Paleoclimate Changes in the Pacific Northwest Over the Past 36,000 Years from Clumped Isotope Measurements and Isotope-Enabled Model Analysis

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Key Points:

1. Warming and water isotope variations inferred from clumped isotopes are qualitatively similar to transient climate model simulations
2. Amount of warming was about three times the global average and is likely due to the proximity of site to ice margin during OIS 3 and LGM
3. Model analysis indicates $\delta^{18}O$ depletion in this location at the LGM is largely a result of the North American ice sheets

Abstract

Since the last glacial period, North America has experienced dramatic changes in regional climate, including the collapse of ice sheets and changes in effective precipitation. We use clumped isotopes and analysis of transient climate simulations to provide constraints on hydroclimate changes in the Pacific Northwest. The coldest soil temperatures (~10.5 ±1.°C to 14.9 ±1.2°C) occurred ~34,000−23,000 years ago. Glacial warm average monthly temperatures (~1°C) and mean annual air temperature (~-9°C) indicate regional warming of 20.1 ± 2.6°C was about three times the global average. Proxy data confirm the boundary of the cooler anticyclone induced by LGM ice sheets, and the warmer cyclone in the Eastern Pacific Ocean. Model analysis suggests regional amplification is due to the proximal location of the study area to the Laurentide Ice Sheet margin and the impact of the glacial anticyclone on the region, as well as local albedo. Isotope-enabled model experiments indicate variations in water $\delta^{18}O$ largely reflect circulation changes, with westerly winds and associated storm tracks bringing more depleted vapor to the region during the LGM.

1 Introduction

Proxy records and climate models show that variations in insolation, greenhouse gas levels, the distribution of ice sheets, and other processes have driven changes in climate, including glacial-interglacial cycles (COHMAP members, 1988; Weaver et al., 1998; Mix et al., 2001; Lisiecki and Raymo, 2005). Studies examining sediments from different regions of North America have shown that between the Last Glacial Maximum (LGM; ~23,000-19,000 years ago or ka) and the early Holocene (beginning 11 ka), there were dramatic environmental changes including the collapse of the Cordilleran Ice Sheet (CIS) and Laurentide Ice Sheet (LIS), the drying out of major lake systems in the southwestern US and Great Basin regions, and increased effective precipitation in the Pacific Northwest (Lyle, et al., 2012; McDonald et al., 2012; Whitlock et al., 1992). However, despite decades of study, our ability to quantify and understand terrestrial climate variability in this region and other mid-latitude areas has been limited, largely because of ambiguous reconstructions, and disagreement between reconstructions and simulations.

Two promising tools for studying terrestrial hydroclimates are carbonate clumped isotope thermometry and isotope-enabled climate models. Recent work has shown that carbonate

clumped isotope thermometry can constrain the growth temperatures of carbonate minerals without a priori knowledge of other environmental factors such as water $\delta^{18}O$ (Passey et al., 2010; Eiler, 2011; Eagle et al., 2013). Additionally, clumped isotope-derived growth temperatures can be combined with carbonate oxygen isotope measurements to determine the $\delta^{18}O$ of formation waters. Isotope-enabled climate model simulations offer the ability to track processes impacting the water cycle via fractionations of oxygen and hydrogen isotopes (LeGrande and Schmidt, 2008; Roberts et al., 2011; Zhu et al., 2017; Brady et al., 2019).

In this study, we use clumped isotope thermometry and $\delta^{18}O$ isotope measurements of glacial and deglacial pedogenic carbonates from the Palouse loess with isotope-enabled simulations to examine the evolution of temperature and precipitation in the Pacific Northwest. The region examined is in the Columbia Basin province in eastern Washington. We chose this region because it was directly affected by the Purcell lobe of the CIS during the Last Glacial Maximum (LGM), and thus provides critical constraints on potential climate responses to circulation changes induced by the collapse of the ice sheet (Lora et al., 2016).

Since soils form from parent material by pedogenic processes that depend on localized terrestrial conditions (e.g., precipitation and heat flux) during the time of soil formation (Bader et al., 2015; Sheldon and Tabor, 2009), paleosols have been used extensively to directly infer past climates. In particular, different proxy measurements of pedogenic carbonates have extensively been used as archives of paleoclimate data (Cerling, 1984; Breecker et al., 2009; Sheldon and Tabor, 2009; Passey et al, 2010; Peters et al., 2012; Quade et al, 2012; Eagle et al., 2013). Because calcic paleosols are characterized by the presence of a prominent Bk horizon, which forms over hundreds to thousands of years, their chemical composition is a function of equilibrium, and short-term climatic volatility does not overprint the long-term conditions (e.g.,

regional cooling due to volcanism; Peters et al., 2012; Sheldon and Tabor, 2009). With the Palouse loess, we are able to build on prior work in this region examining controls on the stable isotopic composition of paleosols (Passey et al., 2010; Takeuchi et al., 2009; Lechler et al., 2018).

The chronology of the Palouse loess has been well constrained, and for this work, we investigated the Washtucna paleosol that formed during the middle to late Wisconsin (~40 to 17 ka); and the Sand Hills Coulee that formed either during the Younger Dryas to early Holocene (~13 to 11 ka) or the relatively warm and dry Holocene Climatic Optimum (HCO; ~11 to 7 ka) (Berger and Busacca, 1995; Richardson et al., 1997; Blinnikov et al., 2002; Sweeney et al., 2005; Spencer and Knapp, 2010). In addition to reconstructing past temperature and water isotope changes, we utilize model simulations to investigate the likely factors influencing regional climate variations.

Our study had several objectives: (i) to reconstruct carbonate formation temperatures using carbonate clumped isotopes; (ii) to derive mean annual air temperatures (MAAT) and warmest average monthly temperatures (WAMT) using air temperature transfer functions developed by Quade et al. (2012) and compare these to modern and simulated regional MAAT and WAMT; (iii) to use paleotemperature results obtained from the Sand Hills Coulee paleosol to test if it formed during the Holocene Climatic Optimum (HCO); (iv) to compare reconstructed climate parameters to climate model simulations, including those from the Paleoclimate Modeling Intercomparison Project Phases 3 & 4 (PMIP3 & PMIP4) and the Transient Climate Evolution of the Last 21,000 Years (TraCE-21k) project (Liu et al., 2009), in order to identify unresolved model biases and a suitable model for the region; and (v) to track the source of local precipitation using both proxy temperature and soil water $\delta^{18}O$ reconstructions and the stable

water isotope-enabled version of the Community Earth System Model (iCESM1.2; Brady et al. 2019).

2. Background

The study area is within an 80 km^2 region at 46 ^oN, 118 ^oW with an average elevation of 420 meters above average mean sea level in eastern Washington (Figure 1). The Palouse region currently experiences a temperate climate with a mean annual temperature of 10.9 ^oC and a summer average temperature of 21.2 ^oC; mean annual precipitation is 280 mm with the majority occurring in winter (PRISM Climate Group, 2018). Paleosol sites include AY-1 (i.e. CLY-2 site in Busacca and McDonald, 1994), AY-2 (i.e. CLY-1 site in Busacca and McDonald, 1994), KP1, and WA-3 (i.e. Busacca's [1989] roadcut). Whitlock et al. (2000) and Blinnikov et al. (2002) compiled a terrestrial climate record of the region using a pollen record from Carp Lake and a phytolith record from the Palouse loess, which provide context for this work. In addition, Dyke et al. (2002) describes the LIS and CIS margin advance and retreat. A composite ice sheet was created for the Coupled Model Intercomparison Project Phase 5 experiments by combining information from three reconstructions of the distribution of ice mass because direct evidence of the distribution does not exist (ICE-6G v2.0: Argus and Peltier, 2010; GLAC -1a: Tarasov et al., 2012; ANU: Lambeck et al., 2010).

Prior work has shown that the Palouse experienced cool, temperate, dry conditions during the early-mid-Wisconsin (~42.9 to 30.9 ka), a point in time when the LIS margin was near the boundary of the Canadian Shield and the CIS remained small (Dyke et al., 2002). Towards the end of Oxygen Isotope Stage (OIS) 3 (36 to 27.6 ka) and the early stages of OIS 2 (beginning in 27.6 ka; Martinson et al., 1987), the LIS margin approximately followed the boundary of the Canadian Shield and began its advance to its maximum extent (Dyke et al., 2002). The LIS margin advanced to its late OIS 2 limit in the northwest, south, and northeast (i.e. south of the of the Great Lakes) about 24-23 ka and in the southwest and far north about 21-20 ka (Dyke et al., 2002). It remained near that limit until ~17 ka, while the CIS remained limited (Clark and Mix, 2002; Dyke et al., 2002).

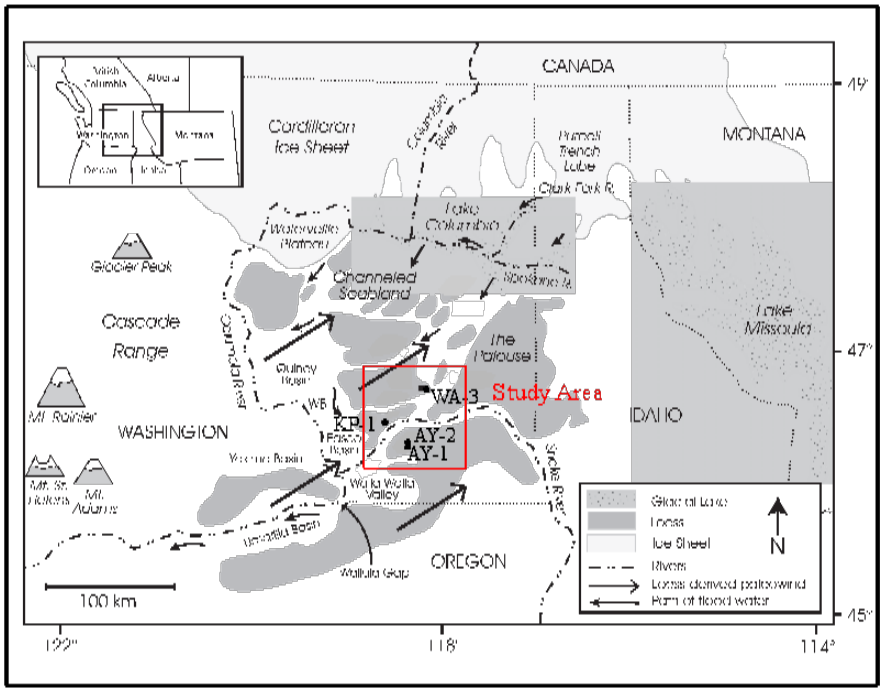

Figure 1. Locality map. Map of the Pacific Northwest showing the site locations within the context of glacial lake Missoula-Channeled Scabland system, the Cordilleran ice sheet at its Late Wisconsin maximum, loess deposits, prevailing winds, and generalized flow directions (as described in McDonald et al., 2012).

As the LIS retreated, the CIS advanced to its maximum extent at about 15-14 ka (Booth et al., 2003; Clark and Mix, 2002; Dyke et al., 2002; Whitlock, 1992). During this period (~30.9 to 15 ka), the Palouse experienced cold, dry conditions; in addition, the late Wisconsin Glacial Lake Missoula (15.7-13.5 ka) was created by an ice dam formed by the Purcell Trench lobe of the CIS (Blinnikov et al., 2002; Booth et al., 2003; Whitlock et al., 2000). Near the end of OIS 2 and the beginning of OIS 1 (14 ka; Martinson et al, 1987), the climate in the Palouse began to transition into a cooler and wetter climate that persisted throughout the late glacial period (~14 to 11 ka; i.e., the Younger Dryas to early Holocene), progressing to a warmer and drier climate than the modern that persisted throughout the HCO (~11 to 7 ka).

The Palouse loess was likely sourced from slackwater sediments deposited during glacial outburst floods in basinal areas (i.e. Pasco Basin and Walla Walla Valley to the south and southwest, especially near Wallula Gap) (Bader et al., 2016; Sweeney et al., 2007; McDonald and Busacca, 1992; Spencer and Knapp, 2010). These floods were created from the rapid emptying of Glacial Lake Missoula by recurring hydraulic instability (Booth et al., 2003). After the deposition of slackwater sediments, prevailing southwesterly wind transported these deposits

from the basinal areas onto the surrounding Palouse hills (McDonald et al., 2012; Sweeney et al., 2007). Times of decreased eolian dust production may have allowed episodes of soil formation in the loess, which appear to have occurred primarily during full glacial conditions when the North American ice sheets produced a glacial anticyclone resulting in weakened westerly winds (Bartlein et al., 1998; Sweeney et al., 2004). The slowing loess transportation and deposition process promoted calcic soil formation in spite of a cold climate (Sweeney et al., 2004). Dust production decreased up to five-fold (~ 6 cm/yr) from 35 ka to 15 ka and increased afterwards to a rate greater than 20 cm/yr (Sweeney et al., 2004).

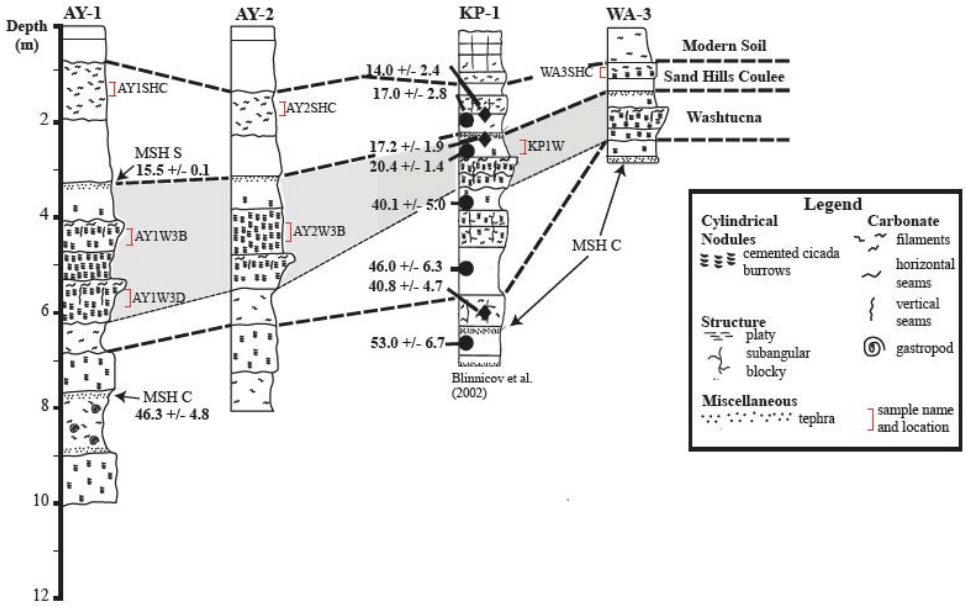

Figure 2. Pedostratigraphic columns with sampled locations, and sedimentation rate estimates. Thermoluminescence loess ages are in thousands of years (circles from Berger and Busacca, 1995 and diamonds from Richardson et al., 1997, 1999). The Mt. Saint Helens set S and C (MSH) tephra ages are in thousands of years. Sedimentation rate estimates from 35 ka to 15 ka (highlighted in gray) are estimated at approximately 6 cm per year, and before and after this interval, are estimated to be >20 cm per year (Sweeney and Busacca, 2004). KP-1 was modified from Blinnicov et al. (2002), and WA-3 was modified from Busacca (1989).

The entire Palouse loess spans the Pleistocene and Holocene (Busacca, 1989; Berger and Busacca, 1995; Blinnicov et al., 2002; Richardson et al., 1997; 1999; Spencer and Knapp, 2010). Table S1 summarizes chronologic constraints. Different sections of the Palouse loess have been dated using a range of techniques, including paleomagnetism, radiocarbon, and thermoluminescence. Two markers (i.e. Cascade-sourced tephras and distinct carbonate paleosols like the Washtucna and the Old Maid Coulee paleosols) were used in the field to

correlate horizons that have not been dated at sites being investigated in this study (McDonald et al., 2012; Spencer and Knapp, 2010). In addition, estimated sedimentation rates from Sweeney et al (2004) were applied between datums to estimate the age of horizons lacking an absolute age date. In summary, (Figure 2), the main dated tephra layers for the sites being investigated include the Mt. Saint Helens set C (MSH C; cal. 46.3 +/- 4.8 ka), and Mt. Saint Helens set S (MSH S; cal. 15.4 +/- 0.1 ka; Sweeney et al. 2005; McDonald et al., 2012). Surrounding sites, not investigated in this study, either contain the Glacier Peak tephra (cal. 11.6 +/- 0.05 ka), or the Mazama Ash (cal. 7.6 +/- 0.1 ka; Sweeny et al. 2005; McDonald et al., 2012). Additional age control is provided from thermoluminescence dating of quartz and feldspar grains (Berger and Busacca, 1995; Richardson et al., 1997; 1999). Thermoluminescence age on the lower boundary of the Washtucna paleosol is 40.1 +/- 3.7 ka, and an age for the upper boundary is 17.2 +/- 1.9 ka (Richardson et al., 1997; 1999). A thermoluminescence age on the lower boundary of the Sand Hills Coulee paleosol is 14.0 +/- 2.4 ka (Richardson et al., 1997); however, the upper boundary is not well constrained, and appears to possibly extend into the HCO.

2 Materials and Methods

2.1 Field Methods

The sites were prepared for sampling by excavating all visibly weathered or modern material from the surface of the soil profile in order to expose comparatively unaltered loess (Bader et al., 2015). The sites are not described in this study because detailed descriptions already exist from previously published literature (Busacca, 1989; McDonald and Busacca, 1992; Busacca and McDonald, 1994). Carbonate development in the field was assessed based on visible calcic features and sample effervescence in 5% HCl. Micrite and microsparite field samples were segregated from horizontal and vertical carbonate seams and used for clumped isotope analysis (supplementary information). In addition, two supplemental analyses were used to discriminate pedogenic carbonate from detrital carbonate (supporting information; Figure S1-S6; Table S2).

2.2 Calculation of Isotopic Ratios and Temperatures

Detailed methods are in the supplementary information. Powdered paleosol samples were measured on a modified MAT 253 gas-source IRMS mass spectrometer with both equilibrated

gas and carbonate standards measured, using methods described elsewhere (Defliese and Tripati, 2020). 25 and 1000 ^{o}C gas standards were measured, along with ETH 1-4 standards, and a suite of in-house carbonate standards. Data are reported using the Brand parameter set (Daeron et al., 2016) and on the absolute reference frame (Dennis et al., 2010). An 0.082‰ acid fractionation factor was added to samples (Defliese et al., 2015) which has been shown to yield accurate results based on prior work in this lab (Defliese and Tripati, 2020; Uphadhyay et al., in review). The temperature calibration of Bernasconi et al. (2018) was used for calculating paleotemperatures, and the carbonate-water oxygen-isotope calibration relationship of Kim and O'Neil (1997) was used for reconstructing water $\delta^{18}O$. Calculated soil carbonate formation temperatures (referred to as $T(\Delta_{47})$ or T_{47}) were then used to reconstruct MAAT and WAMT by using the relationship published by Quade et al. (2012). Uncertainties in $T(\Delta_{47})$, MAAT, and WAMT errors are reported as one standard error and represent propagated external errors, following conventions from several studies (Passey et al., 2010; Eagle et al., 2013).

2.3 Model Simulations

We compared data to simulations from 9 PMIP3 models and 4 currently available PMIP4 models (Braconnot et al., 2012) to assess the regional climate in these simulations. We compared reconstructed glacial to modern temperature changes to the changes in simulated temperatures between LGM and pre-industrial simulations (LGM–PI). In addition, we compared MAAT and WAMT derived from our samples to Pacific Northwest temperatures from the transient climate simulation of the last 22 ka (TraCE-21k; He, 2011; Liu et al., 2009). To examine water isotopes and gauge the impact of ice sheets on temperatures in the region of interest, we also performed three simulations with the Community Earth System Model version 1.2 (CESM1.2) with water isotope tracers (Brady et al., 2019). Isotopes of oxygen and hydrogen are included in the dynamically coupled atmosphere (CAM5), ocean (POP2), land (CLM4), sea ice (CICE4), and river runoff (RTM) components. For this work, the atmosphere and land are on a 1.9° latitude x 2.5° longitude finite-volume grid, and the ocean and sea ice use a ~1° rotated pole grid. Previous studies show that the simulated isotopic distributions compare favorably with observation and other models of similar complexity (Nusbaumer et al., 2017; Wong et al., 2017). We performed three simulations: 1) a preindustrial control (PI) experiment, 2) a LGM experiment with period appropriate boundary conditions, and 3) a LGM land-ice only (LGM-ice_only) experiment, using the LGM ice sheet configuration with PI CO_2 and orbital conditions. Initial ocean oxygen

248 isotopic distributions came from the GISS interpolated ocean $\delta^{18}O$ dataset (LeGrande and
249 Schmidt, 2006). Ocean average $\delta^{18}O$ was increased by +1‰ for the LGM and LGM-ice_only
250 experiments to account for the large ice sheets (Duplessy et al. 2002). Ice volume and
251 topography came from the ICE-6G dataset (Peltier et al., 2015). All simulations were initialized
252 from previously equilibrated experiments and run for an additional 550 years with water isotope
253 tracers, allowing the atmosphere, land, and upper ocean to reach near equilibrium; data analyzed
254 is from the final 48 years of each simulation.

255 **3 Results**

256 3.1 Temperature and $\delta^{18}O$ changes: Proxy data

257 Measured stable isotope ratios of carbonates are in Table 3. The $\delta^{18}O$ of carbonates are
258 enriched (18.5 ‰–18.4 ‰) during the latter part of OIS (Oxygen Isotope Stage) 3 (36 to 27.6 ka)
259 as well as during OIS-2 (27.6 to 14 ka) (17.3 ‰–17.1 ‰) relative to modern values. OIS-1 (14
260 ka-present) carbonates have similar or enriched $\delta^{18}O$ values (19.2 ‰–16.8 ‰) relative to modern
261 values. Carbonate $\delta^{18}O$ values are consistent with two previous studies in the region (Stevenson,
262 1997; Takeuchi et al., 2009).

263 Clumped isotope data over the past 36,000 years reveal evidence for dynamic changes in
264 temperature, with soil temperatures warming by 21.9 ^{o}C ± 4.7 ^{o}C, mean annual air temperatures
265 warming by 26.3 ^{o}C, and warm month air temperatures warming by 24.8 ^{o}C (Table 4; Figures 3
266 and 4). The LGM to present day warming in soil temperatures is 17.6 ^{o}C ± 4.6 ^{o}C, in MAAT is
267 20.1 ^{o}C, and in WMAT is 20.2 ^{o}C.

268 The quantitative reconstruction of temperature from the clumped isotope data reveals a
269 pattern of change that is consistent with other non-thermodynamically derived proxy records for
270 the region. The data provide quantitative evidence to support the qualitative hydroclimate
271 reconstructions from pollen in nearby Carp Lake (Whitlock et al., 2000). The pattern also
272 matches the timing of changes in paleoclimate inferred from phytoliths in the Palouse loess
273 (Blinnikov et al., 2002). Data are also broadly consistent with inferences of temperature change
274 from proxies including chironomids and pollen (Meltzer and Holliday, 2010). The temperature
275 change we find is also consistent with what was inferred by Lechler et al. (2018) using clumped
276 isotopes, but provides further resolution on both the magnitude and timing of variations (Figure
277 3).
278

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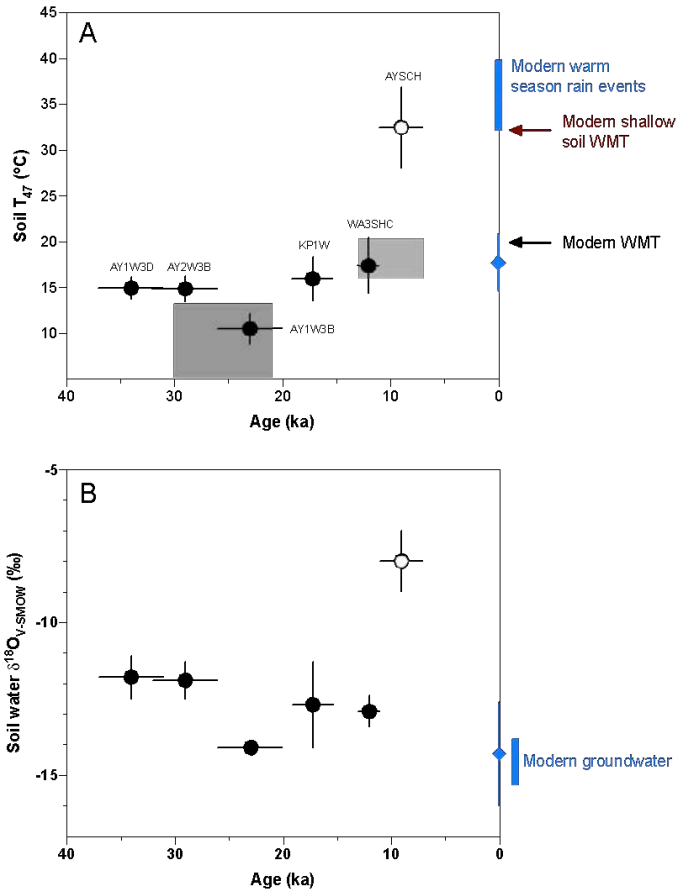
Figure 3. Estimates of soil carbonate formation temperatures from clumped isotopes (Soil T_{47}) and water $\delta^{18}O$ over the past 40,000 years (ka). (A) Soil carbonate formation temperatures with each paleosol labeled. Black circles indicate results from this work calculated using our measurements of Δ_{47} and the temperature calibration from Bernasconi et al. (2018). Open symbol indicates data from samples that formed during the Holocene Climatic Optimum, that could record formation during conditions similar to modern season rain events in shallow soils, after Lechler et al. (2018). Grey squares indicate temperatures reconstructed by Lechler et al. (2018). Blue diamond indicates modern soil temperature from Takeuchi et al. (2009). Black arrow indicates modern warm month mean temperatures, while blue vertical bar indicates temperatures during modern warm season rain events, and red arrow indicates modern shallow soil warm month mean temperatures, after Lechler et al. (2018). (B) Soil water $\delta^{18}O$. Black circles indicate results calculated using the temperature calibration from Bernasconi et al. (2018) and with the carbonate-water $\delta^{18}O$ calibration of Kim and O'Neil (1997). Blue diamond indicates modern soil water $\delta^{18}O$ and groundwater $\delta^{18}O$ from Takeuchi et al. (2009).



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281 The coldest temperatures in the record occurred during the LGM (~23 ± 3 ka), with
282 warming in the region occurring coeval with a decrease in a global benthic $\delta^{18}O$ stack (Lisiecki

and Stern, 2016) and synthesis of proxy data (Shakun et al., 2012) (Figure 4). Our data suggest that temperatures during the Younger Dryas were warmer than LGM values, but cooler than at present. A shift towards a warmer global climate (Diffenbaugh et al., 2010; Kaufman et al., 2004; Mayewski et al., 2004; Shakun et al., 2012; Marcott et al., 2013), and regionally to a warmer, wetter climate began to occur after a rapid loss of ice around 14 ka (Lora et al., 2016). The loss of ice likely caused an abrupt reorganization of the circulation, during which time the two branches of the westerly jet merged and shifted north by several degrees, leading to moistening of the Pacific Northwest (Lora et al., 2016). This is consistent with the relationship between thermal wind and baroclinic instability. A poleward retreat of land ice would likely weaken equator-to-pole temperature gradients, thus migrating the jet stream further north. In addition, northward shifts in baroclinic instability associated with a migrating jet brings precipitation belts northerly, consistent with a moistening of the Pacific Northwest during deglaciation. The weaker jets allow baroclinic waves to break, which in turn allows warm air to leak into the Pacific Northwest. The warmest temperatures in our reconstruction occur during the Holocene Climatic Optimum (HCO) at ~9 ± 2 ka (Figure 4).

Soil water isotope values exhibit similar trends to the reconstruction of temperature, with a total range of 6.2 ± 0.5‰ observed in the reconstruction (Figure 3). When a -1.2 ‰ global ice volume correction is factored in, the most depleted water isotope values are reconstructed for the LGM, with values ~ 1 ‰ less enriched than at present. The most enriched water isotope values we reconstruct, -6.7±0.9 ‰, are observed during the HCO.

3.2 Regional amplification of warming

A global synthesis of terrestrial and marine proxy data combined with the ensemble of PMIP2 climate models suggest global MAAT temperatures during the LGM were ~4 ^{o}C cooler than modern (Annan and Hargreaves, 2013; Bartlein et al., 2011; Braconnot et al., 2007; Shakun et al., 2012) (Figure 4), while more recent proxy syntheses and model analysis suggests it may have been ~5-6.5 ^{o}C cooler (Friedrich et al., 2016; Tierney et al., 2020). The clumped isotope data for the Palouse during the later part of OIS-3 (36 to 27.6 ka) and the beginning of OIS-2 (27.6 to 21 ka) would imply a much larger amplitude of regional temperature change (~20.1 ^{o}C cooler MAAT during the LGM) than either of these estimates for global surface temperatures. These data, however, are broadly consistent with a range of qualitative proxies (see Section 3.1).

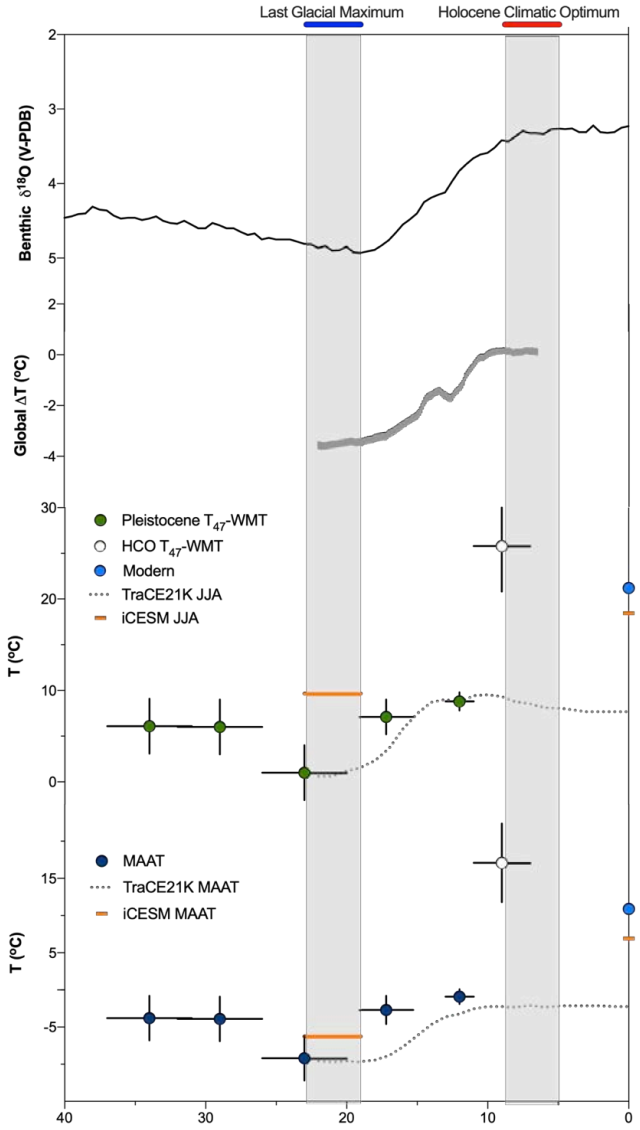

Figure 4. Estimates of warm month temperatures and mean annual air temperatures derived from clumped isotopes (T_{47}) compared to TraCE21K and iCESM temperature anomalies from simulations and benthic foraminiferal $\delta^{18}O$ over the past 40,000 years (ka). Last Glacial Maximum and Holocene Climatic Optimum (HCO) also marked. Benthic $\delta^{18}O$ is the Lisiecki and Stern (2016) stack. Global ΔT is from Shakun et al. (2012), with larger amplitude (~5-6.5 ^{o}C) changes estimated by Friedrich et al. (2016) and Tierney et al. (2020).. TraCE21K anomalies are shown with dotted line (Liu et al., 2009). iCESM anomalies are shown with orange horizontal bars (Brady et al., 2019). Blue circles indicate modern values, and open symbols indicate HCO values.

The larger amplitude of cooling in the Palouse region during the latter part of OIS-3 and the beginning of OIS-2 coincides with a culmination of different events that would have strongly impacted regional climates. During the latter part of OIS-3 and the beginning of OIS-2, the last LIS buildup took place when the ice margin was at a proximal location to the study area (Bartlein et al., 1998; Dyke et al., 2002; Hostetler and Bartlein, 1999). During this time, anticyclonic circulation would have been produced by high atmospheric pressure over the ice sheet, and the westerly jet over the eastern portion of western North America would have been split (Bartlein et al., 1998; Hostetler and Bartlein, 1999; Manabe and Broccoli, 1985). Weakened westerlies due to the anticyclone decreased loess deposition rates at sites >150 km from the LIS

margin, extending as far south as the Washington and Oregon border from ~36 to 15 ka (Sweeney et al, 2004). Moreover, dry conditions, inferred from pollen and phytoliths records, would have resulted from the anticyclone deflecting moisture-bearing storms from the west and southwest (Lora et al., 2017; Lora et al., 2016; Sweeney et al, 2004; Whitlock and Bartlein, 1997).

The Holocene Climatic Optimum temperatures that we reconstruct are similar to or warmer than present, which is not dissimilar to the record of global temperatures (Figure 4). A major factor associated with regional terrestrial hydroclimate changes during the early and mid-Holocene is insolation driven by Earth's orbital variations (Diffenbaugh et al., 2010; Kaufman et al., 2004; Mayewski et al., 2004; Skinner et al., 2020), and changes in atmospheric circulations have been inferred from proxy and model analysis (Bartlein et al., 1989; Kaufman et al., 2004; Skinner et al., 2020). A weakening of the Aleutian low in winter, identified by Lora et al (2016) as beginning by 13.5 ka, and the strengthening of the eastern Pacific and Bermuda high-pressure systems in summer, along with evidence for a poleward shift in atmospheric rivers in the mid-Holocene (Skinner et al., 2020) associated with the northward movement of the jets, would have created conditions that were less cloudy and drier than present in the region, which ultimately caused hotter near-surface air temperatures (Bartlein et al., 1998). Furthermore, heat capacity during this period of higher summer insolation increased as a result of more vegetated land combined with ice sheet retreat (Gildor and Tziperman, 2001; Kaufman et al., 2004).

3.3 Proxy Temperatures Compared to Simulations

All climate model simulate Pacific Northwest MAAT depressions between their LGM and Pre-Industrial (PI) simulations that exceed global average temperature changes, with six out of nine models from the PMIP3 ensemble and iCESM simulating temperature changes in excess of 10 ^{o}C, and two of the PMIP4 models showing changes of ~9 ^{o}C (Figure 5; Table S8). The PMIP3 and PMIP4 multi-model ensemble mean LGM-PI MAAT difference for the region is 13.2 ^{o}C ± 4.1 ^{o}C (1 s.d.) and 8.0 ^{o}C ± 2.0 ^{o}C (1 s.d.), respectively. Reconstructed PMIP4 temperature anomalies are warmer in comparison to PMIP3 models in extratropical North America, which has been hypothesized to be due to change in North American Ice sheet reconstructions within PMIP4 models (Kageyama et al., 2020). PMIP3 models are comparable to but slightly lower in magnitude than the reconstructed change in MAAT of 20.1 ± 4.6 ^{o}C, with

the difference not being statistically significant given the uncertainties. Five of the models that simulated the largest changes (i.e. PMIP3 CCSM4, FGOALS-g2, IPSL-CM5A-LR, MIROC-ESM, and MPI-ESM-P) all compare favorably to our result. The PMIP3 simulation results for changes in WAMT are similar, except that the inter-

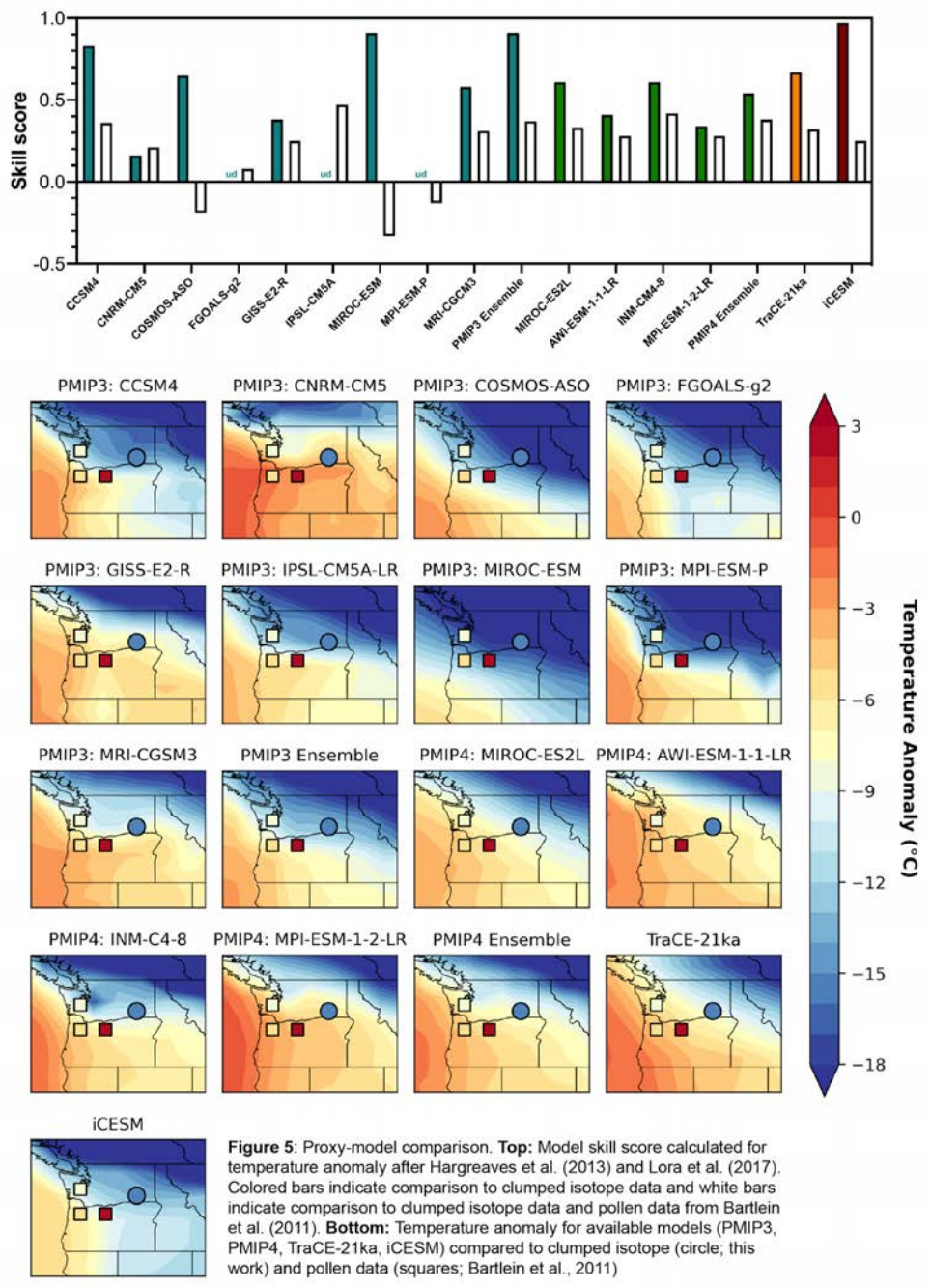

Figure 5: Proxy-model comparison. **Top:** Model skill score calculated for temperature anomaly after Hargreaves et al. (2013) and Lora et al. (2017). Colored bars indicate comparison to clumped isotope data and white bars indicate comparison to clumped isotope data and pollen data from Bartlein et al. (2011). **Bottom:** Temperature anomaly for available models (PMIP3, PMIP4, TraCE-21ka, iCESM) compared to clumped isotope (circle; this work) and pollen data (squares; Bartlein et al., 2011)

359 model spread is greater. The LGM-PI WAMT anomaly in the multi-model average of PMIP4 is -
360 7.2 ± 2.4 ^{o}C (1 s.d.), which is much smaller than the average anomaly in the PMIP3 multi-model
361 average (-12.9 ± 9.0 ^{o}C (1 s.d.)) and our estimate of 20.2 ± 4.6 ^{o}C.

362 To quantitatively gauge climate model performance, we calculated the skill score for
363 each of the models considered in this study using the equation:

364 $$\text{Skill score (SS)} = 1 - \sqrt{\frac{\Sigma(m_i - o_i)^2 - \Sigma(e_i^2)}{\Sigma(n_i - o_i)^2 - \Sigma(e_i^2)}}$$

365 where m_i are the model results, n_i are the reference (in our case, n_i=0, with no change from the
366 LGM to modern), o_i are the observations (clumped results), and e_i are the observation
367 uncertainties (Hargreaves et al., 2013; Lora et al., 2017). A skill score of 1 represents a perfect
368 model, where there is no disagreement between clumped and model estimates, a negative skill
369 score demonstrates that the errors in the model are greater than the reconstructions and a skill
370 score that is undefined would indicate that the model and clumped estimates are too close to
371 evaluate within error of the observations.

372 Figure 5 shows the comparison of the LGM-PI MAAT anomaly for each model to our
373 clumped-isotope derived estimates and pollen data from Bartlein et al. (2011). Overall, all
374 models demonstrate positive skill with respect to the clumped-isotope reconstructed temperature
375 change, with the PMIP3 multi-model average (SS = 0.91) having overall higher skill than the
376 PMIP4 multi-model average (SS = 0.54) for clumped estimates (Figure XXb). With respect to
377 both the clumped and pollen estimates of temperature anomalies, PMIP3 (SS = 0.37) and PMIP4
378 (SS = 0.38) models perform similarly. Only three PMIP3 models (MIROC-ESM, MPI-ESM-P,
379 and COSMOS-ASO) exhibit negative skill in capturing the temperature anomaly reflected in
380 both the pollen and clumped isotope estimates.

381 We also compared our proxy data to the transient evolution of mean and warmest month
382 temperatures from TraCE-21k and iCESM (Figure 4c, d). Our results follow the same broad
383 pattern of temperature change as the TraCE simulation, with a warming trend through the last
384 deglaciation, although the absolute proxy temperatures show larger-magnitude changes than the
385 simulation, while the iCESM MAAT and WAMT reconstructs slightly higher temperatures.
386 Within TraCE-21k, there is an overall similar amplitude of temperature change from the LGM to
387 the Younger Dryas. However, temperature increase into the Holocene is more dramatic in the
388 proxies than the model. Climate models struggle to capture the proxy-reconstructed warmth of

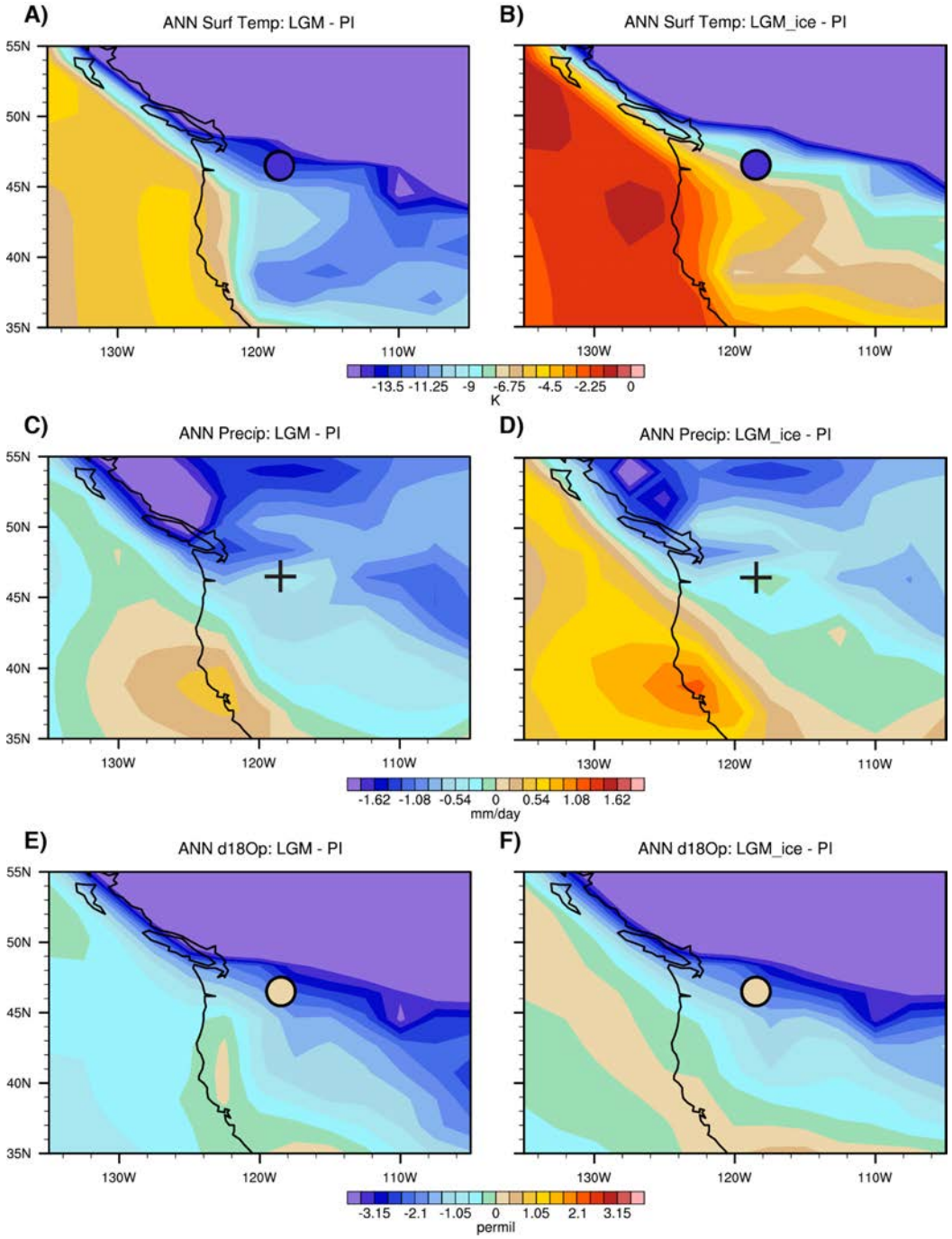

Figure 6. LGM iCESM 1.2 simulations. A. Annual average surface temperature anomalies (LGM minus pre-industrial). B. Annual average surface temperature anomalies (LGM_ice minus pre-industrial). C. Precipitation anomalies (LGM minus pre-industrial). D. Precipitation anomalies (LGM_ice minus pre-industrial). E. $\delta^{18}O_p$ anomalies (LGM minus pre-industrial). F. $\delta^{18}O_p$ anomalies (LGM_ice minus pre-industrial).

395 the Holocene (Liu et al., 2014; Kaufman et al., 2020), possibly due to an inability to accurately
396 simulate vegetation changes (Tabor et al., 2020). Nevertheless, the broad-scale agreement
397 between the transient simulation and our reconstruction supports the overall accuracy of the
398 regional climate changes simulated by TraCE-21k, despite disagreement in the absolute values of
399 temperature that may result from the model's low resolution or potentially point to unresolved
400 model and/or proxy biases.

401 To better understand the mechanisms responsible for the proxy signals, we compared our
402 measurements against outputs from LGM, LGM-ice_only, and PI iCESM model simulations (see
403 methods; Figure 6). For temperatures in the region, LGM-ice_only produces about 66% as much
404 cooling relative to PI as the full LGM simulation (Figure 5a and 5b), implying that a significant
405 portion of the LGM temperature signal is a consequence of topographic and albedo changes. We
406 suggest that the ice sheets alone only explain part of the local precipitation reduction at the LGM,
407 the regional pattern of precipitation response is quite similar between the LGM and LGM-
408 ice_only cases (Figures 6c and 6d), a consequence of similar Pacific circulation changes
409 (discussed above). Likewise, $\delta^{18}O$ from precipitation ($\delta^{18}O_p$) responses demonstrate that a large
410 portion of the LGM depletion signal relates to the presence of the ice sheets (Figures 6e and 6f).
411 The local $\delta^{18}O$ of column integrated vapor has a large depletion value relative to PI for both the
412 LGM and LGM-ice_only cases (-3.66 ‰ and -2.98 ‰, respectively), suggesting the ice sheets
413 play an important role bringing depleted moisture to the region. Although the specific causes of
414 isotopic change at the sample site are complex, it is clear that the North American ice sheets are
415 an important driver of the signal. Like the temperature response, the proximity of the site to the
416 ice edge leads to an amplified deglacial response in $\delta^{18}O$.
417
418 3.3 Implications for the boundary of the LGM anticyclone
419
420 Determining the regions that were influenced by the glacial anticyclone, given
421 disagreements between model simulations, remains a major essential challenge. Cyclonic wind
422 anomalies in the Eastern Pacific, driven by the decreasing sea level pressure (Lora et al., 2017),
423 bring warm air toward the west coast of the US. The warm air is mostly blocked by Pacific
424 coastal mountain ranges, and turns into the northwest US. The easterly wind anomalies, driven
425 by LGM ice, would have delivered cold air toward the west US, as observed in the PMIP3 model

ensemble 850 mbar anomalies (LGM-pre-industrial) shown in Figure 7. However, the Rocky Mountains, stretching from Idaho to Colorado, insulate most of the cold air.

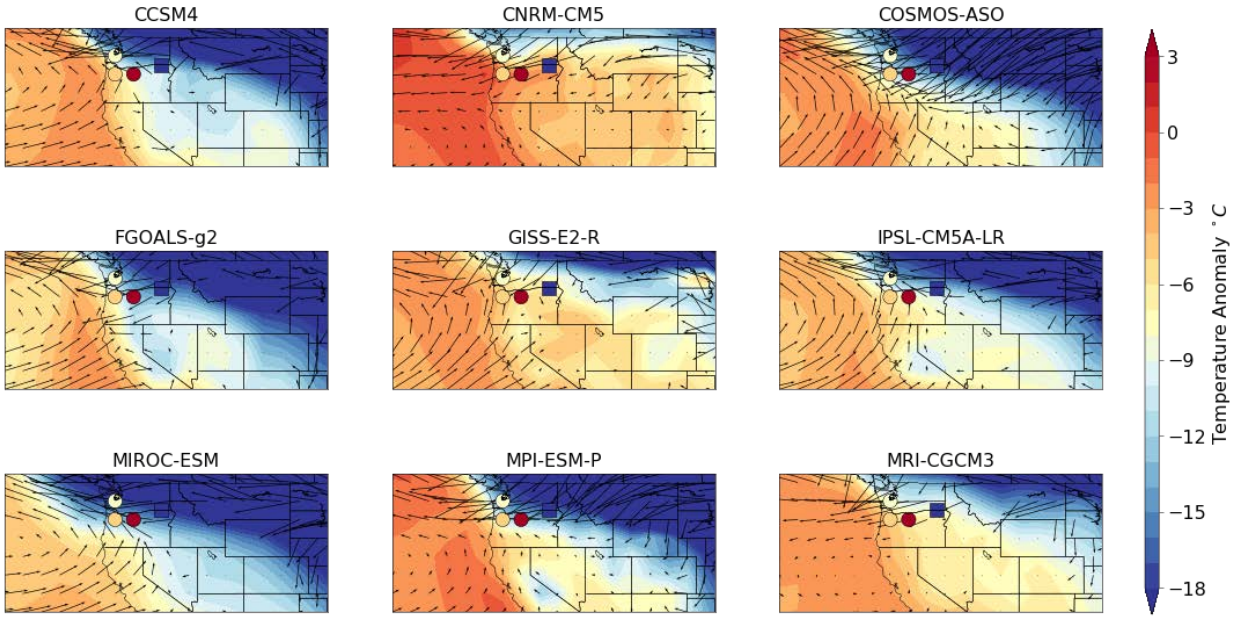

Figure 7 LGM minus Pre-Industrial MAAT anomalies for PMIP3 (colorful contours), pollen reconstruction (circle), and clumped isotope (square) with near surface (850mb) wind anomaly for PMIP3 (black arrows).

Our study area, as it resides in a basin between the Pacific coastal ranges and the Rockies, provides constraints on the boundary of the glacial anticyclone induced by LGM ice sheets, between the cooler LGM anticyclone relative to the warmer cyclone in the Eastern Pacific Ocean. We compare the MAAT reconstruction derived from clumped isotopes to pollen data for three sites to the west (Figure 7). The weaker MAAT anomalies at pollen record sites indicate that these regions are mostly dominated by west to east flows of warmer air from the Eastern Pacific. However, the MAAT anomaly drops dramatically at our study site, consistent with evidence from the thick accumulation of loess in the region, suggesting coverage by the glacial anticyclone during the LGM. Given the dramatic difference between MAAT anomalies between the three pollen localities and our study area, it is very likely that the boundary of the LGM ice-dominated and Eastern Pacific-dominated regimes passed through central Oregon and Washington. These data would imply some climate models (e.g., FGOALS-g2) may overestimate the strength of glacial anticyclone driven by LGM ice, as they simulate cold air that flows into the entire Central Valley and Death Valley regions of California, while other models

(e.g. GISS-E2-R) may simulate the warm air from the Eastern Pacific penetrating too far. Further investigation could help to shed light on the mechanisms that cause model disagreement.

4 Conclusions

This study provides novel paleoenvironmental constraints for the Pacific Northwest, a region that was proximal to the ice sheet margin during the LGM, from clumped isotope analysis and isotope-enabled simulations. We use clumped isotope measurements of paleosols to reconstruct temperatures and water isotope values from soil carbonates ~36 to 9 ka in age. At the LGM, when mean annual surface temperature changed globally by 4-6 ^{o}C, T(Δ_{47}) suggests that regional MAAT and WAMT changed by three to five times this amount in our study area. Calculated soil carbonate formation temperatures, MAAT, and WAMT exhibit a pattern of change from ~36 ka to modern that correlates with paleoenvironmental constraints from pollen and phytoliths as well as with model simulations. Model-data comparison indicates the magnitude of temperature change is likely explained by the proximity of the study area to the LIS margin, the resulting influence of the glacial anticyclone on the region, and local albedo, while changes in the isotopic composition of precipitation is likely due to large-scale atmospheric circulation changes.

