074	8.936	0.78
3.238	0	2.063	9.191	0.978
3.299	0	2.107	9.056	0.981
3.304	0	2.148	8.57	1.113
3.239	0	2.192	8.98	1.014
3.281	0	2.208	10.243	1.023
3.233	0	2.23	10.814	1
3.209	0	2.159	10.411	0.96
3.231	0	2.1	10.829	1.055
3.214	0	2.149	12.052	1.067
3.229	0	2.122	14.076	1.181
3.327	0	2.177	16.008	1.37
3.313	0	2.16	15.959	1.46
3.337	0	2.17	16.43	1.542
3.423	0	2.151	16.448	1.592
3.168	0	2.124	16.361	1.431
2.892	0	2.111	16.346	1.162
2.505	0	2.179	16.525	1.172
2.262	0	2.356	16.17	1.541
2.331	0	2.802	17.974	1.752
2.407	0	2.945	17.811	1.561

2.263	0	2.842	17.956	1.75
2.446	0	2.749	17.761	1.422
2.367	0	2.518	17.834	1.4
2.304	0	2.406	16.817	1.371
2.224	0	2.276	16.167	1.461
2.184	0	2.17	15.078	1.862
1.798	0	1.984	13.788	2.306
1.744	0	1.864	13.069	3.098
1.899	0	1.759	12.113	3.637
1.913	0	1.635	10.737	3.751
1.871	0	1.578	14.918	4.045
1.782	0	1.55	14.063	4.158
1.915	0	1.525	13.318	4.022
1.911	0	1.517	12.006	4.022
1.894	0	1.503	11.659	3.92
1.768	0	1.501	11.238	4.216
1.738	0	1.512	10.936	4.106
1.798	0	1.521	9.987	3.984
1.877	0	1.592	9.315	3.821
1.952	0	1.719	8.659	3.391
2.056	0	1.796	8.65	3.452
2.165	0	1.988	8.686	3.308
2.133	0	1.86	7.725	2.386
2.157	0	1.986	7.492	1.883
2.275	0	2.01	7.212	1.58
2.785	0	1.897	7.033	1.356
2.928	0	1.937	7.595	1.11
3.066	0	2.074	7.643	0.921
3.238	0	2.063	7.468	0.925
3.299	0	2.107	7.079	0.854
3.304	0	2.148	7.464	0.916
3.239	0	2.192	7.741	0.956
3.281	0	2.208	7.794	0.953
3.233	0	2.23	7.186	0.963
3.209	0	2.159	7.33	0.826
3.231	0	2.1	7.401	0.854
3.214	0	2.149	8.069	0.855
3.229	0	2.122	8.038	0.925
3.327	0	2.177	8.505	1.064
3.313	0	2.16	8.988	0.957
3.337	0	2.17	10.524	1.298
3.423	0	2.151	10.613	1.253
3.168	0	2.124	11.503	1.319
2.892	0	2.111	12.404	1.45
2.505	0	2.179	13.212	1.424

2.262	0	2.356	14.668	1.538
2.331	0	2.802	16.944	1.582
2.407	0	2.945	18.481	1.703
2.263	0	2.842	18.1	1.749
2.446	0	2.749	17.78	1.81
2.367	0	2.518	17.798	1.822
2.304	0	2.406	17.784	2.145
2.224	0	2.276	17.301	2.905
2.184	0	2.17	16.9	3.606
1.798	0	1.984	16.299	3.819
1.744	0	1.864	15.472	3.993
1.899	0	1.759	14.797	3.88
1.913	0	1.635	13.688	4.033