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Response of crop yield to different time-scales of drought in the United States: spatio-temporal patterns and climatic and environmental drivers

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Abstract: This article presents an analysis of the response of the annual crop yield in five main dryland cultivations in the United States to different time-scales of drought, and explores the environmental and climatic characteristics that determine the response. For this purpose we analysed barley, winter wheat, soybean, corn and cotton. Drought was quantified by means of the Standardized Precipitation Evapotranspiration Index (SPEI). The results demonstrate a strong response in the interannual variability of crop yields to the drought time-scales in the different cultivations. Moreover, the response is highly spatially variable. Crop types showed considerable differences in the month in which their yields are most strongly linked to drought conditions. Some crops (e.g. winter wheat) responded to drought at medium to long SPEI time-scales, while other crops (e.g. soybean and corn) responded to short or long drought time-scales. The study confirms that the differences in the patterns of crop yield response to drought time-scales are mostly controlled by average climate conditions, in general, and water availability (precipitation), in particular. Generally, we found that there is a weaker link between crop yield and drought severity in humid environments and also that the response tends to occur over longer time-scales.

Key-words: Drought index, SPEI, drought impacts, crop yields, cultivations, climatic change, natural hazards.

1. Introduction

Long-term changes in large-scale crop production are driven by processes related to management and technical improvement (Fischer and Esmeades, 2010; Grisini et al., 2013). Thus, crop production has substantially increased at the global scale, supporting the needs of the increasing population. Nevertheless, the increase in crop productivity is a non-linear process over time, given that crop yields vary from year to year, with episodes characterized by yield reductions or crop failures (Ciais et al., 2005; Lobell et al., 2011). There are numerous factors that can explain the temporal variability in crop yield. In addition to factors like diseases, social crisis and wars (Stanhill, 1976; Oerke, 2006; Wrather et al., 2001), climate variability is also a key controller of variations in crop yield (Lobell et al., 2007; Schlenker and Roberts, 2009). In particular, some meteorological hazards (e.g. frost, heat waves, hail, floods) may affect plant development and accordingly decrease crop production (Ciais et al., 2005; Lobell et al., 2011b; Asseng et al., 2011). Nevertheless, drought is considered the main climatic hazard impacting crop yield in many areas worldwide (Porter and Semenov, 2005; Barnabás et al., 2008; Farooq et al., 2009).

Although temperature and light are essential for plant growth, as they are important factors for photosynthetic activity (Nemani et al., 2003), water availability, in the form of soil moisture, is essential for plant growth and crop development, specifically during the critical phenological phases for a given crop (e.g. Barnabás et al., 2008; Ramadas and Govindaraju, 2015). However, assessing the impacts of drought on crop yield is not straight forward for a variety of reasons: i) vegetation types may have different resistance, times of response and resilience to water deficits as a consequence of different phenological, physiological and morphological strategies to cope with water deficits (Chaves et al., 2003), ii) drought is the most complex natural hazard, which makes it very difficult to study, particularly given the difficulty of establishing an unitary multidisciplinary definition of drought (Wilhite and Glantz, 1985; Lloyd-Hughes, 2013); iii) drought is difficult to quantify since there is no single climatic variable that can be employed to quantify drought severity, with the choice of variable (and appropriate timescale; McKee et al. 1993) being dependent on the type of impact that is of interest (Vicente-Serrano, 2016); iv) there are difficulties in defining the beginning, end, spatial extent and total severity of drought, which makes its quantification much more difficult; and v) the convergence of multiple climate factors trigger drought; although precipitation is the most important variable for determining drought severity, other variables that condition the atmospheric evaporative demand (AED) are also relevant and can be more important than precipitation (Narasimhan and Srinivasan, 2005; Hobbins et al., 2016; McEvoy et al., 2016).

The concept of drought time-scale, developed in the 1990s, altered the way in which drought is quantified and drought impacts are analysed. This concept was introduced to characterize the various response times, or lags, of different components of the terrestrial water cycle (streamflow, groundwater, etc.) to precipitation deficits (McKee et al., 1995), as hydrological drought conditions may be impacted by different climatic drought time-scales, as a function of different hydrological systems and regions (e.g. Lorenzo-Lacruz et al., 2010; 2012; Barker et al., 2016). The term time-scale has recently been applied in the quantification of the drought effects on natural vegetation communities, given the different resistance of vegetation types that makes their response highly dependent on drought time-scale (Ji and Peters, 2003; Pasho et al., 2011; Arzac et al., 2016; Vicente-Serrano et al., 2013; 2015). Robust and flexible drought indices can be calculated on different time scales, among them the Standardized Precipitation Index (SPI) (McKee et al., 1993), the Standardized Precipitation Evapotranspiration Index (SPEI) (Vicente-Serrano et al., 2010) and the Standardized Palmer Drought Index (SPDI) (Ma et al., 2014).