Acknowledgments, Samples, and Data

We thank Juan Lora, Alex Lechler, and Kate Huntington for discussions of this work. We thank members of the Tripati lab group for their support. RLM was partially supported by the NSF CREST Center for Energy and Sustainability at Cal State LA (HRD-0932421). JBB was supported by the postdoctoral fellowship: UPLIFT: UCLA Postdocs' Longitudinal Investment in Faculty (Award # K12 GM106996) for a portion of this study. The work was supported by a NSF CAREER award EAR-1352212 to AT. We also acknowledge support by the "Laboratoire d'Excellence" LabexMER (ANR-10-LABX-19) and the French government ("Investissements d'Avenir"). Development of the stable water isotope enabled version of the Community Earth System Model was made possible by the National Science Foundation (NSF) grants AGS-1401778, AGS-1401803, and AGS-1401802. Clay Tabor acknowledges funding from the National Center for Atmosphere Research (NCAR) Advanced Study Program (ASP) postdoctoral fellowship and the computational resources provided by the NCAR Strategic Capability (NSC) project run by Computational and Information Systems Lab (CISL). All simulations were carried out on the Yellowstone supercomputer managed by CISL and sponsored by NSF, and are stored on the NCAR server and available upon request. All data tables and supplementary tables included in the manuscript will be placed on the NOAA Paleoclimatology database on acceptance.

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675
676

677 **Table 1.** Field Localities.

678

Site	Paleosol Material	Elevation (amsl ft)	Latitude	Longitude
AY-1	Micritic Carbonate/Carbonate Seam	1255	46.312	-118.487
AY-2	Micritic Carbonate/Carbonate Seam	1186	46.315	-118.490
WA-3	Micritic Carbonate/Carbonate Seam	1583	46.767	-118.346
KP-1	Micritic Carbonate/Carbonate Seam	1383	46.569	-118.627

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681 **Table 2:** Estimated sample ages. Geochronologic constraints in Table S2.

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Paleosol Horizon and Sample ID	Age (ka)	uncertainty
Sand Hills Coulee Paleosol – Horizon Bkb1		
WA-3		
WA3SHC	12	1
KP-1		
KP1SHC	12	1.5
AY-1		
AY1SHC	9	2
AY-2		
AY2SHC	9	2
Washtucna Paleosol – Horizon Bwb2		
KP-1		
KP1W	17.2	1.9
Washtucna Paleosol – Horizon Bkqmb2 (upper)		
AY-1		
AY1W3B	23	3
WA-3		
WA3W	34	3
Washtucna Paleosol – Horizon Bkqb2		
AY-2		
AY2W3B	29	3
Washtucna Paleosol – Horizon Bkqmb2 (lower)		
AY-1		
AY1W3D	34	3

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685 **Table 3:** Stable isotope data summary. All units for isotope ratios in per mil. Errors are
686 propagated. 1: Carbon dioxide equilibrated scale. 2: Likely impacted by detrital/dissolution
687 based on petrography/ancillary geochemistry (Lopez-Maldonado, 2017).

Sample Name	# replicates	# acquisitions	$\delta^{13}C_c$ V-PDB	1 s.d.	$\delta^{18}O_c$ V-PDB	1 s.d.	Δ_{47} (CDES)[1]	1 s.e.
AY1SHC	4	36	-4.4	0.1	-12.2	0.1	0.638	0.009
AY1W3B	6	54	-6.3	0.0	-13.4	0.1	0.725	0.007
AY1W3D	9	81	-5.7	0.1	-12.0	0.2	0.708	0.005
AY2SHC	5	45	-4.4	0.1	-11.4	0.1	0.658	0.004
AY2W3B	3	27	-5.5	0.2	-12.2	0.1	0.708	0.005
AY2W3C[2]	5	45	-4.5	0.2	-11.8	0.1	0.660	0.005
KP1SHC[2]	3	27	-2.6	0.2	-12.3	0.2	0.595	0.007
KP1W	7	63	-4.5	0.2	-13.2	0.6	0.705	0.008
WA3SHC	2	18	-6.5	0.2	-13.7	0.4	0.699	0.011
WA3W[2]	7	63	-4.6	0.1	-12.7	0.1	0.664	0.004

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691 **Table 4:** Stable isotope-derived reconstructions. Errors are propagated. 1: Calculated using an
692 equation from Bernasconi et al. (2018). 2: Calculated using an equation of Kim and O'Neil
693 (1997). 3: Calculated using an equation from Quade et al. (2012).

694

Sample Name	Age (ka)	err	Δ_{47}-T [°C][1]	1 s.e.	$\delta^{18}O_w$ V-SMOW[2]	1 s.d.	MAAT [°C][3]	WMAT [°C][3]
AY1SHC	9	2	35.5	2.7	-7.8	1.1	20.9	29.3
AY2SHC	9	2	29.3	1.3	-8.1	0.6	13.4	22.2
Average	*9*	*2*	*32.4*	*4.4*	*-8.0*	*0.2*	*17.1*	*25.8*
WA3SHC	12	1	17.4	3.0	-12.9	0.5	-0.9	8.8
KP1W	17.2	1.9	15.9	2.4	-12.7	1.4	-2.7	7.1
AY1W3B	23	3	10.5	1.7	-14.1	0.4	-9.2	1.0
AY2W3B	29	3	14.8	1.4	-11.9	0.6	-3.9	6.0
AY1W3D	34	3	14.9	1.2	-11.8	0.7	-3.8	6.1

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Paleoceanography and Paleoclimatology

Supporting Information for

Paleoclimate Changes in the Pacific Northwest Over the Past 36,000 Years from Clumped Isotope Measurements and Isotope-Enabled Model Analysis

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Introduction

We provide supporting information including a discussion of the materials and methods and analysis of results, six supporting figures, and seven supporting tables.

Text S1.

A. Materials and Methods

A1. Microscale pedogenic carbonate

For this study, we analyzed microscale pedogenic carbonates from the rhizosphere (Barta, 2011), specifically hypocoatings, which are thought to form on the order of weeks to months (Zamanian et al., 2016). Other microscale pedogenic carbonates that we identified in our samples and at our sites were carbonate coatings and calcite laminar caps (i.e. petrocalcic horizons). We did not use either the carbonate coatings or the calcite laminar caps in our analyses because these carbonates are believed to form on the order of 10^2 to 10^3 y. In the Sand Hills Coulee samples, we only found hypocatings, whereas in the Washtucna paleosol we found both hypocoatings and carbonate coatings and observed a calcite laminar cap in the soil profile. Additional details are in the M.S. thesis of the lead author (Lopez-Maldonado, 2017).

A2. Detrital and pedogenic carbonate discrimination

We used two approaches to identify and differentiate between pedogenic carbonates and detrital carbonate in our samples to ensure that our results reflect the environment at the time of formation (pedogenic carbonates) and not subsequent alteration (detrital carbonates). A detailed description is in the M.S. thesis of the lead author (Lopez-Maldonado, 2017). First, we analyzed the Manganese:Calcium (Mn:Ca) and Magnesium:Calcium (Mg:Ca) ratios of samples to determine the purity of secondary carbonates (Li et al., 2013). Next, we examined the samples' micromorphology using thin sections of horizon samples. Both analyses were performed at California State University, Los Angeles (Cal State LA).

To analyze the samples Mn:Ca and Mg:Ca ratios, we digested samples in 0.2 M acetic acid for 24 h. After digestion we centrifuged the samples, and then collected the supernatant for analysis on a Perkin-Elmer ICP-OES Optima 5300. A calibrated blank and a 5 M Sigma-Aldrich multi-element standard solution were run to verify the accuracy and precision of the analysis. Analytical standard errors were <5%.

To analyze micromorphology, we sent samples to Quality Thin Sections (Tucson, AZ) for thin section preparation. Quality Thin Sections impregnated disturbed samples with epoxy, cut them into thin sections, and stained the thin sections with alizarin red-S and potassium ferricyanide. After thin section preparation, we analyzed the samples using standard petrographic microscope techniques.

A3. Stable isotope analysis

A detailed description is in the M.S. thesis of the lead author (Lopez-Maldonado, 2017). Prior to isotope analysis, we cleaned samples by soaking them in 3% H_2O_2 for 4 h to remove trace amounts of organic material (Eagle et al., 2013). After cleaning, we rinsed samples with deionized water, and then oven-dried them at 40 °C. We homogenized samples with an agate mortar and pestle that was cleaned with 10% HCl between samples. Between oven-drying and analysis on the mass spectrometer, samples were stored in desiccators to prevent isotopic exchange with ambient water vapor.

To obtain pure CO_2 gas for analysis, the homogenized samples first go through an automated sampling process comprised of a Costech Zero Blank Autosampler and common acid bath coupled with a gas purification system and gas chromatograph (either from Thermo or Agilent). Acid temperature is kept at 90 ± 2 °C, and is checked daily whilst the machine is in operation. The gas purification system uses a series of cryotraps to remove water vapor from the gas released upon reaction with the acid and a silver wool filter to remove SO_4^- compounds. Samples are then automatically transferred to the mass spectrometer for analysis. We ran the samples on either a Nu Perspective IS mass spectrometer or a Thermo Finnigan MAT 253 gas source mass spectrometer specially configured to make precise clumped isotope measurements of mass-47 CO_2. Isotope analyses were performed in the Tripati lab at UCLA.

A4. Calculations to derive stable isotope values and their errors

A detailed description is in the M.S. thesis of the lead author (Lopez-Maldonado, 2017). All data are reported on the absolute reference frame (Dennis et al., 2011), with equilibrated gases and carbonate standards analyzed daily. Gas standards were equilibrated at either 1000 ^oC or 25 ^oC, and consisted of an isotopically depleted gas or an enriched gas standard. Our working gas is a high-purity Oztech brand CO_2 reference gas (i.e. $\delta^{13}C$ = -3.60 $^o/_{oo}$ VPDB and $\delta^{18}O$ = 25.03 $^o/_{oo}$ V-SMOW). Every sample run also included carbonate standards of known isotopic compositions that were analyzed between every 2-3 samples. Between 3 and 12 replicates were run of each sample.

A5. iCESM simulations

We performed three simulations with the isotope-enabled version of the Community Earth System Model version 1.2 (CESM1.2): 1) A preindustrial control (PI) experiment, 2) a LGM experiment with period appropriate boundary conditions, and 3) a LGM land-ice only (LGM-ice_only) experiment, using the LGM ice sheet configuration with PI CO_2 and orbital conditions.

Isotopes of oxygen and hydrogen are included in the dynamically coupled atmosphere (CAM5), ocean (POP2), land (CLM4), sea ice (CICE4), and river runoff (RTM) components. For this work, the atmosphere and land were run on a 1.9° latitude x 2.5° longitude finite-volume grid, and the ocean and sea ice used a ~1° rotated pole grid. Previous studies have shown that the simulated isotopic distributions compare favorably with observations and other models of similar complexity (Nusbaumer et al., 2017; Wong et al., 2017; Zhang et al., 2017; Zhu et al., 2017). Initial ocean oxygen isotopic distributions were taken from the GISS interpolated ocean $\delta^{18}O$ dataset (LeGrande and Schmidt, 2006). Ocean average $\delta^{18}O$ was increased by +1 ‰ for the LGM and LGM-ice only experiments, to account for the large ice sheets (Duplessy et al. 2002). Ice volume and topography came from the ICE-6G dataset (Peltier et al., 2015). All simulations were initialized from previously equilibrated experiments and run for an additional 550 years with water isotope tracers, allowing the atmosphere, land, and upper ocean to reach near equilibrium; analyses were performed on the final 48 years of each simulation.

B. Analysis of Results

B1. Analysis of Mg/Ca and Mn/Ca ratios

A detailed description is in the M.S. thesis of the lead author (Lopez-Maldonado, 2017). Pure pedogenic carbonates are characterized by low Mg/Ca and Mn/Ca ratios. Mg/Ca and Mn/Ca in the carbonates from our samples ranged from 0.02 to 0.06 mol/mol and 0.03 to 0.15 mmol/mol, respectively (Figure S1-S2). Table S1 shows a summary of the Mg/Ca and Mn/Ca ratio data.

B2. Analysis of Micromorphology

A detailed description is in the M.S. thesis of the lead author (Lopez-Maldonado, 2017). The thin sections in plane-polarized light mainly show a pale structureless pink stain and a pseudofabric in the groundmass formed from non-calcareous silt (Figures S3. C, D, and Figure S4. A, E, and F). Dickson (1966) states that the pale pink stain covering the entire thin section results from the "floods" of carbon dioxide bubbles during the carbonate staining, and indicates that calcite is the only carbonate mineral present. The structureless appearance and pseudofabric suggest a micritic and microsparite carbonate groundmass, which coincides with the dominant pedogenic calcite form in the region (Busacca, 1989; Durand et al., 2010; McDonald and Busacca, 1992). Dissolution voids are not present, and re-precipitated carbonate cannot be distinguished in any of the thin sections.

Thin sections reveal that detrital carbonate grains exist in some of the horizons characterized as pure pedogenic carbonate by the Mg/Ca and Mn/Ca ratios in trace amounts. Under cross-polarized light the Sand Hills Coulee paleosol thin sections—excluding the WA-3 calcic horizon—produced second and third order reds, blues, and yellows (Figure S5.). These colors are the result of the etching process, and are indicative of the presence of detrital limestone or marble grains (Dickson, 1966). Visual inspection of the Washtucna paleosol thin sections in cross-polarized light also showed evidence of very few detrital carbonate grains (Figure S6. A, B, and D), and pedogenic carbonate coatings, which represent carbonate recrystallization, within and around mineral grains in the KP-1 cambic horizon (Figure S6. D).

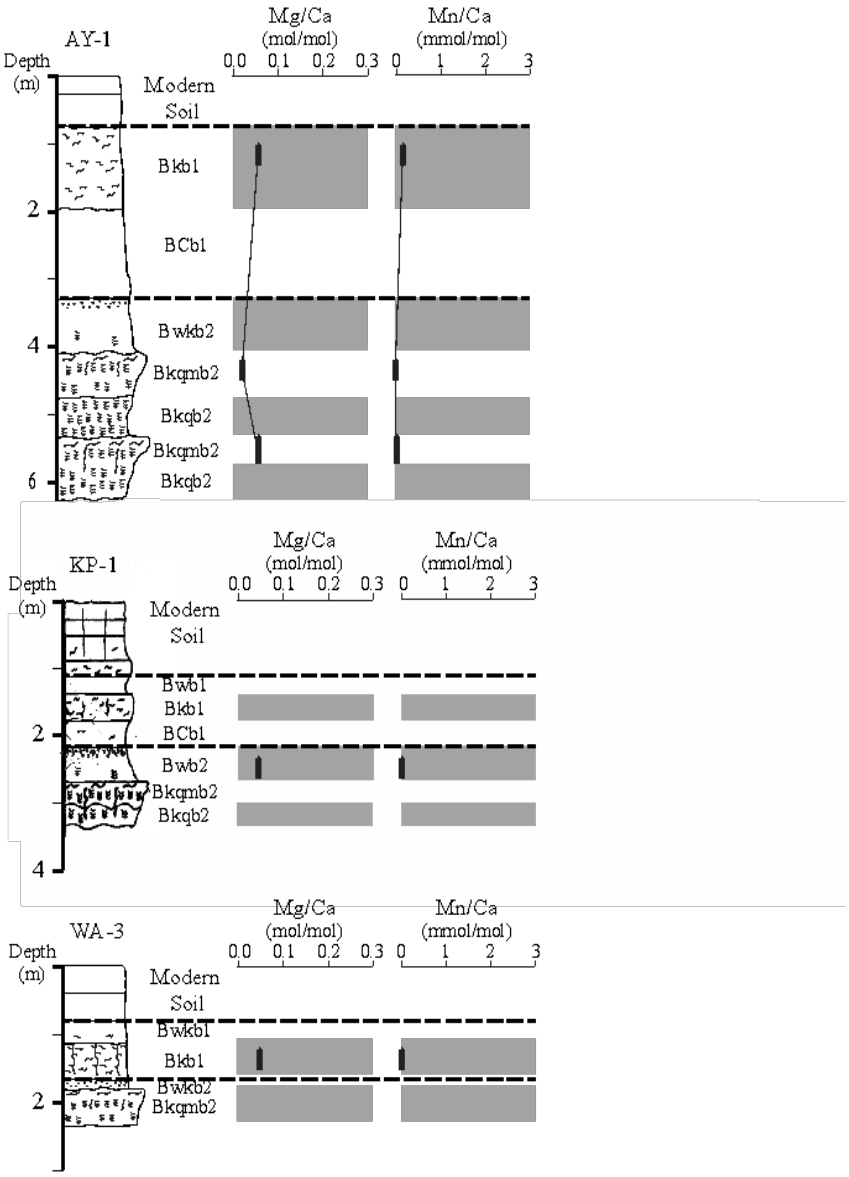

Figure S1. Mg/Ca and Mn/Ca ratios at AY-1, KP-1, and WA-3.

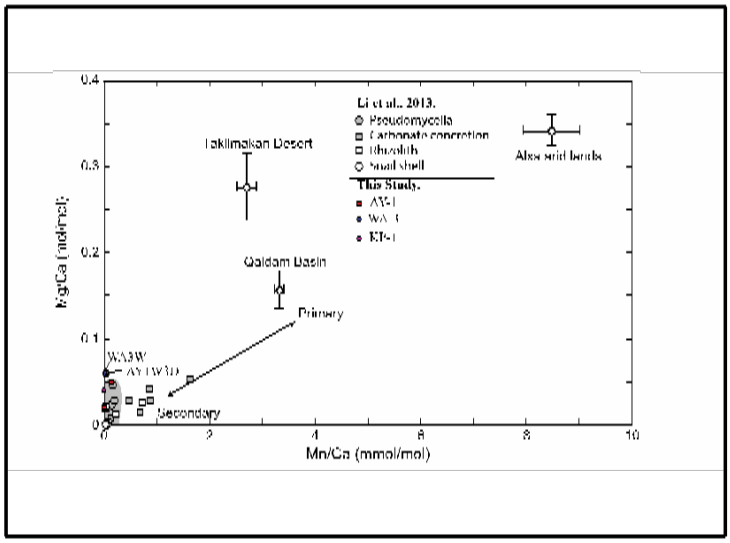

Figure S2. Mg/Ca and Mn/Ca ratios of pedogenic carbonates (modified from Li et al., 2013).

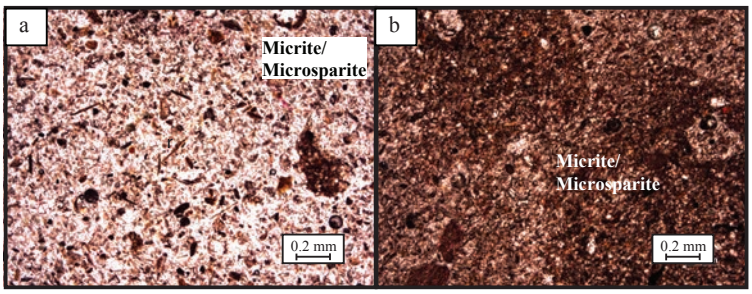

Figure S3. Examples of Sand Hills Coulee paleosol thin sections in plane polarized light. Thin sections are carbonate stained with alizarin red-s and potassium ferricynide, and depict the entire area containing micrite.

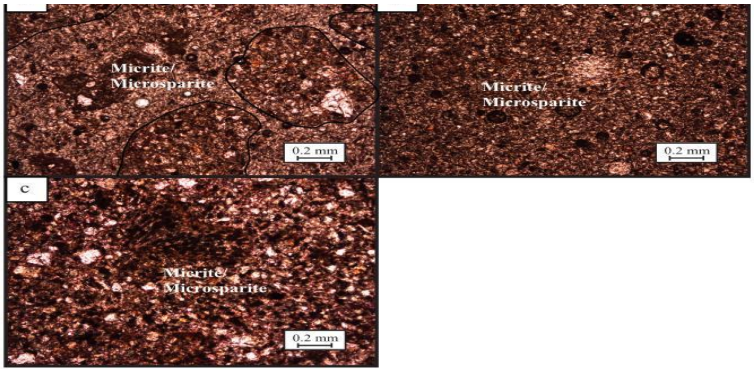

Figure S4. Examples of Washtucna paleosol thin sections in plane polarized light. Thin sections are carbonate stained with alizarin red-s and potassium ferricynide, and show the area containing micrite.

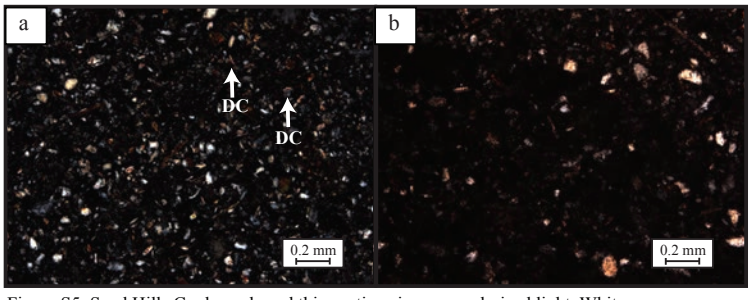

Figure S5. Examples of Sand Hills Coulee paleosol thin sections in cross-polarized light. White arrows are pointing to detrital limestone or marble (DC) giving second and third order red, blues and yellows.

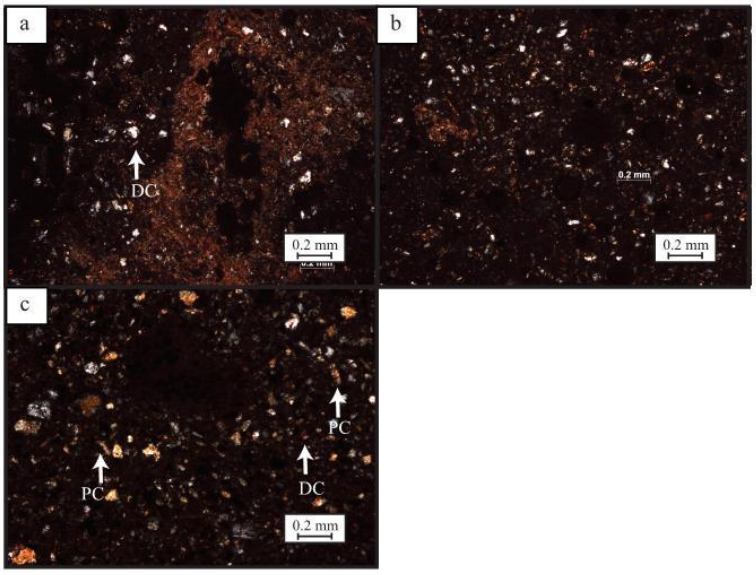

Figure S6. Examples of Washtucna paleosol thin sections in cross-polarized light. White arrows are pointing to detrital limestone or marble (DC) or pedogenic carbonate coatings (PC) within and around a mineral grain in second and third order red, blues, and yellows.

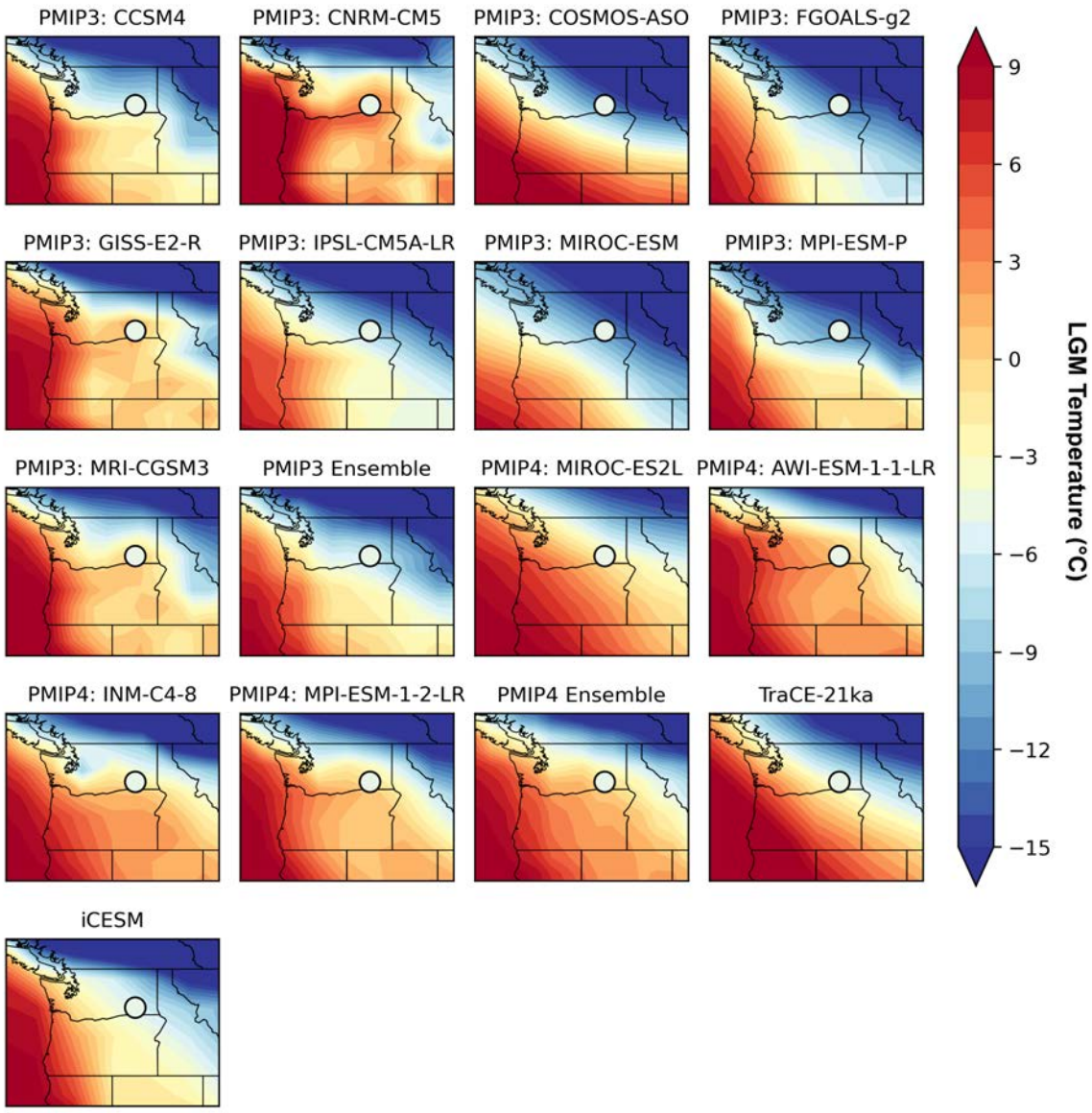

Figure S6: LGM temperatures for available models (PMIP3, PMIP4, TraCE-21ka, iCESM) compared to clumped isotope (circle; this work).

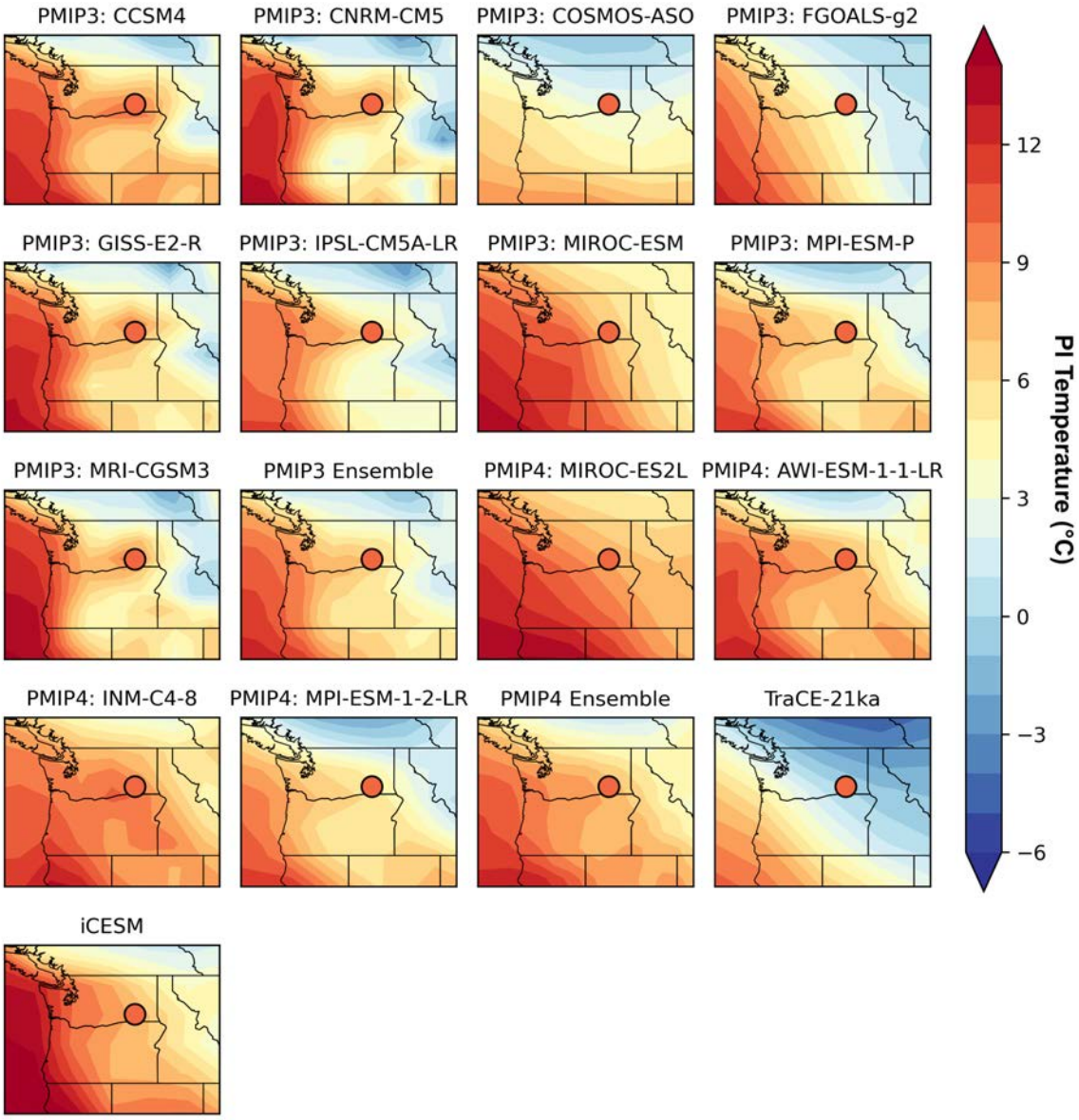

Figure S7: Pre-industrial temperatures for available models (PMIP3, PMIP4, TraCE-21ka, iCESM) compared to modern values (PRISM Climate Group, 2018).

Supporting Tables are in a separate excel file.

Table S1. Mg/Ca and Mn/Ca Ratios of Bulk Carbonate.

Sample I.D.	Sample Type	Horizon	Bulk Carbonate Major Elements			Bulk Carbonate Ratios	
			Ca (mmol)	Mg (mmol)	Mn (micro mol)	Mg/Ca (mol/mol)	Mn/Ca (mmol/mol)
AY-1							
AY1SHC	Micritic Carbonate	Bkb1	0.29 +/– 0.01	0.02 +/– 0.00	0.04 +/– 0.00	0.05 +/– 0.03	0.13 +/– 0.03
AY1W3B	Micritic Carbonate/Carbonate Seam	Bkqmb2	0.73 +/– 0.01	0.02 +/– 0.00	0.02 +/– 0.00	0.02 +/– 0.01	0.03 +/– 0.01
AY1W3D	Micritic Carbonate/Carbonate Seam	Bkqmb2/Bkqb2	0.29 +/– 0.00	0.02 +/– 0.00	0.02 +/– 0.00	0.06 +/– 0.01	0.07 +/– 0.00
KP-1							
KP1W	Micritic Carbonate	Bwb2	0.31 +/– 0.01	0.01 +/– 0.00	0.01 +/– 0.00	0.04 +/– 0.02	0.03 +/– 0.02
WA-3							
WA3SHC	Micritic Carbonate	Bkb1	0.37 +/– 0.01	0.02 +/– 0.00	0.01 +/– 0.00	0.05 +/– 0.03	0.04 +/– 0.03

Table S2: Age Constraints. TL = thermoluminescence; ^{14}C AMS = radiocarbon

Site	Unit	Material Dated	Age Estimate (ka)	Uncertainty	Method	Stratigraphic Context
KP-1	Sand Hills Coulee	Loess	14.0	+/- 2.4	TL	Straddling above MSH S tephra, slightly above Berger and Busacca, 1995.
KP-1	Sand Hills Coulee	Loess	17.0	+/- 2.8	TL	Straddling above MSH S tephra.
CHR-1	Sand Hills Coulee	Loess	8.2	+/- 1.6	TL	Located 77 cm above the cap of the Washtucna soil.
McFeely	Sand Hills Coulee	Gastropod	12.48	+/- 0.06	14C AMS	Above MSH S tephra and below Glacier Peak Tephra (lengths are not provided by the authors).
KP-1	Washtucna	Loess	20.4	+/- 1.4	TL	Straddling below MSH S tephra.
KP-1	Washtucna	Loess	17.2	+/- 1.9	TL	Straddling below MSH S tephra, slightly above Berger and Busacca, 1995.
CON-1	Washtucna	Loess	20.5	+/- 1.8	TL	Straddling below MSH S tephra.
CHR-1	Washtucna	Loess	33.2	+/- 3.4	TL	Located 58 cm below the base of the Sand Hills Coulee.
CLY-2	Washtucna	Loess	23.7	+/- 2.0	TL	Located approximately 160 cm below the MSH S Tephra.
CLY-2	Washtucna	Loess	36.1	+/- 4.3	TL	Located approximately 270 cm below the MSH S Tephra.
CLY-2	Washtucna	Loess	40.1	+/- 3.7	TL	Locted approximately 370 cm below the MSH S Tephra.
Marias Pass	Glacier Peak Tephra	Twig Fragments	11.6 Cal.	+/- 0.05	14C AMS	Located below the cap of the Sand Hills Coulee soil.
NA	MSH S Tephra	NA	15.4 Cal.	+/- 0.1	14C AMS	Seperates the Sand Hills Coulee soil and Washtucna soil, overlain by L1 loess and underlain by L2 loess.

Table S3. AY-1 and AY-2 Field Descriptions.

Site	Unit	Depth (cm)	Horizon	Dry Color
AY-1	Sand Hills Coulee	81	Bkb1	2.5Y6/3
		190	BCb1	2.5Y6/3
	Washtucna	331	Bwkb2	2.5Y6/3
		421	Bkqmb2	2.5Y7/2
		479	Bkqb2	2.5Y6/3
		544	Bkqmb2	2.5Y7/2
		580	Bkqb2	2.5Y6/3
		630	BCb2	2.5Y6/3
AY-2	Sand Hills Coulee	140	Bkb1	2.5Y5/3
		230	BCb1	2.5Y6/3
	Washtucna	320	Bwkb2	2.5Y5/4
		390	Bkqb2	2.5Y6/3
		480	Bkqmb2	2.5Y7/2
		520	Bkqb2	2.5Y6/3
		553	BCb2	2.5Y6/3

Table S4. Air Temperature Transfer Functions and modern climate data (monthly air temperatures from PRISM Climate Group, 2017, and modern carbonate formation temperatures from Takeuchi et al., 2009).

Air Temperature Interval	Equation	R_2	Source
Mean Annual	MAAT = 1.20*TC(D47) - 21.72	0.92	Quade et al., 2012
June-August	WAMT = 1.13*TC(D47) - 10.81	0.89	Quade et al., 2012

Month	Monthly Mean Air Temperatures	MAT Modern	WAMT Modern	Carbonate Formation Temperatures
Jan	0.6	10.9	21.2	14.6 ^{o}C to 20.7 ^{o}C
Feb	2.8			
March	6.7			
Apr	10.3			
May	14.4			
Jun	18.3			
Jul	22.6			
Aug	22.6			
Sep	17.7			
Oct	11.1			
Nov	4.6			
Dec	-0.3			

Table S5: PMIP3 simulation results used for this work. All data regridded and output to 46.5 ^{o}N,118.5 ^{o}W. Model and simulation descriptions are in Bracconot et al. (2012).

	Temperature		Change in T	
Time (ka)	**MAT (K)**	**JJA Temp (K)**	**MAT (C)**	**JJA Temp (C)**
22	266.6	276.7	-6.55	3.55
21	266.5	276.7	-6.65	3.55
20	266.6	277.3	-6.55	4.15
19	266.5	277.6	-6.65	4.45
18	266.7	278.3	-6.45	5.15
17	267.3	279.6	-5.85	6.45
16	268.5	281.7	-4.65	8.55
15	270	283.3	-3.15	10.15
14	271.5	284.5	-1.65	11.35
13	272.5	284.8	-0.65	11.65
12	272.9	284.5	-0.25	11.35
11	273.6	285.2	0.45	12.05
10	273.9	285.3	0.75	12.15
9	273.9	285.1	0.75	11.95
8	273.9	284.6	0.75	11.45
7	274.1	284.4	0.95	11.25
6	273.9	284	0.75	10.85
5	274	283.9	0.85	10.75
4	274	283.7	0.85	10.55
3	274	283.5	0.85	10.35
2	274	283.5	0.85	10.35
1	273.9	283.5	0.75	10.35
0	273.9	283.5	0.75	10.35

Table S6: TraCE21k simulation results used for this work. Data for 46.4 ^{o}N,240 ^{o}E was averaged over 100 years around age. Model and simulation descriptions are in Liu et al. (2009).

PMIP3 MODELS: (46.5N,118.5W)

Model	PI MAT (C)	LGM MAT (C)	Temperature Anomaly (C)
CCSM4	9.07	-6.14	-15.21
CNRM-CM5	8.35	3.24	-5.11
COSMOS-ASO	3.05	-12.81	-15.86
FGOALS-g2	3.34	-11.72	-15.06
GISS-E2-R	9.48	2.09	-7.39
IPSL-CM5A-LR	7.92	-6.19	-14.11
MIROC-ESM	6.70	-10.88	-17.58
MPI-ESM-P	6.16	-10.33	-16.49
MRI-CGCM3	8.74	0.21	-8.54
PMIP3 Ensemble	6.98	-5.92	-12.90

PMIP4 MODELS: (46.5N,118.5W)

Model	PI MAT (C)	LGM MAT (K)	Temperature Anomaly (C)
MIROC-ES2L	7.97	-1.07	-9.05
AWI-ESM-1-1-LR	7.85	1.72	-6.13
INM-CM4-8	9.79	0.77	-9.02
MPI-ESM-1-2-LR	5.61	0.54	-5.07
PMIP4 Ensemble	7.67	-0.35	-8.02
iCESM	6.97	-6.28	-13.25
TraCE	0.75	-6.60	-7.35

Table S7: Stable isotope data for samples and standards.

	ID	Identifier_1	Mass Spec	Easotope Name	Acid Temp	Acquisitions	abled Acquisitio	3C VPDB (Ra	C VPDB (Raw	C VPDB (Raw	8O VPDB (Ra	O VPDB (Raw	O VPDB (Raw	O VSMOW (R	VSMOW (Rav
R1	2015-11-02 11:21 PST	Bonedry 5.90mb UH RD+MG 4/14	Chewbacca	Unheated gas		9	9	-37.89	0.01	0	-25.06	0.01	0	5.02	0.01
R2	2015-11-04 11:17 PST	Evap DI+CM 5.85mB UH MG 11/13	Chewbacca	Unheated gas		8	8	2.48	0.01	0	17.68	0.01	0.01	49.08	0.01
R1	2015-11-04 17:25 PST	50 B1 AY2W3B 1/2	Chewbacca	AY2W3B	90	9	9	-5.46	0.01	0	-4.43	0.01	0	26.29	0.01
R3	2015-11-04 23:40 PST	4 A3 carrera marble	Chewbacca	Carrara Marble	90	9	9	1.97	0.01	0	6.43	0.01	0	37.49	0.01
R4	2015-11-05 01:47 PST	5 B12 carmel chalk	Chewbacca	Carmel Chalk	90	9	9	-2.32	0.01	0	4.01	0.02	0.01	34.99	0.02
R2	2015-11-05 16:35 PST	11 C9 AY2W3B-1-3-14 (1/3)	Chewbacca	AY2W3B	90	9	9	-5.26	0.01	0	-4.49	0.01	0	26.23	0.01
R5	2015-11-06 02:57 PST	22 D5 ETH-4	Chewbacca	ETH-4-1	90	9	9	-10.14	0.01	0	-10.88	0.01	0	19.65	0.01
R6	2015-11-06 05:04 PST	23 A4 CARRERA MARBLE	Chewbacca	Carrara Marble	90	9	9	1.95	0.01	0	6.28	0.01	0	37.33	0.01
R7	2015-11-07 01:56 PST	40 A3 SET 2 VEINSTROM	Chewbacca	Veinstrom	90	9	9	-6.09	0.01	0	-4.67	0.01	0	26.04	0.01
R3	2015-11-07 16:45 PST	45 C4 AYLW3B-1-3-24 (1/3)	Chewbacca	AY2W3B	90	9	9	-6.06	0.01	0	-5.23	0.01	0	25.47	0.01
R8	2015-11-09 15:37 PST	21 C1 ETH-3	Chewbacca	ETH-3-1	90	9	9	1.68	0.01	0	6.07	0.01	0	37.12	0.01
R9	2015-11-09 17:43 PST	22 D1 ETH-4	Chewbacca	ETH-4-1	90	9	9	-10.11	0	0	-10.92	0.01	0	19.61	0.01
R10	2015-11-10 11:41 PST	Bonedry 5.54mB 01/08 RD	Chewbacca	Unheated gas		9	9	-37.54	0.01	0	-26.04	0.01	0	4.01	0.01
R11	2015-11-11 21:59 PST	42 A5 VEINSTROM	Chewbacca	Veinstrom	90	9	9	-6.19	0.01	0	-4.76	0.01	0	25.95	0.02
R12	2015-11-12 11:44 PST	Evap DI+CM H 5.79mb 1/20 RD	Chewbacca	Heated Gas		9	9	2.36	0.01	0	8.75	0.01	0	39.88	0.01
R13	2015-11-13 00:36 PST	5 A8 CARRERA MARBLE	Chewbacca	Carrara Marble	90	9	9	2.04	0.01	0	6.41	0.01	0	37.47	0.01
R14	2015-11-13 04:52 PST	7 C2 CARMEL CHALK	Chewbacca	Carmel Chalk	90	9	9	-2.26	0.01	0	3.85	0.01	0	34.83	0.01
R1	2015-11-13 11:27 PST	8 B9 AY1SHC-1-5-14 (1/5)	Chewbacca	AY1SHC	90	9	9	-4.43	0	0	-4.54	0.01	0	26.18	0.01
R2	2015-11-13 13:28 PST	13 C2 AY1SHC-1-5-24 (1/5)	Chewbacca	AY1SHC	90	9	9	-4.43	0	0	-4.45	0.01	0	26.27	0.01
R3	2015-11-13 15:34 PST	18 C7 AY1SHC-1-5-34 (1/5)	Chewbacca	AY1SHC	90	9	9	-4.39	0.01	0	-4.49	0.01	0	26.23	0.01
R15	2015-11-13 19:42 PST	24 A3 ETH-1	Chewbacca	ETH-1-1	90	9	9	1.81	0.01	0	5.54	0.01	0	36.57	0.01
R16	2015-11-15 12:44 PST	31 Cararra A11	Chewbacca	Carrara Marble	90	9	9	2.01	0	0	6.39	0.01	0	37.45	0.01
R17	2015-11-15 14:55 PST	32 A8 Veinstrom	Chewbacca	Veinstrom	90	9	9	-6.16	0	0	-4.75	0.01	0	25.96	0.01
R18	2015-11-15 23:32 PST	36 D3 ETH-4	Chewbacca	ETH-4-1	90	9	9	-10.26	0	0	-11	0.01	0	19.52	0.01
R19	2015-11-17 13:29 PST	Evap DI+CM6.33mb WD 10/30/2014	Chewbacca	Unheated gas		9	9	-8.83	0.01	0	14.07	0.02	0.01	45.37	0.02
R4	2015-11-17 15:39 PST	48 C12 AYLSHC-1-5-44(1/5)	Chewbacca	AY1SHC	90	10	10	-4.14	0	0	-4.41	0.01	0	26.31	0.01
R20	2015-11-18 12:53 PST	Bonedry UH 5.63 mbar MG 6/24	Chewbacca	Unheated gas		9	9	-37.87	0.01	0	-25.49	0.01	0	4.58	0.01
R21	2015-11-19 14:16 PST	19 B1 CARRERA MARBLE	Chewbacca	Carrara Marble	90	9	9	2.06	0	0	6.37	0.01	0	37.42	0.01
R22	2015-11-20 23:22 PST	32 C10 carmel chalk	Chewbacca	Carmel Chalk	90	9	9	-2.23	0.01	0	3.93	0.01	0	34.91	0.01
R23	2015-11-23 11:08 PST	Bonedry 5.65mB H 4/8 RD	Chewbacca	Heated Gas		9	9	-38.08	0.01	0	-23.54	0.01	0	6.59	0.01
R24	2015-11-23 15:19 PST	46 G3 ETH-3	Chewbacca	ETH-3-1	90	9	9	1.71	0.01	0	6.14	0.01	0	37.19	0.01
R25	2015-11-23 23:40 PST	50 H2 ETH-4	Chewbacca	ETH-4-1	90	9	9	-10.14	0.01	0	-10.94	0.01	0	19.58	0.01
R26	2015-11-24 11:37 PST	Evap DI+CM 5.51 mb H 6/26 MG	Chewbacca	Heated Gas		9	9	1.57	0.01	0	4.36	0.01	0	35.36	0.01
R27	2015-11-25 05:34 PST	9 E4 ETH-1	Chewbacca	ETH-1-1	90	9	9	2	0.01	0	5.71	0.01	0	36.75	0.01
R28	2015-11-27 20:01 PST	34 Carmel Chalk D1	Chewbacca	Carmel Chalk	90	9	9	-2.22	0.01	0	3.87	0.01	0	34.85	0.01
R29	2015-11-28 14:39 PST	39 Veinstrom B3	Chewbacca	Veinstrom	90	9	9	-6.08	0.01	0	-4.88	0.02	0.01	25.83	0.02
R30	2015-11-28 17:50 PST	41 Carmel Chalk	Chewbacca	Carmel Chalk	90	9	9	-2.17	0.01	0	3.75	0.01	0	34.72	0.01
R31	2015-11-30 12:38 PST	Evap Bonedry UH 6.03 mb	Chewbacca	Unheated gas		9	9	-37.57	0.01	0	-2.79	0.01	0	27.98	0.01
R32	2015-12-01 13:03 PST	Evap DI+CM 5.73MB H	Chewbacca	Unheated gas		9	9	2.9	0.01	0	12.14	0.01	0	43.38	0.01
R33	2016-06-13 17:09 PDT		R2D2-SarlaccBel	Heated Gas		4	4	-38.18	0	0	-3.3	0	0	27.45	0
R34	2016-06-13 18:48 PDT		R2D2-SarlaccBel	Unheated gas		4	4	-37.25	0	0	-0.51	0	0	30.34	0
R35	2016-06-14 01:24 PDT		R2D2-SarlaccBel	ETH-4-1	90	4	4	-10.13	0	0	-10.61	0	0	19.93	0
R36	2016-06-14 11:22 PDT		R2D2-SarlaccBel	Carmel Chalk	90	4	4	-2.32	0	0	4.15	0	0	35.14	0
R37	2016-06-14 13:01 PDT		R2D2-SarlaccBel	TV03	90	4	4	2.51	0	0	-0.22	0	0	30.63	0
R38	2016-06-14 14:40 PDT		R2D2-SarlaccBel	Carrara Marble	90	4	4	2.05	0	0	6.64	0	0	37.71	0
R39	2016-06-14 16:19 PDT		R2D2-SarlaccBel	Veinstrom	90	4	4	-6.17	0	0	-4.55	0	0	26.17	0
R40	2016-06-15 11:51 PDT		R2D2-SarlaccBel	Unheated gas		4	4	1.98	0	0	29.72	0	0	61.49	0
R41	2016-06-15 13:29 PDT		R2D2-SarlaccBel	Unheated gas		4	4	-37.55	0	0	-0.38	0	0	30.46	0
R42	2016-06-15 15:09 PDT		R2D2-SarlaccBel	Heated Gas		4	4	1.9	0	0	22.7	0	0	54.26	0
R43	2016-06-15 16:49 PDT		R2D2-SarlaccBel	Heated Gas		4	4	-37.34	0	0	-2.17	0	0	28.63	0
R44	2016-06-16 14:29 PDT		R2D2-SarlaccBel	Unheated gas		4	4	1.9	0	0	29.42	0	0	61.18	0
R45	2016-06-16 18:09 PDT		R2D2-SarlaccBel	ETH-4-1	90	4	4	-10.12	0	0	-10.5	0	0	20.04	0
R46	2016-06-17 11:54 PDT		R2D2-SarlaccBel	Unheated gas		4	4	-38.2	0	0	-1.62	0	0	29.2	0
R47	2016-06-18 15:47 PDT		R2D2-SarlaccBel	TV03	90	4	4	2.48	0	0	-0.21	0	0	30.64	0
R48	2016-06-20 18:53 PDT		R2D2-SarlaccBel	Veinstrom	90	4	4	-6.01	0	0	-4.09	0	0	26.65	0
R49	2016-06-21 01:56 PDT		R2D2-SarlaccBel	Carrara Marble	90	4	4	1.98	0	0	6.88	0	0	37.95	0
R50	2016-06-23 16:44 PDT		R2D2-SarlaccBel	Unheated gas		4	4	1.97	0	0	24.23	0	0	55.84	0
R51	2016-06-23 18:23 PDT		R2D2-SarlaccBel	Carrara Marble	90	4	4	1.98	0	0	6.64	0	0	37.7	0
R52	2016-06-25 00:44 PDT		R2D2-SarlaccBel	ETH-2-1	90	4	4	-10.11	0	0	-10.51	0	0	20.02	0
R53	2016-06-25 11:01 PDT		R2D2-SarlaccBel	Heated Gas		4	4	2.45	0	0	7.25	0	0	38.33	0
R54	2016-06-27 18:56 PDT		R2D2-SarlaccBel	Unheated gas		4	4	2.04	0	0	29.51	0	0	61.28	0
R55	2016-06-27 20:35 PDT		R2D2-SarlaccBel	Veinstrom	90	4	4	-6.21	0	0	-4.51	0	0	26.22	0
R56	2016-06-28 16:54 PDT		R2D2-SarlaccBel	Unheated gas		4	4	-37.24	0.55	0.27	-0.27	0.09	0.04	30.58	0.09
R57	2016-06-29 14:33 PDT		R2D2-SarlaccBel	ETH-1-1	90	4	4	1.99	0	0	6.21	0	0	37.26	0
R58	2016-06-30 14:50 PDT		R2D2-SarlaccBel	Unheated gas		4	4	-37.69	0	0	-2.88	0	0	27.89	0

R59	2016-06-30 16:29 PDT	R2D2-SarlaccBel	Veinstrom	90	4	4	-6.18	0	0	-4.31	0	0	26.42	0
R60	2016-06-30 23:07 PDT	R2D2-SarlaccBel	TV03	90	4	4	2.51	0	0	0.13	0	0	31	0
R61	2016-07-06 20:55 PDT	R2D2-SarlaccBel	ETH-2-1	90	4	4	-10.11	0	0	-10.73	0	0	19.8	0
R62	2016-07-07 15:57 PDT	R2D2-SarlaccBel	Veinstrom	90	4	4	-6.16	0	0	-4.59	0	0	26.13	0
R63	2016-07-08 12:59 PDT	R2D2-SarlaccBel	Unheated gas		4	4	-37.36	0	0	-0.46	0	0	30.38	0
R64	2016-07-08 17:59 PDT	R2D2-SarlaccBel	Carrara Marble	90	4	4	2.01	0	0	6.66	0	0	37.73	0
R65	2016-07-09 00:37 PDT	R2D2-SarlaccBel	Carmel Chalk	90	4	4	-2.25	0	0	4.24	0	0	35.23	0
R66	2016-07-12 00:40 PDT	R2D2-SarlaccBel	ETH-4-1	90	4	4	-10.17	0	0	-10.63	0	0	19.9	0
R67	2016-07-12 16:05 PDT	R2D2-SarlaccBel	Heated Gas		4	4	2.59	0	0	14.51	0	0	45.81	0
R68	2016-07-12 17:45 PDT	R2D2-SarlaccBel	Heated Gas		4	4	-37.98	0	0	-6.26	0	0	24.41	0
R69	2016-07-13 12:25 PDT	R2D2-SarlaccBel	Unheated gas		4	4	2.04	0	0	28.93	0	0	60.68	0
R1	2016-07-13 14:05 PDT	R2D2-SarlaccBel	KP1W	90	4	4	-4.19	0	0	-4.98	0.01	0	25.73	0.01
R70	2016-07-14 15:58 PDT	R2D2-SarlaccBel	Carmel Chalk	90	4	4	-2.18	0	0	4.23	0	0	35.22	0
R2	2016-07-14 17:38 PDT	R2D2-SarlaccBel	KP1W	90	4	4	-4.05	0	0	-4.62	0	0	26.1	0
R4	2016-07-14 19:18 PDT	R2D2-SarlaccBel	AY2W3B	90	4	4	-5.51	0	0	-3.77	0	0	26.97	0
R71	2016-07-14 20:58 PDT	R2D2-SarlaccBel	ETH-1-1	90	4	4	2.06	0	0	5.97	0	0	37.02	0
R72	2016-07-15 12:55 PDT	R2D2-SarlaccBel	Unheated gas		4	4	-37.83	0	0	-1.19	0	0	29.64	0
R73	2016-07-15 14:35 PDT	R2D2-SarlaccBel	ETH-2-1	90	4	4	-10.1	0	0	-10.67	0	0	19.86	0
R3	2016-07-15 18:29 PDT	R2D2-SarlaccBel	KP1W	90	4	4	-4.11	0	0	-4.78	0	0	25.93	0
R5	2016-07-15 20:08 PDT	R2D2-SarlaccBel	AY2W3B	90	4	4	-5.55	0	0	-3.94	0	0	26.8	0
R1	2016-07-15 21:57 PDT	R2D2-SarlaccBel	AY2SHC	90	4	4	-4.4	0	0	-3.33	0	0	27.43	0
R74	2016-07-19 16:12 PDT	R2D2-SarlaccBel	Heated Gas		4	4	-37.31	0.01	0.01	-5.28	0.01	0.01	25.42	0.01
R75	2016-07-19 17:52 PDT	R2D2-SarlaccBel	Veinstrom	90	4	4	-6.14	0	0	-4.65	0	0	26.06	0
R76	2016-07-20 00:33 PDT	R2D2-SarlaccBel	Carmel Chalk	90	4	4	-2.36	0	0	4.2	0	0	35.19	0
R77	2016-07-20 17:42 PDT	R2D2-SarlaccBel	Carmel Chalk	90	4	4	-2.26	0	0	4.14	0	0	35.13	0
R2	2016-07-20 19:21 PDT	R2D2-SarlaccBel	AY2SHC	90	4	4	-4.14	0	0	-3.07	0	0	27.7	0
R6	2016-07-21 16:44 PDT	R2D2-SarlaccBel	AY2W3B	90	4	4	-5.54	0	0	-3.49	0	0	27.26	0
R1	2016-07-21 18:28 PDT	R2D2-SarlaccBel	WA3SHC	90	4	4	-6.72	0	0	-5.34	0	0	25.36	0
R3	2016-07-21 20:08 PDT	R2D2-SarlaccBel	AY2SHC	90	4	4	-4.74	0	0	-3.45	0	0	27.3	0
R78	2016-07-22 16:32 PDT	R2D2-SarlaccBel	Veinstrom	90	4	4	-6.03	0.02	0.01	-4.6	0.01	0.01	26.12	0.01
R2	2016-07-22 21:32 PDT	R2D2-SarlaccBel	WA3SHC	90	4	4	-6.47	0	0	-5.43	0	0	25.26	0
R79	2016-07-22 23:11 PDT	R2D2-SarlaccBel	Carmel Chalk	90	4	4	-2.13	0	0	4.12	0	0	35.11	0
R3	2016-07-23 00:51 PDT	R2D2-SarlaccBel	WA3SHC	90	4	4	-6.56	0	0	-5.57	0	0	25.12	0
R80	2016-07-23 14:36 PDT	R2D2-SarlaccBel	Unheated gas		4	4	-37.43	0	0	-0.51	0	0	30.33	0
R81	2016-07-23 16:16 PDT	R2D2-SarlaccBel	TV03	90	4	4	2.61	0	0	-0.26	0	0	30.59	0
R82	2016-07-24 13:49 PDT	R2D2-SarlaccBel	Unheated gas		4	4	2.15	0	0	29.89	0	0	61.67	0
R1	2016-07-25 19:35 PDT	R2D2-SarlaccBel	KP1SHC	90	4	4	-2.46	0	0	-4.38	0	0	26.34	0
R83	2016-07-25 22:53 PDT	R2D2-SarlaccBel	Carmel Chalk	90	4	4	-2.18	0	0	4.17	0	0	35.16	0
R2	2016-07-26 03:51 PDT	R2D2-SarlaccBel	KP1SHC	90	4	4	-2.57	0	0	-4.45	0	0	26.28	0
R84	2016-07-27 14:44 PDT	R2D2-SarlaccBel	Heated Gas		4	4	2.46	0	0	7.85	0	0	38.95	0
R85	2016-07-27 18:05 PDT	R2D2-SarlaccBel	Unheated gas		4	4	2.05	0	0	9.74	0	0	40.9	0
R86	2016-07-28 02:38 PDT	R2D2-SarlaccBel	TV03	70	4	4	2.5	0	0	0	0	0	30.86	0
R87	2016-07-28 15:03 PDT	R2D2-SarlaccBel	Unheated gas		4	4	-37.33	0	0	-2.16	0	0	28.63	0
R88	2016-07-28 16:43 PDT	R2D2-SarlaccBel	Unheated gas		4	4	2.34	0	0	10.7	0	0	41.9	0
R89	2016-07-29 10:57 PDT	R2D2-SarlaccBel	Heated Gas		4	4	-37.63	0	0	-7.52	0	0	23.1	0
R3	2016-07-29 12:36 PDT	R2D2-SarlaccBel	KP1SHC	90	4	4	-2.69	0	0	-4.43	0	0	26.29	0
R4	2016-07-29 14:16 PDT	R2D2-SarlaccBel	AY2SHC	90	4	4	-4.28	0	0	-3.13	0	0	27.64	0
R90	2016-07-29 17:04 PDT	R2D2-SarlaccBel	Heated Gas		4	4	2.34	0	0	3.43	0	0	34.39	0
R91	2016-07-29 18:42 PDT	R2D2-SarlaccBel	ETH-3-1	90	4	4	1.75	0	0	6.52	0	0	37.58	0
R92	2016-07-30 01:47 PDT	R2D2-SarlaccBel	Veinstrom	90	4	4	-6.15	0	0	-4.48	0	0	26.24	0
R93	2016-07-30 13:59 PDT	R2D2-SarlaccBel	ETH-4-1	90	4	4	-10.16	0	0	-10.72	0	0	19.81	0
R94	2016-07-30 22:47 PDT	R2D2-SarlaccBel	Carrara Marble	90	4	4	2.07	0	0	6.63	0	0	37.69	0
R95	2016-07-31 21:41 PDT	R2D2-SarlaccBel	ETH-1-1	90	4	4	2.08	0	0	6.14	0	0	37.19	0
R96	2016-08-01 12:33 PDT	R2D2-SarlaccBel	Unheated gas		4	4	2.41	0	0	10.7	0	0	41.89	0
R97	2016-08-01 14:12 PDT	R2D2-SarlaccBel	Unheated gas		4	4	-37.28	0	0	-0.21	0	0	30.65	0
R98	2016-08-01 18:53 PDT	R2D2-SarlaccBel	Carmel Chalk	90	4	4	-2.15	0	0	4.09	0	0	35.08	0
R99	2016-08-01 20:33 PDT	R2D2-SarlaccBel	TV03	90	4	4	2.62	0	0	-0.41	0	0	30.43	0
R100	2016-08-01 23:53 PDT	R2D2-SarlaccBel	Carrara Marble	90	4	4	2.08	0	0	6.55	0	0	37.61	0
R101	2016-08-02 01:33 PDT	R2D2-SarlaccBel	Carmel Chalk	90	4	4	-2.12	0.01	0.01	4.12	0.07	0.04	35.11	0.07
R102	2016-08-02 10:51 PDT	R2D2-SarlaccBel	Heated Gas		4	4	2.43	0	0	7.34	0	0	38.42	0
R103	2016-08-02 12:31 PDT	R2D2-SarlaccBel	Heated Gas		4	4	-37.57	0	0	-4.52	0	0	26.2	0
R104	2016-08-02 22:20 PDT	R2D2-SarlaccBel	ETH-2-1	90	4	4	-10.2	0	0	-10.69	0	0	19.84	0
R105	2016-08-03 13:48 PDT	R2D2-SarlaccBel	Unheated gas		4	4	2.35	0	0	10.42	0	0	41.6	0
R106	2016-08-03 15:27 PDT	R2D2-SarlaccBel	Unheated gas		4	4	-37.56	0	0	-0.69	0	0	30.15	0
R107	2016-08-03 17:06 PDT	R2D2-SarlaccBel	ETH-4-1	90	4	4	-10.17	0	0	-10.73	0	0	19.8	0
R108	2016-08-03 23:49 PDT	R2D2-SarlaccBel	ETH-3-1	90	4	4	1.7	0	0	6.5	0	0	37.56	0
R109	2016-08-04 17:54 PDT	R2D2-SarlaccBel	Unheated gas		4	4	2.78	0	0	10.64	0	0	41.82	0
R110	2016-08-04 19:33 PDT	R2D2-SarlaccBel	Carmel Chalk	90	4	4	-2.21	0	0	4.17	0	0	35.15	0

R111	2016-08-04 22:54 PDT		R2D2-SarlaccBel	Veinstrom	90	4	4	-6.18	0.01	0	-4.61	0	0	26.11	0
R112	2016-08-05 16:10 PDT		R2D2-SarlaccBel	Unheated gas		4	4	2.47	0	0	10.36	0	0	41.54	0
R113	2016-08-05 17:50 PDT		R2D2-SarlaccBel	Carrara Marble	90	4	4	2.08	0	0	6.63	0	0	37.7	0
R114	2016-08-05 19:29 PDT		R2D2-SarlaccBel	Carmel Chalk	90	4	4	-2.22	0	0	4.21	0	0	35.2	0
R115	2016-08-05 21:10 PDT		R2D2-SarlaccBel	Veinstrom	90	4	4	-6.09	0	0	-4.53	0	0	26.19	0
R116	2016-08-05 22:50 PDT		R2D2-SarlaccBel	Carrara Marble	90	4	4	2.06	0	0	6.61	0	0	37.67	0
R117	2016-08-08 13:48 PDT		R2D2-SarlaccBel	Unheated gas		4	4	2.72	0	0	10.62	0	0	41.8	0
R118	2016-08-08 16:53 PDT		R2D2-SarlaccBel	Unheated gas		4	4	2.95	0	0	10.72	0	0	41.91	0
R119	2016-08-08 20:14 PDT		R2D2-SarlaccBel	ETH-2-1	90	4	4	-10.1	0.1	0.05	-10.71	0.08	0.04	19.82	0.08
R120	2016-08-08 21:56 PDT		R2D2-SarlaccBel	TV03	90	4	4	2.53	0	0	-0.33	0	0	30.52	0
R121	2016-08-08 23:37 PDT		R2D2-SarlaccBel	Carrara Marble	90	4	4	2.27	0.05	0.03	6.34	0.11	0.05	37.4	0.11
R122	2016-08-09 17:54 PDT		R2D2-SarlaccBel	Heated Gas		4	4	-37.38	0	0	-23.58	0	0	6.55	0
R123	2016-08-10 10:21 PDT		R2D2-SarlaccBel	Heated Gas		4	4	2.46	0	0	5.78	0	0	36.81	0
R124	2016-08-10 13:51 PDT		R2D2-SarlaccBel	Carrara Marble	90	4	4	2.08	0	0	6.61	0	0	37.67	0
R125	2016-08-10 17:56 PDT		R2D2-SarlaccBel	Unheated gas		4	4	-38.12	0	0	-1.57	0.03	0.01	29.24	0.03
R126	2016-08-10 19:37 PDT		R2D2-SarlaccBel	Carmel Chalk	90	4	4	-2.19	0	0	4.17	0	0	35.16	0
R127	2016-08-11 16:58 PDT		R2D2-SarlaccBel	Heated Gas		4	4	2.42	0	0	7.09	0	0	38.17	0
R128	2016-08-11 18:37 PDT		R2D2-SarlaccBel	Carmel Chalk	90	4	4	-2.14	0	0	4.24	0	0	35.23	0
R129	2016-08-11 20:17 PDT		R2D2-SarlaccBel	Carrara Marble	90	4	4	2.33	0	0	6.47	0	0	37.53	0
R130	2016-08-11 21:59 PDT		R2D2-SarlaccBel	Carmel Chalk	90	4	4	-2.25	0	0	4.25	0	0	35.24	0
R131	2016-08-11 23:39 PDT		R2D2-SarlaccBel	Carrara Marble	90	4	4	2.31	0	0	6.46	0	0	37.52	0
R132	2016-08-12 14:16 PDT		R2D2-SarlaccBel	Unheated gas		4	4	-38.08	0	0	-1.46	0	0	29.35	0
R133	2016-08-15 16:18 PDT		R2D2-SarlaccBel	Heated Gas		4	4	2.57	0	0	7.79	0	0	38.89	0
R134	2016-08-15 23:10 PDT		R2D2-SarlaccBel	Veinstrom	90	4	4	-6.08	0	0	-4.47	0	0	26.26	0
R135	2016-09-25 12:04 PDT	EVAP DI+CM H	Chewbacca	Heated Gas		9	9	0.51	0	0	20.82	0.01	0	52.32	0.01
R136	2016-09-26 14:10 PDT	ETH-4	Chewbacca	ETH-4-1	90	9	9	-10.18	0	0	-10.95	0.01	0	19.58	0.01
R137	2016-10-06 14:26 PDT	Boneory+DI 9-28-16 NH CW	Chewbacca	Unheated gas		9	9	-36.81	0.01	0	0.02	0.01	0	30.88	0.01
R138	2016-10-07 12:44 PDT	Evap DI+CM H 9-19-16	Chewbacca	Heated Gas		9	9	1.1	0	0	18.02	0	0	49.44	0
R139	2016-10-09 01:33 PDT	TVO3	Chewbacca	TV03	90	9	9	2.54	0	0	-0.49	0.01	0	30.36	0.01
R140	2016-10-11 11:49 PDT	BonedryDI U CW 9-23	Chewbacca	Unheated gas		9	9	-37.64	0	0	-0.98	0.01	0	29.85	0.01
R141	2016-10-11 13:59 PDT	TV03	Chewbacca	TV03	90	9	9	2.41	0	0	-0.55	0.01	0	30.3	0.01
R142	2016-10-13 14:26 PDT	VeinStrom	Chewbacca	Veinstrom	90	9	9	-6.17	0	0	-4.9	0	0	25.81	0.01
R143	2016-10-14 12:35 PDT	BonedryDI H CW 9-23	Chewbacca	Heated Gas		9	9	-37.42	0.01	0	-6.22	0.01	0	24.45	0.01
R144	2016-10-14 14:45 PDT	ETH-2	Chewbacca	ETH-2-1	90	9	9	-10.22	0	0	-11.11	0.01	0	19.41	0.01
R145	2016-10-14 23:21 PDT	ETH-4	Chewbacca	ETH-4-1	90	9	9	-10.17	0	0	-11.11	0.01	0	19.41	0.01
R146	2016-10-15 12:31 PDT	Evap DI+CM H 9-19 DU	Chewbacca	Heated Gas		9	9	1.84	0	0	2.68	0.01	0	33.62	0.01
R147	2016-10-15 23:22 PDT	Carmel Chalk	Chewbacca	Carmel Chalk	90	9	9	-2.24	0	0	3.51	0.01	0	34.48	0.01
R148	2016-10-17 00:00 PDT	TV03	Chewbacca	TV03	90	9	9	2.5	0	0	-0.84	0.01	0	30	0.01
R149	2016-10-19 12:09 PDT	BonedryDI H CW 9-23	Chewbacca	Heated Gas		9	9	-37.95	0.01	0	-6.54	0	0	24.12	0
R150	2016-10-19 14:17 PDT	ETH-2	Chewbacca	ETH-2-1	90	9	9	-10.23	0	0	-10.97	0.01	0	19.56	0.01
R151	2016-10-19 23:00 PDT	ETH-3	Chewbacca	ETH-3-1	90	9	9	1.61	0	0	5.83	0	0	36.86	0
R152	2016-10-20 12:05 PDT	BonedryDI U NH 10-17	Chewbacca	Unheated gas		9	9	-37.54	0.01	0	10.43	0.01	0	41.61	0.01
R153	2016-10-20 14:15 PDT	ETH-4	Chewbacca	ETH-4-1	90	9	9	-10.21	0	0	-11	0.01	0	19.52	0.01
R1	2016-10-20 16:25 PDT	AY1W3D_mc	Chewbacca	AY1W3D	90	9	9	-5.81	0	0	-4.65	0.01	0	26.07	0.01
R154	2016-10-20 22:53 PDT	TV03	Chewbacca	TV03	90	9	9	2.49	0	0	-0.78	0.01	0	30.05	0.01
R2	2016-10-21 01:05 PDT	AY1W3D_mc	Chewbacca	AY1W3D	90	9	9	-5.74	0	0	-4.58	0.01	0	26.14	0.01
R3	2016-10-21 03:19 PDT	AY1W3D_mc	Chewbacca	AY1W3D	90	9	9	-5.74	0	0	-4.58	0.01	0	26.14	0.01
R155	2016-10-21 14:32 PDT	Carrera Marble	Chewbacca	Carrara Marble	90	9	9	1.95	0	0	6.12	0.01	0	37.17	0.01
R4	2016-10-21 18:47 PDT	AY1W3D_mc	Chewbacca	AY1W3D	90	9	9	-5.84	0	0	-4.08	0.01	0	26.66	0.01
R5	2016-10-21 21:01 PDT	AY1W3D_mc	Chewbacca	AY1W3D	90	9	9	-5.77	0	0	-4.32	0.01	0	26.41	0.01
R156	2016-10-21 23:15 PDT	Vienstrom-01	Chewbacca	Veinstrom	90	9	9	-6.14	0	0	-4.94	0	0	25.77	0
R157	2016-10-22 16:39 PDT	Bonedry DI UH	Chewbacca	Unheated gas		9	9	-37.59	0.01	0	10.29	0.01	0	41.47	0.01
R158	2016-10-22 18:50 PDT	47 ETH-1	Chewbacca	ETH-1-1	90	9	9	1.89	0	0	5.33	0.01	0	36.35	0.01
R159	2016-10-23 05:58 PDT	2 ETH-2	Chewbacca	ETH-2-1	90	9	9	-10.19	0	0	-11.09	0.01	0	19.43	0.01
R160	2016-10-24 15:35 PDT	Carmel Chalk	Chewbacca	Carmel Chalk	90	9	9	-2.24	0	0	3.48	0.01	0	34.45	0.01
R161	2016-10-25 00:24 PDT	TV03	Chewbacca	TV03	90	9	9	2.57	0	0	-0.7	0.01	0	30.13	0.01
R162	2016-10-25 14:11 PDT	ETH-3	Chewbacca	ETH-3-1	90	9	9	1.64	0	0	5.8	0.01	0	36.84	0.01
R163	2016-10-26 14:41 PDT	Carrera Marble-UCLA	Chewbacca	Carrara Marble	90	9	9	1.93	0	0	6.03	0	0	37.08	0
R164	2016-10-27 01:40 PDT	VeinStrom-01	Chewbacca	Veinstrom	90	9	9	-6.19	0	0	-5.11	0.01	0	25.59	0.01
R165	2016-10-28 18:20 PDT	ETH-3	Chewbacca	ETH-3-1	90	9	9	1.6	0	0	5.65	0.01	0	36.68	0.01
R166	2016-10-29 12:41 PDT	Bonedry DI UH 10/17 NH	Chewbacca	Unheated gas		9	9	-37.46	0.01	0	10.54	0.01	0	41.72	0.01
R167	2016-10-29 14:50 PDT	Vientstrom-01	Chewbacca	Veinstrom	90	9	9	-6.2	0	0	-4.84	0	0	25.87	0
R168	2016-10-29 23:25 PDT	TVO3	Chewbacca	TV03	90	9	9	2.34	0	0	-0.85	0.01	0	29.98	0.01
R6	2016-10-30 01:35 PDT	AY1W3D_mc	Chewbacca	AY1W3D	90	9	9	-5.65	0	0	-4.5	0.01	0	26.22	0.01
R169	2016-10-30 13:04 PDT	Carrera Marble	Chewbacca	Carrara Marble	90	9	9	2.18	0	0	5.86	0.01	0	36.9	0.01
R5	2016-10-30 22:03 PDT	AY2SHC	Chewbacca	AY2SHC	90	9	9	-3.87	0	0	-3.17	0.01	0	27.6	0.01
R4	2016-10-31 04:40 PDT	WA3SHC	Chewbacca	WA3SHC	90	9	9	-6.38	0	0	-5.88	0.01	0	24.8	0.01
R4	2016-10-31 06:56 PDT	KP1SHC	Chewbacca	KP1SHC	90	9	9	-2.42	0	0	-4.59	0.01	0	26.12	0.01

R170	2016-10-31 13:19 PDT	BonedryDI UH DU 10-14	Chewbacca	Unheated gas		9	9	-37.59	0	0	-1.68	0.01	0	29.13	0.01
R171	2016-10-31 15:28 PDT	ETH-4	Chewbacca	ETH-4-1	90	9	9	-10.16	0	0	-10.96	0.01	0	19.56	0.01
R7	2016-10-31 17:40 PDT	AY1W3D_mc	Chewbacca	AY1W3D	90	9	9	-5.69	0	0	-4.52	0.01	0	26.2	0.01
R8	2016-10-31 19:50 PDT	AY1W3D_mc	Chewbacca	AY1W3D	90	9	9	-5.68	0	0	-4.58	0.01	0	26.14	0.01
R9	2016-10-31 22:01 PDT	AY1W3D_mc	Chewbacca	AY1W3D	90	9	9	-5.59	0	0	-4.47	0.01	0	26.26	0.01
R172	2016-11-01 00:13 PDT	TV03	Chewbacca	TV03	90	9	9	2.56	0	0	-0.67	0.01	0	30.17	0.01
R10	2016-11-01 02:38 PDT	AY1W3D_mc	Chewbacca	AY1W3D	90	9	9	-5.71	0	0	-4.48	0.01	0	26.25	0.01
R173	2016-11-01 16:44 PDT	Carmel Chalk	Chewbacca	Carmel Chalk	90	9	9	-2.25	0	0	3.47	0	0	34.43	0
R11	2016-11-01 18:52 PDT	AY1W3D_mc	Chewbacca	AY1W3D	90	9	9	-5.67	0	0	-4.59	0.01	0	26.13	0.01
R12	2016-11-01 21:03 PDT	AY1W3D_mc	Chewbacca	AY1W3D	90	9	9	-5.76	0	0	-4.61	0.01	0	26.1	0.01
R174	2016-11-02 01:34 PDT	ETH-2	Chewbacca	ETH-2-1	90	9	9	-10.15	0	0	-10.86	0.01	0	19.67	0.01
R175	2016-11-02 12:49 PDT	BonedryDI H DU 10-28	Chewbacca	Heated Gas		9	9	-36.93	0.01	0	-3.02	0.01	0	27.75	0.01
R176	2016-11-03 17:25 PDT	TV03	Chewbacca	TV03	90	9	9	2.57	0	0	-0.69	0	0	30.15	0
R177	2016-11-03 22:48 PDT	Carmel Chalk	Chewbacca	Carmel Chalk	90	9	9	-2.18	0	0	3.73	0	0	34.71	0
R178	2016-11-04 00:57 PDT	ETH-4	Chewbacca	ETH-4-1	90	9	9	-10.17	0	0	-11.21	0.01	0	19.31	0.01
R179	2016-11-04 14:59 PDT	ETH-2	Chewbacca	ETH-2-1	90	9	9	-10.2	0	0	-10.94	0.01	0	19.58	0.01
R180	2016-11-06 21:58 PST	Veinstrom	Chewbacca	Veinstrom	90	9	9	-6.23	0	0	-5.07	0	0	25.64	0
R181	2016-11-07 14:53 PST	ETH-1	Chewbacca	ETH-1-1	90	9	9	1.99	0	0	5.4	0.01	0	36.42	0.01
R182	2016-11-07 23:34 PST	ETH-3	Chewbacca	ETH-3-1	90	9	9	1.63	0	0	5.84	0.01	0	36.88	0.01
R183	2016-11-08 15:32 PST	Carmel Chalk	Chewbacca	Carmel Chalk	90	9	9	-2.2	0	0	3.46	0.01	0	34.42	0.01
R184	2016-11-09 00:13 PST	TV03	Chewbacca	TV03	90	9	9	2.62	0	0	-0.96	0.01	0	29.87	0.01
R185	2016-11-09 14:39 PST	Vein strom UCLA-1	Chewbacca	Veinstrom	90	9	9	-6.26	0	0	-4.98	0.01	0	25.72	0.01
R186	2016-11-10 16:32 PST	Carrera Marvble	Chewbacca	Carrara Marble	90	9	9	1.94	0	0	6.02	0.01	0	37.07	0.01
R187	2016-11-11 14:45 PST	ETH-1	Chewbacca	ETH-1-1	90	9	9	1.97	0	0	5.43	0.01	0	36.46	0.01
R188	2016-11-12 00:40 PST	ETH-4	Chewbacca	ETH-4-1	90	9	9	-10.15	0	0	-10.95	0.01	0	19.57	0.01
R189	2016-11-12 15:32 PST	TV03	Chewbacca	TV03	90	9	9	2.5	0	0	-0.7	0.01	0	30.14	0.01
R190	2016-11-13 00:19 PST	VeinStrom	Chewbacca	Veinstrom	90	9	9	-6.13	0	0	-4.88	0.01	0	25.83	0.01
R191	2016-11-14 15:02 PST	ETH-2	Chewbacca	ETH-2-1	90	9	9	-10.27	0	0	-11	0.01	0	19.52	0.01
R192	2016-11-15 00:23 PST	ETH-3	Chewbacca	ETH-3-1	90	9	9	1.54	0	0	5.56	0	0	36.59	0
R193	2016-11-15 14:34 PST	ETH-3	Chewbacca	ETH-3-1	90	9	9	1.57	0	0	5.79	0.01	0	36.83	0.01
R194	2016-11-16 23:19 PST	TV03	Chewbacca	TV03	90	9	9	2.59	0	0	-0.84	0	0	30	0
R195	2016-11-17 15:53 PST	Carmel Chalk	Chewbacca	Carmel Chalk	90	9	9	-2.14	0	0	3.61	0	0	34.58	0
R196	2016-11-18 00:39 PST	Carrera Marble	Chewbacca	Carrara Marble	90	9	9	1.95	0	0	6.05	0	0	37.1	0.01
R197	2016-11-18 16:02 PST	Veinstrom-01	Chewbacca	Veinstrom	90	9	9	-6.19	0	0	-4.93	0.01	0	25.78	0.01
R198	2016-11-19 14:17 PST	BonedryDI H DU	Chewbacca	Heated Gas		9	9	-36.96	0.01	0	-3.79	0	0	26.96	0
R199	2016-11-19 22:51 PST	ETH-4	Chewbacca	ETH-4-1	90	9	9	-10.17	0	0	-10.96	0.01	0	19.56	0.01
R200	2016-11-20 21:54 PST	TV03	Chewbacca	TV03	90	9	9	2.54	0	0	-0.75	0.01	0	30.09	0.01
R201	2016-11-21 23:43 PST	Carmel Chalk	Chewbacca	Carmel Chalk	90	9	9	-2.12	0	0	3.7	0.01	0	34.67	0.01
R202	2016-11-22 15:57 PST	ETH-1	Chewbacca	ETH-1-1	90	9	9	1.96	0	0	5.43	0.01	0	36.46	0.01
R203	2016-11-23 15:04 PST	Carrera Marble-UCLA	Chewbacca	Carrara Marble	90	9	9	1.96	0	0	6.08	0.01	0	37.12	0.01
R204	2016-11-28 22:54 PST	ETH-3	Chewbacca	ETH-3-1	90	9	9	1.61	0	0	5.78	0	0	36.82	0
R205	2016-11-29 15:26 PST	Carmel Chalk	Chewbacca	Carmel Chalk	90	9	9	-2.26	0	0	3.57	0.01	0	34.54	0.01
R206	2016-11-30 04:20 PST	Veinstrom	Chewbacca	Veinstrom	90	9	9	-6.2	0	0	-4.97	0	0	25.73	0
R207	2016-11-30 13:03 PST	BonedryDI UH GJ 10-14-16	Chewbacca	Unheated gas		9	9	-37.57	0.01	0	-1.82	0.01	0	28.98	0.01
R208	2016-11-30 15:15 PST	ETH-3	Chewbacca	ETH-3-1	90	9	9	1.58	0	0	5.73	0	0	36.77	0
R209	2016-11-30 21:31 PST	Veinstrom UCLA-2	Chewbacca	Veinstrom	90	9	9	-6.16	0	0	-5	0	0	25.71	0
R210	2016-12-01 15:15 PST	Carrara Marble	Chewbacca	Carrara Marble	90	9	9	1.95	0	0	6.08	0.01	0	37.12	0.01
R211	2016-12-01 23:56 PST	TV03	Chewbacca	TV03	90	9	9	2.5	0	0	-0.72	0.01	0	30.12	0.01
R212	2016-12-05 23:34 PST	ETH-3	Chewbacca	ETH-3-1	90	9	9	1.48	0	0	5.58	0	0	36.61	0
R213	2016-12-09 16:30 PST	BonedryDI UH DU 10-14	Chewbacca	Unheated gas		9	9	-37.66	0	0	-1.94	0.01	0	28.86	0.01
R214	2016-12-09 18:38 PST	Carrera Marble	Chewbacca	Carrara Marble	90	9	9	1.93	0	0	6.02	0	0	37.06	0
R215	2016-12-09 20:47 PST	TV03	Chewbacca	TV03	90	9	9	2.59	0	0	-0.86	0	0	29.97	0
R216	2016-12-09 22:54 PST	Carmel Chalk	Chewbacca	Carmel Chalk	90	9	9	-2.21	0	0	3.52	0.01	0	34.49	0.01
R217	2016-12-10 01:03 PST	Veinstrom	Chewbacca	Veinstrom	90	9	9	-6.19	0	0	-5.06	0.01	0	25.65	0.01
R218	2016-12-13 15:21 PST	ETH-1	Chewbacca	ETH-1-1	90	9	9	1.93	0	0	5.32	0.01	0	36.34	0.01
R219	2016-12-14 12:54 PST	BonedryDI UH CW 12-5-16	Chewbacca	Unheated gas		9	9	-37.48	0	0	10.8	0.01	0	41.99	0.01
R220	2016-12-16 13:40 PST	BonedryDI H CW 12-5-16	Chewbacca	Heated Gas		9	9	-37.61	0	0	0.9	0	0	31.79	0.01
R221	2016-12-18 11:05 PST	BonedryDI UH DH 11-3-16	Chewbacca	Unheated gas		9	9	-37.57	0	0	10.55	0.01	0	41.74	0.01
R222	2016-12-19 11:38 PST	Bonedry + DI UH NH 10.17.16	Chewbacca	Unheated gas		9	9	-37.53	0	0	10.58	0	0	41.76	0
R223	2016-12-19 22:16 PST	TV03	Chewbacca	TV03	90	9	9	2.43	0	0	-0.92	0	0	29.91	0
R224	2016-12-20 11:34 PST	Bonedry + DI UH CW 9.23.16	Chewbacca	Unheated gas		9	9	-37.02	0	0	-0.09	0	0	30.76	0
R225	2016-12-20 21:00 PST	ETH-3	Chewbacca	ETH-3-1	90	9	9	1.58	0	0	5.55	0	0	36.58	0
R226	2016-12-21 12:05 PST	Bonedry + DI UH GJ 11.3.16	Chewbacca	Unheated gas		9	9	-37.24	0	0	11.1	0	0	42.3	0
R227	2016-12-21 14:13 PST	Carmel Marble	Chewbacca	Carrara Marble	90	9	9	2.26	0	0	5.76	0.01	0	36.8	0.01
R228	2016-12-22 11:50 PST	Evap DI + CM UH WD 12.21.16	Chewbacca	Unheated gas		9	9	1.95	0	0	17.49	0.01	0	48.89	0.01
R229	2016-12-22 14:00 PST	ETH-1	Chewbacca	ETH-1-1	90	9	9	1.93	0	0	5.18	0	0	36.2	0
R230	2016-12-23 14:04 PST	Evap DI+CM H WD 12-21-16	Chewbacca	Unheated gas		9	9	1.98	0	0	18.7	0	0	50.13	0
R231	2016-12-23 16:12 PST	ETH-3	Chewbacca	ETH-3-1	90	10	10	1.68	0	0	5.68	0	0	36.71	0

R232	2016-12-26 11:42 PST	Evap DI + CM UH WD 12.21.16	Chewbacca	Unheated gas		9	9	2.09	0	0	19.13	0.01	0	50.58	0.01
R233	2016-12-27 17:07 PST	Evap DI+CM H WD 12-21-16	Chewbacca	Heated Gas		9	9	2.09	0	0	13.23	0	0	44.49	0.01
R234	2016-12-27 19:14 PST	ETH-3	Chewbacca	ETH-3-1	90	9	9	1.7	0	0	5.58	0	0	36.61	0
R235	2016-12-28 11:24 PST	Evap DI+CM 12/21/16 UH WD	Chewbacca	Unheated gas		9	9	1.91	0	0	17.58	0.01	0	48.98	0.01
R236	2016-12-30 12:13 PST	Evap DI+CM H WD 12-21-16	Chewbacca	Heated Gas		9	9	2.39	0	0	16.03	0	0	47.38	0
R237	2017-02-23 10:13 PST	BonedryDI UH ND 1-24	Chewbacca	Unheated gas		9	9	-37.57	0	0	10.1	0	0	41.28	0
R4	2017-02-23 14:31 PST	KP1W	Chewbacca	KP1W	90	9	9	-4.63	0	0	-6.47	0.03	0.01	24.19	0.03
R5	2017-02-23 16:59 PST	KP1W	Chewbacca	KP1W	90	10	10	-4.62	0.01	0	-6.43	0.02	0.01	24.23	0.02
R6	2017-02-23 19:24 PST	KP1W	Chewbacca	KP1W	90	9	9	-4.65	0	0	-6.64	0.01	0	24.02	0.01
R238	2017-02-23 21:28 PST	ETH-4	Chewbacca	ETH-4-1	90	9	9	-10.07	0	0	-11.5	0.01	0	19	0.01
R5	2017-02-23 23:42 PST	KP1SHC	Chewbacca	KP1SHC	90	9	9	-2.4	0	0	-4.94	0	0	25.77	0.01
R239	2017-02-24 12:05 PST	Bonedry DI H DU 2/3/17	Chewbacca	Heated Gas		9	9	-38.28	0.01	0	-7.01	0	0	23.63	0
R240	2017-02-24 23:00 PST	Carrera Marble	Chewbacca	Carrara Marble	90	9	9	2.11	0	0	5.94	0	0	36.98	0
R241	2017-02-25 13:48 PST	Evap DI + CM UH DU 2/24/17	Chewbacca	Unheated gas		9	9	-37.09	0	0	-0.21	0	0	30.64	0
R242	2017-02-25 15:54 PST	TV03	Chewbacca	TV03	90	9	9	2.77	0	0	-1.09	0	0	29.74	0.01
R243	2017-02-27 11:30 PST	Bonedry DI H ND 1/24/17	Chewbacca	Heated Gas		9	9	-37.26	0	0	4.47	0.01	0	35.46	0.01
R244	2017-02-28 12:33 PST	Bonedry DI H ND 1/24	Chewbacca	Heated Gas		9	9	-37.51	0	0	5.72	0	0	36.75	0
R245	2017-03-01 13:47 PST	Evap Di + CM UH DU 2/24/2017	Chewbacca	Unheated gas		9	9	-37.02	0	0	-0.13	0.01	0	30.73	0.01
R246	2017-03-04 13:31 PST	Bone Dry DI H ND 1/4	Chewbacca	Heated Gas		9	9	-37.44	0	0	5.25	0.01	0	36.27	0.01
R247	2017-03-04 15:44 PST	ETH-4	Chewbacca	ETH-4-1	90	9	9	-10.17	0	0	-11.32	0	0	19.19	0
R248	2017-03-05 14:25 PST	Evap DI + CM H GJ 2/24/2017	Chewbacca	Heated Gas		9	9	-37.78	0	0	-3.23	0	0	27.53	0
R249	2017-03-05 16:31 PST	TV03	Chewbacca	TV03	90	9	9	2.53	0	0	-0.88	0.01	0	29.96	0.01
R250	2017-03-05 22:54 PST	Veinstrom	Chewbacca	Veinstrom	90	9	9	-6.1	0	0	-5.03	0	0	25.67	0
R251	2017-03-06 13:04 PST	BonedryDI H ND 1/24/2017	Chewbacca	Heated Gas		9	9	-37.89	0.01	0	5.22	0.01	0	36.24	0.01
R252	2017-03-06 15:10 PST	Carrara Marble	Chewbacca	Carrara Marble	90	9	9	1.96	0	0	5.88	0	0	36.92	0
R253	2017-03-07 13:31 PST	ETH-2	Chewbacca	ETH-2-1	90	9	9	-10.17	0	0	-11.28	0	0	19.23	0.01
R254	2017-03-07 21:56 PST	ETH-3	Chewbacca	ETH-3-1	90	9	9	1.72	0	0	5.9	0	0	36.94	0
R255	2017-03-08 12:46 PST	BonedryDI H DU	Chewbacca	Heated Gas		9	9	-37.18	0.01	0	-4.9	0	0	25.81	0
R256	2017-03-08 14:57 PST	ETH-1	Chewbacca	ETH-1-1	90	9	9	2.06	0	0	5.4	0	0	36.43	0.01
R257	2017-03-08 23:41 PST	ETH-4	Chewbacca	ETH-4-1	90	9	9	-10.13	0	0	-11.25	0	0	19.26	0.01
R258	2017-03-09 12:37 PST	BonedryDI UH DU	Chewbacca	Unheated gas		9	9	-38.51	0	0	-2.69	0	0	28.09	0
R259	2017-03-09 14:48 PST	Veinstrom	Chewbacca	Veinstrom	90	9	9	-6.22	0	0	-5.26	0	0	25.44	0
R260	2017-03-09 23:07 PST	TV03	Chewbacca	TV03	90	9	9	2.58	0	0	-0.86	0	0	29.98	0
R261	2017-03-10 13:31 PST	BonedryDI H DU 2/3/2017	Chewbacca	Heated Gas		9	9	-38.29	0	0	-6.25	0	0	24.42	0
R262	2017-03-10 15:41 PST	ETH-4	Chewbacca	ETH-4-1	90	9	9	-10.16	0	0	-11.33	0	0	19.18	0
R263	2017-03-11 14:26 PST	Evap DI + CM UH DU 3.10.17	Chewbacca	Unheated gas		9	9	2.16	0	0	19.66	0	0	51.13	0
R264	2017-03-11 16:31 PST	Carrera Marble	Chewbacca	Carrara Marble	90	9	9	2.06	0	0	6.13	0	0	37.18	0
R265	2017-03-12 01:17 PST	Carmel Chalk	Chewbacca	Carmel Chalk	90	9	9	-2.21	0	0	3.63	0	0	34.6	0
R266	2017-03-13 10:42 PDT	Bonedry + DI H ND	Chewbacca	Heated Gas		9	9	-37.41	0	0	4.74	0.01	0	35.75	0.01
R267	2017-03-13 13:32 PDT	Veinstrom	Chewbacca	Veinstrom	90	9	9	-6.06	0	0	-4.99	0.01	0	25.72	0.01
R268	2017-03-13 21:52 PDT	TV03	Chewbacca	TV03	90	9	9	2.68	0	0	-0.66	0	0	30.18	0
R269	2017-03-14 14:29 PDT	Carmel Chalk	Chewbacca	Carmel Chalk	90	9	9	-2.13	0	0	3.67	0	0	34.64	0
R270	2017-03-14 20:58 PDT	Carrara Marble	Chewbacca	Carrara Marble	90	9	9	2.1	0	0	6.19	0	0	37.24	0
R271	2017-03-15 13:31 PDT	Bonedry DI UH WD 3.13.17	Chewbacca	Unheated gas		9	9	-37.55	0	0	10.86	0	0	42.05	0
R272	2017-03-15 15:38 PDT	Veinstrom	Chewbacca	Veinstrom	90	9	9	-6.14	0	0	-5.04	0.01	0	25.66	0.01
R273	2017-03-16 00:32 PDT	TV03	Chewbacca	TV03	90	9	9	2.63	0	0	-0.71	0.01	0	30.13	0.01
R274	2017-03-16 12:17 PDT	Evap DI + CM UH GJ 3.10.17	Chewbacca	Unheated gas		9	9	1.59	0	0	18.62	0	0	50.05	0
R275	2017-03-16 14:28 PDT	ETH-2	Chewbacca	ETH-2-1	90	9	9	-10.13	0	0	-11.23	0	0	19.28	0
R276	2017-03-16 22:55 PDT	ETH-3	Chewbacca	ETH-3-1	90	9	9	1.77	0	0	5.86	0	0	36.9	0
R277	2017-03-18 14:07 PDT	Bonedry + DI H 12/5 CW	Chewbacca	Heated Gas		9	9	-37.41	0	0	2.17	0.01	0	33.1	0.01
R278	2017-03-18 16:23 PDT	ETH-1	Chewbacca	ETH-1-1	90	9	9	2.05	0	0	5.39	0	0	36.42	0
R279	2017-03-20 13:27 PDT	Evap DI+CM H GJ 3/10/17	Chewbacca	Heated Gas		9	9	3.5	0	0	20.13	0	0	51.61	0
R280	2017-03-20 15:31 PDT	Carrera Marble	Chewbacca	Carrara Marble	90	9	9	2.01	0	0	5.91	0.01	0	36.95	0.01
R281	2017-03-20 21:58 PDT	Carmel Chalk	Chewbacca	Carmel Chalk	90	9	9	-2.21	0	0	3.49	0.01	0	34.46	0.01
R282	2017-03-21 15:02 PDT	TV03	Chewbacca	TV03	90	9	9	2.71	0	0	-0.68	0	0	30.15	0
R283	2017-03-21 21:28 PDT	ETH 4	Chewbacca	ETH-4-1	90	9	9	-10.12	0	0	-11.22	0	0	19.29	0
R284	2017-03-22 12:07 PDT	Bonedry DI UH WD 3.13.17	Chewbacca	Unheated gas		9	9	-37.49	0	0	10.37	0	0	41.54	0
R285	2017-03-22 14:19 PDT	ETH-2	Chewbacca	ETH-2-1	90	9	9	-10.14	0	0	-11.08	0.01	0	19.44	0.01
R286	2017-03-23 15:58 PDT	Bonedry DI H CW 12.5.16	Chewbacca	Heated Gas		9	9	-37.34	0	0	2.38	0	0	33.31	0
R287	2017-03-24 12:30 PDT	Evap DI+CM UH DU 3/23/17	Chewbacca	Unheated gas		9	9	1.09	0	0	7.95	0	0	39.05	0
R288	2017-03-24 14:36 PDT	ETH-1	Chewbacca	ETH-1-1	90	9	9	2	0	0	5.28	0	0	36.3	0
R289	2017-03-24 21:11 PDT	Carrera Marble	Chewbacca	Carrara Marble	90	9	9	2.05	0	0	6.14	0.01	0	37.19	0.01
R290	2017-03-25 16:24 PDT	Evap DI+CM H DU 3/23/17	Chewbacca	Heated Gas		9	9	1.38	0	0	5.85	0	0	36.89	0
R291	2017-03-25 18:31 PDT	ETH-4	Chewbacca	ETH-4-1	90	9	9	-10.14	0	0	-11.27	0.01	0	19.24	0.01
R292	2017-03-26 13:27 PDT	Veinstrom	Chewbacca	Veinstrom	90	9	9	-6.07	0	0	-4.93	0	0	25.78	0
R293	2017-03-27 12:44 PDT	Bonedry DI UH NH 3/24/17	Chewbacca	Unheated gas		9	9	-37.37	0	0	10.36	0	0	41.54	0
R294	2017-03-27 14:50 PDT	TV03	Chewbacca	TV03	90	9	9	2.7	0	0	-0.77	0	0	30.06	0
R295	2017-03-27 21:07 PDT	Carmel Chalk	Chewbacca	Carmel Chalk	90	9	9	-2.16	0	0	3.62	0	0	34.59	0

R296	2017-03-28 12:55 PDT	Evap DI+CM UH DU 3/23/17	Chewbacca	Unheated gas		9	9	1.31	0	0	8.4	0	0	39.52	0
R297	2017-03-28 15:05 PDT	ETH-2	Chewbacca	ETH-2-1	90	9	9	-10.1	0	0	-11.26	0.01	0	19.25	0.01
R298	2017-03-29 15:57 PDT	ETH-1	Chewbacca	ETH-1-1	90	9	9	2.02	0	0	5.34	0.01	0	36.37	0.01
R299	2017-03-30 12:17 PDT	EVAP DI+CM UH DU 3/23/17	Chewbacca	Unheated gas		9	9	1.33	0	0	8.47	0	0	39.59	0
R300	2017-03-31 10:50 PDT	Bonedry DI H DU 3-24-17	Chewbacca	Heated Gas		9	9	-38.4	0	0	-3.29	0.01	0	27.47	0.01
R5	2017-03-31 15:09 PDT	WA3SHC	Chewbacca	WA3SHC	90	9	9	-6.56	0	0	-6.64	0.01	0	24.01	0.01
R5	2017-03-31 17:10 PDT	AY1SHC	Chewbacca	AY1SHC	90	9	9	-3.57	0	0	-5.05	0.01	0	25.65	0.01
R301	2017-03-31 19:19 PDT	ETH-2	Chewbacca	ETH-2-1	90	9	9	-10.2	0	0	-11.42	0.01	0	19.09	0.01
R6	2017-03-31 21:29 PDT	AY1SHC	Chewbacca	AY1SHC	90	9	9	-3.54	0	0	-5.02	0.01	0	25.69	0.01
R7	2017-03-31 23:35 PDT	AY1SHC	Chewbacca	AY1SHC	90	9	9	-3.57	0	0	-5.05	0.01	0	25.65	0.01
R302	2017-04-01 13:18 PDT	Evap DI+CM H DU 3-23-17	Chewbacca	Heated Gas		9	9	1.33	0	0	5.51	0	0	36.54	0
R303	2017-04-03 13:01 PDT	Bonedry DI UH DU 3/24/17	Chewbacca	Unheated gas		9	9	-38.12	0	0	-1.87	0.01	0	28.93	0.01
R304	2017-04-03 15:11 PDT	Veinstrom	Chewbacca	Veinstrom	90	9	9	-6.17	0	0	-5.15	0.01	0	25.55	0.01
R305	2017-04-04 13:16 PDT	Evap DI+CM UH NH 3/30/17	Chewbacca	Unheated gas		9	9	2.05	0	0	-3.27	0	0	27.49	0
R306	2017-04-05 12:31 PDT	Bonedry DI H DU 3/24/17	Chewbacca	Heated Gas		9	9	-38.6	0	0	-3.33	0	0	27.43	0
R307	2017-04-05 21:01 PDT	TV03	Chewbacca	TV03	90	9	9	2.33	0	0	-1.27	0	0	29.55	0
R308	2017-04-06 12:53 PDT	Evap DI+CM UH	Chewbacca	Unheated gas		9	9	2.06	0	0	-3.15	0.01	0	27.62	0.01
R309	2017-04-06 15:08 PDT	Eth-1	Chewbacca	ETH-1-1	90	9	9	2.08	0	0	5.46	0.01	0	36.49	0.01
R310	2017-04-07 12:17 PDT	Bonedry DI UH DU 3.24.17	Chewbacca	Unheated gas		9	9	-38.17	0	0	-1.56	0.01	0	29.26	0.01
R311	2017-04-07 14:24 PDT	ETH-3	Chewbacca	ETH-3-1	90	9	9	1.72	0	0	5.74	0.01	0	36.77	0.01
R312	2017-04-10 11:57 PDT	Evap DI+CM UH NH 4.1.17	Chewbacca	Unheated gas		9	9	2	0	0	-3.57	0.01	0	27.18	0.01
R313	2017-05-14 13:16 PDT	Bonedry DI UH DU 5/10/2017	Chewbacca	Unheated gas		9	9	-36.79	0.01	0	-2.79	0.01	0	27.98	0.01
R314	2017-05-14 15:21 PDT	ETH-1	Chewbacca	ETH-1-1	90	9	9	2.07	0	0	5.45	0.01	0	36.48	0.01
R315	2017-05-14 21:40 PDT	VeinStrom	Chewbacca	Veinstrom	90	9	9	-6.04	0	0	-4.82	0	0	25.89	0
R316	2017-05-15 12:07 PDT	Evap DI+CM UH GJ 4/24/17	Chewbacca	Unheated gas		9	9	0.97	0	0	3.31	0	0	34.27	0
R317	2017-05-16 13:42 PDT	Evap DI+CM H NH 4/1/17	Chewbacca	Heated Gas		9	9	2.17	0	0	-5.84	0	0	24.84	0
R318	2017-05-16 15:53 PDT	Carrara Marble	Chewbacca	Carrara Marble	90	9	9	2.09	0	0	6.1	0	0	37.14	0
R319	2017-05-16 22:17 PDT	Carmel Chalk	Chewbacca	Carmel Chalk	90	9	9	-2.14	0	0	3.7	0	0	34.68	0
R320	2017-05-17 11:45 PDT	Bonedry DI H DU 5/6/17	Chewbacca	Heated Gas		9	9	-38.26	0	0	-6.04	0	0	24.63	0
R321	2017-05-17 13:56 PDT	VeinStrom	Chewbacca	Veinstrom	90	9	9	-6.06	0	0	-4.94	0.01	0	25.77	0.01
R322	2017-05-17 20:17 PDT	88B Dolomitic Limestone	Chewbacca	SRM 88B	90	9	9	1.97	0	0	1.29	0	0	32.19	0
R323	2017-05-18 09:31 PDT	Bonedry DI uH GJ 5/10/17	Chewbacca	Unheated gas		9	9	-37.25	0	0	-3.5	0	0	27.25	0
R324	2017-05-19 20:53 PDT	ETH-3	Chewbacca	ETH-3-1	90	9	9	1.66	0	0	5.68	0.01	0	36.72	0.01
R325	2017-05-20 13:18 PDT	Evap DI+CM H GJ 5/8/17	Chewbacca	Heated Gas		9	9	1.87	0	0	2.65	0.01	0	33.59	0.01
R326	2017-05-20 15:32 PDT	ETH-4	Chewbacca	ETH-4-1	90	9	9	-10.09	0	0	-11.12	0	0	19.39	0
R327	2017-05-20 22:04 PDT	Carrara Marble	Chewbacca	Carrara Marble	90	9	9	2.07	0	0	6.14	0	0	37.19	0
R328	2017-05-22 11:49 PDT	Bonedry DI UH DU 5/6/17	Chewbacca	Unheated gas		9	9	-38.46	0	0	-5.54	0	0	25.15	0
R329	2017-05-22 16:08 PDT	Carmel Chalk	Chewbacca	Carmel Chalk	90	9	9	-2.1	0	0	3.67	0.01	0	34.65	0.01
R330	2017-05-22 23:56 PDT	SRM 88B	Chewbacca	SRM 88B	90	9	9	1.85	0	0	1.36	0	0	32.26	0
R331	2017-05-23 12:33 PDT	Bonedry DI H GJ 5/10/17	Chewbacca	Heated Gas		9	9	-38.17	0	0	-6.22	0	0	24.45	0
R332	2017-05-23 14:50 PDT	88B Dolomitic Limestone	Chewbacca	SRM 88B	90	9	9	2.05	0	0	1.11	0.01	0	32.01	0.01
R333	2017-05-23 21:17 PDT	ETH-1	Chewbacca	ETH-1-1	90	9	9	2.11	0	0	5.51	0	0	36.54	0
R334	2017-05-24 11:52 PDT	Evap DI + CM UH NH 3-30-17	Chewbacca	Unheated gas		9	9	2.02	0	0	-3.05	0	0	27.72	0
R335	2017-05-24 14:04 PDT	Cararra Marble	Chewbacca	Carrara Marble	90	9	9	2.1	0	0	6.09	0	0	37.14	0
R336	2017-05-24 20:51 PDT	ETH-2	Chewbacca	ETH-2-1	90	9	9	-10.03	0	0	-11.02	0	0	19.5	0
R337	2017-05-25 11:47 PDT	Evap DI + CM H DU 5/17/17	Chewbacca	Heated Gas		9	9	1.88	0	0	3.06	0.01	0	34.01	0.01
R338	2017-05-25 13:53 PDT	ETH-3	Chewbacca	ETH-3-1	90	9	9	1.69	0	0	5.7	0	0	36.73	0
R339	2017-05-25 20:18 PDT	ETH-4	Chewbacca	ETH-4-1	90	9	9	-10.12	0	0	-11.22	0	0	19.29	0
R340	2017-05-26 11:24 PDT	Bonedry DI UH DU 5/22/17	Chewbacca	Unheated gas		9	9	-37.85	0	0	1.57	0	0	32.48	0
R341	2017-05-26 13:32 PDT	Veinstrom	Chewbacca	Veinstrom	90	9	9	-6.05	0	0	-4.95	0	0	25.75	0
R342	2017-05-26 19:50 PDT	Carmel Chalk	Chewbacca	Carmel Chalk	90	9	9	-2.13	0	0	3.72	0	0	34.7	0
R343	2017-05-27 16:10 PDT	ETH-1	Chewbacca	ETH-1-1	90	9	9	2.09	0	0	5.4	0	0	36.42	0
R344	2017-05-27 22:31 PDT	Carrara Marble	Chewbacca	Carrara Marble	90	9	9	2.15	0	0	6.02	0	0	37.06	0
R345	2017-05-28 13:41 PDT	EvapDI+CM U GJ4-24	Chewbacca	Unheated gas		9	9	1.17	0	0	3.5	0	0	34.46	0
R346	2017-05-28 15:52 PDT	SRM 88B	Chewbacca	SRM 88B	90	9	9	2.17	0	0	1.24	0	0	32.14	0
R347	2017-05-29 00:18 PDT	ETH-2	Chewbacca	ETH-2-1	90	9	9	-10	0	0	-10.99	0	0	19.53	0
R348	2017-05-29 12:56 PDT	EvapDI+CM H GJ 5/8/17	Chewbacca	Heated Gas		9	9	1.81	0	0	2.58	0	0	33.51	0
R349	2017-05-30 12:41 PDT	bonedry DI UH GJ 5/22/17	Chewbacca	Unheated gas		9	9	-38.26	0	0	0.72	0	0	31.61	0
R350	2017-05-30 14:52 PDT	Veinstrom	Chewbacca	Veinstrom	90	9	9	-6.12	0	0	-5.06	0	0	25.65	0
R351	2017-05-30 21:10 PDT	Carmel Chalk	Chewbacca	Carmel Chalk	90	9	9	-2.11	0	0	3.73	0	0	34.71	0.01
R352	2017-05-31 12:14 PDT	bonedry DI H GJ 5/10/17	Chewbacca	Heated Gas		9	9	-38.01	0.01	0	-5.38	0	0	25.32	0.01
R353	2017-05-31 14:19 PDT	ETH-1	Chewbacca	ETH-1-1	90	9	9	2.02	0	0	5.39	0	0	36.42	0
R354	2017-05-31 20:43 PDT	ETH-2	Chewbacca	ETH-2-1	90	9	9	-10.08	0	0	-11.1	0	0	19.41	0
R355	2017-06-04 13:36 PDT	Bonedry DI UH 5/22/17 GJ	Chewbacca	Unheated gas		9	9	-38.26	0	0	0.75	0	0	31.64	0
R356	2017-06-04 15:46 PDT	Carmel Chalk	Chewbacca	Carmel Chalk	90	9	9	-2.25	0	0	3.52	0	0	34.49	0
R357	2017-06-04 17:51 PDT	Eth-1	Chewbacca	ETH-1-1	90	9	9	2.09	0	0	5.49	0	0	36.52	0.01
R358	2017-06-04 19:57 PDT	Eth- 2	Chewbacca	ETH-2-1	90	9	9	-10.11	0	0	-11.14	0	0	19.38	0
R359	2017-06-05 00:09 PDT	88B dolomitic limestone	Chewbacca	SRM 88B	90	9	9	2.17	0	0	1.27	0.01	0	32.17	0.01