Drought indices have been widely used to explain crop yield anomalies (Easterling et al., 1988; Quiring and Papakryiakou, 2003; Kola et al., 2014; Tunalioclu and Durdu, 2012; Benitez and Domecq, 2014; Arshad et al., 2013) and to develop statistical models to predict crop yields (Vicente-Serrano et al., 2006; Subash and Ram Mohan, 2011; Sadat Noori et al., 2012; Dutta et al., 2013; Ming et al., 2015; Scian, 2004; Potopova et al., 2016b). Nevertheless, multi-scalar drought indices are more skillful in identifying the influence of drought severity on crop yields, compared to other drought indices (Vicente-Serrano et al., 2012; Wang et al., 2016). Among them, the SPEI has been widely used to analyse the impacts of crops on different cultivations in varied regions worldwide, including China (Ming et al., 2015; Wang et al., 2016a and b; Chen et al., 2016), the Iberian Peninsula (Pescoa et al., 2016), Slovakia (Labudova et al. 2016), Czech Republic (Potopova et al., 2016), Moldova (Potopova et al., 2015), South Africa (Araujo et al., 2016), U.S. (Moorhead et al., 2015) and the whole European continent (Gunst et al., 2015). These studies demonstrate that the SPEI performs better than other indices in identifying drought impacts on crop yields at regional and global scales (Vicente-Serrano et al., 2012; Gunst et al., 2015; Wang et al., 2016a; Chen et al., 2016; Labudova et al., 2016). The AED is included in the calculation of the SPEI. This is relevant since different studies have stressed the negative influence of temperature-driven evaporative demand and crop yields, given its influence on soil moisture and vegetation stress conditions (Asseng et al., 2004; Schlenker and Roberts, 2009; Lobell et al., 2003; 2007). A representative example is Lobell et al. (2014) who analysed the sensitivity of corn yields to drought in the U.S., indicating that the sensitivity to drought stress increased in crops associated with high vapor pressure deficits, thus underlining the need for considering AED in drought quantification tools.

The United States is one of the main crop producers in the world, with a high percentage of the total global production of some crops (e.g. corn, soybean and wheat) (FAO, 2013). Numerous studies have analysed the response of crop yields to interannual variability of drought indices in the United States (e.g. Easterling et al., 1988; Moorhead et al., 2015; Rohli et al., 2016). Nevertheless, there are very few studies that consider the connection between different drought time-scales and different crops (e.g. Zipper et al., 2016). Correspondingly, to the authors' knowledge there are no studies that determine the climatic and environmental drivers controlling crop yield responses to drought time-scales. Hence, in this study, we analyse the response of the annual crop yield in five main dryland cultivations in the United States to different time-scales of drought using the SPEI. The objective of this study is to identify possible spatial patterns in the response of crop types to drought at different time scales and to define the environmental and climatic characteristics that determine these patterns.

2. Data and Methods

2.1. Data

2.1.1. Crop yield data

We used the entire dataset of the United States Department of Agriculture (National Agriculture Statistics Service), which was obtained through https://quickstats.nass.usda.gov/#AF9A0104-19EF-3BFE-90D2-C67700892F3E. This portal provides production statistics for different cultivations per unit of surface at the county level. We obtained the county production data for five different dryland cultivations: barley, winter wheat, soybean, corn and cotton. We did not include the yield of these cultivations in irrigated lands. Annual productions were obtained for each county and the information was scaled to the same units (Metric Tons/Ha). Data were obtained independently of the surface covered by the different crop types in each county. However, as crop types were not represented over large surfaces in some counties, we decided to exclude those counties with each crop type covering only a low percentage of the total surface of the county (< 1%) (https://www.nass.usda.gov/Charts_and_Maps/Crops_County/#ctp) (Figure 1).