R360	2017-06-05 13:28 PDT	Evap DI+CM H 4/24/17 GJ	Chewbacca	Heated Gas		9	9	0.96	0	0	1.05	0.01	0	31.94	0.01
R361	2017-06-05 15:37 PDT	ETH-3	Chewbacca	ETH-3-1	90	9	9	1.73	0	0	5.78	0	0	36.82	0
R362	2017-06-05 21:57 PDT	ETH-4	Chewbacca	ETH-4-1	90	9	9	-10.1	0	0	-11.19	0.01	0	19.33	0.01
R363	2017-06-06 13:10 PDT	Evap DI+CM UH 6/1/17 DU	Chewbacca	Unheated gas		9	9	0.31	0	0	-3.95	0.01	0	26.79	0.01
R364	2017-06-06 15:13 PDT	Carrara Marble	Chewbacca	Carrara Marble	90	9	9	2.14	0	0	6.18	0	0	37.23	0
R365	2017-06-10 12:02 PDT	Bonedry DI UH 6.7.17 DU	Chewbacca	Unheated gas		9	9	-37.37	0	0	2.29	0.05	0.02	33.22	0.05
R366	2017-06-10 14:05 PDT	88b dolomitic limestone	Chewbacca	SRM 88B	90	9	9	1.88	0	0	1.1	0.01	0	31.99	0.01
R367	2017-06-10 19:17 PDT	ETH-1	Chewbacca	ETH-1-1	90	9	9	1.83	0	0	5.49	0.01	0	36.52	0.01
R368	2017-06-11 04:12 PDT	VeinStrom	Chewbacca	Veinstrom	90	9	9	-6.1	0	0	-4.82	0.01	0	25.89	0.01
R369	2017-06-11 14:48 PDT	BondryDI H DU5-6	Chewbacca	Heated Gas		9	9	-37.84	0	0	-5.57	0.01	0	25.12	0.01
R370	2017-06-11 16:52 PDT	Carmel Chalk	Chewbacca	Carmel Chalk	90	9	9	-2.29	0	0	3.63	0.01	0	34.6	0.01
R371	2017-06-12 12:01 PDT	Evap DI+CM H 6/1/17 DU	Chewbacca	Heated Gas		9	9	1.06	0	0	-3.05	0.01	0	27.71	0.01
R372	2017-06-12 14:12 PDT	Carrara Marble	Chewbacca	Carrara Marble	90	9	9	1.99	0	0	6.11	0.01	0	37.16	0.01
R373	2017-06-12 20:22 PDT	SRM 88B	Chewbacca	SRM 88B	90	9	9	1.95	0	0	1.17	0.01	0	32.07	0.01
R374	2017-06-13 12:19 PDT	Evap DI+CM UH 6/7/17 DU	Chewbacca	Unheated gas		9	9	-38.12	0	0	1.34	0.01	0	32.25	0.01
R375	2017-06-13 14:28 PDT	ETH-1	Chewbacca	ETH-1-1	90	9	9	1.99	0	0	5.41	0.01	0	36.44	0.01
R376	2017-06-13 20:49 PDT	ETH-2	Chewbacca	ETH-2-1	90	9	9	-10.07	0	0	-10.93	0.01	0	19.59	0.01
R377	2017-06-14 11:40 PDT	Bonedry DI UH 5/10/17 GJ	Chewbacca	Unheated gas		9	9	-37.58	0	0	-3.98	0.01	0	26.76	0.01
R378	2017-06-14 13:45 PDT	ETH-3	Chewbacca	ETH-3-1	90	9	9	1.65	0	0	5.77	0.01	0	36.81	0.01
R379	2017-06-14 20:08 PDT	ETH-4	Chewbacca	ETH-4-1	90	9	9	-10.18	0	0	-11.15	0.01	0	19.36	0.01
R380	2017-06-15 11:57 PDT	Bonedry DI H 3.24.17 DU	Chewbacca	Heated Gas		9	9	-38.44	0	0	-3.03	0.01	0	27.74	0.01
R381	2017-06-15 14:00 PDT	Veinstrom	Chewbacca	Veinstrom	90	9	9	-6.16	0	0	-5.03	0	0	25.68	0
R382	2017-06-15 20:25 PDT	Carmel Chalk	Chewbacca	Carmel Chalk	90	9	9	-2.23	0	0	3.61	0	0	34.58	0.01
R383	2017-06-16 11:27 PDT	Evap DI+CM H 6-13-17 DU	Chewbacca	Heated Gas		9	9	2.95	0	0	-3.76	0	0	26.99	0
R384	2017-06-16 13:30 PDT	Carrara Marble	Chewbacca	Carrara Marble	90	9	9	1.95	0	0	6.03	0	0	37.08	0
R385	2017-06-16 22:05 PDT	SRM 88B	Chewbacca	SRM 88B	90	9	9	1.78	0	0	1.5	0.04	0.01	32.4	0.04
R386	2017-06-17 11:47 PDT	Evap DI+CM UH 6.15.17 GJ	Chewbacca	Unheated gas		9	9	1.66	0	0	-5.62	0.01	0	25.06	0.01
R387	2017-06-17 13:54 PDT	ETH-1	Chewbacca	ETH-1-1	90	9	9	1.98	0	0	5.44	0.01	0	36.46	0.01
R388	2017-06-17 22:23 PDT	ETH-2	Chewbacca	ETH-2-1	90	9	9	-10.2	0	0	-11.15	0.01	0	19.36	0.01
R389	2017-06-18 12:37 PDT	Bonedry DI UH 6-6-17 GJ	Chewbacca	Unheated gas		9	9	-37.44	0	0	2.31	0	0	33.25	0
R390	2017-06-18 14:44 PDT	ETH-3	Chewbacca	ETH-3-1	90	9	9	1.64	0	0	5.81	0	0	36.85	0
R391	2017-06-18 23:17 PDT	ETH-4	Chewbacca	ETH-4-1	90	9	9	-10.19	0	0	-11.17	0.01	0	19.34	0.01
R392	2017-06-19 12:20 PDT	Bonedry DI H 4.4.17 NH	Chewbacca	Heated Gas		9	9	-37.43	0	0	-6.48	0.01	0	24.18	0.01
R393	2017-06-19 14:24 PDT	TV03	Chewbacca	TV03	90	9	9	2.5	0	0	-0.71	0	0	30.13	0
R394	2017-06-19 21:00 PDT	Veinstrom	Chewbacca	Veinstrom	90	9	9	-6.2	0	0	-4.96	0	0	25.75	0
R395	2017-06-20 12:29 PDT	Evap DI + CM H 6.13.17 GJ	Chewbacca	Heated Gas		9	9	3.34	0	0	-2.96	0.01	0	27.81	0.01
R396	2017-06-20 14:31 PDT	Carmel Chalk	Chewbacca	Carmel Chalk	90	9	9	-2.23	0	0	3.62	0	0	34.6	0
R397	2017-06-21 12:32 PDT	Evap DI + CM UH 6.15.17 GJ	Chewbacca	Unheated gas		9	9	1.9	0	0	-5.21	0	0	25.48	0
R398	2017-06-21 14:42 PDT	8544 NBS19 Limestone	Chewbacca	NBS 19	90	9	9	1.88	0	0	5.45	0	0	36.47	0
R399	2017-06-22 12:37 PDT	Bonedry DI UH 6.6.17 GJ	Chewbacca	Unheated gas		9	9	-37.55	0	0	2.06	0.01	0	32.99	0.01
R400	2017-06-22 14:44 PDT	8544 NBS19 Limestone	Chewbacca	NBS 19	90	9	9	1.83	0	0	5.43	0	0	36.45	0
R401	2017-06-22 21:04 PDT	88B Dolomitic Limestone	Chewbacca	SRM 88B	90	9	9	1.92	0	0	1.11	0	0	32.01	0
R402	2017-06-23 11:56 PDT	Bonedry DI H 6.6.17 DU	Chewbacca	Heated Gas		9	9	-37.43	0	0	0.26	0	0	31.12	0.01
R403	2017-06-23 14:03 PDT	ETH-1	Chewbacca	ETH-1-1	90	9	9	1.97	0	0	5.43	0	0	36.46	0.01
R404	2017-06-24 13:51 PDT	Evap DI+CM H 6.13.17 DU	Chewbacca	Heated Gas		9	9	2.08	0	0	-5.29	0	0	25.41	0
R405	2017-06-24 15:57 PDT	Carmel Chalk	Chewbacca	Carmel Chalk	90	9	9	-2.23	0	0	3.67	0	0	34.64	0
R406	2017-06-24 22:13 PDT	Carrara Marble	Chewbacca	Carrara Marble	90	9	9	1.96	0	0	6.15	0	0	37.2	0
R407	2017-06-25 12:06 PDT	Evap DI+CM UH 6.15.17 DU	Chewbacca	Unheated gas		9	9	2.13	0	0	-5.1	0	0	25.6	0
R6	2017-06-25 18:22 PDT	KP1SHC	Chewbacca	KP1SHC	90	9	9	-2.45	0	0	-4.78	0.01	0	25.94	0.01
R7	2017-06-25 20:25 PDT	KP1SHC	Chewbacca	KP1SHC	90	9	9	-2.5	0	0	-4.81	0.01	0	25.9	0.01
R408	2017-06-26 12:18 PDT	Bonedry DI UH 6.19.17 GJ	Chewbacca	Unheated gas		9	9	-37.48	0	0	2.16	0.01	0	33.09	0.01
R409	2017-06-26 14:30 PDT	Veinstrom	Chewbacca	Veinstrom	90	9	9	-6.19	0	0	-4.93	0.01	0	25.78	0.01
R1	2017-06-26 16:37 PDT	AY1W3B	Chewbacca	AY1W3B	90	9	9	-6.27	0	0	-5.74	0	0	24.94	0
R1	2017-06-26 18:43 PDT	AY2W3C	Chewbacca	AY2W3C	90	9	9	-4.51	0	0	-4.15	0	0	26.58	0
R410	2017-06-26 20:47 PDT	88B Dolomitic Limestone	Chewbacca	SRM 88B	90	9	9	1.91	0	0	1.18	0.01	0	32.08	0.01
R411	2017-06-27 16:57 PDT	Bonedry DI H 4.7.17 NH	Chewbacca	Heated Gas		10	8	-37.7	0	0	-6.97	0.01	0	23.68	0.01
R412	2017-06-27 19:45 PDT	88B Dolomitic Limestone	Chewbacca	SRM 88B	90	9	8	2.01	0	0	1.1	0.01	0	31.99	0.01
R413	2017-06-27 22:03 PDT	ETH-3	Chewbacca	ETH-3-1	90	9	8	1.71	0	0	5.77	0	0	36.81	0
R414	2017-06-28 00:14 PDT	ETH-4	Chewbacca	ETH-4-1	90	9	8	-10.15	0	0	-11.15	0.01	0	19.37	0.01
R415	2017-06-28 02:34 PDT	Carrara Marble-UCLA	Chewbacca	Carrara Marble	90	9	8	2.03	0	0	6.12	0	0	37.17	0
R416	2017-06-28 12:19 PDT	Bonedry DI H GJ 5/10/17	Chewbacca	Heated Gas		9	9	-38.04	0	0	-6.12	0	0	24.55	0
R417	2017-06-28 14:30 PDT	Carmel Chalk	Chewbacca	Carmel Chalk	90	9	9	-2.21	0	0	3.57	0.01	0	34.54	0.01
R1	2017-06-28 16:56 PDT	WA3W	Chewbacca	WA3W	90	9	9	-4.49	0	0	-5.11	0	0	25.59	0
R6	2017-06-28 19:16 PDT	AY2SHC	Chewbacca	AY2SHC	90	9	9	-4.21	0	0	-3.7	0	0	27.05	0
R418	2017-06-28 21:20 PDT	ETH-2	Chewbacca	ETH-2-1	90	9	9	-10.13	0	0	-11.13	0.01	0	19.38	0.01
R419	2017-06-29 10:50 PDT	EvapDI+CM H 6.15.17 DU	Chewbacca	Heated Gas		9	9	2.22	0	0	-5.97	0.01	0	24.71	0.01
R7	2017-06-29 15:10 PDT	KP1W	Chewbacca	KP1W	90	9	9	-4.31	0	0	-5.24	0.01	0	25.45	0.01
R8	2017-06-29 17:13 PDT	AY1SHC	Chewbacca	AY1SHC	90	9	9	-3.5	0	0	-4.86	0	0	25.85	0

R420	2017-06-29 19:15 PDT	88B dolomitic limestone	Chewbacca	SRM 88B	90	9	9	1.86	0	0	0.82	0.01	0	31.71	0.01
R421	2017-06-30 11:56 PDT	EvapDI+CM H 6.15.17 DU	Chewbacca	Unheated gas		9	9	1.58	0	0	-1.44	0	0	29.37	0
R422	2017-06-30 14:00 PDT	Carrara Marble - UCLA	Chewbacca	Carrara Marble	90	9	9	2.01	0	0	6.06	0.01	0	37.1	0.01
R2	2017-06-30 16:04 PDT	WA3W	Chewbacca	WA3W	90	9	9	-4.53	0	0	-5.24	0.01	0	25.46	0.01
R7	2017-06-30 18:06 PDT	AY2SHC	Chewbacca	AY2SHC	90	9	9	-4.28	0	0	-3.8	0.01	0	26.94	0.01
R423	2017-06-30 20:09 PDT	Carmel Chalk	Chewbacca	Carmel Chalk	90	9	9	-2.19	0	0	3.61	0.01	0	34.59	0.01
R424	2017-07-01 12:01 PDT	Bonedry DI H 4.7.17 NH	Chewbacca	Heated Gas		9	9	-37.45	0	0	-5.38	0.01	0	25.31	0.01
R425	2017-07-01 14:04 PDT	Carmel Chalk	Chewbacca	Carmel Chalk	90	9	9	-2.18	0	0	3.58	0.01	0	34.55	0.01
R2	2017-07-01 16:11 PDT	AY1W3B	Chewbacca	AY1W3B	90	9	9	-6.28	0	0	-5.93	0.01	0	24.75	0.01
R3	2017-07-01 18:17 PDT	AY1W3B	Chewbacca	AY1W3B	90	9	9	-6.29	0	0	-5.94	0	0	24.74	0
R4	2017-07-01 20:19 PDT	AY1W3B	Chewbacca	AY1W3B	90	9	9	-6.27	0	0	-5.99	0.01	0	24.69	0.01
R426	2017-07-01 22:23 PDT	ETH-1	Chewbacca	ETH-1-1	90	9	9	2.03	0	0	5.41	0.01	0	36.44	0.01
R5	2017-07-02 00:29 PDT	AY1W3B	Chewbacca	AY1W3B	90	9	9	-6.25	0	0	-5.97	0	0	24.71	0
R427	2017-07-02 15:32 PDT	ETH-2	Chewbacca	ETH-2-1	90	9	9	-10.18	0	0	-11.24	0	0	19.27	0
R9	2017-07-02 17:36 PDT	AY1SHC	Chewbacca	AY1SHC	90	9	9	-3.3	0	0	-4.64	0.01	0	26.08	0.01
R10	2017-07-02 19:38 PDT	AY1SHC	Chewbacca	AY1SHC	90	9	9	-3.34	0	0	-4.66	0	0	26.06	0
R8	2017-07-02 21:42 PDT	AY2SHC	Chewbacca	AY2SHC	90	9	9	-4.31	0	0	-3.85	0.01	0	26.89	0.01
R428	2017-07-02 23:45 PDT	Veinstrom	Chewbacca	Veinstrom	90	9	9	-6.09	0	0	-4.97	0	0	25.74	0
R9	2017-07-03 01:52 PDT	AY2SHC	Chewbacca	AY2SHC	90	9	9	-4.31	0	0	-3.85	0	0	26.89	0
R429	2017-07-03 12:37 PDT	Evap DI CM UH 6.28.17 DU	Chewbacca	Unheated gas		9	9	1.08	0	0	-2.43	0	0	28.36	0
R430	2017-07-03 14:41 PDT	ETH-3	Chewbacca	ETH-3-1	90	9	9	1.78	0	0	5.71	0.01	0	36.75	0.01
R2	2017-07-03 16:47 PDT	AY2W3C	Chewbacca	AY2W3C	90	9	9	-4.26	0	0	-4.2	0	0	26.53	0
R3	2017-07-03 18:48 PDT	AY2W3C	Chewbacca	AY2W3C	90	9	9	-4.24	0	0	-4.18	0	0	26.56	0
R3	2017-07-03 20:50 PDT	WA3W	Chewbacca	WA3W	90	9	9	-4.45	0	0	-5.26	0.01	0	25.44	0.01
R431	2017-07-03 22:54 PDT	Carrera Marble-UCLA	Chewbacca	Carrara Marble	90	9	9	2.08	0	0	6.09	0.01	0	37.14	0.01
R4	2017-07-04 01:01 PDT	WA3W	Chewbacca	WA3W	90	9	9	-4.44	0	0	-5.28	0.01	0	25.42	0.01
R5	2017-07-04 03:04 PDT	WA3W	Chewbacca	WA3W	90	9	9	-4.39	0	0	-5.19	0.01	0	25.51	0.01
R432	2017-07-05 14:36 PDT	EvapDI+CM H 5.86 5.17.17 DU	Chewbacca	Heated Gas		9	9	1.51	0	0	3.09	0.01	0	34.04	0.01
R433	2017-07-05 16:49 PDT	carmel chalk	Chewbacca	Carmel Chalk	90	9	9	-2.23	0	0	3.59	0.01	0	34.56	0.01
R4	2017-07-05 18:56 PDT	AY2W3C	Chewbacca	AY2W3C	90	9	9	-4.47	0	0	-4.28	0.01	0	26.45	0.01
R6	2017-07-05 20:58 PDT	WA3W	Chewbacca	WA3W	90	9	9	-4.58	0	0	-5.2	0.01	0	25.5	0.01
R434	2017-07-06 16:43 PDT	Bonedry DI H 6.7.17 GJ	Chewbacca	Heated Gas		9	9	-38.11	0	0	-0.87	0.01	0	29.96	0.01
R435	2017-07-06 18:48 PDT	Carrara Marble	Chewbacca	Carrara Marble	90	9	9	1.98	0	0	6.06	0.01	0	37.1	0.01
R8	2017-07-06 20:56 PDT	KP1W	Chewbacca	KP1W	90	9	9	-4.32	0	0	-5.12	0.01	0	25.58	0.01
R7	2017-07-06 22:59 PDT	WA3W	Chewbacca	WA3W	90	9	9	-4.63	0	0	-5.23	0.01	0	25.46	0.01
R436	2017-07-07 01:03 PDT	ETH-1	Chewbacca	ETH-1-1	90	9	9	2.03	0	0	5.47	0.01	0	36.5	0.01
R8	2017-07-07 03:09 PDT	WA3W	Chewbacca	WA3W	90	9	9	-4.6	0	0	-5.25	0	0	25.45	0
R9	2017-07-07 05:14 PDT	KP1W	Chewbacca	KP1W	90	9	9	-4.36	0	0	-5.21	0.01	0	25.49	0.01
R10	2017-07-07 07:27 PDT	KP1W	Chewbacca	KP1W	90	9	9	-4.33	0	0	-5.21	0	0	25.49	0
R437	2017-07-07 11:57 PDT	Bonedry DI UH 7.6.17 NH	Chewbacca	Unheated gas		9	9	-37.35	0	0	-3.6	0	0	27.15	0
R438	2017-07-07 14:01 PDT	Carmel Chalk	Chewbacca	Carmel Chalk	90	9	9	-2.23	0	0	3.68	0.01	0	34.65	0.01
R6	2017-07-07 16:07 PDT	AY1W3B	Chewbacca	AY1W3B	90	9	9	-6.28	0	0	-5.88	0.01	0	24.8	0.01
R8	2017-07-07 18:10 PDT	KP1SHC	Chewbacca	KP1SHC	90	9	9	-2.52	0	0	-4.87	0.01	0	25.84	0.01
R439	2017-07-07 20:17 PDT	ETH-2	Chewbacca	ETH-2-1	90	9	9	-10.11	0	0	-11.03	0.01	0	19.49	0.01
R440	2017-07-08 10:59 PDT	Evap DI + UH GJ 6-28-17	Chewbacca	Unheated gas		9	9	0.94	0	0	-2.7	0.01	0	28.08	0.01
R441	2017-07-08 13:07 PDT	ETH-3	Chewbacca	ETH-3-1	90	9	9	1.68	0	0	5.81	0.01	0	36.85	0.01
R11	2017-07-08 15:10 PDT	AY1SHC	Chewbacca	AY1SHC	90	9	9	-3.39	0	0	-4.6	0	0	26.12	0
R5	2017-07-08 17:14 PDT	AY2W3C	Chewbacca	AY2W3C	90	9	9	-4.6	0	0	-4.41	0.01	0	26.31	0.01
R10	2017-07-08 19:21 PDT	AY2SHC	Chewbacca	AY2SHC	90	9	9	-4.41	0	0	-3.88	0.01	0	26.86	0.01
R442	2017-07-08 21:25 PDT	ETH-4	Chewbacca	ETH-4-1	90	9	9	-10.13	0	0	-11.08	0	0	19.44	0
R11	2017-07-08 23:29 PDT	KP1W	Chewbacca	KP1W	90	9	9	-4.34	0	0	-5.15	0.01	0	25.55	0.01
R443	2017-07-09 15:18 PDT	EvapDI+CM U DU6-15	Chewbacca	Unheated gas		9	9	1.82	0	0	-5.43	0.01	0	25.27	0.01
R7	2017-07-09 17:23 PDT	AY2W3B	Chewbacca	AY2W3B	90	9	9	-4.39	0	0	-4.4	0	0	26.32	0
R444	2017-07-09 19:29 PDT	Carrera Marble - UCLA	Chewbacca	Carrara Marble	90	9	9	2.01	0	0	6.17	0.01	0	37.23	0.01
R11	2017-07-09 21:32 PDT	AY2SHC	Chewbacca	AY2SHC	90	9	9	-4.38	0	0	-3.84	0	0	26.9	0
R12	2017-07-09 23:39 PDT	AY2SHC	Chewbacca	AY2SHC	90	9	9	-4.45	0	0	-3.89	0	0	26.85	0
R445	2017-07-10 12:33 PDT	Evap DI + CM H 6.26.17 DU	Chewbacca	Heated Gas		9	9	3.32	0	0	-4.43	0	0	26.29	0
R446	2017-07-10 14:34 PDT	SRM 88B Dolomitic Limestone	Chewbacca	SRM 88B	90	9	9	1.94	0	0	1.13	0.01	0	32.02	0.01
R447	2017-07-10 20:47 PDT	ETH-1	Chewbacca	ETH-1-1	90	9	9	2.07	0	0	5.61	0.01	0	36.64	0.01

S1	AY1SHC
S2	AY1W3B
S3	AY1W3D
S4	AY1W3D_cs
S5	AY1W3D_mc_cs
S6	AY2SHC
S7	AY2W3B
S8	AY2W3C
S9	KP1SHC

S10 KP1W
S11 WA3SHC
S12 WA3W
S13 WA3W_mc_cs

) VSMOW (Rav	d45 WG (Raw)	45 WG (Raw)	45 WG (Raw) S	d46 WG (Raw)	46 WG (Raw) S	46 WG (Raw) S	d47 WG (Raw)	47 WG (Raw) S	47 WG (Raw) S	D47 WG (Raw)	47 WG (Raw) S	47 WG (Raw) S	d48 WG (Raw)	48 WG (Raw) S	48 WG (Raw) S	D48 WG (Raw)	48 WG (Raw) S	48 WG (Raw) S
0	-32.831	0.01	0.003	-19.598	0.012	0.004	-53.044	0.053	0.018	-0.596	0.051	0.017	-45.312	0.149	0.05	-6.762	0.16	0.053
0.01	6.52	0.008	0.003	23.425	0.014	0.005	30.242	0.048	0.017	0.325	0.028	0.01	55.782	0.176	0.062	8.005	0.16	0.056
0	-1.695	0.006	0.002	1.193	0.011	0.004	-0.875	0.069	0.023	-0.298	0.066	0.022	2.411	0.281	0.094	0.023	0.264	0.088
0	5.651	0.008	0.003	12.121	0.011	0.004	17.454	0.028	0.009	-0.355	0.033	0.011	28.688	0.278	0.093	4.196	0.262	0.087
0.01	1.544	0.005	0.002	9.679	0.015	0.005	10.949	0.035	0.012	-0.172	0.031	0.01	22.948	0.199	0.066	3.429	0.202	0.067
0	-1.511	0.007	0.002	1.14	0.013	0.004	-0.721	0.037	0.012	-0.282	0.037	0.012	2.452	0.226	0.075	0.169	0.217	0.072
0	-6.304	0.006	0.002	-5.291	0.013	0.004	-12.244	0.032	0.011	-0.579	0.029	0.01	-12.629	0.145	0.048	-2.098	0.137	0.046
0	5.632	0.007	0.002	11.974	0.01	0.003	17.276	0.04	0.013	-0.367	0.036	0.012	28.175	0.192	0.064	3.988	0.181	0.06
0	-2.291	0.006	0.002	0.953	0.012	0.004	-1.714	0.047	0.016	-0.286	0.036	0.012	2.238	0.205	0.068	0.33	0.192	0.064
0	-2.284	0.007	0.002	0.392	0.011	0.004	-2.249	0.048	0.016	-0.277	0.045	0.015	0.422	0.264	0.088	-0.361	0.249	0.083
0	5.371	0.007	0.002	11.764	0.011	0.004	17.069	0.04	0.013	-0.099	0.028	0.009	27.217	0.26	0.087	3.469	0.242	0.081
0	-6.283	0.005	0.002	-5.33	0.01	0.003	-12.283	0.045	0.015	-0.603	0.04	0.013	-13.176	0.184	0.061	-2.572	0.184	0.061
0	-32.542	0.006	0.002	-20.582	0.008	0.003	-53.715	0.041	0.014	-0.626	0.042	0.014	-48.177	0.213	0.071	-7.752	0.228	0.076
0.01	-2.39	0.008	0.003	0.866	0.015	0.005	-1.931	0.045	0.015	-0.315	0.037	0.012	1.764	0.228	0.076	0.031	0.235	0.078
0	6.101	0.008	0.003	14.459	0.013	0.004	20.09	0.037	0.012	-0.497	0.039	0.013	34.48	0.196	0.065	5.202	0.176	0.059
0	5.715	0.007	0.002	12.106	0.011	0.004	17.499	0.068	0.023	-0.364	0.059	0.02	28.507	0.193	0.064	4.049	0.183	0.061
0	1.593	0.005	0.002	9.526	0.009	0.003	10.843	0.059	0.02	-0.178	0.048	0.016	22.537	0.245	0.082	3.331	0.234	0.078
0	-0.73	0.002	0.001	1.091	0.006	0.002	-0.027	0.044	0.015	-0.345	0.043	0.014	2.336	0.207	0.069	0.153	0.201	0.067
0	-0.731	0.003	0.001	1.179	0.005	0.002	0.061	0.047	0.016	-0.343	0.047	0.016	2.576	0.205	0.068	0.216	0.202	0.067
0	-0.688	0.006	0.002	1.137	0.01	0.003	0.09	0.042	0.014	-0.318	0.04	0.013	2.673	0.203	0.068	0.396	0.2	0.067
0	5.468	0.005	0.002	11.232	0.009	0.003	16.273	0.038	0.013	-0.465	0.033	0.011	26.349	0.239	0.08	3.676	0.246	0.082
0	5.686	0.005	0.002	12.089	0.01	0.003	17.462	0.046	0.015	-0.353	0.047	0.016	28.586	0.245	0.082	4.161	0.225	0.075
0	-2.358	0.005	0.002	0.873	0.009	0.003	-1.836	0.028	0.009	-0.261	0.025	0.008	2.025	0.172	0.057	0.277	0.171	0.057
0	-6.42	0.003	0.001	-5.414	0.009	0.003	-12.482	0.048	0.016	-0.578	0.045	0.015	-13.06	0.239	0.08	-2.286	0.237	0.079
0.01	-4.212	0.01	0.003	19.779	0.018	0.006	15.093	0.055	0.018	0.081	0.032	0.011	46.95	0.34	0.113	6.731	0.303	0.101
0	-0.453	0.005	0.002	1.222	0.014	0.004	0.386	0.039	0.012	-0.348	0.038	0.012	2.8	0.192	0.061	0.354	0.19	0.06
0	-32.825	0.007	0.002	-20.028	0.011	0.004	-53.433	0.047	0.016	-0.582	0.037	0.012	-46.943	0.16	0.053	-7.59	0.15	0.05
0	5.731	0.005	0.002	12.06	0.012	0.004	17.46	0.025	0.008	-0.372	0.016	0.005	28.67	0.167	0.056	4.301	0.155	0.052
0	1.629	0.006	0.002	9.6	0.009	0.003	10.96	0.054	0.018	-0.171	0.05	0.017	22.578	0.277	0.092	3.225	0.259	0.086
0	-32.957	0.005	0.002	-18.071	0.009	0.003	-52.565	0.05	0.017	-1.483	0.045	0.015	-42.649	0.15	0.05	-7.087	0.164	0.055
0	5.394	0.005	0.002	11.83	0.008	0.003	17.201	0.046	0.015	-0.057	0.041	0.014	27.933	0.167	0.056	4.037	0.16	0.053
0	-6.315	0.008	0.003	-5.356	0.013	0.004	-12.312	0.034	0.011	-0.573	0.029	0.01	-12.803	0.234	0.078	-2.143	0.219	0.073
0	5.203	0.005	0.002	10.044	0.008	0.003	14.606	0.036	0.012	-0.68	0.034	0.011	23.334	0.23	0.077	3.082	0.215	0.072
0	5.651	0.009	0.003	11.405	0.013	0.004	16.662	0.037	0.012	-0.438	0.033	0.011	27.12	0.199	0.066	4.086	0.18	0.06
0	1.628	0.006	0.002	9.542	0.011	0.004	10.885	0.047	0.016	-0.189	0.039	0.013	22.585	0.102	0.034	3.346	0.109	0.036
0.01	-2.294	0.01	0.003	0.743	0.016	0.005	-1.949	0.05	0.017	-0.312	0.037	0.012	1.821	0.309	0.103	0.335	0.28	0.093
0	1.679	0.008	0.003	9.42	0.012	0.004	10.822	0.041	0.014	-0.185	0.047	0.016	22.372	0.206	0.069	3.379	0.194	0.065
0	-31.753	0.006	0.002	2.773	0.007	0.002	-30.553	0.032	0.011	-0.443	0.037	0.012	6.508	0.323	0.108	0.949	0.313	0.104
0	6.722	0.005	0.002	17.865	0.01	0.003	24.842	0.054	0.018	0.218	0.046	0.015	42.793	0.214	0.071	6.509	0.19	0.063
0	-32.348	0.003	0.001	2.259	0.002	0.001	-32.209	0.071	0.035	-1.014	0.075	0.038	4.029	0.043	0.022	-0.493	0.046	0.023
0	-31.378	0.001	0	5.07	0.002	0.001	-27.852	0.122	0.061	-0.309	0.124	0.062	9.864	0.129	0.065	-0.299	0.126	0.063
0	-6.288	0.001	0	-5.018	0.003	0.001	-12.065	0.169	0.084	-0.685	0.17	0.085	-10.243	0.162	0.081	-0.234	0.165	0.082
0	1.551	0.001	0	9.823	0.001	0	10.782	0.161	0.081	-0.484	0.16	0.08	19.425	0.053	0.026	-0.311	0.052	0.026
0	5.93	0.001	0	5.441	0.001	0.001	10.998	0.046	0.023	-0.496	0.046	0.023	10.612	0.098	0.049	-0.297	0.098	0.049
0	5.73	0.003	0.001	12.338	0.003	0.002	17.357	0.097	0.049	-0.742	0.099	0.049	24.443	0.085	0.043	-0.376	0.084	0.042
0	-2.365	0.001	0.001	1.077	0.002	0.001	-1.935	0.041	0.021	-0.552	0.044	0.022	1.936	0.017	0.009	-0.219	0.019	0.01
0	6.456	0.001	0.001	35.52	0.003	0.001	41.51	0.125	0.062	-0.282	0.119	0.059	71.658	0.059	0.03	-0.601	0.056	0.028
0	-31.655	0.001	0	5.195	0.001	0.001	-28.024	0.137	0.068	-0.312	0.14	0.07	10.078	0.092	0.046	-0.336	0.091	0.045
0	6.145	0.002	0.001	28.469	0.001	0.001	33.39	0.102	0.051	-1.073	0.098	0.049	56.944	0.072	0.036	-0.76	0.07	0.035
0	-31.514	0.001	0.001	3.404	0.002	0.001	-30.3	0.091	0.045	-1.054	0.093	0.047	6.235	0.047	0.023	-0.581	0.045	0.023
0	6.371	0.003	0.001	35.217	0.002	0.001	41.174	0.133	0.067	-0.229	0.125	0.063	71.187	0.126	0.063	-0.454	0.114	0.057
0	-6.274	0.002	0.001	-4.909	0.004	0.002	-11.92	0.168	0.084	-0.66	0.166	0.083	-10.019	0.135	0.067	-0.228	0.13	0.065
0	-32.305	0.002	0.001	3.957	0.002	0.001	-29.71	0.025	0.012	-0.144	0.026	0.013	7.743	0.066	0.033	-0.185	0.063	0.032
0	5.903	0.002	0.001	5.45	0.002	0.001	10.872	0.087	0.043	-0.602	0.086	0.043	10.537	0.083	0.042	-0.388	0.086	0.043
0	-2.197	0.002	0.001	1.541	0.003	0.002	-1.224	0.115	0.058	-0.47	0.113	0.057	2.786	0.087	0.044	-0.297	0.085	0.042
0	5.68	0.002	0.001	12.576	0.003	0.002	17.554	0.152	0.076	-0.728	0.146	0.073	24.873	0.105	0.052	-0.426	0.099	0.049
0	6.262	0.002	0.001	30.005	0.001	0.001	36.095	0.134	0.067	-0.047	0.132	0.066	65.305	0.163	0.081	4.141	0.155	0.078
0	5.672	0.001	0	12.332	0.003	0.001	17.512	0.035	0.017	-0.525	0.037	0.018	43.071	0.117	0.058	17.813	0.11	0.055
0	-6.264	0.001	0	-4.923	0.004	0.002	-12.095	0.104	0.052	-0.834	0.102	0.051	-10.169	0.074	0.037	-0.35	0.068	0.034
0	6.129	0.001	0.001	12.949	0.001	0.001	18.078	0.032	0.016	-1.036	0.03	0.015	25.435	0.031	0.015	-0.614	0.031	0.016
0	6.507	0.002	0.001	35.312	0.002	0.001	41.442	0.093	0.047	-0.203	0.09	0.045	71.335	0.08	0.04	-0.501	0.074	0.037
0	-2.396	0.001	0	1.12	0.002	0.001	-1.747	0.056	0.028	-0.374	0.055	0.027	2.018	0.053	0.026	-0.223	0.054	0.027
0.05	-31.354	0.511	0.255	5.309	0.087	0.044	-27.519	0.509	0.255	-0.225	0.127	0.064	10.327	0.156	0.078	-0.316	0.129	0.065
0	5.659	0.002	0.001	11.9	0.001	0.001	16.729	0.107	0.054	-0.862	0.105	0.052	23.462	0.08	0.04	-0.468	0.078	0.039
0	-31.875	0	0	2.685	0.003	0.001	-30.5	0.036	0.018	-0.172	0.036	0.018	5.149	0.06	0.03	-0.227	0.064	0.032

0	-2.363	0.001	0.001	1.32	0.003	0.002	-1.62	0.068	0.034	-0.477	0.07	0.035	2.366	0.071	0.036	-0.275	0.076	0.038
0	5.942	0	0	5.8	0.002	0.001	11.425	0.039	0.019	-0.437	0.037	0.019	11.335	0.075	0.038	-0.295	0.071	0.035
0	-6.277	0.001	0	-5.136	0.002	0.001	-12.367	0.14	0.07	-0.885	0.142	0.071	-10.55	0.159	0.08	-0.307	0.159	0.08
0	-2.352	0.001	0.001	1.039	0.004	0.002	-1.908	0.047	0.024	-0.502	0.052	0.026	1.835	0.061	0.031	-0.245	0.068	0.034
0	-31.473	0.002	0.001	5.117	0.003	0.002	-27.879	0.112	0.056	-0.281	0.112	0.056	9.914	0.111	0.055	-0.343	0.105	0.052
0	5.692	0.001	0	12.358	0.001	0	17.283	0.178	0.089	-0.796	0.176	0.088	24.391	0.126	0.063	-0.465	0.124	0.062
0	1.615	0.001	0.001	9.919	0.003	0.002	10.957	0.092	0.046	-0.47	0.09	0.045	19.607	0.091	0.046	-0.322	0.087	0.043
0	-6.328	0.001	0	-5.039	0.003	0.001	-12.103	0.163	0.081	-0.661	0.162	0.081	-10.323	0.089	0.044	-0.274	0.084	0.042
0	6.516	0.003	0.001	20.239	0.002	0.001	25.713	0.041	0.021	-1.012	0.04	0.02	40.256	0.081	0.041	-0.607	0.081	0.04
0	-32.263	0.002	0.001	-0.706	0.005	0.002	-35.056	0.261	0.13	-1.139	0.269	0.134	-1.955	0.208	0.104	-0.543	0.208	0.104
0	6.49	0	0	34.727	0.001	0	40.745	0.151	0.076	-0.298	0.145	0.072	70.148	0.106	0.053	-0.477	0.099	0.049
0	-0.525	0.004	0.002	0.651	0.005	0.003	-0.363	0.159	0.079	-0.462	0.155	0.078	1.09	0.062	0.031	-0.211	0.062	0.031
0	1.683	0.001	0.001	9.907	0.002	0.001	10.801	0.45	0.225	-0.684	0.446	0.223	19.519	0.199	0.099	-0.385	0.197	0.099
0	-0.374	0.002	0.001	1.011	0.002	0.001	0.145	0.117	0.059	-0.463	0.116	0.058	1.824	0.111	0.055	-0.199	0.111	0.055
0	-1.719	0.002	0.001	1.861	0.002	0.001	-0.404	0.208	0.104	-0.457	0.21	0.105	3.559	0.121	0.061	-0.165	0.124	0.062
0	5.722	0.001	0.001	11.665	0.003	0.001	16.614	0.063	0.032	-0.811	0.063	0.032	23.061	0.074	0.037	-0.395	0.074	0.037
0	-31.944	0.004	0.002	4.386	0.005	0.002	-29.003	0.116	0.058	-0.221	0.116	0.058	8.521	0.034	0.017	-0.268	0.028	0.014
0	-6.265	0.001	0.001	-5.082	0.002	0.001	-12.272	0.141	0.07	-0.855	0.141	0.07	-10.461	0.138	0.069	-0.326	0.138	0.069
0	-0.44	0.001	0.001	0.849	0.001	0	-0.131	0.164	0.082	-0.511	0.164	0.082	1.502	0.088	0.044	-0.195	0.088	0.044
0	-1.761	0.001	0.001	1.688	0.003	0.001	-0.641	0.069	0.034	-0.48	0.072	0.036	3.168	0.046	0.023	-0.211	0.043	0.021
0	-0.661	0.001	0.001	2.306	0.001	0	0.224	1.512	0.756	-1.358	1.509	0.755	4.016	0.647	0.323	-0.599	0.643	0.322
0.01	-31.601	0.011	0.005	0.276	0.014	0.007	-33.374	0.121	0.061	-1.069	0.131	0.065	0.018	0.074	0.037	-0.534	0.079	0.039
0	-2.336	0.001	0.001	0.972	0.002	0.001	-1.909	0.158	0.079	-0.453	0.157	0.079	1.7	0.14	0.07	-0.244	0.139	0.069
0	1.517	0.002	0.001	9.875	0.002	0.001	10.749	0.227	0.113	-0.533	0.222	0.111	19.51	0.096	0.048	-0.331	0.093	0.046
0	1.601	0.001	0	9.815	0.003	0.001	10.82	0.154	0.077	-0.492	0.154	0.077	19.342	0.091	0.046	-0.378	0.093	0.046
0	-0.409	0.001	0.001	2.567	0.003	0.001	1.403	0.245	0.122	-0.697	0.247	0.123	4.818	0.133	0.066	-0.322	0.135	0.068
0	-1.736	0.001	0.001	2.144	0.002	0.001	-1.817	3.29	1.645	-2.13	3.29	1.645	3.359	1.472	0.736	-0.93	1.468	0.734
0	-2.906	0.001	0.001	0.284	0.002	0.001	-3.962	1.464	0.732	-1.246	1.468	0.734	0.031	0.486	0.243	-0.535	0.486	0.243
0	-0.989	0.001	0	2.185	0.001	0	0.6	0.171	0.085	-0.525	0.172	0.086	4.089	0.085	0.042	-0.285	0.085	0.042
0.01	-2.233	0.022	0.011	1.027	0.012	0.006	-1.72	0.08	0.04	-0.424	0.075	0.037	1.847	0.104	0.052	-0.208	0.1	0.05
0	-2.673	0.001	0.001	0.191	0.002	0.001	-3.115	0.356	0.178	-0.546	0.356	0.178	0.152	0.298	0.149	-0.23	0.3	0.15
0	1.73	0.001	0.001	9.798	0.003	0.001	10.843	0.048	0.024	-0.584	0.045	0.023	19.382	0.031	0.015	-0.304	0.028	0.014
0	-2.762	0.002	0.001	0.054	0.003	0.001	-3.329	0.085	0.043	-0.535	0.084	0.042	-0.158	0.032	0.016	-0.266	0.029	0.014
0	-31.542	0.002	0.001	5.067	0.002	0.001	-28.04	0.209	0.104	-0.325	0.217	0.108	9.832	0.152	0.076	-0.326	0.154	0.077
0	6.02	0.002	0.001	5.401	0.001	0.001	10.939	0.118	0.059	-0.607	0.117	0.059	10.497	0.07	0.035	-0.33	0.07	0.035
0	6.622	0.003	0.001	35.692	0.001	0.001	41.767	0.109	0.054	-0.369	0.107	0.054	72.197	0.048	0.024	-0.43	0.046	0.023
0	1.118	0.001	0	1.25	0.001	0.001	1.785	0.195	0.097	-0.598	0.195	0.097	2.196	0.129	0.064	-0.305	0.128	0.064
0	1.682	0.001	0	9.848	0.002	0.001	10.928	0.125	0.063	-0.5	0.126	0.063	19.511	0.115	0.058	-0.277	0.116	0.058
0	1.021	0.001	0	1.189	0.001	0.001	0.362	2.669	1.335	-1.857	2.663	1.331	1.619	1.072	0.536	-0.758	1.068	0.534
0	6.162	0.001	0.001	13.551	0.002	0.001	18.629	0.119	0.059	-1.113	0.117	0.058	26.653	0.079	0.039	-0.616	0.079	0.04
0	5.838	0.001	0.001	15.452	0.004	0.002	21.096	0.054	0.027	-0.205	0.055	0.027	30.862	0.125	0.063	-0.272	0.12	0.06
0	5.929	0.001	0	5.662	0.002	0.001	11.158	0.046	0.023	-0.553	0.045	0.022	10.996	0.048	0.024	-0.356	0.048	0.024
0	-31.51	0.002	0.001	3.407	0.001	0	-29.536	0.205	0.102	-0.274	0.212	0.106	6.515	0.145	0.072	-0.309	0.145	0.073
0	6.15	0.002	0.001	16.42	0.004	0.002	22.34	0.032	0.016	-0.244	0.032	0.016	32.786	0.067	0.034	-0.314	0.062	0.031
0	-31.979	0.002	0.001	-1.978	0.003	0.002	-35.782	0.015	0.008	-0.944	0.02	0.01	-4.4	0.051	0.026	-0.45	0.047	0.023
0	0.906	0.001	0	1.199	0.002	0.001	1.552	0.042	0.021	-0.562	0.043	0.021	2.209	0.074	0.037	-0.19	0.076	0.038
0	-0.546	0.001	0.001	2.508	0.002	0.001	0.063	2.707	1.353	-1.834	2.704	1.352	4.333	0.882	0.441	-0.687	0.881	0.44
0	5.89	0.003	0.001	9.109	0.003	0.001	14.071	0.046	0.023	-1.001	0.046	0.023	17.802	0.12	0.06	-0.49	0.12	0.06
0	5.452	0.001	0.001	12.211	0.002	0.001	17.243	0.12	0.06	-0.446	0.116	0.058	24.288	0.093	0.047	-0.277	0.092	0.046
0	-2.343	0.002	0.001	1.146	0	0	-1.723	0.062	0.031	-0.43	0.063	0.031	2.123	0.014	0.007	-0.171	0.014	0.007
0	-6.319	0.002	0.001	-5.131	0.002	0.001	-12.13	0.071	0.036	-0.607	0.074	0.037	-10.408	0.027	0.013	-0.174	0.031	0.016
0	5.756	0.001	0.001	12.324	0.001	0.001	17.443	0.016	0.008	-0.671	0.014	0.007	24.513	0.051	0.026	-0.28	0.051	0.026
0	5.741	0.002	0.001	11.833	0.004	0.002	16.808	0.084	0.042	-0.804	0.082	0.041	23.405	0.035	0.018	-0.392	0.041	0.021
0	6.211	0.002	0.001	16.412	0.001	0.001	22.476	0.032	0.016	-0.165	0.03	0.015	32.887	0.066	0.033	-0.199	0.063	0.031
0	-31.397	0.002	0.001	5.374	0.002	0.001	-27.511	0.03	0.015	-0.235	0.031	0.016	10.596	0.087	0.043	-0.18	0.088	0.044
0	1.709	0.001	0.001	9.767	0.001	0	10.896	0.017	0.008	-0.48	0.017	0.009	19.375	0.033	0.017	-0.249	0.033	0.017
0	6.023	0.002	0.001	5.249	0.002	0.001	10.953	0.071	0.035	-0.449	0.068	0.034	10.263	0.017	0.008	-0.26	0.02	0.01
0	5.762	0.001	0.001	12.242	0.001	0	17.367	0.022	0.011	-0.672	0.021	0.01	24.224	0.064	0.032	-0.4	0.061	0.031
0.04	1.738	0.014	0.007	9.797	0.071	0.035	11.007	0.105	0.053	-0.43	0.094	0.047	19.475	0.118	0.059	-0.21	0.05	0.025
0	6.112	0.001	0	13.036	0.003	0.001	18.234	0.012	0.006	-0.95	0.01	0.005	25.706	0.042	0.021	-0.523	0.035	0.018
0	-31.811	0.002	0.001	1.041	0.001	0.001	-32.843	0.027	0.014	-1.048	0.031	0.016	1.643	0.06	0.03	-0.439	0.058	0.029
0	-6.357	0.001	0	-5.101	0.002	0.001	-12.357	0.162	0.081	-0.826	0.164	0.082	-10.43	0.096	0.048	-0.256	0.1	0.05
0	6.149	0.001	0.001	16.132	0.002	0.001	22.072	0.1	0.05	-0.227	0.101	0.05	32.239	0.092	0.046	-0.277	0.092	0.046
0	-31.67	0.001	0.001	4.89	0.002	0.001	-28.195	0.023	0.012	-0.174	0.026	0.013	9.628	0.087	0.044	-0.174	0.089	0.044
0	-6.334	0.001	0	-5.137	0.001	0.001	-12.18	0.185	0.093	-0.635	0.188	0.094	-10.547	0.139	0.07	-0.302	0.143	0.071
0	5.402	0.002	0.001	12.198	0.003	0.002	17.155	0.041	0.02	-0.469	0.042	0.021	24.273	0.073	0.037	-0.264	0.07	0.035
0	6.558	0.002	0.001	16.352	0.003	0.001	22.77	0.111	0.055	-0.175	0.107	0.054	32.694	0.104	0.052	-0.267	0.099	0.049
0	1.655	0.001	0.001	9.841	0.002	0.001	10.993	0.008	0.004	-0.402	0.01	0.005	19.565	0.018	0.009	-0.21	0.019	0.01

0	-2.379	0.006	0.003	1.018	0.003	0.002	-1.879	0.058	0.029	-0.425	0.058	0.029	1.854	0.007	0.004	-0.184	0.005	0.002
0	6.258	0.001	0	16.073	0.002	0.001	22.208	0.031	0.016	-0.147	0.032	0.016	32.228	0.042	0.021	-0.17	0.044	0.022
0	5.759	0.001	0	12.326	0.002	0.001	17.335	0.021	0.01	-0.783	0.022	0.011	24.407	0.093	0.047	-0.388	0.094	0.047
0	1.645	0.002	0.001	9.882	0.002	0.001	10.818	0.285	0.143	-0.604	0.282	0.141	19.508	0.08	0.04	-0.347	0.077	0.039
0	-2.286	0.001	0.001	1.098	0.001	0	-1.722	0.154	0.077	-0.442	0.155	0.078	1.979	0.12	0.06	-0.218	0.121	0.061
0	5.743	0.001	0	12.303	0.001	0.001	17.4	0.018	0.009	-0.68	0.017	0.008	24.504	0.034	0.017	-0.247	0.034	0.017
0	6.496	0.001	0	16.331	0.002	0.001	22.688	0.082	0.041	-0.172	0.081	0.04	32.615	0.129	0.064	-0.304	0.127	0.063
0	6.717	0	0	16.432	0.002	0.001	22.973	0.12	0.06	-0.218	0.117	0.058	32.846	0.074	0.037	-0.278	0.069	0.035
0.04	-6.264	0.096	0.048	-5.121	0.08	0.04	-12.316	0.183	0.091	-0.861	0.074	0.037	-10.548	0.184	0.092	-0.335	0.083	0.042
0	5.946	0.002	0.001	5.334	0.004	0.002	10.914	0.11	0.055	-0.49	0.112	0.056	10.418	0.097	0.049	-0.275	0.098	0.049
0.06	5.931	0.055	0.027	12.037	0.108	0.054	17.258	0.15	0.075	-0.753	0.086	0.043	23.792	0.192	0.096	-0.418	0.082	0.041
0	-32.302	0.001	0	-18.108	0.002	0.001	-51.465	0.055	0.027	-0.986	0.056	0.028	-36.307	0.098	0.049	-0.434	0.103	0.051
0	6.088	0.001	0	11.468	0.002	0.001	16.62	0.036	0.018	-0.989	0.034	0.017	22.597	0.016	0.008	-0.46	0.016	0.008
0	5.756	0.001	0	12.303	0	0	17.25	0.134	0.067	-0.841	0.131	0.065	24.237	0.082	0.041	-0.508	0.08	0.04
0.01	-32.225	0.005	0.002	4.001	0.026	0.013	-29.667	0.109	0.055	-0.229	0.085	0.042	7.83	0.087	0.044	-0.188	0.06	0.03
0	1.667	0.001	0.001	9.849	0.002	0.001	10.901	0.117	0.058	-0.512	0.114	0.057	19.508	0.082	0.041	-0.281	0.08	0.04
0	6.094	0.001	0.001	12.791	0.001	0.001	17.858	0.09	0.045	-1.064	0.09	0.045	25.186	0.049	0.025	-0.546	0.05	0.025
0	1.721	0.001	0.001	9.914	0.002	0.001	11.074	0.078	0.039	-0.46	0.077	0.038	19.716	0.018	0.009	-0.206	0.018	0.009
0	5.986	0.001	0.001	12.166	0.003	0.002	17.436	0.103	0.051	-0.759	0.101	0.051	24.102	0.039	0.02	-0.368	0.042	0.021
0	1.621	0.001	0.001	9.925	0.003	0.001	10.957	0.117	0.058	-0.484	0.116	0.058	19.696	0.024	0.012	-0.248	0.026	0.013
0	5.973	0	0	12.16	0.001	0.001	17.373	0.098	0.049	-0.803	0.097	0.049	24.115	0.068	0.034	-0.344	0.067	0.034
0	-32.187	0.001	0	4.111	0.002	0.001	-29.577	0.171	0.085	-0.283	0.174	0.087	8.007	0.099	0.049	-0.23	0.096	0.048
0	6.266	0	0	13.494	0	0	18.675	0.105	0.052	-1.119	0.103	0.051	26.536	0.1	0.05	-0.616	0.096	0.048
0	-2.279	0	0	1.16	0.002	0.001	-1.656	0.055	0.027	-0.443	0.055	0.027	2.076	0.065	0.032	-0.245	0.063	0.032
0	4.779	0.002	0.001	26.581	0.006	0.002	30.537	0.037	0.012	-0.629	0.033	0.011	56.392	0.212	0.071	2.395	0.201	0.067
0	-6.345	0.003	0.001	-5.358	0.014	0.005	-12.2	0.05	0.017	-0.427	0.056	0.019	-11.394	0.169	0.056	-0.715	0.191	0.064
0	-30.944	0.009	0.003	5.601	0.005	0.002	-26.784	0.058	0.019	-0.192	0.06	0.02	11.929	0.155	0.052	0.688	0.158	0.053
0	5.237	0.003	0.001	23.77	0.004	0.001	28.239	0.048	0.016	-0.637	0.045	0.015	50.5	0.162	0.054	2.286	0.156	0.052
0	5.945	0.003	0.001	5.174	0.007	0.002	11.013	0.049	0.016	-0.236	0.049	0.016	10.895	0.175	0.058	0.514	0.172	0.057
0	-31.762	0.004	0.001	4.597	0.006	0.002	-28.51	0.04	0.013	-0.113	0.042	0.014	9.749	0.181	0.06	0.528	0.178	0.059
0	5.823	0.002	0.001	5.117	0.013	0.004	10.879	0.043	0.014	-0.188	0.039	0.013	10.775	0.154	0.051	0.51	0.156	0.052
0	-2.375	0.002	0.001	0.726	0.005	0.002	-1.985	0.054	0.018	-0.247	0.055	0.018	1.576	0.106	0.035	0.124	0.106	0.035
0	-31.734	0.006	0.002	-0.669	0.007	0.002	-34.204	0.026	0.009	-0.859	0.03	0.01	-1.216	0.216	0.072	0.121	0.207	0.069
0	-6.395	0.005	0.002	-5.524	0.007	0.002	-12.661	0.04	0.013	-0.678	0.042	0.014	-11.767	0.167	0.056	-0.759	0.16	0.053
0	-6.344	0.003	0.001	-5.521	0.008	0.003	-12.41	0.025	0.008	-0.479	0.019	0.006	-11.686	0.202	0.067	-0.682	0.197	0.066
0	5.399	0.003	0.001	8.356	0.008	0.003	13.163	0.025	0.008	-0.66	0.027	0.009	17.685	0.157	0.052	0.887	0.155	0.052
0	1.599	0.002	0.001	9.185	0.006	0.002	10.442	0.034	0.011	-0.249	0.031	0.01	19.409	0.194	0.065	0.938	0.192	0.064
0	5.899	0.003	0.001	4.826	0.009	0.003	10.591	0.037	0.012	-0.266	0.035	0.012	10.107	0.283	0.094	0.428	0.274	0.091
0	-32.244	0.006	0.002	-0.993	0.004	0.001	-35.089	0.024	0.008	-0.911	0.031	0.01	-2.416	0.162	0.054	-0.431	0.166	0.055
0	-6.392	0.003	0.001	-5.379	0.006	0.002	-12.506	0.068	0.023	-0.666	0.065	0.022	-11.461	0.178	0.059	-0.74	0.173	0.058
0	5.292	0.003	0.001	11.516	0.004	0.001	16.637	0.047	0.016	-0.202	0.047	0.016	24.444	0.159	0.053	1.251	0.154	0.051
0	-31.275	0.006	0.002	16.055	0.005	0.002	-17.051	0.05	0.017	-0.05	0.048	0.016	34.309	0.205	0.068	1.88	0.206	0.069
0	-6.377	0.003	0.001	-5.414	0.007	0.002	-12.304	0.049	0.016	-0.443	0.045	0.015	-11.628	0.166	0.055	-0.839	0.166	0.055
0	-2.027	0.004	0.001	0.981	0.009	0.003	-1.4	0.034	0.011	-0.272	0.035	0.012	2.003	0.273	0.091	0.04	0.267	0.089
0	5.893	0.003	0.001	4.878	0.007	0.002	10.687	0.049	0.016	-0.216	0.047	0.016	10.271	0.205	0.068	0.486	0.204	0.068
0	-1.965	0.003	0.001	1.048	0.008	0.003	-1.268	0.054	0.018	-0.269	0.049	0.016	2.205	0.162	0.054	0.109	0.151	0.05
0	-1.957	0.002	0.001	1.047	0.008	0.003	-1.278	0.026	0.009	-0.286	0.026	0.009	2.277	0.171	0.057	0.182	0.171	0.057
0	5.618	0.003	0.001	11.815	0.007	0.002	16.992	0.037	0.012	-0.478	0.033	0.011	25.072	0.237	0.079	1.273	0.228	0.076
0	-2.043	0.003	0.001	1.551	0.009	0.003	-0.845	0.027	0.009	-0.26	0.029	0.01	3.276	0.208	0.069	0.172	0.206	0.069
0	-1.985	0.005	0.002	1.31	0.009	0.003	-1.025	0.045	0.015	-0.263	0.038	0.013	2.832	0.242	0.081	0.209	0.232	0.077
0	-2.35	0.002	0.001	0.687	0.004	0.001	-2.012	0.038	0.013	-0.262	0.038	0.013	1.328	0.158	0.053	-0.047	0.159	0.053
0	-31.32	0.006	0.002	15.916	0.007	0.002	-17.312	0.059	0.02	-0.133	0.059	0.02	34.041	0.288	0.096	1.895	0.28	0.093
0	5.538	0.002	0.001	11.014	0.005	0.002	16.036	0.035	0.012	-0.558	0.033	0.011	23.264	0.186	0.062	1.09	0.18	0.06
0	-6.363	0.002	0.001	-5.499	0.008	0.003	-12.589	0.037	0.012	-0.663	0.037	0.012	-11.829	0.248	0.083	-0.871	0.243	0.081
0	1.6	0.004	0.001	9.152	0.005	0.002	10.396	0.037	0.012	-0.265	0.033	0.011	19.369	0.301	0.1	0.962	0.286	0.095
0	5.964	0.003	0.001	4.959	0.007	0.002	10.81	0.042	0.014	-0.245	0.04	0.013	10.373	0.113	0.038	0.426	0.105	0.035
0	5.32	0.003	0.001	11.487	0.008	0.003	16.628	0.04	0.013	-0.212	0.038	0.013	24.33	0.178	0.059	1.197	0.174	0.058
0	5.597	0.003	0.001	11.727	0.004	0.001	16.902	0.026	0.009	-0.46	0.029	0.01	24.783	0.171	0.057	1.163	0.165	0.055
0	-2.4	0.003	0.001	0.513	0.006	0.002	-2.235	0.034	0.011	-0.263	0.035	0.012	1.138	0.187	0.062	0.112	0.186	0.062
0	5.274	0.003	0.001	11.339	0.006	0.002	16.422	0.035	0.012	-0.223	0.038	0.013	24.198	0.182	0.061	1.361	0.178	0.059
0	-31.189	0.005	0.002	16.165	0.006	0.002	-16.894	0.038	0.013	-0.087	0.035	0.012	34.556	0.137	0.046	1.903	0.138	0.046
0	-2.403	0.003	0.001	0.782	0.005	0.002	-1.961	0.063	0.021	-0.25	0.063	0.021	1.651	0.17	0.057	0.086	0.168	0.056
0	5.747	0.003	0.001	4.811	0.006	0.002	10.472	0.028	0.009	-0.212	0.026	0.009	10.149	0.185	0.062	0.5	0.179	0.06
0	-1.872	0.002	0.001	1.124	0.011	0.004	-1.131	0.044	0.015	-0.302	0.044	0.015	2.332	0.173	0.058	0.084	0.168	0.056
0	5.828	0.001	0	11.556	0.005	0.002	16.98	0.042	0.014	-0.453	0.044	0.015	24.354	0.215	0.072	1.084	0.203	0.068
0	-0.157	0.003	0.001	2.472	0.005	0.002	1.946	0.052	0.017	-0.321	0.052	0.017	5.128	0.159	0.053	0.178	0.161	0.054
0	-2.605	0.002	0.001	-0.259	0.005	0.002	-3.225	0.028	0.009	-0.284	0.027	0.009	-0.587	0.213	0.071	-0.068	0.214	0.071
0	1.148	0.002	0.001	1.04	0.008	0.003	1.858	0.04	0.013	-0.349	0.046	0.015	2.061	0.256	0.085	-0.02	0.246	0.082

0	-31.734	0.005	0.002	3.897	0.006	0.002	-29.17	0.059	0.02	-0.138	0.056	0.019	8.373	0.21	0.07	0.559	0.206	0.069
0	-6.331	0.002	0.001	-5.374	0.009	0.003	-12.217	0.039	0.013	-0.442	0.039	0.013	-11.419	0.179	0.06	-0.707	0.178	0.059
0	-1.911	0.003	0.001	1.103	0.009	0.003	-1.18	0.038	0.013	-0.292	0.034	0.011	2.279	0.095	0.032	0.071	0.098	0.033
0	-1.908	0.003	0.001	1.046	0.008	0.003	-1.188	0.035	0.012	-0.245	0.037	0.012	2.103	0.156	0.052	0.01	0.148	0.049
0	-1.813	0.003	0.001	1.162	0.01	0.003	-1	0.031	0.01	-0.27	0.026	0.009	2.496	0.204	0.068	0.17	0.197	0.066
0	5.961	0.002	0.001	4.989	0.008	0.003	10.824	0.044	0.015	-0.258	0.043	0.014	10.469	0.193	0.064	0.462	0.182	0.061
0	-1.93	0.002	0.001	1.152	0.006	0.002	-1.159	0.043	0.014	-0.299	0.044	0.015	2.36	0.265	0.088	0.055	0.266	0.089
0	1.594	0.004	0.001	9.138	0.004	0.001	10.371	0.037	0.012	-0.269	0.037	0.012	19.298	0.126	0.042	0.921	0.121	0.04
0	-1.896	0.004	0.001	1.039	0.009	0.003	-1.207	0.051	0.017	-0.27	0.047	0.016	2.097	0.153	0.051	0.019	0.149	0.05
0	-1.98	0.004	0.001	1.012	0.008	0.003	-1.342	0.043	0.014	-0.292	0.041	0.014	2.128	0.083	0.028	0.104	0.082	0.027
0	-6.316	0.003	0.001	-5.268	0.009	0.003	-12.311	0.044	0.015	-0.658	0.038	0.013	-11.412	0.309	0.103	-0.913	0.301	0.1
0	-31.163	0.006	0.002	2.548	0.008	0.003	-30.5	0.039	0.013	-0.796	0.033	0.011	5.634	0.234	0.078	0.528	0.234	0.078
0	5.972	0.002	0.001	4.97	0.005	0.002	10.867	0.041	0.014	-0.208	0.043	0.014	10.543	0.135	0.045	0.572	0.139	0.046
0	1.669	0.003	0.001	9.406	0.004	0.001	10.718	0.053	0.018	-0.264	0.051	0.017	19.892	0.213	0.071	0.973	0.209	0.07
0	-6.348	0.002	0.001	-5.619	0.007	0.002	-12.517	0.034	0.011	-0.486	0.038	0.013	-12.162	0.103	0.034	-0.967	0.103	0.034
0	-6.369	0.004	0.001	-5.355	0.006	0.002	-12.468	0.036	0.012	-0.675	0.03	0.01	-11.509	0.138	0.046	-0.836	0.141	0.047
0	-2.434	0.003	0.001	0.555	0.005	0.002	-2.254	0.037	0.012	-0.289	0.037	0.012	1.224	0.151	0.05	0.113	0.152	0.051
0	5.634	0.001	0	11.086	0.005	0.002	16.212	0.039	0.013	-0.554	0.038	0.013	23.385	0.138	0.046	1.066	0.139	0.046
0	5.313	0.003	0.001	11.531	0.006	0.002	16.675	0.033	0.011	-0.202	0.033	0.011	24.361	0.207	0.069	1.139	0.204	0.068
0	1.639	0.002	0.001	9.127	0.007	0.002	10.431	0.046	0.015	-0.245	0.046	0.015	19.368	0.155	0.052	1.012	0.151	0.05
0	6.009	0.004	0.001	4.703	0.005	0.002	10.608	0.046	0.015	-0.241	0.044	0.015	9.854	0.186	0.062	0.422	0.18	0.06
0	-2.468	0.003	0.001	0.639	0.005	0.002	-2.19	0.047	0.016	-0.272	0.051	0.017	1.174	0.198	0.066	-0.105	0.198	0.066
0	5.613	0.002	0.001	11.715	0.005	0.002	16.921	0.028	0.009	-0.446	0.03	0.01	24.586	0.142	0.047	0.996	0.135	0.045
0	5.617	0.003	0.001	11.119	0.005	0.002	16.229	0.035	0.012	-0.552	0.035	0.012	23.589	0.182	0.061	1.2	0.178	0.059
0	-6.315	0.003	0.001	-5.366	0.006	0.002	-12.223	0.018	0.006	-0.473	0.02	0.007	-11.408	0.165	0.055	-0.712	0.163	0.054
0	5.906	0.002	0.001	4.967	0.005	0.002	10.793	0.047	0.016	-0.21	0.048	0.016	10.467	0.231	0.077	0.504	0.228	0.076
0	-2.338	0.002	0.001	0.749	0.006	0.002	-1.937	0.029	0.01	-0.26	0.033	0.011	1.573	0.098	0.033	0.074	0.104	0.035
0	-6.435	0.003	0.001	-5.409	0.008	0.003	-12.586	0.037	0.012	-0.672	0.032	0.011	-11.598	0.17	0.057	-0.817	0.173	0.058
0	5.219	0.002	0.001	11.245	0.005	0.002	16.285	0.028	0.009	-0.211	0.029	0.01	24.001	0.213	0.071	1.355	0.212	0.071
0	5.258	0.003	0.001	11.482	0.005	0.002	16.539	0.055	0.018	-0.231	0.053	0.018	24.516	0.253	0.084	1.388	0.245	0.082
0	5.984	0.003	0.001	4.824	0.004	0.001	10.714	0.054	0.018	-0.229	0.052	0.017	10.305	0.181	0.06	0.628	0.183	0.061
0	1.701	0.003	0.001	9.28	0.002	0.001	10.649	0.039	0.013	-0.243	0.038	0.013	19.76	0.172	0.057	1.094	0.171	0.057
0	5.619	0.002	0.001	11.746	0.005	0.002	16.948	0.036	0.012	-0.456	0.031	0.01	25.06	0.163	0.054	1.397	0.158	0.053
0	-2.395	0.003	0.001	0.692	0.005	0.002	-2.065	0.032	0.011	-0.273	0.03	0.01	1.415	0.093	0.031	0.031	0.095	0.032
0	-31.219	0.005	0.002	1.779	0.005	0.002	-31.293	0.046	0.015	-0.801	0.046	0.015	4.014	0.185	0.062	0.452	0.182	0.061
0	-6.339	0.004	0.001	-5.373	0.007	0.002	-12.267	0.029	0.01	-0.485	0.025	0.008	-11.625	0.233	0.078	-0.917	0.229	0.076
0	5.938	0.003	0.001	4.91	0.008	0.003	10.745	0.065	0.022	-0.235	0.062	0.021	10.367	0.194	0.065	0.517	0.194	0.065
0	1.718	0.003	0.001	9.369	0.005	0.002	10.742	0.04	0.013	-0.255	0.04	0.013	19.844	0.15	0.05	0.999	0.147	0.049
0	5.606	0.003	0.001	11.121	0.005	0.002	16.259	0.041	0.014	-0.513	0.037	0.012	23.772	0.239	0.08	1.376	0.237	0.079
0	5.63	0.002	0.001	11.768	0.006	0.002	16.974	0.04	0.013	-0.464	0.039	0.013	25.103	0.177	0.059	1.395	0.177	0.059
0	5.292	0.002	0.001	11.473	0.005	0.002	16.596	0.035	0.012	-0.201	0.034	0.011	24.375	0.172	0.057	1.269	0.164	0.055
0	1.583	0.003	0.001	9.239	0.006	0.002	10.495	0.042	0.014	-0.233	0.044	0.015	19.638	0.202	0.067	1.055	0.201	0.067
0	-2.41	0.002	0.001	0.65	0.002	0.001	-2.118	0.047	0.016	-0.27	0.047	0.016	1.378	0.149	0.05	0.077	0.151	0.05
0	-31.717	0.005	0.002	3.748	0.009	0.003	-29.298	0.035	0.012	-0.143	0.037	0.012	8.048	0.179	0.06	0.532	0.175	0.058
0	5.262	0.003	0.001	11.422	0.002	0.001	16.5	0.034	0.011	-0.214	0.033	0.011	24.391	0.187	0.062	1.385	0.181	0.06
0	-2.372	0.002	0.001	0.623	0.005	0.002	-2.124	0.027	0.009	-0.289	0.03	0.01	1.281	0.17	0.057	0.034	0.17	0.057
0	5.623	0.003	0.001	11.769	0.006	0.002	17.004	0.033	0.011	-0.427	0.03	0.01	25.072	0.135	0.045	1.364	0.134	0.045
0	5.903	0.002	0.001	4.943	0.005	0.002	10.704	0.05	0.017	-0.272	0.049	0.016	10.435	0.233	0.078	0.52	0.226	0.075
0	5.16	0.003	0.001	11.267	0.005	0.002	16.246	0.03	0.01	-0.21	0.032	0.011	24.108	0.162	0.054	1.415	0.154	0.051
0	-31.813	0.005	0.002	3.632	0.015	0.005	-29.496	0.041	0.014	-0.131	0.045	0.015	7.733	0.251	0.084	0.453	0.249	0.083
0	5.603	0.003	0.001	11.71	0.004	0.001	16.887	0.049	0.016	-0.464	0.049	0.016	24.767	0.218	0.073	1.182	0.21	0.07
0	5.983	0.003	0.001	4.8	0.004	0.001	10.71	0.047	0.016	-0.209	0.049	0.016	10.154	0.158	0.053	0.526	0.158	0.053
0	1.627	0.003	0.001	9.189	0.006	0.002	10.471	0.033	0.011	-0.255	0.032	0.011	19.442	0.158	0.053	0.962	0.158	0.053
0	-2.402	0.002	0.001	0.568	0.009	0.003	-2.198	0.038	0.013	-0.277	0.042	0.014	1.177	0.259	0.086	0.041	0.253	0.084
0	5.579	0.002	0.001	11.009	0.006	0.002	16.085	0.036	0.012	-0.548	0.04	0.013	23.447	0.125	0.042	1.279	0.127	0.042
0	-31.2	0.003	0.001	16.429	0.007	0.002	-16.644	0.052	0.017	-0.076	0.056	0.019	35.532	0.23	0.077	2.327	0.218	0.073
0	-31.662	0.005	0.002	6.484	0.005	0.002	-27.294	0.061	0.02	-0.813	0.063	0.021	13.717	0.15	0.05	0.698	0.147	0.049
0	-31.291	0.005	0.002	16.18	0.007	0.002	-17.046	0.028	0.009	-0.148	0.031	0.01	34.756	0.112	0.037	2.065	0.111	0.037
0	-31.253	0.004	0.001	16.204	0.005	0.002	-16.902	0.046	0.015	-0.065	0.047	0.016	35.141	0.196	0.065	2.391	0.189	0.063
0	5.825	0.002	0.001	4.742	0.004	0.001	10.459	0.021	0.007	-0.238	0.02	0.007	9.866	0.249	0.083	0.356	0.245	0.082
0	-31.144	0.003	0.001	5.489	0.004	0.001	-27.038	0.057	0.019	-0.131	0.059	0.02	11.735	0.212	0.071	0.719	0.209	0.07
0	5.252	0.003	0.001	11.237	0.004	0.001	16.325	0.051	0.017	-0.197	0.051	0.017	23.89	0.226	0.075	1.262	0.22	0.073
0	-30.969	0.004	0.001	16.732	0.003	0.001	-16.145	0.03	0.01	-0.109	0.029	0.01	35.966	0.175	0.058	2.15	0.167	0.056
0	5.9	0.002	0.001	11.456	0.007	0.002	16.976	0.024	0.008	-0.434	0.022	0.007	24.328	0.123	0.041	1.256	0.118	0.039
0	6.01	0.002	0.001	23.237	0.006	0.002	29.264	0.03	0.01	0.077	0.033	0.011	50.252	0.183	0.061	3.092	0.176	0.059
0	5.573	0.002	0.001	10.865	0.004	0.001	15.969	0.041	0.014	-0.515	0.04	0.013	23.266	0.199	0.066	1.388	0.194	0.065
0	6.087	0.003	0.001	24.447	0.005	0.002	30.525	0.03	0.01	0.062	0.028	0.009	52.803	0.166	0.055	3.156	0.158	0.053
0	5.352	0.002	0.001	11.369	0.003	0.001	16.547	0.034	0.011	-0.209	0.033	0.01	24.254	0.198	0.063	1.356	0.196	0.062

0	6.203	0.002	0.001	24.883	0.006	0.002	31.134	0.031	0.01	0.115	0.032	0.011	53.768	0.165	0.055	3.221	0.153	0.051
0	5.999	0.003	0.001	18.953	0.005	0.002	24.264	0.022	0.007	-0.655	0.022	0.007	40.633	0.164	0.055	2.28	0.154	0.051
0	5.367	0.003	0.001	11.268	0.004	0.001	16.437	0.04	0.013	-0.234	0.04	0.013	24.036	0.101	0.034	1.343	0.096	0.032
0	5.977	0.002	0.001	23.324	0.005	0.002	29.295	0.02	0.007	0.059	0.021	0.007	50.447	0.16	0.053	3.109	0.149	0.05
0	6.38	0.003	0.001	21.77	0.005	0.002	27.537	0.032	0.011	-0.57	0.03	0.01	46.563	0.304	0.101	2.442	0.291	0.097
0	-31.326	0.003	0.001	21.456	0.004	0.001	-11.99	0.043	0.014	-0.071	0.043	0.014	44.008	0.15	0.05	0.61	0.141	0.047
0.01	-1.003	0.003	0.001	4.781	0.033	0.011	3.377	0.039	0.013	-0.283	0.03	0.01	8.422	0.16	0.053	-1.152	0.156	0.052
0.01	-1	0.006	0.002	4.818	0.024	0.008	3.421	0.036	0.011	-0.279	0.035	0.011	8.584	0.12	0.038	-1.065	0.111	0.035
0	-1.031	0.003	0.001	4.612	0.012	0.004	3.187	0.039	0.013	-0.278	0.031	0.01	7.936	0.17	0.057	-1.297	0.173	0.058
0	-6.288	0.003	0.001	-0.313	0.006	0.002	-7.283	0.041	0.014	-0.495	0.039	0.013	-2.457	0.19	0.063	-1.831	0.196	0.065
0	1.141	0.003	0.001	6.336	0.005	0.002	7.032	0.053	0.018	-0.378	0.052	0.017	11.682	0.142	0.047	-1.017	0.138	0.046
0	-32.59	0.005	0.002	4.164	0.004	0.001	-30.549	0.025	0.008	-0.912	0.029	0.01	7.099	0.195	0.065	-1.235	0.195	0.065
0	5.747	0.002	0.001	17.33	0.004	0.001	22.604	0.05	0.017	-0.453	0.05	0.017	35.646	0.235	0.078	0.663	0.226	0.075
0	-31.241	0.004	0.001	11.035	0.004	0.001	-21.843	0.041	0.014	-0.112	0.041	0.014	22.082	0.225	0.075	-0.108	0.216	0.072
0	6.123	0.002	0.001	10.233	0.005	0.002	16.238	0.035	0.012	-0.2	0.034	0.011	20.339	0.134	0.045	-0.226	0.137	0.046
0	-31.236	0.004	0.001	15.76	0.006	0.002	-18.072	0.044	0.015	-0.848	0.046	0.015	31.929	0.248	0.083	0.155	0.236	0.079
0	-31.43	0.002	0.001	17.022	0.003	0.001	-17.079	0.044	0.015	-0.852	0.045	0.015	34.679	0.223	0.074	0.334	0.216	0.072
0	-31.173	0.004	0.001	11.121	0.005	0.002	-21.731	0.028	0.009	-0.152	0.029	0.01	22.281	0.218	0.073	-0.083	0.218	0.073
0	-31.376	0.004	0.001	16.549	0.006	0.002	-17.503	0.038	0.013	-0.883	0.041	0.014	32.278	0.201	0.067	-1.058	0.196	0.065
0	-6.369	0.002	0.001	-0.133	0.003	0.001	-7.185	0.028	0.009	-0.489	0.027	0.009	-1.794	0.179	0.06	-1.529	0.177	0.059
0	-31.993	0.004	0.001	7.987	0.005	0.002	-26.287	0.042	0.014	-0.895	0.043	0.014	14.877	0.166	0.055	-1.143	0.157	0.052
0	5.903	0.003	0.001	10.446	0.006	0.002	16.203	0.033	0.011	-0.216	0.03	0.01	20.187	0.237	0.079	-0.797	0.229	0.076
0	-2.334	0.003	0.001	6.231	0.004	0.001	3.44	0.041	0.014	-0.263	0.04	0.013	13.475	0.937	0.312	0.961	0.924	0.308
0	-31.799	0.005	0.002	16.521	0.005	0.002	-17.999	0.044	0.015	-0.909	0.046	0.015	30.684	0.742	0.247	-2.546	0.724	0.241
0	5.603	0.002	0.001	17.274	0.003	0.001	22.365	0.059	0.02	-0.484	0.058	0.019	32.261	0.34	0.113	-2.499	0.333	0.111
0	-6.369	0.002	0.001	-0.095	0.005	0.002	-7.39	0.028	0.009	-0.732	0.032	0.011	-1.787	0.22	0.073	-1.597	0.221	0.074
0	5.375	0.003	0.001	17.287	0.005	0.002	22.433	0.053	0.018	-0.196	0.054	0.018	33.892	0.222	0.074	-0.948	0.217	0.072
0	-31.482	0.005	0.002	6.297	0.004	0.001	-27.401	0.037	0.012	-0.936	0.037	0.012	11.25	0.228	0.076	-1.368	0.224	0.075
0	5.683	0.002	0.001	16.788	0.005	0.002	21.874	0.053	0.018	-0.576	0.051	0.017	33.059	0.182	0.061	-0.772	0.174	0.058
0	-6.337	0.003	0.001	-0.059	0.005	0.002	-7.073	0.049	0.016	-0.482	0.052	0.017	-1.644	0.135	0.045	-1.525	0.137	0.046
0	-32.656	0.004	0.001	8.53	0.003	0.001	-25.689	0.029	0.01	-0.103	0.032	0.011	16.631	0.238	0.079	-0.493	0.232	0.077
0	-2.453	0.003	0.001	5.997	0.005	0.002	3.072	0.031	0.01	-0.279	0.032	0.011	11.028	0.161	0.054	-0.991	0.154	0.051
0	5.952	0.001	0	10.467	0.003	0.001	16.266	0.06	0.02	-0.224	0.059	0.02	20.144	0.123	0.041	-0.882	0.122	0.041
0	-32.572	0.004	0.001	4.932	0.003	0.001	-29.837	0.044	0.015	-0.947	0.047	0.016	8.537	0.147	0.049	-1.338	0.147	0.049
0	-6.363	0.002	0.001	-0.141	0.005	0.002	-7.197	0.032	0.011	-0.499	0.031	0.01	-1.876	0.171	0.057	-1.594	0.167	0.056
0	6.26	0.002	0.001	31.194	0.002	0.001	37.479	0.028	0.009	0.155	0.027	0.009	64.502	0.305	0.102	1.074	0.291	0.097
0	5.707	0.002	0.001	17.521	0.003	0.001	22.75	0.04	0.013	-0.453	0.043	0.014	35.399	0.141	0.047	0.049	0.136	0.045
0	1.612	0.003	0.001	14.989	0.003	0.001	16.172	0.051	0.017	-0.247	0.048	0.016	30.175	0.173	0.058	-0.026	0.171	0.057
0	-31.365	0.004	0.001	16.036	0.005	0.002	-17.983	0.038	0.013	-0.888	0.04	0.013	30.892	0.494	0.165	-1.393	0.478	0.159
0	-2.294	0.002	0.001	6.273	0.007	0.002	3.538	0.037	0.012	-0.248	0.036	0.012	11.696	0.18	0.06	-0.879	0.166	0.055
0	6.047	0.002	0.001	10.667	0.004	0.001	16.565	0.053	0.018	-0.223	0.055	0.018	20.785	0.192	0.064	-0.649	0.186	0.062
0	1.688	0.003	0.001	15.029	0.004	0.001	16.319	0.033	0.011	-0.219	0.03	0.01	30.259	0.148	0.049	-0.024	0.149	0.05
0	5.739	0.003	0.001	17.587	0.004	0.001	22.815	0.064	0.021	-0.487	0.06	0.02	35.475	0.221	0.074	-0.008	0.21	0.07
0	-31.286	0.002	0.001	22.215	0.003	0.001	-11.273	0.036	0.012	-0.119	0.039	0.013	45.826	0.244	0.081	0.863	0.235	0.078
0	-2.372	0.004	0.001	6.219	0.005	0.002	3.372	0.035	0.012	-0.279	0.033	0.011	11.668	0.131	0.044	-0.799	0.136	0.045
0	6.001	0.003	0.001	10.613	0.006	0.002	16.467	0.042	0.014	-0.218	0.044	0.015	20.715	0.12	0.04	-0.609	0.12	0.04
0	5.697	0.003	0.001	30.141	0.004	0.001	35.881	0.025	0.008	0.195	0.026	0.009	62.872	0.346	0.115	1.586	0.331	0.11
0	-6.332	0.003	0.001	-0.042	0.004	0.001	-7.282	0.029	0.01	-0.714	0.032	0.011	-0.988	0.181	0.06	-0.904	0.18	0.06
0	5.422	0.002	0.001	17.25	0.004	0.001	22.462	0.067	0.022	-0.18	0.064	0.021	34.78	0.284	0.095	-0.016	0.276	0.092
0	-31.455	0.004	0.001	13.439	0.006	0.002	-20.526	0.03	0.01	-0.871	0.032	0.011	26.396	0.325	0.108	-0.646	0.321	0.107
0	5.671	0.003	0.001	16.78	0.002	0.001	21.871	0.034	0.011	-0.56	0.032	0.011	33.821	0.187	0.062	-0.019	0.183	0.061
0	7.535	0.003	0.001	31.67	0.003	0.001	38.49	0.037	0.012	-0.63	0.034	0.011	65.383	0.27	0.09	0.977	0.255	0.085
0	5.65	0.004	0.001	17.3	0.005	0.002	22.453	0.034	0.011	-0.471	0.033	0.011	35.066	0.17	0.057	0.161	0.158	0.053
0	1.605	0.004	0.001	14.849	0.005	0.002	16.05	0.026	0.009	-0.225	0.029	0.01	29.732	0.108	0.036	-0.181	0.102	0.034
0	6.079	0.002	0.001	10.641	0.004	0.001	16.588	0.041	0.014	-0.207	0.041	0.014	20.983	0.217	0.072	-0.404	0.214	0.071
0	-6.319	0.002	0.001	-0.034	0.004	0.001	-7.034	0.041	0.014	-0.485	0.044	0.015	-1.884	0.132	0.044	-1.815	0.135	0.045
0	-31.248	0.003	0.001	21.719	0.005	0.002	-11.662	0.044	0.015	-0.075	0.043	0.014	45.074	0.266	0.089	1.115	0.25	0.083
0	-6.334	0.004	0.001	0.109	0.006	0.002	-7.128	0.034	0.011	-0.705	0.034	0.011	-1.464	0.137	0.046	-1.682	0.139	0.046
0	-31.385	0.004	0.001	13.647	0.004	0.001	-20.284	0.031	0.01	-0.9	0.031	0.01	27.293	0.182	0.061	-0.183	0.173	0.058
0	4.855	0.002	0.001	19.357	0.004	0.001	24.27	0.038	0.013	0.134	0.037	0.012	39.705	0.192	0.064	0.593	0.184	0.061
0	5.618	0.003	0.001	16.666	0.003	0.001	21.701	0.041	0.014	-0.56	0.038	0.013	33.855	0.278	0.093	0.238	0.268	0.089
0	5.699	0.002	0.001	17.532	0.006	0.002	22.739	0.033	0.011	-0.466	0.032	0.011	35.697	0.254	0.085	0.314	0.249	0.083
0	5.053	0.003	0.001	17.239	0.002	0.001	21.515	0.058	0.019	-0.717	0.058	0.019	34.871	0.257	0.086	0.092	0.247	0.082
0	-6.339	0.003	0.001	-0.08	0.006	0.002	-7.118	0.037	0.012	-0.504	0.036	0.012	-1.882	0.236	0.079	-1.721	0.233	0.078
0	-2.303	0.002	0.001	6.335	0.004	0.001	3.586	0.044	0.015	-0.251	0.043	0.014	11.93	0.265	0.088	-0.77	0.26	0.087
0	-31.133	0.003	0.001	21.709	0.004	0.001	-11.518	0.041	0.014	-0.044	0.041	0.014	45.017	0.172	0.057	1.079	0.168	0.056
0	6.062	0.002	0.001	10.552	0.004	0.001	16.489	0.045	0.015	-0.201	0.048	0.016	20.9	0.198	0.066	-0.309	0.198	0.066
0	1.658	0.004	0.001	14.98	0.004	0.001	16.199	0.064	0.021	-0.259	0.062	0.021	30.273	0.215	0.072	0.087	0.208	0.069

0	5.077	0.002	0.001	19.816	0.004	0.001	24.933	0.043	0.014	0.11	0.041	0.014	41.063	0.223	0.074	0.998	0.214	0.071
0	-6.308	0.003	0.001	-0.071	0.006	0.002	-7.252	0.038	0.013	-0.681	0.041	0.014	-1.879	0.17	0.057	-1.737	0.171	0.057
0	5.641	0.003	0.001	16.727	0.006	0.002	21.777	0.03	0.01	-0.57	0.028	0.009	34.258	0.097	0.032	0.508	0.097	0.032
0	5.099	0.003	0.001	19.89	0.003	0.001	25.007	0.045	0.015	0.089	0.044	0.015	41.119	0.149	0.05	0.906	0.143	0.048
0	-32.571	0.004	0.001	7.926	0.008	0.003	-27.033	0.017	0.006	-0.986	0.025	0.008	14.963	0.188	0.063	-0.938	0.19	0.063
0	-2.822	0.002	0.001	4.6	0.012	0.004	1.294	0.043	0.014	-0.304	0.043	0.014	8.429	0.134	0.045	-0.785	0.132	0.044
0	0.035	0.004	0.001	6.212	0.006	0.002	5.765	0.029	0.01	-0.377	0.029	0.01	11.788	0.274	0.091	-0.667	0.265	0.088
0	-6.401	0.003	0.001	-0.233	0.005	0.002	-7.533	0.042	0.014	-0.708	0.04	0.013	-2.204	0.236	0.079	-1.739	0.234	0.078
0	0.065	0.002	0.001	6.25	0.006	0.002	5.851	0.034	0.011	-0.359	0.032	0.011	11.847	0.127	0.042	-0.684	0.12	0.04
0	0.035	0.002	0.001	6.217	0.008	0.003	5.772	0.04	0.013	-0.374	0.04	0.013	11.728	0.11	0.037	-0.736	0.111	0.037
0	4.998	0.003	0.001	16.893	0.004	0.001	21.123	0.029	0.01	-0.71	0.025	0.008	34.351	0.126	0.042	0.27	0.127	0.042
0	-32.264	0.003	0.001	9.354	0.005	0.002	-24.538	0.034	0.011	-0.144	0.037	0.012	18.611	0.159	0.053	-0.181	0.159	0.053
0	-2.407	0.003	0.001	6.106	0.006	0.002	3.252	0.042	0.014	-0.252	0.044	0.015	11.475	0.132	0.044	-0.765	0.13	0.043
0	5.373	0.003	0.001	8.028	0.005	0.002	13.546	0.029	0.01	0.067	0.027	0.009	15.647	0.271	0.09	-0.465	0.263	0.088
0	-32.763	0.004	0.001	7.88	0.002	0.001	-27.237	0.034	0.011	-0.946	0.036	0.012	15.004	0.201	0.067	-0.806	0.198	0.066
0	5.701	0.003	0.001	10.045	0.004	0.001	15.636	0.044	0.015	-0.177	0.043	0.014	19.92	0.143	0.048	-0.266	0.14	0.047
0	5.382	0.002	0.001	8.152	0.014	0.005	13.682	0.04	0.013	0.069	0.038	0.013	15.892	0.173	0.058	-0.471	0.166	0.055
0	5.695	0.003	0.001	16.852	0.005	0.002	21.958	0.042	0.014	-0.568	0.043	0.014	34.291	0.171	0.057	0.294	0.168	0.056
0	-32.296	0.004	0.001	9.674	0.009	0.003	-24.266	0.041	0.014	-0.142	0.039	0.013	19.194	0.214	0.071	-0.244	0.211	0.07
0	5.368	0.003	0.001	17.127	0.007	0.002	22.291	0.029	0.01	-0.174	0.032	0.011	35.37	0.2	0.067	0.795	0.184	0.061
0	5.308	0.002	0.001	7.728	0.006	0.002	13.178	0.043	0.014	0.062	0.043	0.014	14.902	0.241	0.08	-0.604	0.235	0.078
0	-31.043	0.006	0.002	8.428	0.008	0.003	-24.154	0.021	0.007	-0.15	0.024	0.008	16.472	0.307	0.102	-0.447	0.304	0.101
0	5.688	0.002	0.001	16.841	0.006	0.002	21.977	0.047	0.016	-0.532	0.045	0.015	34.655	0.236	0.079	0.668	0.229	0.076
0	-2.275	0.003	0.001	6.445	0.004	0.001	3.709	0.041	0.014	-0.264	0.042	0.014	12.165	0.187	0.062	-0.757	0.189	0.063
0	4.579	0.002	0.001	14.669	0.002	0.001	19.313	0.041	0.014	0.098	0.041	0.014	30.14	0.364	0.121	0.57	0.354	0.118
0	5.391	0.002	0.001	5.429	0.004	0.001	10.171	0.041	0.014	-0.749	0.04	0.013	9.751	0.291	0.097	-1.125	0.289	0.096
0	5.729	0.002	0.001	17.49	0.005	0.002	22.767	0.047	0.016	-0.429	0.043	0.014	36.059	0.135	0.045	0.746	0.134	0.045
0	1.68	0.002	0.001	15.065	0.005	0.002	16.355	0.037	0.012	-0.21	0.036	0.012	31.023	0.32	0.107	0.646	0.311	0.104
0	-32.534	0.004	0.001	5.139	0.005	0.002	-29.601	0.031	0.01	-0.947	0.039	0.013	8.999	0.434	0.145	-1.291	0.426	0.142
0	-2.292	0.003	0.001	6.326	0.006	0.002	3.594	0.035	0.012	-0.244	0.037	0.012	12.364	0.319	0.106	-0.324	0.32	0.107
0	5.456	0.002	0.001	12.635	0.004	0.001	17.816	0.044	0.015	-0.299	0.046	0.015	25.746	0.496	0.165	0.308	0.487	0.162
0	-31.504	0.003	0.001	7.707	0.005	0.002	-25.273	0.041	0.014	-0.103	0.044	0.015	15.019	0.357	0.119	-0.447	0.358	0.119
0	5.31	0.002	0.001	17.071	0.006	0.002	22.149	0.032	0.011	-0.199	0.033	0.011	35.386	0.468	0.156	0.922	0.449	0.15
0	5.403	0.002	0.001	14.011	0.006	0.002	18.727	0.042	0.014	-0.684	0.042	0.014	28.431	0.362	0.121	0.208	0.347	0.116
0	-6.293	0.003	0.001	0.068	0.001	0	-6.906	0.019	0.006	-0.485	0.02	0.007	-1.441	0.4	0.133	-1.576	0.4	0.133
0	5.714	0.002	0.001	17.534	0.004	0.001	22.751	0.049	0.016	-0.472	0.049	0.016	36.247	0.394	0.131	0.843	0.377	0.126
0	-32.707	0.003	0.001	5.652	0.004	0.001	-28.47	0.023	0.008	-0.099	0.026	0.009	10.844	0.326	0.109	-0.487	0.327	0.109
0	1.718	0.003	0.001	15.035	0.005	0.002	16.354	0.043	0.014	-0.221	0.044	0.015	30.944	0.398	0.133	0.63	0.389	0.13
0	5.341	0.002	0.001	12.704	0.003	0.001	17.754	0.033	0.011	-0.308	0.032	0.011	25.453	0.48	0.16	-0.115	0.467	0.156
0	-32.456	0.003	0.001	4.961	0.004	0.001	-29.706	0.054	0.018	-0.964	0.055	0.018	8.866	0.408	0.136	-1.071	0.408	0.136
0	5.522	0.002	0.001	12.457	0.005	0.002	17.742	0.044	0.015	-0.266	0.042	0.014	25.028	0.268	0.089	-0.04	0.262	0.087
0	5.73	0.002	0.001	16.895	0.004	0.001	22.024	0.044	0.015	-0.581	0.047	0.016	34.461	0.68	0.227	0.372	0.658	0.219
0	5.353	0.003	0.001	8.252	0.004	0.001	13.751	0.035	0.012	0.071	0.036	0.012	16.212	0.322	0.107	-0.353	0.313	0.104
0	5.738	0.002	0.001	17.488	0.003	0.001	22.76	0.038	0.013	-0.443	0.037	0.012	36.178	0.511	0.17	0.866	0.493	0.164
0	-6.227	0.002	0.001	0.173	0.004	0.001	-6.981	0.018	0.006	-0.731	0.019	0.006	1.094	13.747	4.582	0.748	13.745	4.582
0	5.431	0.003	0.001	14.418	0.005	0.002	19.12	0.049	0.016	-0.722	0.048	0.016	27.577	0.54	0.18	-1.425	0.533	0.178
0	5.34	0.003	0.001	17.085	0.003	0.001	22.22	0.038	0.013	-0.173	0.04	0.013	34.264	0.425	0.142	-0.191	0.41	0.137
0	-6.319	0.003	0.001	-0.034	0.005	0.002	-7.023	0.035	0.012	-0.475	0.039	0.013	-1.704	0.847	0.282	-1.637	0.845	0.282
0	-31.89	0.003	0.001	12.836	0.003	0.001	-20.801	0.018	0.006	-0.103	0.02	0.007	25.577	0.27	0.09	-0.254	0.268	0.089
0	-2.29	0.002	0.001	6.309	0.004	0.001	3.564	0.038	0.013	-0.261	0.035	0.012	11.842	0.481	0.16	-0.805	0.471	0.157
0	1.69	0.002	0.001	15.085	0.005	0.002	16.338	0.035	0.012	-0.256	0.035	0.012	30.288	0.614	0.205	-0.106	0.591	0.197
0	5.706	0.003	0.001	16.785	0.004	0.001	21.877	0.045	0.015	-0.594	0.042	0.014	33.817	0.308	0.103	-0.033	0.299	0.1
0	5.785	0.002	0.001	17.413	0.004	0.001	22.675	0.041	0.014	-0.502	0.037	0.012	34.617	0.964	0.321	-0.495	0.931	0.31
0	4.78	0.003	0.001	14.862	0.004	0.001	19.748	0.027	0.009	0.131	0.025	0.008	30.553	0.374	0.125	0.591	0.359	0.12
0	5.636	0.004	0.001	12.582	0.003	0.001	18.25	0.024	0.008	-0.005	0.024	0.008	26.922	0.371	0.124	1.561	0.362	0.121
0	-6.204	0.001	0	0.202	0.003	0.001	-6.885	0.036	0.012	-0.688	0.036	0.012	-1.091	0.415	0.138	-1.496	0.411	0.137
0	5.342	0.004	0.001	13.933	0.005	0.002	18.537	0.034	0.011	-0.733	0.032	0.011	27.913	0.4	0.133	-0.143	0.384	0.128
0	-32.305	0.003	0.001	11.977	0.005	0.002	-22.081	0.035	0.012	-0.134	0.04	0.013	24.467	0.385	0.128	0.361	0.374	0.125
0	-2.352	0.003	0.001	6.203	0.002	0.001	3.401	0.059	0.02	-0.256	0.059	0.02	11.66	0.259	0.086	-0.776	0.255	0.085
0	1.708	0.002	0.001	15.092	0.005	0.002	16.402	0.037	0.012	-0.219	0.036	0.012	30.978	0.203	0.068	0.55	0.199	0.066
0	-32.28	0.005	0.002	5.813	0.005	0.002	-28.733	0.034	0.011	-0.983	0.035	0.012	10.584	0.306	0.102	-1.064	0.302	0.101
0	5.637	0.002	0.001	16.778	0.002	0.001	21.829	0.031	0.01	-0.564	0.032	0.011	34.697	0.225	0.075	0.831	0.218	0.073
0	-6.28	0.003	0.001	0.086	0.003	0.001	-7.081	0.047	0.016	-0.692	0.049	0.016	-1.567	0.332	0.111	-1.74	0.336	0.112
0	-32.298	0.005	0.002	12.006	0.004	0.001	-22.025	0.018	0.006	-0.113	0.023	0.008	23.437	0.368	0.123	-0.702	0.363	0.121
0	1.569	0.001	0	14.877	0.003	0.001	16.048	0.032	0.011	-0.216	0.032	0.011	29.812	0.196	0.065	-0.159	0.191	0.064
0	5.713	0.002	0.001	16.877	0.005	0.002	22.009	0.064	0.021	-0.562	0.061	0.02	33.97	0.135	0.045	-0.067	0.131	0.044
0	-6.306	0.001	0	0.051	0.004	0.001	-7.177	0.036	0.012	-0.727	0.035	0.012	-1.514	0.266	0.089	-1.616	0.268	0.089
0	5.636	0.002	0.001	12.616	0.007	0.002	17.991	0.031	0.01	-0.293	0.027	0.009	24.936	0.241	0.08	-0.444	0.23	0.077

0	4.501	0.005	0.002	12.392	0.006	0.002	16.137	0.024	0.008	-0.733	0.024	0.008	24.631	0.278	0.093	-0.299	0.272	0.091
0	5.383	0.003	0.001	17.168	0.004	0.001	22.344	0.039	0.013	-0.177	0.041	0.014	35.099	0.281	0.094	0.452	0.269	0.09
0	-6.301	0.003	0.001	0.001	0.006	0.002	-6.975	0.036	0.012	-0.48	0.04	0.013	-1.733	0.237	0.079	-1.735	0.233	0.078
0	3.716	0.002	0.001	7.336	0.01	0.003	11.165	0.035	0.012	0.09	0.035	0.012	13.812	0.223	0.074	-0.901	0.231	0.077
0	5.781	0.002	0.001	17.578	0.002	0.001	22.884	0.052	0.017	-0.453	0.051	0.017	35.917	0.259	0.086	0.436	0.249	0.083
0.02	-31.417	0.002	0.001	13.564	0.047	0.016	-19.601	0.052	0.017	-0.088	0.031	0.01	26.163	0.167	0.056	-1.118	0.132	0.044
0	5.358	0.004	0.001	12.442	0.006	0.002	17.513	0.029	0.01	-0.309	0.024	0.008	23.898	0.238	0.079	-1.113	0.232	0.077
0	5.462	0.002	0.001	16.882	0.009	0.003	21.748	0.034	0.011	-0.564	0.038	0.013	33.539	0.216	0.072	-0.492	0.199	0.066
0	-2.333	0.004	0.001	6.441	0.007	0.002	3.637	0.048	0.016	-0.273	0.048	0.016	11.548	0.143	0.048	-1.358	0.141	0.047
0	-32.13	0.003	0.001	5.619	0.009	0.003	-28.679	0.025	0.008	-0.898	0.032	0.011	9.862	0.181	0.06	-1.392	0.175	0.058
0	1.536	0.002	0.001	14.986	0.01	0.003	16.11	0.025	0.008	-0.228	0.023	0.008	29.88	0.177	0.059	-0.308	0.163	0.054
0	4.45	0.004	0.001	8.246	0.008	0.003	11.98	0.046	0.015	-0.746	0.041	0.014	15.644	0.207	0.069	-0.901	0.201	0.067
0	5.641	0.003	0.001	17.502	0.009	0.003	22.662	0.059	0.02	-0.453	0.053	0.018	35.33	0.158	0.053	0.02	0.147	0.049
0	5.434	0.002	0.001	12.518	0.006	0.002	17.673	0.038	0.013	-0.303	0.04	0.013	24.884	0.207	0.069	-0.301	0.196	0.065
0	-32.147	0.002	0.001	12.604	0.007	0.002	-21.249	0.057	0.019	-0.06	0.056	0.019	25.07	0.141	0.047	-0.29	0.129	0.043
0	5.613	0.003	0.001	16.799	0.007	0.002	21.844	0.032	0.011	-0.545	0.029	0.01	33.842	0.165	0.055	-0.037	0.157	0.052
0	-6.262	0.003	0.001	0.26	0.006	0.002	-6.888	0.039	0.013	-0.686	0.036	0.012	-1.365	0.134	0.045	-1.884	0.131	0.044
0	-31.825	0.003	0.001	7.229	0.005	0.002	-26.066	0.025	0.008	-0.109	0.027	0.009	13.634	0.196	0.065	-0.864	0.195	0.065
0	5.31	0.003	0.001	17.159	0.005	0.002	22.256	0.038	0.013	-0.179	0.038	0.013	34.869	0.18	0.06	0.248	0.178	0.059
0	-6.378	0.002	0.001	0.036	0.005	0.002	-7.012	0.036	0.012	-0.471	0.036	0.012	-1.73	0.226	0.075	-1.802	0.23	0.077
0	-32.603	0.003	0.001	8.187	0.005	0.002	-26.722	0.041	0.014	-0.886	0.038	0.013	15.331	0.222	0.074	-1.092	0.225	0.075
0	-2.396	0.004	0.001	6.236	0.004	0.001	3.402	0.041	0.014	-0.242	0.042	0.014	11.574	0.175	0.058	-0.925	0.173	0.058
0	1.594	0.003	0.001	14.969	0.005	0.002	16.128	0.035	0.012	-0.252	0.034	0.011	30.084	0.141	0.047	-0.076	0.136	0.045
0	6.192	0.003	0.001	7.539	0.003	0.001	13.083	0.035	0.012	-0.754	0.036	0.012	14.087	0.113	0.038	-1.032	0.11	0.037
0	5.595	0.002	0.001	17.425	0.004	0.001	22.543	0.026	0.009	-0.447	0.026	0.009	35.458	0.182	0.061	0.295	0.175	0.058
0.01	5.284	0.003	0.001	12.844	0.04	0.013	17.572	0.046	0.015	-0.564	0.041	0.014	27.112	0.262	0.087	1.228	0.207	0.069
0	4.918	0.003	0.001	5.649	0.007	0.002	10.673	0.036	0.012	0.017	0.037	0.012	10.499	0.316	0.105	-0.822	0.307	0.102
0	5.601	0.002	0.001	16.823	0.008	0.003	21.826	0.042	0.014	-0.574	0.037	0.012	34.069	0.214	0.071	0.135	0.204	0.068
0	-6.392	0.002	0.001	0.035	0.007	0.002	-7.279	0.045	0.015	-0.725	0.046	0.015	-1.797	0.237	0.079	-1.868	0.239	0.08
0	-31.478	0.004	0.001	13.585	0.002	0.001	-19.625	0.05	0.017	-0.067	0.051	0.017	27.344	0.202	0.067	-0.01	0.194	0.065
0	5.298	0.003	0.001	17.201	0.004	0.001	22.273	0.034	0.011	-0.191	0.037	0.012	35.158	0.213	0.071	0.445	0.206	0.069
0	-6.383	0.002	0.001	0.017	0.005	0.002	-7.037	0.022	0.007	-0.472	0.025	0.008	-1.794	0.206	0.069	-1.828	0.207	0.069
0	-31.769	0.003	0.001	4.698	0.006	0.002	-29.188	0.048	0.016	-0.907	0.054	0.018	8.095	0.194	0.065	-1.311	0.196	0.065
0	5.875	0.002	0.001	10.613	0.003	0.001	16.364	0.035	0.012	-0.191	0.035	0.012	21.036	0.118	0.039	-0.295	0.115	0.038
0	-2.426	0.002	0.001	6.302	0.004	0.001	3.434	0.05	0.017	-0.243	0.049	0.016	11.653	0.186	0.062	-0.979	0.18	0.06
0	6.594	0.002	0.001	8.343	0.006	0.002	14.329	0.03	0.01	-0.721	0.026	0.009	15.598	0.241	0.08	-1.137	0.231	0.077
0	1.591	0.003	0.001	14.983	0.004	0.001	16.185	0.04	0.013	-0.207	0.038	0.013	30.224	0.226	0.075	0.031	0.22	0.073
0	5.16	0.001	0	6.063	0.005	0.002	11.347	0.039	0.013	0.031	0.039	0.013	11.062	0.199	0.066	-1.087	0.191	0.064
0	5.51	0.002	0.001	16.833	0.005	0.002	21.89	0.037	0.012	-0.427	0.034	0.011	34.196	0.183	0.061	0.238	0.179	0.06
0	-31.585	0.003	0.001	13.331	0.007	0.002	-20.01	0.042	0.014	-0.1	0.041	0.014	26.759	0.302	0.101	-0.078	0.286	0.095
0	5.463	0.002	0.001	16.812	0.004	0.001	21.782	0.041	0.014	-0.465	0.044	0.015	34.215	0.167	0.056	0.298	0.164	0.055
0	5.395	0.003	0.001	12.457	0.003	0.001	17.596	0.045	0.015	-0.28	0.042	0.014	24.802	0.234	0.078	-0.261	0.226	0.075
0	-31.543	0.003	0.001	11.507	0.005	0.002	-22.47	0.042	0.014	-0.888	0.042	0.014	22.432	0.251	0.084	-0.698	0.245	0.082
0	5.598	0.003	0.001	16.819	0.005	0.002	21.848	0.038	0.013	-0.545	0.038	0.013	34.121	0.158	0.053	0.194	0.155	0.052
0	5.332	0.002	0.001	5.99	0.004	0.001	10.662	0.04	0.013	-0.751	0.038	0.013	10.794	0.189	0.063	-1.207	0.186	0.062
0	1.59	0.002	0.001	15.031	0.005	0.002	16.202	0.046	0.015	-0.236	0.044	0.015	30.308	0.193	0.064	0.02	0.192	0.064
0	5.607	0.003	0.001	17.549	0.005	0.002	22.682	0.033	0.011	-0.444	0.034	0.011	35.988	0.299	0.1	0.562	0.294	0.098
0	5.383	0.004	0.001	6.177	0.004	0.001	11.717	0.015	0.005	0.057	0.019	0.006	11.473	0.201	0.067	-0.907	0.196	0.065
0	1.1	0.003	0.001	6.495	0.009	0.003	7.2	0.056	0.019	-0.326	0.056	0.019	12.148	0.148	0.049	-0.873	0.134	0.045
0	1.048	0.001	0	6.462	0.008	0.003	7.083	0.053	0.018	-0.355	0.049	0.016	11.874	0.135	0.045	-1.078	0.128	0.043
0	-31.522	0.003	0.001	13.429	0.005	0.002	-19.832	0.043	0.014	-0.082	0.041	0.014	27.171	0.279	0.093	0.129	0.277	0.092
0	-2.422	0.002	0.001	6.335	0.005	0.002	3.462	0.046	0.015	-0.251	0.045	0.015	11.861	0.183	0.061	-0.838	0.184	0.061
0	-2.519	0.003	0.001	5.511	0.005	0.002	2.562	0.018	0.006	-0.243	0.02	0.007	10.014	0.183	0.061	-1.028	0.178	0.059
0	-0.815	0.002	0.001	7.126	0.003	0.001	5.857	0.028	0.009	-0.3	0.027	0.009	13.445	0.118	0.039	-0.845	0.117	0.039
0	5.393	0.002	0.001	12.526	0.006	0.002	17.657	0.046	0.015	-0.285	0.047	0.016	25.019	0.133	0.044	-0.184	0.123	0.041
0	-32.044	0.003	0.001	4.209	0.007	0.002	-29.924	0.023	0.008	-0.893	0.028	0.01	7.026	0.216	0.077	-1.398	0.211	0.075
0	5.478	0.002	0.001	12.442	0.007	0.003	17.642	0.028	0.01	-0.305	0.028	0.01	24.997	0.184	0.065	-0.042	0.177	0.063
0	5.361	0.002	0.001	17.163	0.004	0.001	22.337	0.031	0.011	-0.156	0.03	0.011	35.216	0.204	0.072	0.576	0.196	0.069
0	-6.347	0.003	0.001	0.044	0.007	0.002	-6.944	0.068	0.024	-0.443	0.065	0.023	-1.689	0.213	0.075	-1.777	0.212	0.075
0	5.678	0.002	0.001	17.515	0.005	0.002	22.714	0.05	0.018	-0.452	0.048	0.017	35.813	0.235	0.083	0.46	0.227	0.08
0	-32.335	0.002	0.001	5.06	0.004	0.001	-29.472	0.044	0.015	-0.95	0.048	0.016	8.937	0.217	0.072	-1.197	0.214	0.071
0	1.608	0.001	0	14.931	0.005	0.002	16.144	0.034	0.011	-0.214	0.034	0.011	30.571	0.192	0.064	0.472	0.185	0.062
0	-0.827	0.003	0.001	6.152	0.002	0.001	4.895	0.03	0.01	-0.293	0.03	0.01	11.677	0.099	0.033	-0.658	0.099	0.033
0	-0.518	0.004	0.001	7.579	0.005	0.002	6.615	0.043	0.014	-0.296	0.042	0.014	14.591	0.213	0.071	-0.615	0.206	0.069
0	-6.333	0.003	0.001	0.058	0.005	0.002	-7.132	0.073	0.024	-0.661	0.071	0.024	-1.75	0.185	0.062	-1.865	0.182	0.061
0	5.433	0.002	0.001	5.303	0.007	0.002	10.092	0.035	0.012	-0.748	0.038	0.013	9.423	0.2	0.067	-1.198	0.192	0.064
0	-0.661	0.003	0.001	6.019	0.007	0.002	4.957	0.049	0.016	-0.273	0.05	0.017	11.243	0.136	0.045	-0.822	0.136	0.045
0	0.105	0.003	0.001	6.412	0.004	0.001	6.047	0.037	0.012	-0.363	0.035	0.012	12.064	0.158	0.053	-0.791	0.153	0.051