Annual crop yield series in each county shows a strong positive trend since the 1960s, as a consequence of the ongoing technological and management improvements (Egli, 2008). To eliminate this effect, the series were de-trended by using a linear regression model fitted to crop yield series (dependent variable) and time (independent variable). The average crop yield of each series was added to the residual series of the model to produce the de-trended yield data in Metric Tons/Ha.

2.1.2. Climate data

We employed the PRISM (Parameter-elevation Relationships on Independent Slopes Model) gridded data set developed by the Oregon State University (http://www.prism.oregonstate.edu/). We used monthly data series for precipitation, maximum and minimum air temperatures from 1961 to 2014 at a grid interval of 30 seconds. PRISM data have already been validated (Daly et al., 2008) and widely used for climatic, hydrological, agricultural and environmental applications (e.g. Lutz et al., 2010; Bandaru et al., 2017; Bodner and Robles, 2017).

2.1.3. Normalized Difference Vegetation Index data and water field capacity

We used the NOAA-AVHRR NDVI dataset (https://www.star.nesdis.noaa.gov/smcd/emb/vci/VH/vh_browse.php) (Vargas et al.,

2009) at a spatial resolution of 16 km^2 to characterise the different responses of crop yield to drought time-scales. NDVI is calculated as:

$$\text{NDVI} = \frac{(NIR - VIS)}{(NIR + VIS)}$$

Where NIR and VIS refer to the near-infrared' and visible wavelengths of spectrum.

The NDVI is closely related to the total biomass and leaf area index (Baret and Guyot 1991; Gutman 1991; Carlson and Ripley 1997). Seasonal and annual averages were obtained for each county for the period 1981-2014. In addition, vegetation phenology metrics (i.e. green-up and maximum NDVI dates) were calculated from the average NDVI series of each county (Fischer, 1994; Doktor et al., 2009). Finally, high resolution water field capacity data were obtained from the State Soil Geographic (STATSGO) Database for the contiguous United States (https://water.usgs.gov/GIS/metadata/usgswrd/XML/ussoils.xml#stdorder).

2.2. Methods

2.2.1. SPEI calculation

The Standardized Precipitation Evapotranspiration Index (SPEI) developed by Vicente-Serrano et al. (2010) is equally sensitive to precipitation and AED (Vicente-Serrano et al., 2015). In comparison with other drought indices based on precipitation alone, this property allows for better identification of the impact of extreme warm air temperatures and heat waves on drought severity (Begueria et al., 2014). Using the average monthly precipitation and maximum and minimum air temperature series corresponding to each county, we calculated the SPEI series at time scales ranging from 1 to 18 months. For this purpose, we derived a monthly climatic water balance time series (i.e. the difference between precipitation and AED) and then fitted a log-logistic distribution (Vicente-

Serrano and Beguería, 2015) to obtain the SPEI in standardized units. For the complete mathematical procedure, please refer to Vicente-Serrano et al. (2010).

This procedure allows for comparing drought characteristics in space, time and at different time-scales, regardless of the magnitude and seasonality of climate in each region. To account for AED we used reference evapotranspiration (ETo) in the SPEI calculation and applied the Hargreaves method (Hargreaves and Samani, 1985) using maximum and minimum air temperatures and extraterrestrial solar radiation data calculated using latitude and Julian day. In accordance with crop yield timeseries and considering the existence of a linear tendency in each SPEI time series the 1- to 18-month SPEI series were also de-trended for the period 1961–2014.

2.2.2. Correlation between SPEI and crop yields

The influence of droughts on the annual yield of different crops was assessed using the Pearson correlation coefficient. The correlation was computed between the time series of the de-trended annual crop yield and de-trended SPEI for all months of the year, using SPEI aggregation periods of 1- to 18-months (i.e. the month in question and then aggregating two to 18 months prior) for each county independently. Thus, for each crop and county, we obtained 216 correlations (12 months × 18 time-scales).