0	5.332	0.003	0.001	12.161	0.008	0.003	17.225	0.026	0.009	-0.292	0.025	0.008	24.416	0.211	0.07	-0.053	0.216	0.072
0	4.994	0.003	0.001	9.871	0.003	0.001	14.989	0.044	0.015	0.081	0.042	0.014	19.473	0.193	0.064	-0.359	0.189	0.063
0	5.657	0.002	0.001	17.451	0.008	0.003	22.649	0.038	0.013	-0.433	0.036	0.012	35.929	0.202	0.067	0.698	0.192	0.064
0	-0.867	0.004	0.001	6.027	0.005	0.002	4.739	0.037	0.012	-0.287	0.038	0.013	11.23	0.151	0.05	-0.851	0.147	0.049
0	-0.588	0.002	0.001	7.474	0.006	0.002	6.404	0.037	0.012	-0.331	0.034	0.011	14.374	0.26	0.087	-0.621	0.254	0.085
0	1.627	0.002	0.001	14.975	0.006	0.002	16.21	0.017	0.006	-0.211	0.017	0.006	30.549	0.124	0.041	0.364	0.127	0.042
0	-31.749	0.003	0.001	5.811	0.006	0.002	-28.15	0.033	0.011	-0.947	0.034	0.011	10.431	0.267	0.089	-1.21	0.262	0.087
0	1.636	0.003	0.001	14.939	0.006	0.002	16.154	0.029	0.01	-0.241	0.033	0.011	30.407	0.242	0.081	0.296	0.234	0.078
0	-2.535	0.001	0	5.326	0.005	0.002	2.358	0.039	0.013	-0.249	0.035	0.012	9.687	0.268	0.089	-0.982	0.266	0.089
0	-2.547	0.002	0.001	5.316	0.005	0.002	2.311	0.037	0.012	-0.274	0.036	0.012	9.676	0.232	0.077	-0.975	0.226	0.075
0	-2.526	0.003	0.001	5.265	0.005	0.002	2.287	0.037	0.012	-0.268	0.038	0.013	9.756	0.093	0.031	-0.793	0.094	0.031
0	5.65	0.003	0.001	16.796	0.006	0.002	21.873	0.03	0.01	-0.552	0.026	0.009	34.526	0.148	0.049	0.63	0.143	0.048
0	-2.513	0.004	0.001	5.285	0.005	0.002	2.349	0.025	0.008	-0.24	0.022	0.007	9.853	0.168	0.056	-0.737	0.166	0.055
0	-6.382	0.003	0.001	-0.051	0.002	0.001	-7.318	0.04	0.013	-0.69	0.039	0.013	-2.202	0.185	0.062	-2.101	0.183	0.061
0	0.305	0.002	0.001	6.634	0.006	0.002	6.48	0.036	0.012	-0.355	0.037	0.012	12.417	0.147	0.049	-0.883	0.138	0.046
0	0.262	0.003	0.001	6.617	0.004	0.001	6.417	0.067	0.022	-0.358	0.065	0.022	12.458	0.25	0.083	-0.809	0.252	0.084
0	-0.619	0.002	0.001	7.426	0.005	0.002	6.357	0.041	0.014	-0.299	0.04	0.013	14.129	0.193	0.064	-0.767	0.192	0.064
0	-2.329	0.002	0.001	6.296	0.003	0.001	3.513	0.047	0.016	-0.259	0.048	0.016	11.964	0.165	0.055	-0.659	0.163	0.054
0	-0.617	0.004	0.001	7.43	0.004	0.001	6.367	0.032	0.011	-0.295	0.032	0.011	14.622	0.246	0.082	-0.289	0.239	0.08
0	4.488	0.002	0.001	8.878	0.005	0.002	13.497	0.034	0.011	0.097	0.032	0.011	17.336	0.175	0.058	-0.489	0.173	0.058
0	5.422	0.001	0	17.1	0.006	0.002	22.313	0.05	0.017	-0.182	0.047	0.016	35.091	0.158	0.053	0.579	0.159	0.053
0	-0.582	0.003	0.001	7.071	0.005	0.002	6.052	0.031	0.01	-0.292	0.028	0.009	13.393	0.164	0.055	-0.787	0.161	0.054
0	-0.559	0.003	0.001	7.099	0.005	0.002	6.093	0.04	0.013	-0.304	0.039	0.013	13.453	0.153	0.051	-0.784	0.152	0.051
0	-0.8	0.002	0.001	6.003	0.007	0.002	4.77	0.027	0.009	-0.301	0.032	0.011	11.314	0.19	0.063	-0.719	0.186	0.062
0	5.721	0.004	0.001	17.482	0.007	0.002	22.732	0.03	0.01	-0.448	0.026	0.009	36.228	0.129	0.043	0.926	0.122	0.041
0	-0.784	0.003	0.001	5.987	0.005	0.002	4.742	0.045	0.015	-0.329	0.045	0.015	11.583	0.222	0.074	-0.421	0.226	0.075
0	-0.738	0.002	0.001	6.073	0.008	0.003	4.892	0.034	0.011	-0.312	0.037	0.012	11.651	0.204	0.068	-0.526	0.204	0.068
0	5.079	0.004	0.001	14.451	0.01	0.003	18.83	0.039	0.013	-0.677	0.035	0.012	29.012	0.337	0.112	-0.096	0.31	0.103
0	1.592	0.002	0.001	14.951	0.005	0.002	16.127	0.045	0.015	-0.233	0.048	0.016	30.519	0.101	0.034	0.382	0.099	0.033
0	-0.781	0.003	0.001	6.993	0.006	0.002	5.784	0.037	0.012	-0.279	0.037	0.012	13.255	0.147	0.049	-0.768	0.148	0.049
0	-0.912	0.002	0.001	6.067	0.008	0.003	4.729	0.045	0.015	-0.289	0.039	0.013	11.364	0.19	0.063	-0.798	0.177	0.059
0	-32.218	0.003	0.001	10.368	0.006	0.002	-24.298	0.043	0.014	-0.933	0.042	0.014	20.345	0.212	0.071	-0.489	0.212	0.071
0	5.629	0.002	0.001	17.45	0.005	0.002	22.622	0.045	0.015	-0.431	0.044	0.015	35.807	0.196	0.065	0.581	0.187	0.062
0	-0.666	0.003	0.001	6.141	0.006	0.002	5.072	0.028	0.009	-0.272	0.027	0.009	11.451	0.192	0.064	-0.858	0.19	0.063
0	-0.961	0.003	0.001	6.03	0.006	0.002	4.645	0.049	0.016	-0.285	0.051	0.017	11.201	0.283	0.094	-0.884	0.278	0.093
0	5.65	0.002	0.001	16.863	0.006	0.002	21.924	0.041	0.014	-0.567	0.039	0.013	34.746	0.101	0.034	0.712	0.101	0.034
0	-0.934	0.002	0.001	6.018	0.002	0.001	4.646	0.046	0.015	-0.3	0.045	0.015	11.265	0.155	0.052	-0.797	0.152	0.051
0	-0.712	0.002	0.001	6.059	0.006	0.002	4.997	0.041	0.014	-0.22	0.04	0.013	11.664	0.299	0.1	-0.484	0.295	0.098
0	-0.687	0.001	0	6.059	0.003	0.001	5.141	0.03	0.01	-0.103	0.031	0.01	12.103	0.214	0.071	-0.05	0.212	0.071
0	-31.598	0.003	0.001	7.609	0.001	0	-25.528	0.049	0.016	-0.169	0.049	0.016	14.605	0.09	0.03	-0.661	0.089	0.03
0	1.595	0.002	0.001	15.036	0.006	0.002	16.232	0.051	0.017	-0.216	0.053	0.018	30.758	0.129	0.043	0.446	0.124	0.041
0	-2.533	0.002	0.001	5.371	0.007	0.002	2.408	0.035	0.012	-0.245	0.039	0.013	9.789	0.142	0.047	-0.971	0.135	0.045
0	1.028	0.002	0.001	6.402	0.006	0.002	7.047	0.037	0.012	-0.312	0.034	0.011	12.168	0.157	0.052	-0.668	0.158	0.053
0	-6.303	0.002	0.001	0.159	0.006	0.002	-7.052	0.038	0.013	-0.709	0.039	0.013	-1.433	0.136	0.045	-1.749	0.137	0.046
0	4.349	0.003	0.001	8.603	0.006	0.002	13.094	0.031	0.01	0.11	0.03	0.01	17.234	0.144	0.048	-0.045	0.142	0.047
0	5.333	0.003	0.001	17.203	0.006	0.002	22.37	0.064	0.021	-0.133	0.064	0.021	35.675	0.127	0.042	0.941	0.123	0.041
0	0.221	0.002	0.001	6.673	0.004	0.001	6.437	0.039	0.013	-0.351	0.041	0.014	12.801	0.24	0.08	-0.582	0.234	0.078
0	-0.91	0.004	0.001	6.861	0.007	0.002	5.505	0.068	0.023	-0.293	0.067	0.022	13.11	0.108	0.036	-0.649	0.109	0.036
0	-0.715	0.004	0.001	7.398	0.007	0.002	6.249	0.061	0.02	-0.28	0.063	0.021	14.344	0.277	0.092	-0.5	0.272	0.091
0	-6.324	0.003	0.001	0.11	0.004	0.001	-6.878	0.051	0.017	-0.465	0.05	0.017	-1.25	0.218	0.073	-1.47	0.216	0.072
0	-0.694	0.002	0.001	6.112	0.005	0.002	5.021	0.033	0.011	-0.268	0.031	0.01	11.947	0.186	0.062	-0.311	0.184	0.061
0	5.079	0.002	0.001	5.848	0.006	0.002	11.091	0.043	0.014	0.071	0.045	0.015	10.77	0.231	0.077	-0.949	0.234	0.078
0	-0.709	0.002	0.001	6.868	0.003	0.001	5.727	0.048	0.016	-0.287	0.047	0.016	13.053	0.346	0.115	-0.72	0.341	0.114
0	5.657	0.002	0.001	17.57	0.006	0.002	22.749	0.033	0.011	-0.45	0.03	0.01	36.262	0.16	0.053	0.786	0.152	0.051
0	-0.684	0.002	0.001	7.439	0.003	0.001	6.31	0.046	0.015	-0.291	0.048	0.016	14.399	0.187	0.062	-0.526	0.187	0.062
0	-0.75	0.002	0.001	7.389	0.004	0.001	6.215	0.064	0.021	-0.269	0.065	0.022	14.227	0.187	0.062	-0.598	0.179	0.06
0	6.519	0.002	0.001	6.854	0.003	0.001	12.745	0.048	0.016	-0.754	0.051	0.017	12.717	0.186	0.062	-1.023	0.18	0.06
0	5.421	0.003	0.001	12.47	0.008	0.003	17.671	0.03	0.01	-0.245	0.027	0.009	25.108	0.153	0.051	0.012	0.146	0.049
0	5.697	0.002	0.001	17.001	0.007	0.002	22.117	0.036	0.012	-0.559	0.037	0.012	35.016	0.197	0.066	0.701	0.186	0.062

d49 WG (Raw)	49 WG (Raw) S	49 WG (Raw) S	D49 WG (Raw	49 WG (Raw) S	49 WG (Raw) S	49 Param	49 Param SD	49 Param SE	d13C VPDB (Final)	d18O AFF	d18O VPDB (Acid)	d18O VPDB (Final)	d18O VSMOW (Final)	D47 Nonlinearity Slope
4.982	0.852	0.284	82.699	0.944	0.315	-0.112	0.019	0.006	-38.19		-25.06	-24.99	5.1	0.011451909
-3.226	0.734	0.26	-54.137	0.72	0.254	0.076	0.017	0.006	2.52		17.68	17.84	49.25	0.011181569
1.687	0.624	0.208	1.15	0.631	0.21	-0.039	0.015	0.005	-5.49	1.007950954	-12.29	-12.19	18.3	0.011295831
-2.018	0.922	0.307	-31.204	0.919	0.306	0.048	0.022	0.007	2	1.007950954	-1.51	-1.38	29.43	0.011295831
-1.474	0.611	0.204	-21.807	0.596	0.199	0.035	0.014	0.005	-2.33	1.007950954	-3.91	-3.79	26.95	0.011295831
1.303	0.879	0.293	0.674	0.908	0.303	-0.03	0.02	0.007	-5.29	1.007950954	-12.34	-12.24	18.24	0.011295831
1.496	0.997	0.332	18.834	1.041	0.347	-0.035	0.024	0.008	-10.2	1.007950954	-18.68	-18.58	11.71	0.011295831
-1.879	0.984	0.328	-30.772	0.96	0.32	0.044	0.023	0.008	1.98	1.007950954	-1.66	-1.54	29.27	0.011295831
-0.007	0.738	0.246	0.564	0.758	0.253	0	0.017	0.006	-6.12	1.007950954	-12.52	-12.42	18.06	0.011295831
1.924	0.849	0.283	3.596	0.862	0.287	-0.045	0.02	0.007	-6.09	1.007950954	-13.08	-12.98	17.48	0.011295831
0.645	0.544	0.181	-27.657	0.541	0.18	-0.015	0.013	0.004	1.72	1.007950954	-1.86	-1.74	29.07	0.011295831
3.524	0.589	0.196	20.953	0.61	0.203	-0.083	0.014	0.005	-10.17	1.007950954	-18.72	-18.62	11.66	0.011295831
5.989	0.923	0.308	85.578	1.004	0.335	-0.142	0.022	0.007	-37.84		-26.04	-25.97	4.09	0.011367611
0.427	1.006	0.335	1.276	1.039	0.346	-0.01	0.024	0.008	-6.23	1.007950954	-12.61	-12.51	17.97	0.011295831
-9.265	1.431	0.477	-43.045	1.402	0.467	0.221	0.034	0.011	2.4		8.75	8.9	40.03	0.010968947
-1.245	0.769	0.256	-30.492	0.759	0.253	0.03	0.018	0.006	2.08	1.007950954	-1.53	-1.4	29.42	0.011295831
-1.641	0.954	0.318	-21.73	0.937	0.312	0.04	0.023	0.008	-2.27	1.007950954	-4.07	-3.95	26.79	0.011295831
0.099	0.809	0.27	-1.264	0.808	0.269	-0.002	0.019	0.006	-4.45	1.007950954	-12.39	-12.29	18.19	0.011295831
0.21	0.823	0.274	-1.324	0.831	0.277	-0.005	0.02	0.007	-4.45	1.007950954	-12.3	-12.2	18.28	0.011295831
-0.409	0.463	0.154	-1.908	0.485	0.162	0.01	0.011	0.004	-4.41	1.007950954	-12.35	-12.24	18.24	0.011295831
-1.006	0.563	0.188	-28.356	0.556	0.185	0.024	0.014	0.005	1.82	1.007950954	-2.39	-2.28	28.51	0.011295486
-1.888	1.166	0.389	-31.053	1.151	0.384	0.046	0.028	0.009	2.04	1.007950954	-1.54	-1.42	29.4	0.011295831
0.201	0.97	0.323	1.002	0.981	0.327	-0.005	0.023	0.008	-6.19	1.007950954	-12.6	-12.5	17.97	0.011295831
1.784	0.766	0.255	19.503	0.787	0.262	-0.043	0.019	0.006	-10.35	1.007950954	-18.8	-18.73	11.56	0.011295831
-1.388	0.943	0.314	-34.754	0.949	0.316	0.034	0.023	0.008	-8.88		14.07	14.23	45.52	0.011469845
-0.956	0.838	0.265	-2.87	0.821	0.26	0.023	0.02	0.006	-4.16	1.007950954	-12.26	-12.16	18.32	0.011295831
2.174	0.936	0.312	80.597	1.013	0.338	-0.052	0.023	0.008	-38.17		-25.49	-25.41	4.66	0.011522399
-2.617	0.711	0.237	-31.752	0.708	0.236	0.063	0.017	0.006	2.1	1.007950954	-1.57	-1.45	29.36	0.011295831
-1.051	0.473	0.158	-21.329	0.457	0.152	0.025	0.011	0.004	-2.23	1.007950954	-3.99	-3.87	26.87	0.011295831
4.835	0.709	0.236	79.387	0.783	0.261	-0.117	0.017	0.006	-38.38		-23.54	-23.46	6.67	0.010762455
-1.071	0.582	0.194	-29.471	0.574	0.191	0.026	0.014	0.005	1.74	1.007950954	-1.8	-1.67	29.14	0.011295831
1.878	0.763	0.254	19.365	0.803	0.268	-0.046	0.019	0.006	-10.21	1.007950954	-18.75	-18.66	11.63	0.011295831
-0.307	0.786	0.262	-25.156	0.78	0.26	0.008	0.019	0.006	1.6		4.36	4.49	35.49	0.011362488
-2.273	0.626	0.209	-30.103	0.615	0.205	0.056	0.016	0.005	2.03	1.007950954	-2.22	-2.09	28.7	0.011295486
-0.987	0.573	0.191	-21.156	0.567	0.189	0.024	0.014	0.005	-2.23	1.007950954	-4.05	-3.93	26.8	0.011295831
-0.638	1.187	0.396	0.35	1.226	0.409	0.016	0.029	0.01	-6.11	1.007950954	-12.73	-12.64	17.83	0.011295831
-1.334	0.767	0.256	-21.316	0.77	0.257	0.033	0.019	0.006	-2.16	1.007950954	-4.17	-4.06	26.67	0.011295831
1.626	0.724	0.241	31.086	0.757	0.252	-0.041	0.018	0.006	-37.87		-2.79	-2.67	28.1	0.011218781
-2.008	0.717	0.239	-42.994	0.696	0.232	0.05	0.018	0.006	2.94		12.14	12.29	43.53	0.011416858
-65.879	12.617	6.309	-36.806	13.011	6.505	0	0	0	-38.31		-3.3	-3.63	27.12	0.000923731
-72.021	25.254	12.627	-49.403	25.868	12.934	0	0	0	-37.38		-0.51	-0.86	29.98	0.000923731
-72.156	31.891	15.946	-56.617	32.423	16.212	0	0	0	-10.2	1.007950954	-18.41	-18.58	11.71	0.000923731
-29.851	32.547	16.273	-49.879	31.876	15.938	0	0	0	-2.37	1.007950954	-3.77	-4.09	26.64	0.000923731
-46.719	9.832	4.916	-62.753	9.666	4.833	0	0	0	2.46	1.007950954	-8.11	-8.38	22.22	0.000923731
-14.984	17.867	8.934	-44.274	17.341	8.671	0	0	0	2	1.007950954	-1.3	-1.64	29.17	0.000923731
-75.121	6.797	3.398	-74.743	6.803	3.402	0	0	0	-6.24	1.007950954	-12.4	-12.63	17.84	0.000923731
-10.411	21.401	10.7	-82.322	19.843	9.922	0	0	0	1.93		29.72	29.07	60.83	0.000923731
-86.907	22.336	11.168	-64.594	22.882	11.441	0	0	0	-37.68		-0.38	-0.73	30.1	0.000923731
-3.073	23.338	11.669	-62.714	21.941	10.971	0	0	0	1.85		22.7	22.12	53.66	0.000923731
-75.652	16.401	8.201	-49.891	16.859	8.43	0	0	0	-37.46		-2.17	-2.5	28.28	0.000923731
8.07	26.309	13.155	-64.562	24.41	12.205	0	0	0	1.85		29.42	28.77	60.52	0.000923731
-67.157	35.671	17.835	-51.753	36.254	18.127	0	0	0	-10.19	1.007950954	-18.3	-18.46	11.83	0.000923731
-56.482	5.637	2.819	-30.389	5.791	2.896	0	0	0	-38.33		-1.62	-1.95	28.85	0.000923731
-77.562	18.016	9.008	-93.067	17.714	8.857	0	0	0	2.44	1.007950954	-8.1	-8.38	22.23	0.000923731
-49.149	17.67	8.835	-49.797	17.654	8.827	0	0	0	-6.07	1.007950954	-11.94	-12.18	18.3	0.000923731
-11.761	36.23	18.115	-41.537	35.132	17.566	0	0	0	1.94	1.007950954	-1.06	-1.41	29.41	0.000923731
1067.858	52.122	26.061	938.214	48.861	24.431	0.001	0	0	1.92		24.23	23.63	55.22	0.000923731
5691.965	41.728	20.864	5493.455	40.49	20.245	0.003	0	0	1.94	1.007950954	-1.3	-1.64	29.16	0.000923731
-52.314	14.676	7.338	-36.649	14.911	7.456	0	0	0	-10.18	1.007950954	-18.32	-18.48	11.81	0.001075531
-24.871	7.672	3.836	-55.386	7.43	3.715	0	0	0	2.4		7.25	6.82	37.89	0.000923731
7.555	19.079	9.539	-65.344	17.7	8.85	0	0	0	1.99		29.51	28.86	60.62	0.000923731
-36.483	13.22	6.61	-36.14	13.221	6.611	0	0	0	-6.27	1.007950954	-12.36	-12.59	17.88	0.000923731
-68.362	26.374	13.187	-46.127	26.887	13.443	0	0	0	-37.36		-0.27	-0.62	30.22	0.000923731
-25.727	22.823	11.411	-53.822	22.165	11.082	0	0	0	1.92	1.007950954	-1.73	-2.04	28.76	0.001553601
-66.435	10.879	5.439	-38.683	11.2	5.6	0	0	0	-37.82		-2.88	-3.21	27.55	0.000923731

-60.274	12.076	6.038	-60.34	12.078	6.039	0	0	0	-6.24	1.007950954	-12.16	-12.39	18.08	0.000923731
-40.918	7.42	3.71	-57.723	7.29	3.645	0	0	0	2.46	1.007950954	-7.76	-8.03	22.58	0.000923731
-59.741	27.429	13.715	-43.783	27.894	13.947	0	0	0	-10.18	1.007950954	-18.53	-18.71	11.57	0.00063809
-64.435	7.818	3.909	-63.998	7.828	3.914	0	0	0	-6.22	1.007950954	-12.44	-12.67	17.8	0.000923731
-66.68	22.921	11.46	-43.92	23.474	11.737	0	0	0	-37.48		-0.46	-0.81	30.02	0.000923731
-22.024	30.535	15.267	-51.103	29.629	14.814	0	0	0	1.96	1.007950954	-1.28	-1.62	29.19	0.000923731
-21.864	20.414	10.207	-42.3	19.985	9.992	0	0	0	-2.31	1.007950954	-3.68	-4	26.74	0.000923731
-68.707	31.171	15.585	-53.031	31.691	15.846	0	0	0	-10.25	1.007950954	-18.43	-18.6	11.69	0.000923731
-2.048	7.808	3.904	-47.195	7.456	3.728	0	0	0	2.55		14.51	14.01	45.3	0.000923731
-93.842	44.629	22.315	-60.274	46.28	23.14	0	0	0	-38.11		-6.26	-6.55	24.11	0.000923731
14.659	29.406	14.703	-57.689	27.308	13.654	0	0	0	1.99		28.93	28.29	60.02	0.000923731
-42.028	27.892	13.946	-42.717	27.866	13.933	0	0	0	-4.25	1.007950954	-12.83	-13.05	17.4	0.000923731
-41.933	41.49	20.745	-61.998	40.624	20.312	0	0	0	-2.24	1.007950954	-3.69	-4.01	26.73	0.000923731
-39.304	24.031	12.016	-40.827	23.991	11.995	0	0	0	-4.11	1.007950954	-12.47	-12.7	17.77	0.000923731
-40.496	30.834	15.417	-42.241	30.781	15.391	0	0	0	-5.57	1.007950954	-11.63	-11.87	18.63	0.000923731
-13.247	16.955	8.478	-41.327	16.475	8.237	0	0	0	2.02	1.007950954	-1.96	-2.33	28.46	0.000671886
-60.124	29.194	14.597	-35.327	29.957	14.979	0	0	0	-37.96		-1.19	-1.53	29.28	0.000923731
-59.294	26.145	13.072	-43.443	26.584	13.292	0	0	0	-10.17	1.007950954	-18.48	-18.65	11.63	0.000901927
-49.976	33.038	16.519	-51.113	32.999	16.499	0	0	0	-4.17	1.007950954	-12.63	-12.86	17.6	0.000923731
-60.269	17.23	8.615	-61.617	17.211	8.606	0	0	0	-5.61	1.007950954	-11.8	-12.04	18.45	0.000923731
-84.798	23.726	11.863	-88.289	23.635	11.817	0	0	0	-4.46	1.007950954	-11.19	-11.43	19.07	0.000923731
-84.025	24.261	12.131	-52.615	25.114	12.557	0	0	0	-37.44		-5.28	-5.58	25.11	0.000923731
-49.831	29.953	14.976	-49.277	29.969	14.984	0	0	0	-6.2	1.007950954	-12.51	-12.74	17.73	0.000923731
-39.135	43.631	21.815	-59.033	42.725	21.362	0	0	0	-2.41	1.007950954	-3.72	-4.04	26.7	0.000923731
-31.298	25.492	12.746	-51.333	24.967	12.484	0	0	0	-2.32	1.007950954	-3.78	-4.1	26.64	0.000923731
-70.353	32.826	16.413	-74.622	32.68	16.34	0	0	0	-4.2	1.007950954	-10.93	-11.18	19.34	0.000923731
-91.053	54.419	27.209	-93.193	54.292	27.146	0	0.001	0	-5.6	1.007950954	-11.35	-11.59	18.91	0.000923731
-92.425	33.004	16.502	-90.114	33.089	16.544	0	0	0	-6.78	1.007950954	-13.18	-13.41	17.04	0.000923731
-58.61	31.669	15.834	-61.65	31.568	15.784	0	0	0	-4.81	1.007950954	-11.31	-11.55	18.95	0.000923731
-38.675	14.835	7.417	-38.323	14.842	7.421	0	0	0	-6.09	1.007950954	-12.45	-12.68	17.79	0.000923731
-56.439	49.696	24.848	-54.099	49.819	24.91	0	0	0	-6.53	1.007950954	-13.28	-13.5	16.95	0.000923731
-56.194	10.849	5.424	-75.809	10.623	5.311	0	0	0	-2.18	1.007950954	-3.8	-4.11	26.62	0.000923731
-72.385	23.044	11.522	-69.745	23.109	11.555	0	0	0	-6.62	1.007950954	-13.41	-13.63	16.81	0.000923731
-81.124	33.904	16.952	-58.553	34.741	17.37	0	0	0	-37.55		-0.51	-0.86	29.97	0.000923731
-74.271	24.33	12.165	-89.857	23.921	11.961	0	0	0	2.56	1.007950954	-8.15	-8.42	22.18	0.000923731
-27.57	20.097	10.049	-98.688	18.632	9.316	0	0	0	2.1		29.89	29.24	61	0.000923731
-50.377	34.866	17.433	-53.833	34.739	17.37	0	0	0	-2.52	1.007950954	-12.24	-12.47	18	0.000923731
-25.821	27.296	13.648	-46.112	26.731	13.365	0	0	0	-2.24	1.007950954	-3.75	-4.06	26.67	0.000923731
-72.459	52.286	26.143	-75.627	52.105	26.053	0	0	0	-2.62	1.007950954	-12.3	-12.53	17.94	0.000923731
-44.869	29.88	14.94	-75.87	28.911	14.456	0	0	0	2.41		7.85	7.42	38.51	0.000923731
-9.822	9.301	4.65	-45.154	8.968	4.484	0	0	0	2		9.74	9.29	40.44	0.000923731
-64.192	11.166	5.583	-80.328	10.972	5.486	0	0	0	2.46	1.008429	-8.36	-8.63	21.96	0.000923731
-94.89	34.088	17.044	-69.674	35.039	17.519	0	0	0	-37.46		-2.16	-2.5	28.29	0.000923731
-17.989	8.191	4.095	-55.115	7.888	3.944	0	0	0	2.3		10.7	10.25	41.42	0.000923731
-62.933	5.918	2.959	-26.091	6.153	3.077	0	0	0	-37.76		-7.52	-7.8	22.82	0.000923731
-64.211	11.25	5.625	-67.313	11.215	5.607	0	0	0	-2.75	1.007950954	-12.29	-12.52	17.95	0.000923731
-65.559	58.861	29.43	-69.607	58.61	29.305	0	0	0	-4.35	1.007950954	-10.99	-11.24	19.28	0.000923731
-21.249	10.347	5.174	-44.534	10.1	5.05	0	0	0	2.29		3.43	3.04	33.99	0.000923731
-22.29	35.759	17.88	-50.849	34.711	17.356	0	0	0	1.71	1.007950954	-1.42	-1.76	29.04	0.000923731
-49.13	17.293	8.646	-48.895	17.298	8.649	0	0	0	-6.22	1.007950954	-12.33	-12.56	17.91	0.000923731
-61.515	15.943	7.972	-45.555	16.219	8.109	0	0	0	-10.23	1.007950954	-18.52	-18.7	11.59	0.000923731
5.491	3.432	1.716	-24.407	3.33	1.665	0	0	0	2.03	1.007950954	-1.31	-1.65	29.16	0.000923731
-8.606	18.011	9.005	-37.154	17.49	8.745	0	0	0	2.04	1.007950954	-1.8	-2.12	28.67	0.000548328
-3.292	10.893	5.446	-41.02	10.479	5.239	0	0	0	2.36		10.7	10.24	41.41	0.000923731
-67.856	8.417	4.208	-45.684	8.621	4.31	0	0	0	-37.41		-0.21	-0.56	30.29	0.000923731
-30.123	10.328	5.164	-50.201	10.115	5.058	0	0	0	-2.2	1.007950954	-3.83	-4.14	26.59	0.000923731
-36.382	20.443	10.222	-52.328	20.101	10.051	0	0	0	2.57	1.007950954	-8.3	-8.57	22.02	0.000923731
0.897	4.83	2.415	-28.717	4.686	2.343	0	0	0	2.04	1.007950954	-1.39	-1.73	29.07	0.000923731
-12.676	21.581	10.79	-33.201	21.195	10.598	0	0	0	-2.17	1.007950954	-3.8	-4.12	26.62	0.000923731
-1.412	1.103	0.551	-32.808	1.063	0.532	0	0	0	2.38		7.34	6.91	37.98	0.000923731
-83.05	9.063	4.532	-52.811	9.365	4.682	0	0	0	-37.69		-4.52	-4.83	25.88	0.000923731
-54.366	29.902	14.951	-38.301	30.412	15.206	0	0	0	-10.28	1.007950954	-18.49	-18.67	11.61	0.001149561
-10.103	27.611	13.805	-46.996	26.586	13.293	0	0	0	2.31		10.42	9.96	41.13	0.000923731
-52.303	7.521	3.76	-28.55	7.712	3.856	0	0	0	-37.68		-0.69	-1.03	29.79	0.000923731
-58.997	33.874	16.937	-42.966	34.451	17.225	0	0	0	-10.25	1.007950954	-18.53	-18.7	11.58	0.000923731
-25.765	9.783	4.891	-54.148	9.5	4.75	0	0	0	1.65	1.007950954	-1.44	-1.78	29.03	0.000923731
-7.043	27.51	13.755	-44.868	26.46	13.23	0	0	0	2.73		10.64	10.18	41.35	0.000923731
-2.793	3.498	1.749	-23.522	3.429	1.715	0	0	0	-2.26	1.007950954	-3.75	-4.07	26.66	0.000923731

-45.555	15.288	7.644	-45.041	15.299	7.649	0	0	0	-6.25	1.007950954	-12.46	-12.69	17.78	0.000923731
-11.098	5.905	2.952	-47.953	5.687	2.843	0	0	0	2.42		10.36	9.9	41.07	0.000923731
-24.921	6.782	3.391	-53.922	6.582	3.291	0	0	0	2.03	1.007950954	-1.31	-1.65	29.16	0.000923731
-41.237	47.065	23.532	-61.232	46.084	23.042	0	0	0	-2.28	1.007950954	-3.71	-4.03	26.7	0.000923731
-43.425	29.59	14.795	-43.155	29.599	14.8	0	0	0	-6.15	1.007950954	-12.38	-12.61	17.86	0.000923731
-1.328	3.18	1.59	-30.971	3.083	1.541	0	0	0	2.01	1.007950954	-1.33	-1.67	29.14	0.000923731
-17.611	22.326	11.163	-54.934	21.479	10.74	0	0	0	2.67		10.62	10.16	41.33	0.000923731
-28.54	27.23	13.615	-65.85	26.182	13.091	0	0	0	2.9		10.72	10.26	41.43	0.000923731
-72.534	19.304	9.652	-56.817	19.72	9.86	0	0	0	-10.17	1.007950954	-18.51	-18.7	11.59	0.000850684
-41.651	23.135	11.567	-57.587	22.756	11.378	0	0	0	2.49	1.007950954	-8.22	-8.49	22.11	0.000923731
-28.01	13.958	6.979	-56.556	13.726	6.863	0	0	0	2.22	1.007950954	-1.6	-1.93	28.87	0.000923731
-105.491	14.741	7.371	-39.748	15.821	7.911	0	0	0	-37.51		-23.58	-23.7	6.43	0.000923731
-18.866	11.955	5.978	-46.792	11.611	5.806	0	0	0	2.41		5.78	5.36	36.39	0.000923731
-41.605	27.194	13.597	-70.066	26.386	13.193	0	0	0	2.03	1.007950954	-1.33	-1.67	29.13	0.000923731
-69.241	16.248	8.124	-43.668	16.651	8.326	0	0	0	-38.24		-1.57	-1.91	28.89	0.000923731
-37.602	26.37	13.185	-57.634	25.82	12.91	0	0	0	-2.25	1.007950954	-3.75	-4.06	26.67	0.000923731
-25.902	19.207	9.604	-56.062	18.615	9.307	0	0	0	2.37		7.09	6.67	37.73	0.000923731
-1.473	18.908	9.454	-22.437	18.509	9.255	0	0	0	-2.2	1.007950954	-3.68	-4	26.74	0.000923731
-16.256	26.772	13.386	-45.447	25.979	12.989	0	0	0	2.28	1.007950954	-1.47	-1.81	29	0.000923731
-30.951	25.676	12.838	-51.216	25.14	12.57	0	0	0	-2.3	1.007950954	-3.67	-3.99	26.75	0.000923731
-25.971	24.603	12.301	-54.849	23.875	11.937	0	0	0	2.26	1.007950954	-1.47	-1.81	28.99	0.000923731
-66.526	24.908	12.454	-41.125	25.584	12.792	0	0	0	-38.21		-1.46	-1.8	29	0.000923731
-36.154	18.378	9.189	-67.438	17.781	8.891	0	0	0	2.53		7.79	7.36	38.45	0.000923731
-47.169	12.087	6.043	-47.023	12.089	6.045	0	0	0	-6.15	1.007950954	-12.32	-12.55	17.92	0.000923731
-11.675	1.629	0.543	-66.088	1.536	0.512	0.089	0.012	0.004	0.57		20.82	21.58	53.11	0.00417076
3.86	1.506	0.502	21.419	1.53	0.51	-0.03	0.012	0.004	-10.2	1.007950954	-18.75	-18.5	11.79	0.004055841
2.306	3.809	1.27	25.18	3.892	1.297	-0.018	0.03	0.01	-37.04		0.02	0.5	31.37	0.003994728
-12.381	2.708	0.903	-62.17	2.573	0.858	0.099	0.022	0.007	1.17		18.02	18.75	50.18	0.004139341
-3.927	2.282	0.761	-20.186	2.246	0.749	0.03	0.018	0.006	2.61	1.007950954	-8.37	-8.01	22.61	0.004055841
5.578	2.994	0.998	31.476	3.071	1.024	-0.042	0.022	0.007	-37.88		-0.98	-0.51	30.33	0.004110523
-5.592	2.604	0.868	-21.588	2.581	0.86	0.043	0.019	0.006	2.48	1.007950954	-8.43	-8.06	22.55	0.004055841
-1.239	1.701	0.567	-0.131	1.703	0.568	0.01	0.014	0.005	-6.16	1.007950954	-12.75	-12.44	18.04	0.004055841
-7.713	2.14	0.713	28.37	2.216	0.739	0.063	0.018	0.006	-37.65		-6.22	-5.83	24.85	0.00431618
3.087	3.306	1.102	21.021	3.364	1.121	-0.025	0.027	0.009	-10.26	1.007950954	-18.91	-18.7	11.58	0.004041953
3.829	2.12	0.707	21.715	2.153	0.718	-0.031	0.017	0.006	-10.19	1.007950954	-18.91	-18.69	11.59	0.004055841
-16.199	1.703	0.568	-37.694	1.662	0.554	0.131	0.014	0.005	1.91		2.68	3.19	34.15	0.003963817
-4.537	1.266	0.422	-23.925	1.24	0.413	0.036	0.01	0.003	-2.2	1.007950954	-4.4	-3.99	26.74	0.004055841
-2.104	2.739	0.913	-17.676	2.708	0.903	0.016	0.021	0.007	2.58	1.007950954	-8.72	-8.36	22.25	0.004055841
8.159	2.407	0.802	46.074	2.498	0.833	-0.066	0.02	0.007	-38.19		-6.54	-6.15	24.52	0.003700407
3.104	1.185	0.395	20.744	1.206	0.402	-0.025	0.01	0.003	-10.26	1.007950954	-18.77	-18.54	11.75	0.004062504
-6.622	1.761	0.587	-34.172	1.711	0.57	0.053	0.014	0.005	1.68	1.007950954	-2.11	-1.64	29.17	0.004055841
-0.443	1.962	0.654	2.181	1.967	0.656	0.004	0.016	0.005	-37.78		10.43	11.05	42.25	0.003983749
1.685	2.508	0.836	19.353	2.555	0.852	-0.014	0.02	0.007	-10.24	1.007950954	-18.8	-18.56	11.72	0.004055841
-2.663	1.297	0.432	-2.428	1.3	0.433	0.022	0.011	0.004	-5.8	1.007950954	-12.5	-12.19	18.3	0.004055841
-4.897	1.321	0.44	-20.519	1.302	0.434	0.04	0.011	0.004	2.57	1.007950954	-8.67	-8.3	22.3	0.004055841
-1.666	1.74	0.58	-1.627	1.751	0.584	0.014	0.014	0.005	-5.73	1.007950954	-12.43	-12.12	18.37	0.004055841
-1.901	1.968	0.656	-1.869	1.965	0.655	0.015	0.016	0.005	-5.73	1.007950954	-12.43	-12.12	18.36	0.004055841
-5.505	1.582	0.527	-33.98	1.534	0.511	0.045	0.013	0.004	2.01	1.007950954	-1.81	-1.35	29.47	0.004055841
-4.211	2.116	0.705	-5.074	2.112	0.704	0.034	0.017	0.006	-5.84	1.007950954	-11.93	-11.62	18.88	0.004055841
-3.717	2.339	0.78	-4.171	2.341	0.78	0.03	0.019	0.006	-5.76	1.007950954	-12.17	-11.86	18.64	0.004055841
0.573	2.116	0.705	1.732	2.117	0.706	-0.005	0.017	0.006	-6.13	1.007950954	-12.79	-12.48	18	0.004055841
-1.19	2.036	0.679	1.752	2.034	0.678	0.01	0.016	0.005	-37.82		10.29	10.91	42.1	0.004098519
-5.32	1.657	0.552	-32.215	1.609	0.536	0.043	0.013	0.004	1.95	1.007950954	-2.61	-2.16	28.63	0.004079968
4.32	2.847	0.949	22.191	2.901	0.967	-0.035	0.023	0.008	-10.22	1.007950954	-18.89	-18.67	11.61	0.004070004
-4.507	2.051	0.684	-23.835	2.01	0.67	0.035	0.016	0.005	-2.2	1.007950954	-4.44	-4.03	26.71	0.004055841
-2.193	2.962	0.987	-18.086	2.922	0.974	0.017	0.023	0.008	2.64	1.007950954	-8.59	-8.22	22.38	0.004055841
-7.116	3.983	1.328	-34.626	3.883	1.294	0.055	0.031	0.01	1.71	1.007950954	-2.14	-1.68	29.13	0.004055841
-6.494	1.949	0.65	-34.756	1.887	0.629	0.052	0.016	0.005	1.99	1.007950954	-1.9	-1.45	29.37	0.004055841
-0.058	2.687	0.896	1.496	2.697	0.899	0.001	0.022	0.007	-6.18	1.007950954	-12.96	-12.67	17.8	0.004055841
-8.976	2.184	0.728	-36.11	2.131	0.71	0.072	0.018	0.006	1.66	1.007950954	-2.28	-1.85	28.96	0.004055841
-0.05	1.989	0.663	2.269	1.998	0.666	0	0.016	0.005	-37.64		10.54	11.25	42.46	0.003732844
0.008	1.939	0.646	1.036	1.943	0.648	0	0.016	0.005	-6.21	1.007950954	-12.69	-12.4	18.08	0.003725049
-2.519	2.811	0.937	-17.897	2.768	0.923	0.021	0.023	0.008	2.38	1.007950954	-8.73	-8.37	22.23	0.003725049
0.114	1.652	0.551	-0.095	1.654	0.551	-0.001	0.013	0.004	-5.65	1.007950954	-12.36	-12.06	18.43	0.003725049
-6.318	1.95	0.65	-34.499	1.896	0.632	0.052	0.016	0.005	2.22	1.007950954	-2.07	-1.59	29.22	0.003725049
-1.765	2.848	0.949	-6.43	2.836	0.945	0.014	0.023	0.008	-3.86	1.007950954	-11.03	-10.71	19.82	0.003725049
0.028	1.5	0.5	3.323	1.503	0.501	0	0.012	0.004	-6.39	1.007950954	-13.72	-13.45	16.99	0.003725049
-0.99	1.98	0.66	-4.246	1.978	0.659	0.008	0.016	0.005	-2.41	1.007950954	-12.45	-12.15	18.33	0.003725049

-0.125	1.599	0.533	26.999	1.645	0.548	0.001	0.013	0.004	-37.77		-1.68	-1.18	29.64	0.003731222
3.251	2.037	0.679	20.817	2.077	0.692	-0.027	0.017	0.006	-10.19	1.007950954	-18.76	-18.58	11.71	0.003725049
-1.399	1.698	0.566	-1.527	1.702	0.567	0.012	0.014	0.005	-5.69	1.007950954	-12.38	-12.08	18.4	0.003725049
-1.6	1.344	0.448	-1.619	1.343	0.448	0.013	0.011	0.004	-5.69	1.007950954	-12.43	-12.14	18.34	0.003725049
-1.57	1.456	0.485	-1.918	1.451	0.484	0.013	0.012	0.004	-5.59	1.007950954	-12.32	-12.02	18.46	0.003725049
-2.002	2.443	0.814	-17.953	2.404	0.801	0.017	0.02	0.007	2.6	1.007950954	-8.56	-8.19	22.41	0.003725049
-2.169	1.938	0.646	-2.373	1.936	0.645	0.018	0.016	0.005	-5.72	1.007950954	-12.33	-12.03	18.45	0.003725049
-4.319	2.009	0.67	-23.618	1.971	0.657	0.036	0.017	0.006	-2.23	1.007950954	-4.45	-4.01	26.72	0.003725049
-2.854	2.397	0.799	-2.871	2.392	0.797	0.024	0.02	0.007	-5.68	1.007950954	-12.44	-12.15	18.34	0.003725049
-1.097	2.614	0.871	-0.972	2.625	0.875	0.009	0.021	0.007	-5.77	1.007950954	-12.47	-12.18	18.31	0.003725049
3.076	1.498	0.499	20.409	1.531	0.51	-0.025	0.012	0.004	-10.18	1.007950954	-18.66	-18.47	11.82	0.003715374
-15.933	2.392	0.797	12.797	2.472	0.824	0.129	0.02	0.007	-37.11		-3.02	-2.55	28.23	0.003763572
-10.873	1.559	0.52	-26.658	1.534	0.511	0.088	0.013	0.004	2.61	1.007950954	-8.58	-8.21	22.4	0.003725049
-4.651	2.611	0.87	-24.531	2.557	0.852	0.037	0.021	0.007	-2.16	1.007950954	-4.18	-3.73	27.01	0.003725049
5.105	1.461	0.487	23.217	1.498	0.499	-0.041	0.012	0.004	-10.2	1.007950954	-19.01	-18.86	11.42	0.003725049
3.448	2.3	0.767	21.021	2.347	0.782	-0.028	0.019	0.006	-10.24	1.007950954	-18.74	-18.57	11.72	0.003688936
1.004	1.587	0.529	2.512	1.591	0.53	-0.008	0.013	0.004	-6.24	1.007950954	-12.92	-12.64	17.83	0.003725049
-4.491	1.488	0.496	-31.643	1.448	0.483	0.038	0.013	0.004	2.03	1.007950954	-2.53	-2.05	28.74	0.003732864
-5.064	1.419	0.473	-32.708	1.384	0.461	0.043	0.012	0.004	1.66	1.007950954	-2.09	-1.6	29.21	0.003725049
-5.18	2.534	0.845	-24.488	2.483	0.828	0.043	0.021	0.007	-2.18	1.007950954	-4.46	-4.02	26.71	0.003725049
-2.814	1.467	0.489	-18.253	1.452	0.484	0.024	0.012	0.004	2.66	1.007950954	-8.84	-8.48	22.12	0.003725049
-0.48	1.645	0.548	0.898	1.647	0.549	0.004	0.014	0.005	-6.28	1.007950954	-12.83	-12.55	17.92	0.003725049
-6.948	1.793	0.598	-35.19	1.739	0.58	0.059	0.015	0.005	1.98	1.007950954	-1.91	-1.43	29.39	0.003725049
-7.959	2.055	0.685	-35.061	2.001	0.667	0.068	0.018	0.006	2.01	1.007950954	-2.5	-2.02	28.78	0.003731029
2.932	2.359	0.786	20.459	2.405	0.802	-0.025	0.02	0.007	-10.17	1.007950954	-18.76	-18.57	11.71	0.003725049
-3.728	1.973	0.658	-19.552	1.944	0.648	0.032	0.017	0.006	2.54	1.007950954	-8.58	-8.21	22.39	0.003725049
0.545	1.467	0.489	1.569	1.469	0.49	-0.005	0.013	0.004	-6.14	1.007950954	-12.73	-12.44	18.04	0.003725049
1.426	2.313	0.771	19.145	2.35	0.783	-0.012	0.02	0.007	-10.31	1.007950954	-18.8	-18.63	11.66	0.003693701
-6.19	1.025	0.342	-33.168	0.999	0.333	0.053	0.009	0.003	1.57	1.007950954	-2.38	-1.9	28.9	0.003725049
-5.065	2.643	0.881	-32.56	2.568	0.856	0.044	0.023	0.008	1.61	1.007950954	-2.14	-1.65	29.15	0.003725049
-3.551	2.047	0.682	-19.184	2.014	0.671	0.031	0.018	0.006	2.63	1.007950954	-8.72	-8.36	22.24	0.003725049
-4.81	1.679	0.56	-24.48	1.643	0.548	0.042	0.015	0.005	-2.12	1.007950954	-4.31	-3.87	26.88	0.003725049
-7.008	2.017	0.672	-35.313	1.956	0.652	0.061	0.018	0.006	1.98	1.007950954	-1.88	-1.39	29.42	0.003725049
-0.315	1.816	0.605	0.882	1.821	0.607	0.003	0.016	0.005	-6.2	1.007950954	-12.78	-12.5	17.98	0.003725049
-14.759	1.801	0.6	15.597	1.863	0.621	0.128	0.016	0.005	-37.14		-3.79	-3.33	27.42	0.003760969
3.336	1.457	0.486	20.911	1.484	0.495	-0.029	0.013	0.004	-10.2	1.007950954	-18.76	-18.58	11.71	0.003725049
-1.298	2.554	0.851	-17.085	2.518	0.839	0.011	0.022	0.007	2.58	1.007950954	-8.63	-8.27	22.33	0.003725049
-2.044	1.871	0.624	-21.956	1.835	0.612	0.018	0.017	0.006	-2.11	1.007950954	-4.22	-3.77	26.97	0.003725049
-6.505	1.771	0.59	-33.638	1.727	0.576	0.058	0.016	0.005	1.99	1.007950954	-2.5	-2.02	28.78	0.003693789
-7.496	2.557	0.852	-35.84	2.486	0.829	0.066	0.023	0.008	1.99	1.007950954	-1.86	-1.37	29.45	0.003725049
-5.126	3.461	1.154	-32.636	3.364	1.121	0.043	0.029	0.01	1.64	1.007950954	-2.15	-1.67	29.14	0.003725049
-3.117	2.95	0.983	-22.621	2.89	0.963	0.027	0.025	0.008	-2.25	1.007950954	-4.35	-3.91	26.83	0.003725049
-1.712	2.595	0.865	-0.42	2.596	0.865	0.015	0.023	0.008	-6.21	1.007950954	-12.82	-12.54	17.93	0.003725049
3.234	2.197	0.732	30.73	2.258	0.753	-0.028	0.019	0.006	-37.75		-1.82	-1.33	29.48	0.003721863
-3.86	1.659	0.553	-31.278	1.609	0.536	0.034	0.014	0.005	1.61	1.007950954	-2.2	-1.72	29.09	0.003725049
0.394	2.916	0.972	1.701	2.927	0.976	-0.003	0.025	0.008	-6.17	1.007950954	-12.85	-12.57	17.9	0.003725049
-7.274	1.59	0.53	-35.618	1.547	0.516	0.061	0.013	0.004	1.99	1.007950954	-1.86	-1.37	29.45	0.003725049
-0.344	2.147	0.716	-16.173	2.112	0.704	0.003	0.018	0.006	2.54	1.007950954	-8.6	-8.24	22.37	0.003725049
-5.529	1.709	0.57	-32.506	1.661	0.554	0.048	0.015	0.005	1.5	1.007950954	-2.35	-1.88	28.92	0.003725049
2.053	2.545	0.848	29.86	2.61	0.87	-0.017	0.022	0.007	-37.85		-1.94	-1.45	29.36	0.003748657
-5.642	1.669	0.556	-33.902	1.624	0.541	0.048	0.014	0.005	1.97	1.007950954	-1.92	-1.43	29.39	0.003725049
-2.373	1.964	0.655	-17.978	1.933	0.644	0.02	0.017	0.006	2.63	1.007950954	-8.74	-8.38	22.22	0.003725049
-3.043	1.827	0.609	-22.498	1.791	0.597	0.026	0.016	0.005	-2.2	1.007950954	-4.4	-3.96	26.78	0.003725049
1.142	2.136	0.712	2.593	2.126	0.709	-0.01	0.018	0.006	-6.2	1.007950954	-12.9	-12.63	17.84	0.003725049
-8.613	2.312	0.771	-35.452	2.243	0.748	0.076	0.02	0.007	1.97	1.007950954	-2.61	-2.13	28.66	0.00372634
-3.483	1.66	0.553	-1.67	1.665	0.555	0.031	0.015	0.005	-37.66		10.8	11.52	42.74	0.003741116
0.256	1.496	0.499	22.131	1.53	0.51	-0.002	0.013	0.004	-37.79		0.9	1.44	32.34	0.003700964
-2.343	1.658	0.553	0.052	1.667	0.556	0.02	0.014	0.005	-37.75		10.55	11.27	42.48	0.003677207
-2.989	1.495	0.498	-0.684	1.502	0.501	0.026	0.013	0.004	-37.71		10.58	11.29	42.5	0.003752451
-2.742	2.191	0.73	-18.066	2.162	0.721	0.024	0.019	0.006	2.46	1.007950954	-8.8	-8.44	22.16	0.003725049
3.951	1.897	0.632	27.313	1.946	0.649	-0.035	0.017	0.006	-37.2		-0.09	0.43	31.3	0.003729749
-5.776	1.686	0.562	-32.784	1.639	0.546	0.051	0.015	0.005	1.61	1.007950954	-2.38	-1.91	28.89	0.003725049
-1.978	1.405	0.468	-1.002	1.407	0.469	0.018	0.012	0.004	-37.42		11.1	11.83	43.05	0.003711154
-5.448	1.854	0.618	-33.54	1.802	0.601	0.048	0.017	0.006	2.31	1.007950954	-2.17	-1.7	29.11	0.003725049
-11.28	1.448	0.483	-60.935	1.378	0.459	0.102	0.013	0.004	1.98		17.49	18.34	49.77	0.003722099
-5.033	1.797	0.599	-31.691	1.749	0.583	0.046	0.016	0.005	1.97	1.007950954	-2.75	-2.28	28.5	0.003696155
-9.894	2.249	0.75	-61.875	2.127	0.709	0.089	0.02	0.007	2.02		18.7	19.57	51.03	0.003789859
-5.725	3.051	0.965	-33.085	2.968	0.938	0.051	0.027	0.009	1.71	1.007950954	-2.25	-1.77	29.03	0.003725049

-9.933	2.223	0.741	-62.811	2.103	0.701	0.09	0.02	0.007	2.13		19.13	20.01	51.48	0.003614128
-7.641	1.548	0.516	-49.664	1.479	0.493	0.07	0.014	0.005	2.13		13.23	14	45.29	0.003878531
-4.628	1.737	0.579	-31.843	1.689	0.563	0.042	0.016	0.005	1.73	1.007950954	-2.35	-1.88	28.92	0.003725049
-10.501	1.695	0.565	-60.317	1.605	0.535	0.097	0.016	0.005	1.94		17.58	18.43	49.86	0.003783591
-9.111	2.015	0.672	-56.587	1.917	0.639	0.082	0.018	0.006	2.43		16.03	16.85	48.23	0.0036248
147.032	2.582	0.861	138.189	2.566	0.855	-1.274	0.024	0.008	-37.73		10.1	10.48	41.66	0.00482775
135.043	0.979	0.326	125.656	0.965	0.322	-1.19	0.01	0.003	-4.68	1.007950954	-14.31	-13.87	16.56	0.004829117
140.918	3.759	1.189	131.397	3.77	1.192	-1.233	0.025	0.008	-4.68	1.007950954	-14.27	-13.83	16.6	0.004829117
140.629	2.241	0.747	131.604	2.212	0.737	-1.231	0.018	0.006	-4.71	1.007950954	-14.47	-14.03	16.39	0.004829117
143.828	1.438	0.479	152.251	1.447	0.482	-1.252	0.012	0.004	-10.14	1.007950954	-19.3	-18.86	11.42	0.004829117
138.295	1.139	0.38	122.889	1.121	0.374	-1.213	0.01	0.003	-2.45	1.007950954	-12.78	-12.35	18.13	0.004829117
121.316	1.63	0.543	152.213	1.682	0.561	-1.095	0.016	0.005	-38.44		-7.01	-6.59	24.07	0.004866959
108.062	1.329	0.443	64.752	1.274	0.425	-0.972	0.012	0.004	2.08	1.007950954	-2	-1.6	29.21	0.004829117
117.204	1.882	0.627	131.031	1.91	0.637	-1.059	0.018	0.006	-37.25		-0.21	0.19	31.05	0.004836996
110.058	1.697	0.566	81.015	1.654	0.551	-1.003	0.014	0.005	2.74	1.007950954	-8.97	-8.54	22.05	0.004829117
123.11	2.055	0.685	126.642	2.059	0.686	-1.115	0.023	0.008	-37.42		4.47	4.85	35.86	0.004839825
112.557	1.606	0.535	113.576	1.607	0.536	-1.025	0.016	0.005	-37.67		5.72	6.1	37.15	0.004835705
117.54	2.089	0.696	131.097	2.112	0.704	-1.085	0.018	0.006	-37.18		-0.13	0.27	31.14	0.004775715
121.262	3.076	1.025	123.248	3.075	1.025	-1.109	0.028	0.009	-37.6		5.25	5.63	36.67	0.00482924
121.869	1.496	0.499	129.827	1.506	0.502	-1.104	0.013	0.004	-10.24	1.007950954	-19.12	-18.67	11.62	0.004829117
120.989	2.019	0.673	142.558	2.057	0.686	-1.111	0.019	0.006	-37.95		-3.23	-2.82	27.95	0.004853691
113.238	0.91	0.303	83.915	0.889	0.296	-1.033	0.008	0.003	2.5	1.007950954	-8.76	-8.34	22.27	0.004829117
123.213	3.69	1.23	112.351	3.654	1.218	-1.092	0.018	0.006	-6.16	1.007950954	-12.88	-12.44	18.03	0.004829117
128.672	3.618	1.206	131.261	3.627	1.209	-1.089	0.018	0.006	-38.05		5.22	5.61	36.64	0.004822666
116.456	3.301	1.1	73.097	3.17	1.057	-1.009	0.025	0.008	1.92	1.007950954	-2.05	-1.66	29.15	0.004829117
117.913	3.288	1.096	125.762	3.318	1.106	-1.066	0.026	0.009	-10.25	1.007950954	-19.08	-18.63	11.65	0.00480625
110.433	1.95	0.65	67.54	1.871	0.624	-0.987	0.016	0.005	1.68	1.007950954	-2.04	-1.63	29.18	0.004829117
119.745	2.164	0.721	144.412	2.217	0.739	-1.089	0.016	0.005	-37.34		-4.9	-4.49	26.23	0.004824617
108.318	0.985	0.328	66.187	0.95	0.317	-0.984	0.008	0.003	2.03	1.007950954	-2.53	-2.12	28.67	0.004837879
112.397	2.062	0.687	120.089	2.08	0.693	-1.035	0.016	0.005	-10.21	1.007950954	-19.05	-18.59	11.7	0.004829117
117.088	2.142	0.714	138.214	2.184	0.728	-1.059	0.015	0.005	-38.67		-2.69	-2.28	28.51	0.004885833
110.992	2.556	0.852	100.891	2.527	0.842	-1.028	0.022	0.007	-6.28	1.007950954	-13.11	-12.68	17.79	0.004829117
123.403	2.801	0.934	93.712	2.73	0.91	-1.069	0.015	0.005	2.55	1.007950954	-8.74	-8.31	22.29	0.004829117
121.699	3.306	1.102	150.853	3.394	1.131	-1.115	0.025	0.008	-38.45		-6.25	-5.83	24.85	0.004824908
116.816	2.098	0.699	124.75	2.113	0.704	-1.073	0.018	0.006	-10.23	1.007950954	-19.13	-18.68	11.61	0.004829117
98.61	2.387	0.796	27.402	2.232	0.744	-0.922	0.021	0.007	2.12		19.66	20	51.48	0.004864255
105.679	2.023	0.674	62.116	1.947	0.649	-0.97	0.017	0.006	2.03	1.007950954	-1.81	-1.4	29.41	0.004829117
109.137	1.526	0.509	75.332	1.479	0.493	-0.993	0.013	0.004	-2.26	1.007950954	-4.29	-3.88	26.86	0.004829117
126.155	4.505	1.502	129.254	4.516	1.505	-1.104	0.027	0.009	-37.57		4.74	5.13	36.14	0.004828583
114.171	2.688	0.896	103.259	2.669	0.89	-1.038	0.021	0.007	-6.12	1.007950954	-12.84	-12.4	18.08	0.004829117
124.654	4.003	1.334	94.392	3.895	1.298	-1.07	0.02	0.007	2.64	1.007950954	-8.54	-8.12	22.49	0.004829117
107.133	2.331	0.777	73.218	2.258	0.753	-1	0.02	0.007	-2.18	1.007950954	-4.25	-3.83	26.91	0.004829117
122.303	3.844	1.281	77.909	3.694	1.231	-1.042	0.011	0.004	2.06	1.007950954	-1.75	-1.33	29.48	0.004829117
110.692	2.792	0.931	100.473	2.767	0.922	-1.027	0.024	0.008	-37.71		10.86	11.23	42.43	0.004786996
110.861	2.672	0.891	100.189	2.651	0.884	-1.028	0.024	0.008	-6.2	1.007950954	-12.89	-12.45	18.02	0.004829117
122.968	2.372	0.791	92.922	2.309	0.77	-1.076	0.016	0.005	2.59	1.007950954	-8.6	-8.17	22.44	0.004829117
110.794	2.877	0.959	41.506	2.695	0.898	-1.017	0.02	0.007	1.56		18.62	18.96	50.41	0.004751107
122.202	1.923	0.641	129.917	1.938	0.646	-1.108	0.017	0.006	-10.2	1.007950954	-19.03	-18.58	11.71	0.004822881
127.127	3.512	1.171	83.613	3.378	1.126	-1.089	0.017	0.006	1.74	1.007950954	-2.08	-1.67	29.14	0.004829117
125.802	2.952	0.984	134.701	2.976	0.992	-1.136	0.026	0.009	-37.57		2.17	2.56	33.5	0.004841139
116.129	2.305	0.768	73.73	2.221	0.74	-1.033	0.019	0.006	2.02	1.007950954	-2.54	-2.13	28.66	0.004822402
123.157	2.837	0.946	47.99	2.648	0.883	-1.1	0.024	0.008	3.47		20.13	20.47	51.96	0.004895868
123.675	2.006	0.669	79.929	1.922	0.641	-1.118	0.016	0.005	1.97	1.007950954	-2.03	-1.63	29.18	0.004829117
137.027	3.088	1.029	102.678	2.99	0.997	-1.176	0.014	0.005	-2.26	1.007950954	-4.42	-4.02	26.72	0.004829117
119.672	2.648	0.883	89.564	2.581	0.86	-1.08	0.019	0.006	2.68	1.007950954	-8.57	-8.14	22.46	0.004829117
137.548	4.953	1.651	145.336	4.988	1.663	-1.16	0.024	0.008	-10.19	1.007950954	-19.02	-18.56	11.72	0.004829117
115.603	2.852	0.951	106.348	2.833	0.944	-1.049	0.021	0.007	-37.65		10.37	10.74	41.93	0.004823003
120.316	1.598	0.533	127.686	1.613	0.538	-1.085	0.013	0.004	-10.21	1.007950954	-18.88	-18.42	11.87	0.004830686
120.267	3.18	1.06	128.579	3.21	1.07	-1.114	0.024	0.008	-37.5		2.38	2.77	33.71	0.004827994
115.123	4.028	1.343	68.363	3.856	1.285	-1.07	0.027	0.009	1.05		7.95	8.32	39.44	0.00478814
116.385	1.648	0.549	74.274	1.583	0.528	-1.068	0.013	0.004	1.96	1.007950954	-2.65	-2.25	28.54	0.004822188
125.227	5.182	1.727	80.879	4.971	1.657	-1.065	0.026	0.009	2.02	1.007950954	-1.8	-1.39	29.42	0.004829117
114.968	3.744	1.248	72.364	3.6	1.2	-1.057	0.03	0.01	1.34		5.85	6.23	37.28	0.004881998
120.181	2.439	0.813	127.975	2.463	0.821	-1.117	0.021	0.007	-10.21	1.007950954	-19.07	-18.61	11.67	0.004829117
115.651	2.232	0.744	104.602	2.215	0.738	-1.078	0.018	0.006	-6.13	1.007950954	-12.78	-12.34	18.14	0.004829117
109.415	1.783	0.594	100.091	1.77	0.59	-1.037	0.014	0.005	-37.53		10.36	10.73	41.92	0.004848041
107.011	1.603	0.534	77.448	1.556	0.519	-1	0.014	0.005	2.66	1.007950954	-8.65	-8.23	22.37	0.004829117
116.974	3.842	1.281	82.896	3.72	1.24	-1.027	0.016	0.005	-2.21	1.007950954	-4.3	-3.89	26.85	0.004829117

104.204	2.131	0.71	56.718	2.032	0.677	-0.992	0.017	0.006	1.27		8.4	8.77	39.91	0.004827083
111.771	1.879	0.626	119.448	1.889	0.63	-1.044	0.016	0.005	-10.18	1.007950954	-19.06	-18.61	11.68	0.004854803
100.272	1.683	0.561	58.617	1.624	0.541	-0.945	0.014	0.005	1.98	1.007950954	-2.59	-2.18	28.61	0.004831438
107.818	1.548	0.516	60	1.485	0.495	-1.016	0.013	0.004	1.29		8.47	8.85	39.98	0.004860059
115.683	3.172	1.057	138.011	3.236	1.079	-1.091	0.023	0.008	-38.56		-3.29	-2.88	27.89	0.004781214
107.795	1.54	0.513	101.159	1.543	0.514	-1.017	0.013	0.004	-6.62	1.007950954	-14.48	-14.04	16.39	0.004829117
106.743	1.912	0.637	93.314	1.884	0.628	-1.006	0.018	0.006	-3.62	1.007950954	-12.9	-12.47	18.01	0.004829117
109.736	1.097	0.366	117.867	1.107	0.369	-1.035	0.011	0.004	-10.28	1.007950954	-19.22	-18.78	11.5	0.004829641
104.313	1.468	0.489	90.799	1.447	0.482	-0.987	0.014	0.005	-3.59	1.007950954	-12.87	-12.43	18.04	0.004829117
105.137	1.113	0.371	91.718	1.105	0.368	-0.995	0.01	0.003	-3.63	1.007950954	-12.9	-12.46	18.01	0.004829117
103.094	2.481	0.827	61.715	2.384	0.795	-0.975	0.021	0.007	1.29		5.51	5.89	36.93	0.004859743
112.591	3.844	1.281	131.325	3.914	1.305	-1.064	0.029	0.01	-38.29		-1.87	-1.47	29.35	0.004806048
109.128	2.025	0.675	98.756	2.014	0.671	-1.027	0.018	0.006	-6.23	1.007950954	-13	-12.57	17.9	0.004829117
106.383	3.721	1.24	82.935	3.642	1.214	-1.004	0.026	0.009	2.02		-3.27	-2.86	27.91	0.004819486
120.103	3.892	1.297	142.864	3.977	1.326	-1.12	0.026	0.009	-38.76		-3.33	-2.92	27.85	0.004815707
110.217	2.061	0.687	82.048	2.005	0.668	-1.023	0.018	0.006	2.29	1.007950954	-9.15	-8.73	21.86	0.004829117
117.08	3.083	1.028	93.128	3.035	1.012	-1.085	0.028	0.009	2.02		-3.15	-2.74	28.04	0.004818094
115.059	1.265	0.422	72.525	1.215	0.405	-1.063	0.011	0.004	2.04	1.007950954	-2.47	-2.06	28.74	0.004830665
112.83	3	1	130.902	3.058	1.019	-1.032	0.024	0.008	-38.33		-1.56	-1.15	29.67	0.004806316
102.384	2.439	0.813	60.136	2.341	0.78	-0.943	0.021	0.007	1.68	1.007950954	-2.2	-1.79	29.01	0.004829117
121.229	5.927	1.976	98.182	5.808	1.936	-1.1	0.027	0.009	1.96		-3.57	-3.16	27.6	0.004821999
123.297	4.807	1.602	142.732	4.881	1.627	-1.17	0.023	0.008	-37.05		-2.79	-2.43	28.36	0.004815638
110.165	2.003	0.668	67.848	1.935	0.645	-1.051	0.019	0.006	2.06	1.007950954	-2.48	-2.11	28.69	0.00472351
113.34	2.245	0.748	102.045	2.226	0.742	-1.077	0.023	0.008	-6.11	1.007950954	-12.67	-12.35	18.13	0.004815638
105.044	3.456	1.152	68.653	3.343	1.114	-1.006	0.026	0.009	0.94		3.31	3.7	34.68	0.004815638
114.588	3.306	1.102	96.493	3.25	1.083	-1.077	0.022	0.007	2.15		-5.84	-5.49	25.2	0.004815638
108.203	1.838	0.613	64.577	1.764	0.588	-1.025	0.017	0.006	2.08	1.007950954	-1.84	-1.47	29.35	0.004815638
109.055	1.78	0.593	75.015	1.72	0.573	-1.026	0.015	0.005	-2.18	1.007950954	-4.21	-3.85	26.89	0.004815638
129.262	3.215	1.072	158.097	3.306	1.102	-1.215	0.021	0.007	-38.53		-6.04	-5.69	24.99	0.004815638
120.739	2.253	0.751	109.647	2.233	0.744	-1.13	0.02	0.007	-6.12	1.007950954	-12.79	-12.47	18.01	0.004815638
115.616	2.249	0.75	82.133	2.184	0.728	-1.087	0.021	0.007	1.96	1.0093	-7.94	-7.59	23.03	0.004815638
117.571	3.935	1.312	139.084	4.013	1.338	-1.105	0.023	0.008	-37.52		-3.5	-3.14	27.62	0.004815638
97.104	2.011	0.67	55.24	1.939	0.646	-0.937	0.018	0.006	1.64	1.007950954	-2.25	-1.89	28.92	0.004815638
98.93	3.117	1.039	63.168	3.012	1.004	-0.956	0.021	0.007	1.85		2.65	3.05	34	0.004815638
102.951	1.854	0.618	110.247	1.865	0.622	-1.002	0.017	0.006	-10.18	1.007950954	-18.92	-18.64	11.65	0.004815638
94.426	1.738	0.579	51.272	1.67	0.557	-0.915	0.016	0.005	2.06	1.007950954	-1.8	-1.43	29.39	0.004815638
114.12	4.562	1.521	141.641	4.682	1.561	-1.096	0.028	0.009	-38.73		-5.54	-5.18	25.52	0.004815638
105.654	1.147	0.382	71.739	1.108	0.369	-1.01	0.009	0.003	-2.14	1.007950954	-4.24	-3.88	26.86	0.004815638
105.078	2.014	0.671	71.899	1.954	0.651	-0.999	0.02	0.007	1.83	1.0093	-7.87	-7.53	23.1	0.004815638
117.173	2.218	0.739	145.998	2.284	0.761	-1.111	0.018	0.006	-38.44		-6.22	-5.87	24.81	0.004815638
107.183	2.512	0.837	74.25	2.442	0.814	-1.022	0.023	0.008	2.04	1.0093	-8.11	-7.77	22.85	0.004815638
104.097	1.738	0.579	61.853	1.669	0.556	-0.988	0.014	0.005	2.1	1.007950954	-2.42	-2.05	28.74	0.004880363
114.738	2.064	0.688	90.66	2.024	0.675	-1.094	0.019	0.006	2.01		-3.05	-2.68	28.09	0.004815638
113.681	2.514	0.838	69.835	2.416	0.805	-1.066	0.021	0.007	2.08	1.007950954	-1.84	-1.47	29.34	0.004815638
145.295	18.369	6.123	152.553	18.489	6.163	-1.252	0.028	0.009	-10.11	1.007950954	-18.82	-18.53	11.76	0.004685634
121.234	5.209	1.736	83.858	5.032	1.677	-1.091	0.026	0.009	1.87		3.06	3.45	34.42	0.004815638
114.404	1.294	0.431	71.816	1.244	0.415	-1.048	0.013	0.004	1.67	1.007950954	-2.24	-1.87	28.93	0.004815638
120.007	1.799	0.6	127.672	1.814	0.605	-1.111	0.015	0.005	-10.21	1.007950954	-19.02	-18.74	11.54	0.004815638
116.011	2.353	0.784	126.688	2.373	0.791	-1.082	0.015	0.005	-38.12		1.57	1.96	32.88	0.004815638
110.646	1.348	0.449	99.687	1.34	0.447	-1.037	0.013	0.004	-6.12	1.007950954	-12.8	-12.49	17.99	0.004815638
105.697	1.657	0.552	71.708	1.606	0.535	-0.991	0.013	0.004	-2.17	1.007950954	-4.19	-3.83	26.91	0.004815638
159.702	0.958	0.319	115.596	0.925	0.308	-1.363	0.009	0.003	2.08	1.007950954	-2.53	-2.17	28.63	0.004917119
163.773	2.027	0.676	118.061	1.951	0.65	-1.363	0.015	0.005	2.14	1.007950954	-1.92	-1.55	29.26	0.004815638
117.794	3.765	1.255	80.35	3.641	1.214	-1.13	0.026	0.009	1.15		3.5	3.89	34.87	0.004815638
69.98	1.462	0.487	37.776	1.42	0.473	-0.686	0.013	0.004	2.15	1.0093	-7.99	-7.65	22.98	0.004815638
127.397	1.339	0.446	134.446	1.347	0.449	-1.244	0.014	0.005	-10.09	1.007950954	-18.79	-18.5	11.79	0.004868711
107.7	2.971	0.99	71.883	2.874	0.958	-1.088	0.022	0.007	1.79		2.58	2.97	33.92	0.004815638
106.247	2.765	0.922	119.208	2.794	0.931	-1.092	0.021	0.007	-38.54		0.72	1.11	32	0.004815638
103.238	1.6	0.533	92.649	1.585	0.528	-1.053	0.015	0.005	-6.18	1.007950954	-12.91	-12.59	17.88	0.004815638
100.382	1.432	0.477	66.522	1.385	0.462	-1.024	0.013	0.004	-2.15	1.007950954	-4.19	-3.83	26.92	0.004815638
113.13	3.524	1.175	139.731	3.613	1.204	-1.142	0.026	0.009	-38.28		-5.38	-5.02	25.68	0.004815638
100.361	2.458	0.819	58.603	2.368	0.789	-1.028	0.025	0.008	2	1.007950954	-2.54	-2.17	28.62	0.004822052
106.764	1.892	0.631	114.029	1.907	0.636	-1.096	0.016	0.005	-10.17	1.007950954	-18.91	-18.62	11.66	0.00485238
112.694	4.789	1.596	125.657	4.846	1.615	-1.122	0.024	0.008	-38.53		0.75	1.14	32.03	0.004815638
102.581	2.165	0.722	69.256	2.099	0.7	-1.044	0.02	0.007	-2.3	1.007950954	-4.4	-4.04	26.69	0.004815638
101.328	1.517	0.506	59.245	1.458	0.486	-1.025	0.013	0.004	2.08	1.007950954	-2.44	-2.07	28.72	0.00481773
106.78	2.399	0.8	114.155	2.416	0.805	-1.084	0.024	0.008	-10.2	1.007950954	-18.94	-18.66	11.63	0.004705486
101.028	1.67	0.557	67.818	1.617	0.539	-1.025	0.015	0.005	2.15	1.0093	-7.95	-7.61	23.01	0.004815638

98.982	2.882	0.961	67.582	2.794	0.931	-1.009	0.019	0.006	0.94		1.05	1.44	32.34	0.004815638
95.561	1.858	0.619	53.474	1.784	0.595	-0.979	0.016	0.005	1.72	1.007950954	-2.16	-1.79	29.02	0.004815638
100.663	1.572	0.524	108.1	1.581	0.527	-1.033	0.017	0.006	-10.19	1.007950954	-18.99	-18.71	11.58	0.004815638
114.993	4.471	1.49	94.757	4.374	1.458	-1.148	0.026	0.009	0.29		-3.95	-3.59	27.16	0.004815638
106.739	1.356	0.452	62.933	1.304	0.435	-1.079	0.014	0.005	2.13	1.007950954	-1.75	-1.38	29.44	0.004815638
264.715	6.553	2.184	274.35	6.503	2.168	-1.467	0.021	0.007	-37.64		2.29	2.68	33.63	0.004815638
238.983	3.096	1.032	202.372	3.012	1.004	-1.36	0.017	0.006	1.86	1.0093	-8.12	-7.78	22.84	0.004815638
201.334	6.312	2.104	155.727	6.088	2.029	-1.241	0.016	0.005	1.8	1.007950954	-2.44	-2.07	28.73	0.004820006
200.583	3.104	1.035	188.484	3.075	1.025	-1.321	0.019	0.006	-6.17	1.007950954	-12.67	-12.35	18.13	0.004815638
167.961	4.269	1.423	196.128	4.388	1.463	-1.246	0.022	0.007	-38.11		-5.57	-5.22	25.48	0.004815638
152.757	2.846	0.949	117.718	2.772	0.924	-1.146	0.017	0.006	-2.33	1.007950954	-4.29	-3.93	26.81	0.004815638
146.822	3.308	1.103	123.136	3.227	1.076	-1.175	0.018	0.006	1.04		-3.05	-2.69	28.09	0.004815638
140.783	3.926	1.309	95.953	3.784	1.261	-1.131	0.029	0.01	1.98	1.007950954	-1.83	-1.46	29.36	0.004815638
140.287	1.347	0.449	106.341	1.312	0.437	-1.133	0.011	0.004	1.94	1.0093	-8.05	-7.71	22.91	0.004815638
151.677	4.802	1.601	163.548	4.867	1.622	-1.246	0.026	0.009	-38.39		1.34	1.73	32.65	0.004815638
140.478	1.589	0.53	97.181	1.53	0.51	-1.157	0.01	0.003	1.97	1.007950954	-2.52	-2.15	28.64	0.004764583
150.714	2.957	0.986	157.851	2.98	0.993	-1.241	0.018	0.006	-10.16	1.007950954	-18.74	-18.44	11.85	0.004875078
146.805	3.871	1.29	170.383	3.958	1.319	-1.233	0.02	0.007	-37.84		-3.98	-3.62	27.13	0.004815638
134.513	1.613	0.538	91.034	1.547	0.516	-1.13	0.015	0.005	1.64	1.007950954	-2.16	-1.8	29.01	0.004815638
145.471	2.267	0.756	153.226	2.287	0.762	-1.217	0.014	0.005	-10.28	1.007950954	-18.95	-18.67	11.61	0.004815638
148.223	5.516	1.839	170.65	5.623	1.874	-1.262	0.025	0.008	-38.72		-3.03	-2.66	28.12	0.004815638
141.026	3.064	1.021	130.056	3.042	1.014	-1.212	0.021	0.007	-6.23	1.007950954	-12.87	-12.56	17.91	0.004815638
135.071	1.874	0.625	100.538	1.82	0.607	-1.158	0.013	0.004	-2.27	1.007950954	-4.31	-3.95	26.79	0.004815638
132.609	2.266	0.755	108.699	2.22	0.74	-1.164	0.019	0.006	2.94		-3.76	-3.39	27.36	0.004815638
127.621	1.662	0.554	83.523	1.599	0.533	-1.119	0.014	0.005	1.93	1.007950954	-1.9	-1.54	29.28	0.004815638
111.247	1.989	0.663	77.656	1.982	0.661	-0.932	0.017	0.006	1.77	1.0093	-7.73	-7.39	23.24	0.004815638
142.351	2.38	0.793	123.885	2.346	0.782	-1.209	0.017	0.006	1.64		-5.62	-5.27	25.43	0.004815638
139.554	1.623	0.541	96.256	1.57	0.523	-1.179	0.011	0.004	1.96	1.007950954	-2.5	-2.13	28.67	0.004852567
152.129	1.064	0.355	159.948	1.07	0.357	-1.261	0.008	0.003	-10.29	1.007950954	-18.96	-18.67	11.61	0.004714928
141.571	3.825	1.275	150.299	3.86	1.287	-1.202	0.024	0.008	-37.71		2.31	2.71	33.65	0.004815638
129.091	2.184	0.728	85.746	2.094	0.698	-1.117	0.016	0.005	1.62	1.007950954	-2.12	-1.75	29.05	0.004815638
139.864	1.324	0.441	147.63	1.342	0.447	-1.199	0.009	0.003	-10.28	1.007950954	-18.97	-18.69	11.59	0.004815638
144.967	5.436	1.812	174.222	5.583	1.861	-1.259	0.025	0.008	-37.69		-6.48	-6.13	24.54	0.004815638
129.817	2.654	0.885	99.734	2.585	0.862	-1.151	0.019	0.006	2.48	1.007950954	-8.6	-8.26	22.35	0.004815638
135.303	3.281	1.094	124.279	3.247	1.082	-1.198	0.028	0.009	-6.27	1.007950954	-12.81	-12.49	17.98	0.004815638
142.771	6.941	2.314	116.42	6.789	2.263	-1.257	0.034	0.011	3.34		-2.96	-2.6	28.18	0.004815638
135.033	1.817	0.606	100.474	1.765	0.588	-1.205	0.011	0.004	-2.28	1.007950954	-4.29	-3.93	26.8	0.004815638
146.031	7.362	2.454	126.306	7.236	2.412	-1.266	0.038	0.013	1.88		-5.21	-4.86	25.85	0.004815638
134.739	3.368	1.123	91.708	3.247	1.082	-1.197	0.025	0.008	1.86	1.007950954	-2.49	-2.12	28.68	0.004815638
138.497	3.893	1.298	147.902	3.919	1.306	-1.24	0.018	0.006	-37.81		2.06	2.45	33.39	0.004815638
126.494	2.894	0.965	83.872	2.786	0.929	-1.142	0.024	0.008	1.81	1.007950954	-2.51	-2.14	28.66	0.004815638
126.774	2.147	0.716	93.404	2.088	0.696	-1.137	0.017	0.006	1.9	1.0093	-8.11	-7.77	22.85	0.004815638
143.059	4.946	1.649	156.532	5.005	1.668	-1.263	0.031	0.01	-37.7		0.26	0.64	31.52	0.004815638
132.345	1.993	0.664	89.332	1.927	0.642	-1.183	0.012	0.004	1.96	1.007950954	-2.5	-2.13	28.66	0.004763247
141.174	4.664	1.555	121.487	4.582	1.527	-1.248	0.024	0.008	2.07		-5.29	-4.93	25.78	0.004815638
132.947	2.185	0.728	98.352	2.124	0.708	-1.188	0.019	0.006	-2.28	1.007950954	-4.25	-3.89	26.85	0.004815638
127.589	1.674	0.558	83.218	1.61	0.537	-1.15	0.012	0.004	1.94	1.007950954	-1.78	-1.41	29.41	0.004815638
130.155	3.159	1.053	110.194	3.091	1.03	-1.179	0.014	0.005	2.12		-5.1	-4.75	25.97	0.004815638
132.12	2.718	0.906	116.498	2.694	0.898	-1.208	0.023	0.008	-2.49	1.007950954	-12.63	-12.31	18.17	0.004815638
130.406	2.331	0.777	114.942	2.301	0.767	-1.185	0.018	0.006	-2.54	1.007950954	-12.66	-12.34	18.14	0.004815638
134.887	5.766	1.922	143.964	5.808	1.936	-1.217	0.033	0.011	-37.75		2.16	2.55	33.49	0.004815638
127.853	2.803	0.934	116.825	2.777	0.926	-1.172	0.021	0.007	-6.26	1.007950954	-12.78	-12.46	18.02	0.004815638
127.483	1.525	0.508	118.372	1.512	0.504	-1.173	0.012	0.004	-6.34	1.007950954	-13.59	-13.27	17.18	0.004815638
127.825	2.071	0.69	113.163	2.047	0.682	-1.165	0.016	0.005	-4.57	1.007950954	-12	-11.68	18.82	0.004815638
123.586	2.117	0.706	90.168	2.055	0.685	-1.129	0.018	0.006	1.9	1.0093	-8.04	-7.7	22.92	0.004815638
132.235	1.689	0.597	162.629	1.743	0.616	-1.227	0.014	0.005	-37.97		-6.97	-6.62	24.04	0.004815638
122.286	2.643	0.934	88.985	2.554	0.903	-1.121	0.022	0.008	1.99	1.0093	-8.12	-7.79	22.83	0.004815638
122.554	2.35	0.831	79.467	2.254	0.797	-1.114	0.017	0.006	1.69	1.007950954	-2.16	-1.79	29.01	0.004815638
131.376	2.389	0.845	138.979	2.406	0.851	-1.206	0.02	0.007	-10.24	1.007950954	-18.95	-18.66	11.62	0.004815638
121.948	1.678	0.593	77.789	1.615	0.571	-1.115	0.015	0.005	2.02	1.007950954	-1.82	-1.44	29.37	0.004815638
127.216	2.115	0.705	155.922	2.173	0.724	-1.213	0.019	0.006	-38.31		-6.12	-5.77	24.91	0.004815638
118.922	1.867	0.622	84.945	1.814	0.605	-1.134	0.013	0.004	-2.25	1.007950954	-4.34	-3.99	26.75	0.004815638
119.328	3.105	1.035	106.893	3.073	1.024	-1.164	0.026	0.009	-4.54	1.007950954	-12.96	-12.64	17.83	0.004815638
119.993	1.811	0.604	104.106	1.778	0.593	-1.162	0.016	0.005	-4.26	1.007950954	-11.56	-11.24	19.28	0.004815638
125.225	0.896	0.299	132.739	0.898	0.299	-1.194	0.008	0.003	-10.23	1.007950954	-18.93	-18.65	11.63	0.004990185
122.341	1.575	0.525	104.343	1.558	0.519	-1.187	0.014	0.005	2.2		-5.97	-5.62	25.07	0.004815638
121.791	1.782	0.594	109.421	1.761	0.587	-1.171	0.016	0.005	-4.36	1.007950954	-13.09	-12.78	17.69	0.004815638
122.467	1.682	0.561	108.333	1.664	0.555	-1.17	0.011	0.004	-3.55	1.007950954	-12.71	-12.39	18.09	0.004815638

119.482	2.171	0.724	87.026	2.111	0.704	-1.145	0.02	0.007	1.84	1.0093	-8.4	-8.06	22.55	0.004815638
127.419	5.767	1.922	100.01	5.633	1.878	-1.19	0.028	0.009	1.57		-1.44	-1.07	29.76	0.004815638
119.381	2.167	0.722	75.479	2.082	0.694	-1.133	0.017	0.006	2	1.007950954	-1.88	-1.51	29.3	0.004815638
124.732	2.428	0.809	112.555	2.41	0.803	-1.195	0.018	0.006	-4.58	1.007950954	-13.08	-12.77	17.7	0.004815638
123.432	1.345	0.448	107.807	1.329	0.443	-1.18	0.011	0.004	-4.34	1.007950954	-11.66	-11.34	19.17	0.004815638
120.078	1.257	0.419	85.952	1.213	0.404	-1.142	0.01	0.003	-2.24	1.007950954	-4.3	-3.94	26.79	0.004815638
129.555	1.695	0.565	155.876	1.742	0.581	-1.265	0.015	0.005	-37.71		-5.38	-5.03	25.68	0.004815638
121.445	2.73	0.91	87.342	2.653	0.884	-1.174	0.023	0.008	-2.22	1.007950954	-4.34	-3.98	26.76	0.004815638
125.315	2.66	0.887	116.646	2.643	0.881	-1.209	0.021	0.007	-6.35	1.007950954	-13.77	-13.46	16.99	0.004815638
125.756	2.525	0.842	117.119	2.507	0.836	-1.203	0.022	0.007	-6.36	1.007950954	-13.78	-13.47	16.98	0.004815638
124.956	1.903	0.634	116.412	1.893	0.631	-1.202	0.018	0.006	-6.33	1.007950954	-13.83	-13.52	16.93	0.004815638
122.031	2.71	0.903	79.398	2.615	0.872	-1.167	0.023	0.008	2.02	1.007950954	-2.52	-2.15	28.64	0.004784627
125.084	3.178	1.059	116.48	3.165	1.055	-1.203	0.025	0.008	-6.32	1.007950954	-13.81	-13.5	16.95	0.004815638
134.276	2.321	0.774	142.154	2.339	0.78	-1.294	0.021	0.007	-10.28	1.007950954	-19.04	-18.76	11.52	0.00486748
130.06	1.769	0.59	115.11	1.737	0.579	-1.257	0.014	0.005	-3.35	1.007950954	-12.49	-12.17	18.31	0.004815638
130.237	2.098	0.699	115.371	2.072	0.691	-1.252	0.021	0.007	-3.39	1.007950954	-12.51	-12.19	18.3	0.004815638
129.713	3.305	1.102	114.141	3.268	1.089	-1.245	0.028	0.009	-4.37	1.007950954	-11.71	-11.39	19.12	0.004815638
131.709	1.812	0.604	120.617	1.798	0.599	-1.255	0.017	0.006	-6.16	1.007950954	-12.82	-12.5	17.97	0.004815638
133.059	2.125	0.708	117.429	2.094	0.698	-1.269	0.02	0.007	-4.37	1.007950954	-11.71	-11.38	19.12	0.004815638
124.414	5.369	1.79	99.792	5.257	1.752	-1.197	0.03	0.01	1.06		-2.43	-2.06	28.74	0.004815638
117.442	2.776	0.925	74.612	2.672	0.891	-1.142	0.025	0.008	1.76	1.007950954	-2.22	-1.86	28.95	0.004815638
121.599	2.911	0.97	106.863	2.872	0.957	-1.182	0.026	0.009	-4.32	1.007950954	-12.06	-11.74	18.76	0.004815638
122.923	2.515	0.838	108.081	2.478	0.826	-1.192	0.021	0.007	-4.29	1.007950954	-12.03	-11.71	18.79	0.004815638
122.729	1.104	0.368	110.547	1.104	0.368	-1.187	0.01	0.003	-4.51	1.007950954	-13.11	-12.79	17.67	0.004815638
116.102	2.314	0.771	72.191	2.235	0.745	-1.137	0.019	0.006	2.07	1.007950954	-1.85	-1.48	29.34	0.004815638
123.063	1.569	0.523	110.895	1.553	0.518	-1.191	0.014	0.005	-4.49	1.007950954	-13.12	-12.81	17.66	0.004815638
123.458	1.757	0.586	111.043	1.733	0.578	-1.191	0.017	0.006	-4.44	1.007950954	-13.04	-12.72	17.74	0.004815638
125.225	3.1	1.033	88.052	2.98	0.993	-1.153	0.018	0.006	1.49		3.09	3.49	34.45	0.004815638
118.859	3.189	1.063	84.861	3.093	1.031	-1.121	0.026	0.009	-2.27	1.007950954	-4.33	-3.97	26.77	0.004815638
119.943	2.137	0.712	105.631	2.107	0.702	-1.145	0.018	0.006	-4.52	1.007950954	-12.14	-11.82	18.68	0.004815638
120.655	1.225	0.408	108.489	1.207	0.402	-1.154	0.012	0.004	-4.63	1.007950954	-13.04	-12.73	17.74	0.004815638
127.978	2.686	0.895	144.653	2.734	0.911	-1.259	0.023	0.008	-38.38		-0.87	-0.49	30.35	0.004815638
120.049	2.037	0.679	76.154	1.961	0.654	-1.169	0.018	0.006	1.97	1.007950954	-1.88	-1.51	29.3	0.004815638
124.941	2.05	0.683	112.278	2.026	0.675	-1.221	0.02	0.007	-4.37	1.007950954	-12.97	-12.66	17.81	0.004815638
125.7	1.822	0.607	113.619	1.799	0.6	-1.212	0.018	0.006	-4.68	1.007950954	-13.08	-12.77	17.7	0.004815638
119.844	1.635	0.545	77.155	1.573	0.524	-1.165	0.016	0.005	2.01	1.007950954	-2.46	-2.09	28.71	0.004832384
122.599	2.322	0.774	110.546	2.298	0.766	-1.2	0.018	0.006	-4.65	1.007950954	-13.09	-12.78	17.69	0.004815638
112.894	1.809	0.603	100.596	1.788	0.596	-1.093	0.017	0.006	-4.42	1.007950954	-13.05	-12.74	17.73	0.004815638
97.134	2.532	0.844	84.981	2.505	0.835	-0.943	0.024	0.008	-4.39	1.007950954	-13.05	-12.74	17.73	0.004815638
134.217	2.996	0.999	156.39	3.056	1.019	-1.286	0.01	0.003	-37.62		-3.6	-3.24	27.52	0.004815638
119.939	2.135	0.712	85.724	2.078	0.693	-1.175	0.018	0.006	-2.27	1.007950954	-4.24	-3.88	26.86	0.004815638
124.324	2.312	0.771	115.562	2.295	0.765	-1.213	0.02	0.007	-6.35	1.007950954	-13.72	-13.41	17.03	0.004815638
121.055	2.859	0.953	105.872	2.824	0.941	-1.187	0.024	0.008	-2.56	1.007950954	-12.72	-12.4	18.07	0.004815638
126.244	1.931	0.644	133.505	1.944	0.648	-1.234	0.016	0.005	-10.2	1.007950954	-18.83	-18.55	11.74	0.004780242
115.28	1.903	0.634	91.603	1.868	0.623	-1.148	0.022	0.007	0.92		-2.7	-2.33	28.46	0.004815638
113.552	1.976	0.659	70.759	1.908	0.636	-1.119	0.018	0.006	1.66	1.007950954	-2.12	-1.75	29.05	0.004815638
118.1	2.487	0.829	103.321	2.449	0.816	-1.161	0.022	0.007	-3.44	1.007950954	-12.45	-12.13	18.35	0.004815638
116.536	2.006	0.669	102.704	1.987	0.662	-1.155	0.016	0.005	-4.66	1.007950954	-12.26	-11.95	18.55	0.004815638
115.666	1.726	0.575	100.459	1.707	0.569	-1.146	0.015	0.005	-4.47	1.007950954	-11.74	-11.42	19.09	0.004815638
117.894	1.401	0.467	125.234	1.414	0.471	-1.17	0.009	0.003	-10.22	1.007950954	-18.88	-18.59	11.69	0.004815638
116.209	1.969	0.656	103.737	1.948	0.649	-1.142	0.02	0.007	-4.4	1.007950954	-13	-12.68	17.78	0.004815638
116.789	1.745	0.582	98.122	1.72	0.573	-1.16	0.019	0.006	1.8		-5.43	-5.07	25.63	0.004815638
116.902	3.081	1.027	102.812	3.045	1.015	-1.152	0.025	0.008	-4.44	1.007950954	-12.26	-11.94	18.55	0.004815638
111.142	1.826	0.609	67.318	1.764	0.588	-1.101	0.016	0.005	1.99	1.007950954	-1.76	-1.39	29.43	0.004815638
116.534	1.959	0.653	101.192	1.935	0.645	-1.145	0.016	0.005	-4.44	1.007950954	-11.7	-11.38	19.13	0.004815638
115.186	2.173	0.724	100.047	2.152	0.717	-1.138	0.018	0.006	-4.51	1.007950954	-11.75	-11.42	19.08	0.004815638
119.344	1.091	0.364	96.8	1.066	0.355	-1.187	0.01	0.003	3.31		-4.43	-4.08	26.66	0.004815638
120.077	1.706	0.569	86.85	1.654	0.551	-1.171	0.016	0.005	1.93	1.0093	-8.1	-7.76	22.86	0.004815638
114.388	2.264	0.755	71.568	2.183	0.728	-1.125	0.017	0.006	2.06	1.007950954	-2.32	-1.95	28.85	0.004809932
									-3.82			-12.29	18.19	
									-6.34			-13.44	17.01	
									-5.72			-12.05	18.44	
									-4.37			-11.31	19.2	
									-5.44			-12.12	18.37	
									-4.47			-11.78	18.72	
									-2.54			-12.39	18.09	

-4.41	-13.09	17.37
-6.59	-13.61	16.83
-4.57	-12.75	17.72

D47 Nonlinearity Intercepts	D47 WG (HG)	ETF Slope	ETF Intercept	D47 CDES (ETF)	Clumped AFF	D47 CDES (Final)	D48 WG (HG)
1=-0.04233762449408604,2=-0.8186394497140147,3=-0.640038353887165	0.012	1.198545765	0.963885195	0.978		0.978	-6.762
1=-0.04352724327289068,2=-0.8202496720331918,3=-0.6355865349897978	-0.014	1.198545765	0.963885195	0.948		0.948	8.005
1=-0.0372798225396806544,2=-0.8195690953530168,3=-0.6374681410822151	-0.288	1.198545765	0.963885195	0.618	0.082	0.7	0.023
1=-0.0372798225396806544,2=-0.8195690953530168,3=-0.6374681410822151	-0.553	1.197882141	0.963694929	0.302	0.082	0.384	4.196
1=-0.0372798225396806544,2=-0.8195690953530168,3=-0.6374681410822151	-0.296	1.201966063	0.96587366	0.61	0.082	0.692	3.429
1=-0.037279822539806067,2=-0.8195690953530167,3=-0.6374681410822147	-0.273	1.198545765	0.963885195	0.636	0.082	0.718	0.169
1=-0.0372798225396806544,2=-0.8195690953530168,3=-0.6374681410822151	-0.441	1.19891266	0.963806341	0.435	0.082	0.517	-2.098
1=-0.0372798225396806544,2=-0.8195690953530168,3=-0.6374681410822151	-0.562	1.202787751	0.965101405	0.289	0.082	0.371	3.988
1=-0.0372798225396806544,2=-0.8195690953530168,3=-0.6374681410822151	-0.267	1.19865373	0.963942808	0.644	0.082	0.726	0.33
1=-0.037279822539806047,2=-0.8195690953530167,3=-0.6374681410822146	-0.252	1.198545765	0.963885195	0.662	0.082	0.744	-0.361
1=-0.0372798225396806544,2=-0.8195690953530168,3=-0.6374681410822151	-0.292	1.196000522	0.962477241	0.613	0.082	0.695	3.469
1=-0.0372798225396806544,2=-0.8195690953530168,3=-0.6374681410822151	-0.464	1.201023363	0.963352702	0.406	0.082	0.488	-2.572
1=-0.039540344457958246,2=-0.8191415538658865,3=-0.6386501749226037	-0.015	1.198545765	0.963885195	0.946		0.946	-7.752
1=-0.0372798225396806544,2=-0.8195690953530168,3=-0.6374681410822151	-0.293	1.185935291	0.957156008	0.609	0.082	0.691	0.031
1=-0.042910113065148206,2=-0.873573860492631,3=-0.632085167133571	-0.717	1.198545765	0.963885195	0.104		0.104	5.202
1=-0.0372798225396806544,2=-0.8195690953530168,3=-0.6374681410822151	-0.561	1.202171565	0.96492474	0.29	0.082	0.372	4.049
1=-0.0372798225396806544,2=-0.8195690953530168,3=-0.6374681410822151	-0.301	1.20033545	0.964925668	0.604	0.082	0.686	3.331
1=-0.0372798225396806544,2=-0.8195690953530168,3=-0.6374681410822146	-0.345	1.198545765	0.963885195	0.55	0.082	0.632	0.153
1=-0.0372798225396806544,2=-0.8195690953530169,3=-0.6374681410822148	-0.344	1.198545765	0.963885195	0.552	0.082	0.634	0.216
1=-0.037279822539806053,2=-0.8195690953530169,3=-0.6374681410822146	-0.319	1.198545765	0.963885195	0.581	0.082	0.663	0.396
1=-0.037285765224402052,2=-0.8195711504035579,3=-0.6264277773718168	-0.648	1.195735117	0.96294153	0.188	0.082	0.27	3.676
1=-0.0372798225396806544,2=-0.8195690953530168,3=-0.6374681410822151	-0.55	1.19652777	0.963306621	0.305	0.082	0.387	4.161
1=-0.0372798225396806544,2=-0.8195690953530168,3=-0.6374681410822151	-0.24	1.211727914	0.970919439	0.68	0.082	0.762	0.277
1=-0.0372798225396806544,2=-0.8195690953530168,3=-0.6374681410822151	-0.437	1.198520913	0.963890537	0.44	0.082	0.522	-2.286
1=-0.02471032935779584,2=-0.8185326176255691,3=-0.640333715033588	-0.092	1.198545765	0.963885195	0.854		0.854	6.731
1=-0.037279822539806544,2=-0.819569095353017,3=-0.6374681410822151	-0.352	1.198545765	0.963885195	0.542	0.082	0.624	0.354
1=-0.044500962334719264,2=-0.8182195905644611,3=-0.6411991481911284	0.033	1.198545765	0.963885195	1.004		1.004	-7.59
1=-0.0372798225396806544,2=-0.8195690953530168,3=-0.6374681410822151	-0.569	1.206184286	0.966075217	0.28	0.082	0.362	4.301
1=-0.037279822539806544,2=-0.8195690953530168,3=-0.6374681410822151	-0.295	1.202353628	0.966098979	0.611	0.082	0.693	3.225
1=-0.046466747039259994,2=-0.7752770685037907,3=-0.6286847621382454	-0.918	1.198545765	0.963885195	-0.136		-0.136	-7.087
1=-0.0372798225396806544,2=-0.8195690953530168,3=-0.6374681410822151	-0.252	1.212850318	0.971798057	0.666	0.082	0.748	4.037
1=-0.037279822539806544,2=-0.8195690953530168,3=-0.6374681410822151	-0.434	1.198279356	0.963942453	0.444	0.082	0.526	-2.143
1=-0.036131717001600526,2=-0.8057251589183565,3=-0.6385658148478295	-0.846	1.198545765	0.963885195	-0.05		-0.05	3.082
1=-0.037285765224402039,2=-0.8195711504035579,3=-0.6484971415010666	-0.626	1.175654963	0.956199691	0.22	0.082	0.302	4.086
1=-0.0372798225396806544,2=-0.8195690953530168,3=-0.6374681410822151	-0.312	1.196509257	0.962701228	0.589	0.082	0.671	3.346
1=-0.0372798225396806544,2=-0.8195690953530168,3=-0.6374681410822151	-0.29	1.187718542	0.958107585	0.614	0.082	0.696	0.335
1=-0.0372798225396806544,2=-0.8195690953530168,3=-0.6374681410822151	-0.308	1.198054808	0.963599767	0.595	0.082	0.677	3.379
1=-0.028330632797807884,2=-0.8200280310210829,3=-0.6361993110235088	-0.1	1.198545765	0.963885195	0.844		0.844	0.949
1=-0.030080524496644934,2=-0.8188482191312032,3=-0.6394611642497066	-0.066	1.198545765	0.963885195	0.885		0.885	6.509
2=-0.8408376034211004	-0.984	1.214929236	1.207846531	0.012		0.012	-0.493
2=-0.8408376034211004	-0.283	1.214929236	1.207846531	0.864		0.864	-0.299
2=-0.8408376034211004	-0.674	1.196111705	1.190538247	0.385	0.082	0.467	-0.234
2=-0.8408376034211004	-0.494	1.214929236	1.207846531	0.607	0.082	0.689	-0.311
2=-0.8408376034211004	-0.506	1.214929236	1.207846531	0.593	0.082	0.675	-0.297
2=-0.8408376034211004	-0.758	1.214929236	1.207846531	0.287	0.082	0.369	-0.376
2=-0.8408376034211004	-0.55	1.214929236	1.207846531	0.539	0.082	0.621	-0.219
2=-0.8408376034211004	-0.321	1.214929236	1.207846531	0.818		0.818	-0.601
2=-0.8408376034211004	-0.286	1.214929236	1.207846531	0.86		0.86	-0.336
2=-0.8408376034211004	-1.104	1.214929236	1.207846531	-0.134		-0.134	-0.76
2=-0.8408376034211004	-1.026	1.214929236	1.207846531	-0.039		-0.039	-0.581
2=-0.8408376034211004	-0.267	1.214929236	1.207846531	0.883		0.883	-0.454
2=-0.8408376034211004	-0.649	1.207110997	1.200655349	0.417	0.082	0.499	-0.228
2=-0.8408376034211004	-0.117	1.214929236	1.207846531	1.066		1.066	-0.185
2=-0.8408376034211004	-0.612	1.214929236	1.207846531	0.464	0.082	0.546	-0.388
2=-0.8408376034211004	-0.469	1.214929236	1.207846531	0.639	0.082	0.721	-0.297
2=-0.8408376034211004	-0.744	1.214929236	1.207846531	0.304	0.082	0.386	-0.426
2=-0.8408376034211004	-0.08	1.214929236	1.207846531	1.111		1.111	4.141
2=-0.8408376034211004	-0.541	1.214929236	1.207846531	0.551	0.082	0.633	17.813
2=-0.8434232886398524	-0.821	1.202590408	1.200804281	0.213	0.082	0.295	-0.35
2=-0.8408376034211004	-1.053	1.214929236	1.207846531	-0.071		-0.071	-0.614
2=-0.8408376034211004	-0.241	1.214929236	1.207846531	0.915		0.915	-0.501
2=-0.8408376034211004	-0.373	1.214929236	1.207846531	0.755	0.082	0.837	-0.223
2=-0.8408376034211004	-0.2	1.214929236	1.207846531	0.965		0.965	-0.316
2=-0.8331060524052312	-0.888	1.242427788	1.223599423	0.12	0.082	0.202	-0.468
2=-0.8408376034211004	-0.144	1.214929236	1.207846531	1.033		1.033	-0.227