2.2.3. Identification of the main patterns of crop yield response to SPEI time-scales

To summarize the high variability in the correlations computed between the crop yield series and the many SPEI series at different time-scales, we performed a Principal Component Analysis (PCA) in S mode, in which each vector was the 12 (months) x 18 (time-scale) correlations (216 cases) obtained between SPEI and crop yield in each county. The correlation matrix was used to extract the components (Richman, 1986; Barry and Carleton, 2001). This approach enabled us to classify, at the broad scale, the patterns of response recorded in individual counties, on the basis of the similarities of the obtained correlations. The number of the extracted components was defined based on the percentage of the total explained variance, as suggested by the scree-plots. The retained components showed strong differences in the explained variance in comparison to the rest of the components. The classification was based on the PCA loadings and following the maximum loading rule. The loadings indicate the degree of similarity of the patterns of correlations between crop yields and SPEI in each county, and the pattern representing a number of counties that correspond to a particular principal component (PC). In other words, mapping the loadings allows us to identify counties with a similar crop yield response to drought.

2.2.4. Driving factors of crop yield responses to droughts

We applied two different methods to define the factors responsible for the varying responses of crop yields to different SPEI time-scales. First, we analysed whether there are differences in the values of different independent variables between the various classes of crop yield response to drought, as identified using the methods outlined in 2.2.3. These included climate variables, such as mean, maximum and minimum annual and seasonal air temperature averages, seasonal and annual mean precipitation and ETo. We also incorporated climatic balance variables, such as Precipitation minus ETo, the long term average of the NDVI green-up and maximum NDVI dates, and soil water field capacity. Specifically, for each crop type, we employed the Tukey post-hoc test within the Analysis of Variance (ANOVA) to compare the differences among means of the different variables, as a function of the general patterns of crop yield response to the SPEI.

Second, the contribution of the various factors in explaining the different types of crop yield response to drought time-scales was estimated using predictive discriminant analysis (PDA) for each crop type. PDA is commonly used to explain the value of a dependent categorical variable based on its relationship to one or more predictors (Huberty 1994). Given a set of independent variables, PDA attempts to identify linear combinations of those variables (e.g. climatic conditions, phenology and soil water field capacity) that best separate the groups of cases of the dependent variable (i.e. groups of crop yield response to the SPEI). These combinations are termed discriminant functions (Hair et al. 1998). This procedure automatically defines the first function that separates the groups as much as possible. It then chooses a second function that does not correlate with the first function and provides as much separation as possible. This procedure considers further functions until the maximum number of functions is reached, based on the number of predictors and categories in the dependent variable. The PDA enables defining predictors that contribute to most of the inter-category differences of the dependent variable, which is the groups of crop yield response to SPEI time-scales in our case.

3. Results

3.1. Diverse response of crop yield to SPEI time-scales

Figure 2 illustrates an example of the varied correlation patterns between the SPEI (1- to 18-month) and winter wheat yield in the US from 1961 to 2014. As depicted, in the case of Valley County, Nebraska, the maximum correlation is recorded in April for an SPEI time-scale of 8 months. In Decatur County, Kansas, the correlation is much stronger during May for an SPEI time-scale of 11 months. Results also reveal that while longer SPEI time-scales impact wheat crop yields in some counties, the response of wheat yield to drought in other counties (e.g. Thomas County, Georgia) is more pronounced at shorter time-scales. Overall, these findings underline the need for PCA to summarize the spatial patterns of crop yield response to drought at different time-scales. Results demonstrate that the PCA identified well-defined patterns of crop yield and SPEI time-scales across the US. As illustrated in Figure 3, the scree-plots suggest three patterns for barley, wheat and soybean, four patterns for the corn and five patterns for the cotton. In the next sections, we explain in-depth the characteristics and spatial distribution of these patterns.

3.2. General spatial patterns within the main cultivations

3.2.1. Barley

Figure 4 shows the main patterns of response of barley crop yields to the SPEI time-scales. The first component (PC1), which explains the main percentage of the total variance (78.3%) reveals a pattern of barley response to short to medium SPEI time-scales (3-7 months in July). This finding demonstrates that the annual yield of barley is mainly impacted by precipitation and AED conditions between January and July. Spatially, this pattern represents those areas located in the north-central counties, close to the Canadian boundaries. PC2 shows a different pattern, with negative correlations between barley annual yield and SPEI time-scales between 8-14 months from February to April. This pattern explains a low percentage of the total variance and is recorded in the counties located in the northwestern limit of the barley cultivation belt. Finally, PC3 is representative of the Northwest US region, suggesting dominant negative correlations with the SPEI in the months of April and May, though not statistically significant at $p<0.05$.