2=-0.8408376034211004	-0.475	1.214929236	1.207846531	0.63	0.082	0.712	-0.275
2=-0.840837603421 1004	-0.448	1.214929236	1.207846531	0.664	0.082	0.746	-0.295
2=-0.8361028989348617	-0.877	1.236385668	1.220092553	0.136	0.082	0.218	-0.307
2=-0.8408376034211004	-0.5	1.214929236	1.207846531	0.6	0.082	0.682	-0.245
2=-0.840837603421 1004	-0.255	1.214929236	1.207846531	0.898		0.898	-0.343
2=-0.840837603421 1004	-0.812	1.214929236	1.207846531	0.222	0.082	0.304	-0.465
2=-0.8408376034211004	-0.48	1.214929236	1.207846531	0.624	0.082	0.706	-0.322
2=-0.840837603421 1004	-0.649	1.207011463	1.200563798	0.417	0.082	0.499	-0.274
2=-0.8408376034211004	-1.036	1.214929236	1.207846531	-0.051		-0.051	-0.607
2=-0.8408376034211004	-1.107	1.214929236	1.207846531	-0.136		-0.136	-0.543
2=-0.840837603421 1004	-0.335	1.214929236	1.207846531	0.8		0.8	-0.477
2=-0.8408376034211003	-0.461	1.214929236	1.207846531	0.648	0.082	0.73	-0.211
2=-0.840837603421 1004	-0.694	1.214929236	1.207846531	0.365	0.082	0.447	-0.385
2=-0.840837603421 1003	-0.463	1.214929236	1.207846531	0.646	0.082	0.728	-0.199
2=-0.8408376034211003	-0.457	1.214929236	1.207846531	0.653	0.082	0.735	-0.165
2=-0.8439464125741222	-0.822	1.201945226	1.200408478	0.213	0.082	0.295	-0.395
2=-0.840837603421 1004	-0.194	1.214929236	1.207846531	0.972		0.972	-0.268
2=-0.8404727519320679	-0.844	1.215968852	1.208439881	0.183	0.082	0.265	-0.326
2=-0.840837603421 1003	-0.511	1.214929236	1.207846531	0.587	0.082	0.669	-0.195
2=-0.840837603421 1004	-0.48	1.214929236	1.207846531	0.625	0.082	0.707	-0.211
2=-0.8408376034211	-1.358	1.214929236	1.207846531	-0.442	0.082	-0.36	-0.599
2=-0.840837603421 1004	-1.038	1.214929236	1.207846531	-0.054		-0.054	-0.534
2=-0.840837603421 1004	-0.451	1.214929236	1.207846531	0.66	0.082	0.742	-0.244
2=-0.840837603421 1004	-0.543	1.214929236	1.207846531	0.548	0.082	0.63	-0.331
2=-0.840837603421 1004	-0.502	1.214929236	1.207846531	0.598	0.082	0.68	-0.378
2=-0.840837603421 1004	-0.698	1.214929236	1.207846531	0.36	0.082	0.442	-0.322
2=-0.840837603421 1003	-2.128	1.214929236	1.207846531	-1.378	0.082	-1.296	-0.93
2=-0.840837603421 1003	-1.242	1.214929236	1.207846531	-0.301	0.082	-0.219	-0.535
2=-0.8408376034211	-0.525	1.214929236	1.207846531	0.57	0.082	0.652	-0.285
2=-0.840837603421 1004	-0.423	1.214929236	1.207846531	0.694	0.082	0.776	-0.208
2=-0.8408376034211	-0.543	1.214929236	1.207846531	0.548	0.082	0.63	-0.23
2=-0.840837603421 1004	-0.594	1.214929236	1.207846531	0.486	0.082	0.568	-0.304
2=-0.840837603421 1003	-0.532	1.214929236	1.207846531	0.562	0.082	0.644	-0.266
2=-0.840837603421 1004	-0.299	1.214929236	1.207846531	0.844		0.844	-0.326
2=-0.840837603421 1004	-0.618	1.214929236	1.207846531	0.458	0.082	0.54	-0.33
2=-0.840837603421 1004	-0.408	1.214929236	1.207846531	0.712		0.712	-0.43
2=-0.840837603421 1003	-0.599	1.214929236	1.207846531	0.48	0.082	0.562	-0.305
2=-0.840837603421 1004	-0.51	1.214929236	1.207846531	0.588	0.082	0.67	-0.277
2=-0.840837603421 1003	-1.858	1.214929236	1.207846531	-1.049	0.082	-0.967	-0.758
2=-0.840837603421 1004	-1.13	1.214929236	1.207846531	-0.165		-0.165	-0.616
2=-0.840837603421 1004	-0.224	1.214929236	1.207846531	0.935		0.935	-0.272
2=-0.840837603421 1004	-0.563	1.214929236	1.207846531	0.524	0.062	0.586	-0.356
2=-0.840837603421 1004	-0.247	1.214929236	1.207846531	0.908		0.908	-0.309
2=-0.840837603421 1004	-0.264	1.214929236	1.207846531	0.887		0.887	-0.314
2=-0.840837603421 1004	-0.911	1.214929236	1.207846531	0.101		0.101	-0.45
2=-0.8408376034211	-0.563	1.214929236	1.207846531	0.523	0.082	0.605	-0.19
2=-0.8408376034211003	-1.834	1.214929236	1.207846531	-1.021	0.082	-0.939	-0.687
2=-0.840837603421 1004	-1.014	1.214929236	1.207846531	-0.024		-0.024	-0.49
2=-0.840837603421 1004	-0.462	1.247247789	1.23367583	0.657	0.082	0.739	-0.277
2=-0.840837603421 1004	-0.429	1.214929236	1.207846531	0.687	0.082	0.769	-0.171
2=-0.840837603421 1004	-0.596	1.231706171	1.223277884	0.489	0.082	0.571	-0.174
2=-0.840837603421 1004	-0.687	1.214929236	1.207846531	0.373	0.082	0.455	-0.28
2=-0.8454278937496892	-0.813	1.196637007	1.197367598	0.225	0.082	0.307	-0.392
2=-0.840837603421 1004	-0.186	1.214929236	1.207846531	0.982		0.982	-0.199
2=-0.840837603421 1004	-0.21	1.214929236	1.207846531	0.953		0.953	-0.18
2=-0.840837603421 1004	-0.49	1.214929236	1.207846531	0.612	0.082	0.694	-0.249
2=-0.840837603421 1004	-0.459	1.214929236	1.207846531	0.65	0.082	0.732	-0.26
2=-0.840837603421 1004	-0.688	1.214929236	1.207846531	0.372	0.082	0.454	-0.4
2=-0.840837603421 1004	-0.44	1.214929236	1.207846531	0.674	0.082	0.756	-0.21
2=-0.840837603421 1004	-0.967	1.214929236	1.207846531	0.033		0.033	-0.523
2=-0.840837603421 1004	-1.017	1.214929236	1.207846531	-0.028		-0.028	-0.439
2=-0.8445847072117015	-0.812	1.197367469	1.197823346	0.225	0.082	0.307	-0.256
2=-0.840837603421 1004	-0.247	1.214929236	1.207846531	0.908		0.908	-0.277
2=-0.840837603421 1004	-0.148	1.214929236	1.207846531	1.028		1.028	-0.174
2=-0.840837603421 1004	-0.624	1.218569936	1.211195232	0.451	0.082	0.533	-0.302
2=-0.840837603421 1004	-0.485	1.21185338	1.205388278	0.618	0.082	0.7	-0.264
2=-0.840837603421 1004	-0.196	1.214929236	1.207846531	0.97		0.97	-0.267
2=-0.840837603421 1004	-0.412	1.214929236	1.207846531	0.707	0.082	0.789	-0.21

2=-0.8408376034211004	-0.423	1.214929236	1.207846531	0.694	0.082	0.776	-0.184
2=-0.8408376034211004	-0.168	1.214929236	1.207846531	1.004		1.004	-0.17
2=-0.8408376034211004	-0.799	1.214929236	1.207846531	0.238	0.082	0.32	-0.388
2=-0.8408376034211004	-0.614	1.214929236	1.207846531	0.462	0.082	0.544	-0.347
2=-0.8408376034211004	-0.44	1.214929236	1.207846531	0.673	0.082	0.755	-0.218
2=-0.8408376034211004	-0.696	1.214929236	1.207846531	0.362	0.082	0.444	-0.247
2=-0.8408376034211004	-0.193	1.214929236	1.207846531	0.973		0.973	-0.304
2=-0.8408376034211004	-0.239	1.214929236	1.207846531	0.917		0.917	-0.278
2=-0.8396205920699701	-0.85	1.219895805	1.210681146	0.174	0.082	0.256	-0.335
2=-0.8408376034211004	-0.5	1.214929236	1.207846531	0.6	0.082	0.682	-0.275
2=-0.8408376034211004	-0.769	1.214929236	1.207846531	0.274	0.082	0.356	-0.418
2=-0.8408376034211004	-0.939	1.214929236	1.207846531	0.068		0.068	-0.434
2=-0.8408376034211004	-1.004	1.214929236	1.207846531	-0.012		-0.012	-0.46
2=-0.8408376034211004	-0.857	1.214929236	1.207846531	0.167	0.082	0.249	-0.508
2=-0.8408376034211004	-0.201	1.214929236	1.207846531	0.963		0.963	-0.188
2=-0.8408376034211004	-0.522	1.214929236	1.207846531	0.573	0.082	0.655	-0.281
2=-0.8408376034211004	-1.08	1.214929236	1.207846531	-0.105		-0.105	-0.546
2=-0.8408376034211004	-0.47	1.214929236	1.207846531	0.636	0.082	0.718	-0.206
2=-0.8408376034211004	-0.775	1.214929236	1.207846531	0.266	0.082	0.348	-0.368
2=-0.8408376034211004	-0.494	1.214929236	1.207846531	0.607	0.082	0.689	-0.248
2=-0.8408376034211004	-0.819	1.214929236	1.207846531	0.213	0.082	0.295	-0.344
2=-0.8408376034211004	-0.256	1.214929236	1.207846531	0.897		0.897	-0.23
2=-0.8408376034211004	-1.136	1.214929236	1.207846531	-0.172		-0.172	-0.616
2=-0.8408376034211004	-0.442	1.214929236	1.207846531	0.671	0.082	0.753	-0.245
1=-0.028724886454931858,2=-0.737505060926956,3=-0.6186269516721761	-0.757	1.258386047	0.963092356	0.011		0.011	2.395
1=-0.03130070809473073,2=-0.7412956094142923,3=-0.6192509823116246	-0.377	1.257272451	0.965664492	0.491	0.082	0.573	-0.715
1=-0.015088345973302133,2=-0.7412632707813939,3=-0.6195828403735599	-0.085	1.258386047	0.963092356	0.856		0.856	0.688
1=-0.02942911284203014,2=-0.7383093152837943,3=-0.6187975608618294	-0.753	1.258386047	0.963092356	0.015		0.015	2.286
1=-0.03130070809473073,2=-0.7412956094142923,3=-0.6192509823116246	-0.281	1.258386047	0.963092356	0.61	0.082	0.692	0.514
1=-0.04135276437415358,2=-0.7413245448262279,3=-0.6189540479991427	0.004	1.258386047	0.963092356	0.968		0.968	0.528
1=-0.03130070809473073,2=-0.7412956094142923,3=-0.6192509823116246	-0.232	1.258386047	0.963092356	0.671	0.082	0.753	0.51
1=-0.03130070809473073,2=-0.7412956094142923,3=-0.6192509823116246	-0.239	1.267667562	0.968154178	0.666	0.082	0.748	0.124
1=-0.02546537460029194,2=-0.7489712678989594,3=-0.6178372870325464	-0.711	1.258386047	0.963092356	0.068		0.068	0.121
1=-0.03161199450966029,2=-0.7412882605609945,3=-0.6169120360014355	-0.627	1.26582648	0.965377083	0.172	0.082	0.254	-0.759
1=-0.03130070809473073,2=-0.7412956094142923,3=-0.6192509823116246	-0.428	1.258755763	0.962238402	0.423	0.082	0.505	-0.682
1=-0.03336337466978,2=-0.7485724299416187,3=-0.6197506935967189	-0.712	1.258386047	0.963092356	0.067		0.067	0.887
1=-0.03130070809473073,2=-0.7412956094142923,3=-0.6192509823116246	-0.291	1.258386976	0.963092904	0.597	0.082	0.679	0.938
1=-0.03130070809473073,2=-0.7412956094142923,3=-0.6192509823116246	-0.309	1.258386047	0.963092356	0.575	0.082	0.657	0.428
1=-0.039267516112924124,2=-0.7310717349768161,3=-0.6211810586123837	-0.781	1.258386047	0.963092356	-0.02		-0.02	-0.431
1=-0.03115135229454417,2=-0.7412991354077573,3=-0.6203986148635968	-0.616	1.256001861	0.962360247	0.189	0.082	0.271	-0.74
1=-0.03130070809473073,2=-0.7412956094142923,3=-0.6192509823116246	-0.27	1.259494263	0.963717212	0.624	0.082	0.706	1.251
1=-0.04981529531020579,2=-0.7412574614338457,3=-0.6196424557204606	0.018	1.258386047	0.963092356	0.985		0.985	1.88
1=-0.03130070809473073,2=-0.7412956094142923,3=-0.6192509823116246	-0.393	1.257727432	0.964613597	0.47	0.082	0.552	-0.839
1=-0.03130070809473073,2=-0.7412956094142923,3=-0.6192509823116246	-0.266	1.258386047	0.963092356	0.628	0.082	0.71	0.04
1=-0.03130070809473073,2=-0.7412956094142923,3=-0.6192509823116246	-0.259	1.258386047	0.963092356	0.637	0.082	0.719	0.486
1=-0.03130070809473098,2=-0.7412956094142924,3=-0.6192509823116246	-0.263	1.258386047	0.963092356	0.632	0.082	0.714	0.109
1=-0.03130070809473128,2=-0.7412956094142922,3=-0.6192509823116246	-0.28	1.258386047	0.963092356	0.61	0.082	0.692	0.182
1=-0.03130070809473073,2=-0.7412956094142923,3=-0.6192509823116246	-0.547	1.267728962	0.965238336	0.272	0.082	0.354	1.273
1=-0.03130070809473084 5,2=-0.7412956094142922,3=-0.6192509823116248	-0.256	1.258386047	0.963092356	0.641	0.082	0.723	0.172
1=-0.03130070809473086,2=-0.7412956094142923,3=-0.6192509823116247	-0.259	1.258386047	0.963092356	0.637	0.082	0.719	0.209
1=-0.03130070809473073,2=-0.7412956094142923,3=-0.6192509823116246	-0.254	1.258386312	0.963092501	0.644	0.082	0.726	-0.047
1=-0.01982826307690555,2=-0.7413181927180071,3=-0.6190192331394678	-0.062	1.258386047	0.963092356	0.885		0.885	1.895
1=-0.030759919066536 38,2=-0.7413083763679493,3=-0.6177070475278551	-0.623	1.26151411	0.964055251	0.178	0.082	0.26	1.09
1=-0.030983260584106175,2=-0.7413031037188091,3=-0.6216609430159012	-0.612	1.252481188	0.961279158	0.195	0.082	0.277	-0.871
1=-0.03130070809473073,2=-0.7412956094142923,3=-0.6192509823116246	-0.307	1.251305052	0.958919727	0.575	0.082	0.657	0.962
1=-0.03130070809473073,2=-0.7412956094142923,3=-0.6192509823116246	-0.289	1.258386047	0.963092356	0.6	0.082	0.682	0.426
1=-0.03130070809473073,2=-0.7412956094142923,3=-0.6192509823116246	-0.279	1.254434783	0.960864479	0.611	0.082	0.693	1.197
1=-0.03130070809473073,2=-0.7412956094142923,3=-0.6192509823116246	-0.529	1.259164293	0.963271112	0.298	0.082	0.38	1.163
1=-0.03130070809473073,2=-0.7412956094142923,3=-0.6192509823116246	-0.254	1.258178986	0.962979432	0.644	0.082	0.726	0.112
1=-0.03130070809473073,2=-0.7412956094142923,3=-0.6192509823116246	-0.29	1.248967456	0.957781786	0.596	0.082	0.678	1.361
1=-0.033210926619664086,2=-0.6992549799272896,3=-0.6060881915259552	-0.024	1.334929305	0.991069994	0.959		0.959	1.903
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.242	1.338959593	0.993217112	0.669	0.082	0.751	0.086
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.251	1.334929305	0.991069994	0.656	0.082	0.738	0.5
1=-0.03253420028060354,2=-0.699313109467133,3=-0.6060459140094879	-0.298	1.334929305	0.991069994	0.593	0.082	0.675	0.084
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.516	1.334588003	0.990986464	0.302	0.082	0.384	1.084
1=-0.03253420028060359,2=-0.699313109467133,3=-0.6060459140094878	-0.328	1.334929305	0.991069994	0.553	0.082	0.635	0.178
1=-0.032534200280603 61,2=-0.6993131094671331,3=-0.6060459140094882	-0.272	1.334929305	0.991069994	0.628	0.082	0.71	-0.068
1=-0.03253420028060355,2=-0.699313109467133,3=-0.6060459140094878	-0.356	1.334929305	0.991069994	0.516	0.082	0.598	-0.02

1=-0.03276601826248141,2=-0.6992670766315614,3=-0.6060793936133029	-0.029	1.334929305	0.991069994	0.952		0.952	0.559
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.396	1.334276517	0.991338365	0.462	0.082	0.544	-0.707
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.287	1.334929305	0.991069994	0.608	0.082	0.69	0.071
1=-0.03253420028060358,2=-0.699313109467133,3=-0.606045914009488	-0.241	1.334929305	0.991069994	0.67	0.082	0.752	0.01
1=-0.032534200280603415,2=-0.6993131094671331,3=-0.6060459140094878	-0.267	1.334929305	0.991069994	0.635	0.082	0.717	0.17
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.299	1.334929305	0.991069994	0.592	0.082	0.674	0.462
1=-0.032534200280603456,2=-0.6993131094671332,3=-0.6060459140094878	-0.295	1.334929305	0.991069994	0.598	0.082	0.68	0.055
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.308	1.332894882	0.989877625	0.58	0.082	0.662	0.921
1=-0.03253420028060526,2=-0.6993131094671331,3=-0.6060459140094878	-0.266	1.334929305	0.991069994	0.636	0.082	0.718	0.019
1=-0.03253420028060304,2=-0.699313109467133,3=-0.6060459140094878	-0.287	1.334929305	0.991069994	0.607	0.082	0.689	0.104
1=-0.0325925608747221 35,2=-0.6993852595703428,3=-0.6050994015256475	-0.612	1.338221029	0.992067445	0.173	0.082	0.255	-0.913
1=-0.03230183594765491,2=-0.7034093848318418,3=-0.606254843286217	-0.681	1.334929305	0.991069994	0.081		0.081	0.528
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.249	1.334929305	0.991069994	0.659	0.082	0.741	0.572
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.304	1.333433769	0.990193465	0.584	0.082	0.666	0.973
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.439	1.335988148	0.990634688	0.404	0.082	0.486	-0.967
1=-0.03275203166082941,2=-0.6995824102993634,3=-0.6025422491651478	-0.629	1.344817414	0.994066266	0.148	0.082	0.23	-0.836
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.28	1.330357795	0.988634543	0.616	0.082	0.698	0.113
1=-0.03248705934115299,2=-0.6992548300116529,3=-0.6049011388408307	-0.614	1.338503192	0.992155095	0.17	0.082	0.252	1.066
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.264	1.33750525	0.992498815	0.639	0.082	0.721	1.139
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.284	1.336720712	0.992119933	0.612	0.082	0.694	1.012
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.28	1.334929305	0.991069994	0.617	0.082	0.699	0.422
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.264	1.334031357	0.990591617	0.638	0.082	0.72	-0.105
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.509	1.332988241	0.990594938	0.312	0.082	0.394	0.996
1=-0.03249812878545939,2=-0.6992685149571412,3=-0.605171359860826	-0.612	1.3377249	0.991918791	0.173	0.082	0.255	1.2
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.428	1.335514153	0.990829554	0.42	0.082	0.502	-0.712
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.251	1.334929305	0.991069994	0.656	0.082	0.738	0.504
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.253	1.336519221	0.991917015	0.654	0.082	0.736	0.074
1=-0.032723289582284015,2=-0.6995468770090529,3=-0.6030233297171949	-0.626	1.343567887	0.993687637	0.153	0.082	0.235	-0.817
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.271	1.336096665	0.991717504	0.629	0.082	0.711	1.355
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.293	1.331925052	0.989403601	0.6	0.082	0.682	1.388
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.269	1.334929305	0.991069994	0.632	0.082	0.714	0.628
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.282	1.337058149	0.992317704	0.615	0.082	0.697	1.094
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.519	1.335271288	0.991153691	0.298	0.082	0.38	1.397
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.265	1.33372279	0.990427229	0.637	0.082	0.719	0.031
1=-0.03231753624887357,2=-0.7029965708953779,3=-0.6062407264355953	-0.683	1.334929305	0.991069994	0.079		0.079	0.452
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.439	1.335987578	0.990634922	0.404	0.082	0.486	-0.917
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.275	1.334929305	0.991069994	0.623	0.082	0.705	0.517
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.295	1.335034542	0.991131673	0.598	0.082	0.68	0.999
1=-0.03272275794763643,2=-0.6995462197591519,3=-0.610604363052466	-0.573	1.322260819	0.987223597	0.23	0.082	0.312	1.376
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.527	1.337006022	0.99157825	0.287	0.082	0.369	1.395
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.263	1.337712819	0.992613949	0.641	0.082	0.723	1.269
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.272	1.33866841	0.993261473	0.629	0.082	0.711	1.055
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.262	1.334467076	0.990823744	0.641	0.082	0.723	0.077
1=-0.03241533611724058,2=-0.6993368652201445,3=-0.6060286364903152	-0.034	1.334929305	0.991069994	0.945		0.945	0.532
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.276	1.335240461	0.991242586	0.623	0.082	0.705	1.385
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.281	1.330134985	0.988515842	0.614	0.082	0.696	0.034
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.49	1.328765057	0.989561355	0.338	0.082	0.42	1.364
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.312	1.334929305	0.991069994	0.574	0.082	0.656	0.52
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.271	1.336182914	0.991765344	0.63	0.082	0.712	1.415
1=-0.03340643514135869,2=-0.699137064475976,3=-0.6061739512351859	-0.02	1.334929305	0.991069994	0.964		0.964	0.453
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.527	1.337023446	0.991582515	0.287	0.082	0.369	1.182
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.249	1.334929305	0.991069994	0.659	0.082	0.741	0.526
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.294	1.335199147	0.991228148	0.599	0.082	0.681	0.962
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.269	1.332898928	0.98998832	0.632	0.082	0.714	0.041
1=-0.03252641398851229,2=-0.6993034834208857,3=-0.6058545033112552	-0.607	1.335760487	0.991322357	0.18	0.082	0.262	1.279
1=-0.033964122422547774,2=-0.6991932954363984,3=-0.606133054552335	-0.014	1.334929305	0.991069994	0.972		0.972	2.327
1=-0.03267948166987198,2=-0.6963091569169216,3=-0.6059152849443602	-0.712	1.334929305	0.991069994	0.04		0.04	0.698
1=-0.0284421631410438,2=-0.6996698762329125,3=-0.6057864381413506	-0.085	1.334929305	0.991069994	0.877		0.877	2.065
1=-0.034911254962999544,2=-0.6991087674553333,3=-0.6061945316106614	-0.002	1.334929305	0.991069994	0.989		0.989	2.391
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.277	1.334929305	0.991069994	0.621	0.082	0.703	0.356
1=-0.03273150480894386,2=-0.6992780593303036,3=-0.6060714059149972	-0.03	1.334929305	0.991069994	0.951		0.951	0.719
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.258	1.33873939	0.993183366	0.648	0.082	0.73	1.262
1=-0.0312325145 16604665,2=-0.6994167231887323,3=-0.605970555924202	-0.049	1.334929305	0.991069994	0.925		0.925	2.15
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.497	1.330333077	0.989945113	0.329	0.082	0.411	1.256
1=-0.032636280239045135,2=-0.6993351076078524,3=-0.6060299147987767	-0.032	1.334929305	0.991069994	0.949		0.949	3.092
1=-0.03270848649657078,2=-0.699528576233021,3=-0.6103793898616902	-0.574	1.322907862	0.987420052	0.227	0.082	0.309	1.388
1=-0.03035540588967711,2=-0.6988298105799331,3=-0.606397416476518	-0.054	1.334929305	0.991069994	0.92		0.92	3.156
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.271	1.336128799	0.991735328	0.63	0.082	0.712	1.356

1=-0.036213009392467 87,2=-0.7001402602608467,3=-0.6054443286297225	0.003	1.334929305	0.991069994	0.995		0.995	3.221
1=-0.03160840965725777,2=-0.6854820816612672,3=-0.6068783342130705	-0.749	1.334929305	0.991069994	-0.009		-0.009	2.28
1=-0.032534200280603436,2=-0.6993131094671332,3=-0.6060459140094878	-0.295	1.331389945	0.989106788	0.596	0.082	0.678	1.343
1=-0.03050985547199154,2=-0.6988765526209572,3=-0.6063634210687712	-0.052	1.334929305	0.991069994	0.921		0.921	3.109
1=-0.03313889506250006,2=-0.7075722301133718,3=-0.6055022055933963	-0.67	1.334929305	0.991069994	0.097		0.097	2.442
1=-0.0113850882543819,2=-0.7990349922396368,3=-0.6725637712531807	-0.013	1.156359881	0.964607687	0.949		0.949	0.61
1=-0.011489832635193523,2=-0.7990164838529652,3=-0.6725736938652315	-0.299	1.156359881	0.964607687	0.619	0.082	0.701	-1.152
1=-0.011489832635193325,2=-0.7990164838529651,3=-0.6725736938652312	-0.296	1.156359881	0.964607687	0.623	0.082	0.705	-1.065
1=-0.011489832635193304,2=-0.7990164838529654,3=-0.6725736938652314	-0.294	1.156359881	0.964607687	0.625	0.082	0.707	-1.297
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.459	1.156170153	0.964322514	0.433	0.082	0.515	-1.831
1=-0.011489832635193709,2=-0.799016483852965,3=-0.6725736938652316	-0.412	1.156359881	0.964607687	0.488	0.082	0.57	-1.017
1=-0.011542067007344352,2=-0.8008825317756901,3=-0.6728484135960491	-0.763	1.156359881	0.964607687	0.083		0.083	-1.235
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.562	1.154663927	0.964244512	0.316	0.082	0.398	0.663
1=-0.01184203980524667,2=-0.798909796672137,3=-0.6726308903959154	-0.006	1.156359881	0.964607687	0.958		0.958	-0.108
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.279	1.156359881	0.964607687	0.642	0.082	0.724	-0.226
1=-0.01150461255514351,2=-0.8013981015481388,3=-0.6726514268878164	-0.761	1.156359881	0.964607687	0.085		0.085	0.155
1=-0.011498926292354397,2=-0.8009178086039589,3=-0.6726215207452049	-0.769	1.156359881	0.964607687	0.075		0.075	0.334
1=-0.009091279837097 67,2=-0.799739614113329,3=-0.6721860133416268	-0.049	1.156359881	0.964607687	0.908		0.908	-0.083
1=-0.011490001752576 55,2=-0.7990478836019035,3=-0.6725745833156074	-0.799	1.156359881	0.964607687	0.041		0.041	-1.058
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.455	1.156330178	0.964563042	0.439	0.082	0.521	-1.529
1=-0.011523752025490221,2=-0.8007448112017834,3=-0.6727520883856986	-0.768	1.156359881	0.964607687	0.077		0.077	-1.143
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.294	1.156359881	0.964607687	0.625	0.082	0.707	-0.797
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.279	1.155769727	0.96425069	0.641	0.082	0.723	0.961
1=-0.011480927473794499,2=-0.7975566210566553,3=-0.6725268583536381	-0.822	1.156359881	0.964607687	0.014		0.014	-2.546
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.592	1.15866524	0.965101362	0.279	0.082	0.361	-2.499
1=-0.011458269024926 18,2=-0.7993261278734783,3=-0.6697379325360258	-0.696	1.162480709	0.96674075	0.157	0.082	0.239	-1.597
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.305	1.154494585	0.963453466	0.612	0.082	0.694	-0.948
1=-0.011483626019905939,2=-0.7987303011614363,3=-0.6725410225973022	-0.804	1.156359881	0.964607687	0.035		0.035	-1.368
1=-0.011501926590501683,2=-0.7988978402341345,3=-0.6716118762757854	-0.682	1.15800528	0.965182971	0.176	0.082	0.258	-0.772
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.448	1.156550543	0.964894266	0.447	0.082	0.529	-1.525
1=-0.013676109871690047,2=-0.7982484880462748,3=-0.6729854274529181	0.022	1.156359881	0.964607687	0.99		0.99	-0.493
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.293	1.151826474	0.961865327	0.624	0.082	0.706	-0.991
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.302	1.156359881	0.964607687	0.615	0.082	0.697	-0.882
1=-0.011484022871046629,2=-0.7987973611441626,3=-0.6725431381836589	-0.803	1.156359881	0.964607687	0.036		0.036	-1.338
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.465	1.155996894	0.964062094	0.427	0.082	0.509	-1.594
1=-0.010558978130340438,2=-0.7985406741151674,3=-0.6728287823028151	-0.027	1.156359881	0.964607687	0.933		0.933	1.074
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.563	1.154770635	0.964267362	0.315	0.082	0.397	0.049
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.325	1.15480241	0.963615709	0.588	0.082	0.67	-0.026
1=-0.011489095309695533,2=-0.7988951465186928,3=-0.6725698159998722	-0.801	1.156359881	0.964607687	0.038		0.038	-1.393
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.265	1.159850128	0.966719016	0.659	0.082	0.741	-0.879
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.303	1.156359881	0.964607687	0.614	0.082	0.696	-0.649
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.298	1.160767201	0.967414782	0.621	0.082	0.703	-0.024
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.597	1.159273888	0.9652317	0.273	0.082	0.355	-0.008
1=-0.008082404393907098,2=-0.7995868605891252,3=-0.6722679067009446	-0.065	1.156359881	0.964607687	0.889		0.889	0.863
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.295	1.151241203	0.961511283	0.621	0.082	0.703	-0.799
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.298	1.156359881	0.964607687	0.62	0.082	0.702	-0.609
1=-0.013657161325327367,2=-0.8000728369850372,3=-0.672007367771856	0.025	1.156359881	0.964607687	0.994		0.994	1.586
1=-0.011481224108472372,2=-0.7991009348648132,3=-0.6717948597603242	-0.679	1.157713404	0.96507938	0.179	0.082	0.261	-0.904
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.288	1.158657474	0.966029409	0.632	0.082	0.714	-0.016
1=-0.011506426198474 53,2=-0.8006934847890358,3=-0.672660965503621	-0.771	1.156359881	0.964607687	0.073		0.073	-0.646
1=-0.011480562908211771,2=-0.799107421344 19,3=-0.6733110792076793	-0.665	1.153473293	0.963598445	0.196	0.082	0.278	-0.019
1=-0.011581971005186 12,2=-0.7967411578686893,3=-0.6730582833636792	-0.819	1.156359881	0.964607687	0.018		0.018	0.977
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.58	1.157008768	0.964746641	0.294	0.082	0.376	0.161
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.302	1.159819386	0.966811103	0.616	0.082	0.698	-0.181
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.287	1.156359881	0.964607687	0.633	0.082	0.715	-0.404
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.451	1.156446942	0.964738547	0.443	0.082	0.525	-1.815
1=-0.011009736411952643,2=-0.7990992726798058,3=-0.6725293095855277	-0.019	1.156359881	0.964607687	0.943		0.943	1.115
1=-0.011491998307393643,2=-0.7989952382653573,3=-0.6727716056076571	-0.671	1.155461469	0.964294597	0.189	0.082	0.271	-1.682
1=-0.011488282095584139,2=-0.7988535967408399,3=-0.6725655390084464	-0.802	1.156359881	0.964607687	0.038		0.038	-0.183
1=-0.013234446522611704,2=-0.7995713665746228,3=-0.6722762132647605	0.017	1.156359881	0.964607687	0.985		0.985	0.593
1=-0.011480267762902 59,2=-0.7991103167664618,3=-0.6733440920107796	-0.665	1.153387329	0.96356839	0.196	0.082	0.278	0.238
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.576	1.156479746	0.964633356	0.299	0.082	0.381	0.314
1=-0.011562825300954982,2=-0.7966878808686286,3=-0.6729575890795114	-0.822	1.156359881	0.964607687	0.014		0.014	0.092
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.47	1.155823383	0.963801295	0.421	0.082	0.503	-1.721
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.268	1.159010575	0.966211152	0.656	0.082	0.738	-0.77
1=-0.012992079785342508,2=-0.7987602301179015,3=-0.6727110751748384	0.012	1.156359881	0.964607687	0.979		0.979	1.079
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.281	1.156359881	0.964607687	0.64	0.082	0.722	-0.309
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.337	1.152150619	0.96192674	0.574	0.082	0.656	0.087

1=-0.011573931534369107,2=-0.7990440324271278,3=-0.6725589246787634	-0.01	1.156359881	0.964607687	0.953		0.953	0.998
1=-0.011525287252707387,2=-0.7986686684345213,3=-0.6757876476706304	-0.646	1.14856308	0.961890561	0.22	0.082	0.302	-1.737
1=-0.011493036719517097,2=-0.7989850512778055,3=-0.6723170616148557	-0.675	1.156119802	0.964523748	0.184	0.082	0.266	0.508
1=-0.010214914467418701,2=-0.7985974940170997,3=-0.6727983203369157	-0.033	1.156359881	0.964607687	0.927		0.927	0.906
1=-0.011423710921691 86,2=-0.7958695508390884,3=-0.6722259355102159	-0.857	1.156359881	0.964607687	-0.026		-0.026	-0.938
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.311	1.156359881	0.964607687	0.606	0.082	0.688	-0.785
1=-0.011489832635193853,2=-0.799016483852965,3=-0.6725736938652316	-0.405	1.156359881	0.964607687	0.496	0.082	0.578	-0.667
1=-0.011490555280467388,2=-0.7990093945882694,3=-0.6726380278148238	-0.672	1.155769359	0.964401895	0.188	0.082	0.27	-1.739
1=-0.011489832635193 76,2=-0.7990164838529653,3=-0.6725736938652316	-0.387	1.156359881	0.964607687	0.517	0.082	0.599	-0.684
1=-0.011489832635193783,2=-0.7990164838529654,3=-0.6725736938652318	-0.401	1.156359881	0.964607687	0.5	0.082	0.582	-0.736
1=-0.01153210634494368,2=-0.7976573129994109,3=-0.6727960268173657	-0.813	1.156359881	0.964607687	0.025		0.025	0.27
1=-0.010562489414019067,2=-0.7993288642302482,3=-0.6724062222562187	-0.026	1.156359881	0.964607687	0.935		0.935	-0.181
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.268	1.15892153	0.966157287	0.655	0.082	0.737	-0.765
1=-0.012273087203189557,2=-0.7991469076180878,3=-0.6725037718106238	0.001	1.156359881	0.964607687	0.966		0.966	-0.465
1=-0.011471321827294701,2=-0.7981513438084313,3=-0.6724763387338542	-0.815	1.156359881	0.964607687	0.022		0.022	-0.806
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.252	1.156359881	0.964607687	0.673	0.082	0.755	-0.266
1=-0.012376170322919515,2=-0.7991657456102431,3=-0.672493672492337	0.003	1.156359881	0.964607687	0.968		0.968	-0.471
1=-0.011491969556 59965,2=-0.798995520315203,3=-0.6724047813032936	-0.674	1.155886253	0.964442092	0.185	0.082	0.267	0.294
1=-0.010563851423680047,2=-0.7993252350195568,3=-0.6724081679282203	-0.026	1.156359881	0.964607687	0.935		0.935	-0.244
1=-0.011489832635193651,2=-0.7990164838529651,3=-0.6725736938652319	-0.281	1.160371648	0.967090118	0.641	0.082	0.723	0.795
1=-0.012087064056943403,2=-0.7991128755649036,3=-0.6725220168833601	-0.002	1.156359881	0.964607687	0.963		0.963	-0.604
3=-0.666900519144065	-0.034	1.149339772	0.947509318	0.909		0.909	-0.447
3=-0.6675451723479657	-0.636	1.145691604	0.946309301	0.218	0.082	0.3	0.668
3=-0.666900519144065	-0.282	1.147158981	0.946203465	0.623	0.082	0.705	-0.757
3=-0.666900519144065	0.005	1.149339772	0.947509318	0.953		0.953	0.57
3=-0.666900519144065	-0.798	1.149339772	0.947509318	0.03		0.03	-1.125
3=-0.666900519144065	-0.539	1.14785045	0.947219516	0.329	0.082	0.411	0.746
3=-0.666900519144065	-0.289	1.1508544	0.948469998	0.616	0.082	0.698	0.646
3=-0.666900519144065	-0.804	1.149339772	0.947509318	0.023		0.023	-1.291
3=-0.666900519144065	-0.262	1.149630145	0.947683193	0.647	0.082	0.729	-0.324
3=-0.666900519144065	-0.385	1.149339772	0.947509318	0.505	0.082	0.587	0.308
3=-0.666900519144065	0.019	1.149339772	0.947509318	0.969		0.969	-0.447
3=-0.666900519144065	-0.305	1.147032285	0.946092239	0.596	0.082	0.678	0.922
3=-0.666900519144065	-0.775	1.149339772	0.947509318	0.057		0.057	0.208
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3=-0.666900519144065	0.038	1.149339772	0.947509318	0.991		0.991	-0.487
3=-0.666900519144065	-0.3	1.149824817	0.947816966	0.603	0.082	0.685	0.63
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3=-0.666900519144065	-0.352	1.149339772	0.947509318	0.543	0.082	0.625	-0.04
3=-0.666451614101533	-0.689	1.152273394	0.948474294	0.155	0.082	0.237	0.372
3=-0.666900519144065	0.004	1.149339772	0.947509318	0.952		0.952	-0.353
3=-0.666900519144065	-0.553	1.14869317	0.947383498	0.312	0.082	0.394	0.866
3=-0.6640417557013011	-0.698	1.153628121	0.948914965	0.143	0.082	0.225	0.748
3=-0.666900519144065	-0.814	1.149339772	0.947509318	0.012		0.012	-1.425
3=-0.666900519144065	-0.28	1.149833753	0.947812682	0.626	0.082	0.708	-0.191
3=-0.666900519144065	-0.441	1.149342759	0.947514593	0.44	0.082	0.522	-1.637
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3=-0.666900519144065	-0.278	1.147665923	0.94650702	0.628	0.082	0.71	-0.805
3=-0.666900519144065	-0.335	1.146516321	0.945718492	0.562	0.082	0.644	-0.106
3=-0.6661769168581735	-0.702	1.153872759	0.949000384	0.139	0.082	0.221	-0.033
3=-0.666900519144065	-0.611	1.152240459	0.948073752	0.244	0.082	0.326	-0.495
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3=-0.6680714984302639	-0.654	1.148187433	0.947131601	0.196	0.082	0.278	-1.496
3=-0.666900519144065	-0.822	1.149339772	0.947509318	0.003		0.003	-0.143
3=-0.666900519144065	-0.027	1.149339772	0.947509318	0.916		0.916	0.361
3=-0.666900519144065	-0.272	1.148350912	0.94691719	0.634	0.082	0.716	-0.776
3=-0.666900519144065	-0.298	1.150018595	0.947939874	0.605	0.082	0.687	0.55
3=-0.666900519144065	-0.844	1.149339772	0.947509318	-0.023		-0.023	-1.064
3=-0.6668543724548371	-0.669	1.149827128	0.947669627	0.178	0.082	0.26	0.831
3=-0.6677056723187157	-0.658	1.148686278	0.947295114	0.191	0.082	0.273	-1.74
3=-0.666900519144065	-0.007	1.149339772	0.947509318	0.94		0.94	-0.702
3=-0.666900519144065	-0.294	1.15043172	0.948201906	0.611	0.082	0.693	-0.159
3=-0.6668859712917137	-0.668	1.149641895	0.947608697	0.18	0.082	0.262	-0.067
3=-0.664494532550945	-0.693	1.152996564	0.948707952	0.15	0.082	0.232	-1.616
3=-0.666900519144065	-0.38	1.149339772	0.947509318	0.511	0.082	0.593	-0.444

3=-0.666900519144065	-0.811	1.149339772	0.947509318	0.015		0.015	-0.299
3=-0.666900519144065	-0.285	1.149254553	0.947456983	0.62	0.082	0.702	0.452
3=-0.666900519144065	-0.446	1.149285445	0.947413358	0.435	0.082	0.517	-1.735
3=-0.666900519144065	0.037	1.149339772	0.947509318	0.99		0.99	-0.901
3=-0.666900519144065	-0.563	1.149340087	0.947509379	0.3	0.082	0.382	0.436
3=-0.666900519144065	0.006	1.149339772	0.947509318	0.955		0.955	-1.118
3=-0.666900519144065	-0.393	1.149339772	0.947509318	0.496	0.082	0.578	-1.113
3=-0.6668686104344863	-0.668	1.149741226	0.947641371	0.179	0.082	0.261	-0.492
3=-0.666900519144065	-0.29	1.146152542	0.945600811	0.613	0.082	0.695	-1.358
3=-0.666900519144065	-0.76	1.149339772	0.947509318	0.074		0.074	-1.392
3=-0.666900519144065	-0.305	1.149313196	0.947492461	0.597	0.082	0.679	-0.308
3=-0.666900519144065	-0.804	1.149339772	0.947509318	0.024		0.024	-0.901
3=-0.666900519144065	-0.562	1.149282014	0.947498079	0.301	0.082	0.383	0.02
3=-0.666900519144065	-0.388	1.149339772	0.947509318	0.502	0.082	0.584	-0.301
3=-0.666900519144065	0.042	1.149339772	0.947509318	0.996		0.996	-0.29
3=-0.6672668622780997	-0.649	1.147387927	0.946867284	0.202	0.082	0.284	-0.037
3=-0.668211826270766	-0.653	1.147998679	0.947069731	0.198	0.082	0.28	-1.884
3=-0.666900519144065	0.017	1.149339772	0.947509318	0.967		0.967	-0.864
3=-0.666900519144065	-0.286	1.149118798	0.947373613	0.619	0.082	0.701	0.248
3=-0.666900519144065	-0.437	1.149397514	0.94761131	0.445	0.082	0.527	-1.802
3=-0.666900519144065	-0.758	1.149339772	0.947509318	0.077		0.077	-1.092
3=-0.666900519144065	-0.258	1.150068389	0.947945612	0.651	0.082	0.733	-0.925
3=-0.666900519144065	-0.33	1.146982092	0.946013916	0.568	0.082	0.65	-0.076
3=-0.666900519144065	-0.817	1.149339772	0.947509318	0.009		0.009	-1.032
3=-0.666900519144065	-0.556	1.148889527	0.947421706	0.309	0.082	0.391	0.295
3=-0.666900519144065	-0.649	1.149339772	0.947509318	0.201	0.082	0.283	1.228
3=-0.666900519144065	-0.034	1.149339772	0.947509318	0.908		0.908	-0.822
3=-0.6666346347098115	-0.68	1.151128305	0.948097632	0.166	0.082	0.248	0.135
3=-0.6647083292635076	-0.691	1.152700251	0.948610825	0.152	0.082	0.234	-1.868
3=-0.666900519144065	0.027	1.149339772	0.947509318	0.979		0.979	-0.01
3=-0.666900519144065	-0.298	1.147796151	0.946561346	0.604	0.082	0.686	0.445
3=-0.666900519144065	-0.438	1.149379206	0.947578972	0.444	0.082	0.526	-1.828
3=-0.666900519144065	-0.767	1.149339772	0.947509318	0.066		0.066	-1.311
3=-0.666900519144065	-0.269	1.149339772	0.947509318	0.638	0.082	0.72	-0.295
3=-0.666900519144065	-0.26	1.149876865	0.947830928	0.649	0.082	0.731	-0.979
3=-0.666900519144065	-0.79	1.149339772	0.947509318	0.039		0.039	-1.137
3=-0.666900519144065	-0.285	1.151253381	0.94872306	0.621	0.082	0.703	0.031
3=-0.666900519144065	-0.023	1.149339772	0.947509318	0.921		0.921	-1.087
3=-0.666900519144065	-0.533	1.149339772	0.947509318	0.335	0.082	0.417	0.238
3=-0.666900519144065	-0.004	1.149339772	0.947509318	0.943		0.943	-0.078
3=-0.666900519144065	-0.57	1.149339772	0.947509318	0.293	0.082	0.375	0.298
3=-0.666900519144065	-0.365	1.149339772	0.947509318	0.528	0.082	0.61	-0.261
3=-0.666900519144065	-0.78	1.149339772	0.947509318	0.052		0.052	-0.698
3=-0.6672761591349027	-0.649	1.147332069	0.94684891	0.202	0.082	0.284	0.194
3=-0.666900519144065	-0.802	1.149339772	0.947509318	0.025		0.025	-1.207
3=-0.666900519144065	-0.314	1.148510486	0.946983328	0.587	0.082	0.669	0.02
3=-0.666900519144065	-0.553	1.148698559	0.947384547	0.312	0.082	0.394	0.562
3=-0.666900519144065	0	1.149339772	0.947509318	0.948		0.948	-0.907
3=-0.666900519144065	-0.361	1.149339772	0.947509318	0.533	0.082	0.615	-0.873
3=-0.6669005191440648	-0.389	1.149339772	0.947509318	0.5	0.082	0.582	-1.078
3=-0.666900519144065	0.014	1.149339772	0.947509318	0.963		0.963	0.129
3=-0.666900519144065	-0.268	1.148847818	0.947214737	0.639	0.082	0.721	-0.838
3=-0.6669005191440649	-0.256	1.149339772	0.947509318	0.654	0.082	0.736	-1.028
3=-0.666900519144065	-0.329	1.149339772	0.947509318	0.57	0.082	0.652	-0.845
3=-0.666900519144065	-0.37	1.149339772	0.947509318	0.523	0.082	0.605	-0.184
3=-0.666900519144065	-0.749	1.149339772	0.947509318	0.087		0.087	-1.398
3=-0.666900519144065	-0.39	1.149339772	0.947509318	0.499	0.082	0.581	-0.042
3=-0.666900519144065	-0.264	1.151543023	0.948862383	0.645	0.082	0.727	0.576
3=-0.666900519144065	-0.41	1.149731409	0.948201081	0.477	0.082	0.559	-1.777
3=-0.666900519144065	-0.561	1.149214791	0.947484998	0.302	0.082	0.384	0.46
3=-0.666900519144065	-0.808	1.149339772	0.947509318	0.019		0.019	-1.197
3=-0.666900519144065	-0.291	1.150643145	0.948336006	0.613	0.082	0.695	0.472
3=-0.6669005191440649	-0.317	1.149339772	0.947509318	0.583	0.082	0.665	-0.658
3=-0.6669005191440649	-0.328	1.149339772	0.947509318	0.57	0.082	0.652	-0.615
3=-0.6707188642073036	-0.625	1.144670106	0.945978682	0.23	0.082	0.312	-1.865
3=-0.666900519144065	-0.796	1.149339772	0.947509318	0.032		0.032	-1.198
3=-0.6669005191440651	-0.297	1.149339772	0.947509318	0.606	0.082	0.688	-0.822
3=-0.6669005191440649	-0.392	1.149339772	0.947509318	0.497	0.082	0.579	-0.791

3=-0.666900519144065	-0.375	1.149339772	0.947509318	0.517	0.082	0.599	-0.053
3=-0.666900519144065	0.009	1.149339772	0.947509318	0.957		0.957	-0.359
3=-0.666900519144065	-0.542	1.148066327	0.947261523	0.325	0.082	0.407	0.698
3=-0.6669005191440649	-0.309	1.149339772	0.947509318	0.592	0.082	0.674	-0.851
3=-0.6669005191440649	-0.361	1.149339772	0.947509318	0.532	0.082	0.614	-0.621
3=-0.666900519144065	-0.289	1.150902086	0.948500244	0.616	0.082	0.698	0.364
3=-0.666900519144065	-0.812	1.149339772	0.947509318	0.015		0.015	-1.21
3=-0.666900519144065	-0.319	1.148035564	0.9466821	0.581	0.082	0.663	0.296
3=-0.6669005191440649	-0.26	1.149339772	0.947509318	0.649	0.082	0.731	-0.982
3=-0.6669005191440649	-0.285	1.149339772	0.947509318	0.62	0.082	0.702	-0.975
3=-0.6669005191440649	-0.279	1.149339772	0.947509318	0.626	0.082	0.708	-0.793
3=-0.6671218082292151	-0.656	1.148240436	0.947147706	0.194	0.082	0.276	0.63
3=-0.6669005191440649	-0.252	1.149339772	0.947509318	0.658	0.082	0.74	-0.737
3=-0.6680275064887122	-0.655	1.148265287	0.94715712	0.195	0.082	0.277	-2.101
3=-0.666900519144065	-0.387	1.149339772	0.947509318	0.503	0.082	0.585	-0.883
3=-0.6669005191440649	-0.389	1.149339772	0.947509318	0.5	0.082	0.582	-0.809
3=-0.666900519144065	-0.33	1.149339772	0.947509318	0.568	0.082	0.65	-0.767
3=-0.666900519144065	-0.276	1.147943605	0.946673296	0.63	0.082	0.712	-0.659
3=-0.6669005191440649	-0.325	1.149339772	0.947509318	0.573	0.082	0.655	-0.289
3=-0.666900519144065	0.032	1.149339772	0.947509318	0.985		0.985	-0.489
3=-0.666900519144065	-0.289	1.148785808	0.947169116	0.615	0.082	0.697	0.579
3=-0.6669005191440649	-0.322	1.149339772	0.947509318	0.578	0.082	0.66	-0.787
3=-0.6669005191440648	-0.333	1.149339772	0.947509318	0.564	0.082	0.646	-0.784
3=-0.666900519144065	-0.323	1.149339772	0.947509318	0.576	0.082	0.658	-0.719
3=-0.666900519144065	-0.557	1.148968884	0.947437148	0.307	0.082	0.389	0.926
3=-0.6669005191440649	-0.352	1.149339772	0.947509318	0.543	0.082	0.625	-0.421
3=-0.6669005191440649	-0.335	1.149339772	0.947509318	0.562	0.082	0.644	-0.526
3=-0.666900519144065	-0.768	1.149339772	0.947509318	0.065		0.065	-0.096
3=-0.666900519144065	-0.311	1.148785005	0.947157446	0.59	0.082	0.672	0.382
3=-0.666900519144065	-0.306	1.149339772	0.947509318	0.595	0.082	0.677	-0.768
3=-0.6669005191440649	-0.311	1.149339772	0.947509318	0.59	0.082	0.672	-0.798
3=-0.666900519144065	-0.816	1.149339772	0.947509318	0.01		0.01	-0.489
3=-0.666900519144065	-0.54	1.14790669	0.94723046	0.328	0.082	0.41	0.581
3=-0.6669005191440649	-0.297	1.149339772	0.947509318	0.606	0.082	0.688	-0.858
3=-0.6669005191440649	-0.307	1.149339772	0.947509318	0.594	0.082	0.676	-0.884
3=-0.666782150280948	-0.673	1.150261955	0.947812658	0.174	0.082	0.256	0.712
3=-0.6669005191440649	-0.322	1.149339772	0.947509318	0.577	0.082	0.659	-0.797
3=-0.6669005191440649	-0.244	1.149339772	0.947509318	0.667	0.082	0.749	-0.484
3=-0.666900519144065	-0.127	1.149339772	0.947509318	0.801	0.082	0.883	-0.05
3=-0.666900519144065	-0.046	1.149339772	0.947509318	0.894		0.894	-0.661
3=-0.666900519144065	-0.294	1.150353246	0.948152132	0.61	0.082	0.692	0.446
3=-0.6669005191440649	-0.257	1.149339772	0.947509318	0.652	0.082	0.734	-0.971
3=-0.6669005191440649	-0.346	1.149339772	0.947509318	0.549	0.082	0.631	-0.668
3=-0.6661240505848942	-0.675	1.150810475	0.947991389	0.171	0.082	0.253	-1.749
3=-0.666900519144065	0.046	1.149339772	0.947509318	1.001		1.001	-0.045
3=-0.666900519144065	-0.241	1.154017745	0.950382165	0.672	0.082	0.754	0.941
3=-0.6669005191440648	-0.382	1.149339772	0.947509318	0.509	0.082	0.591	-0.582
3=-0.666900519144065	-0.319	1.149339772	0.947509318	0.581	0.082	0.663	-0.649
3=-0.6669005191440649	-0.31	1.149339772	0.947509318	0.591	0.082	0.673	-0.5
3=-0.666900519144065	-0.432	1.149458873	0.947719691	0.451	0.082	0.533	-1.47
3=-0.666900519144065	-0.292	1.149339772	0.947509318	0.612	0.082	0.694	-0.311
3=-0.666900519144065	0.018	1.149339772	0.947509318	0.968		0.968	-0.949
3=-0.666900519144065	-0.315	1.149339772	0.947509318	0.585	0.082	0.667	-0.72
3=-0.666900519144065	-0.559	1.149083472	0.947459445	0.305	0.082	0.387	0.786
3=-0.666900519144065	-0.321	1.149339772	0.947509318	0.578	0.082	0.66	-0.526
3=-0.6669005191440649	-0.299	1.149339772	0.947509318	0.604	0.082	0.686	-0.598
3=-0.666900519144065	-0.815	1.149339772	0.947509318	0.011		0.011	-1.023
3=-0.666900519144065	-0.33	1.149339772	0.947509318	0.568	0.082	0.65	0.012
3=-0.6669394029296905	-0.665	1.149316727	0.947501738	0.183	0.082	0.265	0.701
						0.605	
						0.725	
						0.707	
						0.418	
						0.425	
						0.66	
						0.4	

0.722
0.491
0.659