3.2.2 Winter wheat

Figure 5 summarizes correlations between the SPEI and winter wheat yields. PC1 represents a large spatial extent, comprised mostly in the central counties of the country and located mainly in the states of Nebraska, Kansas and Oklahoma. This component is characterized by positive correlations between winter wheat yields and the SPEI at time scales between 3 and 9 months in the months of April and May. The maximum correlation is recorded at the time scale of 5 months. Conversely, counties located in the Northeast, Mid-west, and the East Coast show negative correlations between winter-spring SPEI and winter wheat yields. PC2 exhibited no significant correlations between winter wheat yields and the SPEI for almost all time-scales. This pattern is bimodal, with negative correlations in the counties located in the Central U.S. and positive correlations in a large number of counties in Wyoming, Nebraska and Colorado. Finally, PC3 informs that there are significant correlations between winter wheat yields and the SPEI at time-scales ranging from short to long, particularly over the second half of the year. This component is mostly situated in the counties located in the Eastern US, besides Wisconsin and Illinois. The same pattern, albeit with a negative sign, is distributed over the Central US, particularly in Iowa and Missouri.

3.2.3. Soybean

The correlations between soybean yield and the SPEI indicates a coherent pattern, with high positive correlations with the SPEI at time-scales from 1 to 4 months from July to September but also 4 to 13 months from July to the end of the year (Figure 6). This pattern is observed over the majority of the counties located within the soybean belt in the US. On the other hand, PC2 suggests negative correlations with the SPEI in June at time-scales from 2 to 7 months, compared to positive correlations with the 1-month SPEI during August. Spatially, this component is restricted to a few counties situated mainly within the states of Iowa, Missouri and Nebraska. In comparison to PC1 and PC2, PC3 is devoted particularly to some counties in the Central Atlantic and Northeast, with a generally high positive correlation between soybean yield and the SPEI at long time-scales during the mid and late summer.

3.2.4. Corn

Corn yields show similar patterns to those identified for soybean, with the two first components being specific to the same regions (Figure 7). PC1 demonstrates high positive correlations with the SPEI at time-scales between 1 and 4 months during summer months, while PC2 shows dominant negative correlations between the SPEI and corn yield during the cold half of the year (January-May) and at the beginning of summer. For PC3, positive and significant correlations dominate between the annual corn yields and the SPEI at the 4-7 month scales in late winter and spring. This pattern prevails over the central counties of the U.S. in which corn is cultivated. Finally, PC4 suggests positive and significant correlations between the annual yield of corn and long SPEI time-scales, albeit with a limited spatial coverage, mainly over few counties in north-central US.

3.2.5. Cotton

Although cotton is cultivated in fewer areas, mainly in the Southern US, it shows more spatially fragmented correlation patterns, with five main components, compared to other investigated crops (Figure 8). The first two components exhibit positive and significant correlations with the SPEI, at medium (4-7 months) and long (10-12 months) time-scales. PC1 is broadly distributed in counties located within the cotton belt. On the other hand, PC2 dominates over central-south counties across the cotton belt. The remaining components do not show any distinctive response of cotton annual yields to the SPEI at the different time-scales, indicating that the spatial distribution of PC loadings is patchy across the area of cotton cultivation.

3.3. Factors explaining the different responses of crops to SPEI time-scales

To account for the possible influences of climatic and environmental conditions on the response of the selected crops to the different time-scales of the SPEI, we analysed the magnitudes in mean precipitation, mean air temperature, total ETo, the climatic balance, the information obtained from the NDVI series (i.e. green up day and the day in which the maximum annual NDVI is recorded) and the soil water field capacity for the five cultivations.

Supplementary Figures 1 and 2 illustrates the annual and seasonal values corresponding to barley crop yields. The significance of the values of the different variables among groups and seasons is also listed in the different tables of the supplementary information. There are statistically significant differences in the annual precipitation among the different groups of counties characterized by different correlations between SPEI time-scales and the barley crop yields. These differences are mainly controlled by the spatial patterns of spring precipitation. In general, counties represented by PC1+ (i.e. with maximum positive loadings on this component) are characterized by low annual precipitation and low annual air temperature and in general lower NDVI values than other components. As opposed to PC1+, the counties represented by PC2+ are characterized by higher annual precipitation, which is clearly identified in spring and summer. These areas are also characterized by higher annual air temperatures, higher ETo and humid conditions identified by the climatic water balance. Vegetation activity in counties corresponding to PC2+ is also high, in comparison to that observed for the areas of PC1+. The counties represented by the PC3+ have low precipitation and ETo;

however summer water balance is similar to that observed for the most humid counties represented by PC2+. Winter, spring and autumn mean NDVI values in each county are strongly different among the PC groups, although the average water field capacity, the average day of the year recording the maximum NDVI and the green up day do not show statistically significant different values among the different PC groups.

Supplementary Figures 3 and 4 shows the corresponding violin plots for winter wheat yields and the different SPEI time-scales. There are strong differences between the counties belonging to PC1+, PC2+ and PC3+and those counties with negative (opposite) loadings on the same components. Counties with positive loadings are characterized by more humid conditions, as represented by precipitation and climatic balance, than components characterized by negative loadings. Specifically, counties represented by PC1-, PC2- and PC3- show average annual precipitation values below 700 mm coupled with very negative climate balances, especially for PC1-. Thus, there are statistically significant differences in annual precipitation and climatic balance between the counties corresponding to these groups (see Supplementary information). This pattern is evident for all seasons of the year. In addition, there are also some differences among counties represented by positive and negative loadings in temperatures and ETo, which is clearly observed during summertime.

Soybean shows that PC1+ and PC3+ correspond to counties that receive more annual precipitation than PC2+ (Supplementary Figure 5) and during the cold season (i.e. winter and spring; Supplementary Figure 6). As illustrated, PC1+ and PC3+ are characterized by strong correlation between the SPEI and the annual soybean yields, albeit with correlations recorded at very different time-scales. These different patterns could be explained by the strong differences in the temperature and ETo between these two patterns, given that PC1+ is recorded in warmer counties than PC3+ either on the seasonal or annual scales. Average annual and seasonal values of temperature are statistically different between these two components; a similar finding is also found for ETo during the warm season (summer and autumn). The local differences to these general patterns, which are characterized by negative loadings, could be related to aridity, recalling the low water balance of PC3- and the water field capacity of PC1- and PC2-.

The four main groups of corn yield show more complex patterns, in response to the different environmental variables (Supplementary Figures 7 and 8); but again the different climate variables play the main role in explaining the patterns of corn yield response to the SPEI at different time-scales. Average annual and cold season precipitation is much higher in the two components (PC1+ and PC4+) characterized by a strong response of the corn yield to the SPEI. Thus, these two components show lower values of the climate water balance. The different patterns that characterise PC1+ and PC4+ are mostly driven by the differences in temperature and ETo, which are higher in PC1. The water field capacity and the phenological variables (e.g. green-up and maximum NDVI dates) do not show any considerable differences among patterns. Nevertheless, there are significant differences in the average NDVI values in the counties represented by the different PCs that might highlight some control of the pattern of corn yield response to the SPEI as a function of the crop biomass/leaf area. Overall, the number of statistically significant differences is lower than that found using the average climate variables.

Finally, the patterns found for cotton yields show much more complex features, with a higher identified number of patterns (Supplementary Figures 9 and 10). In general, the differences between the first two PCs, which represent the highest percentage of the total variance, are likely controlled by the different average precipitation amount. PC1+, with a response of cotton yields to short SPEI time-scale, is more specific to counties that receive much more precipitation (800 mm in average of difference) than PC2+, which shows low precipitation values, mainly during the winter season. Annual and seasonal air temperatures and ETo do not show significant differences among the different patterns of response of the cotton yields to the SPEI time-scales.

Table 1 shows the structure matrix of the first three discriminant functions of the predictive discriminant analysis applied to the five crop types, while Figure 9 indicates the centroids of the different PC groups corresponding to the first three discriminant functions. This analysis identifies the factors that are controlling the different crop yield responses to the various SPEI time-scales, including seasonal and annual averages of the analysed climatic and environmental variables. This approach allows us to coherently extract the main determinants of the patterns of response of the crop yields to the SPEI time-scales.

The different barley groups show contrasted differences in function 1. This function is mostly represented by the annual and seasonal precipitation (with the exception of winter precipitation). The centroids of the different PC groups show negative values for function 1 in the PC1+, which contrasts with positive values found for PC2+ and PC3+. Functions 2 and 3 explain a low percentage of the total variance. Function 2 mostly represents winter temperature conditions, but it does not show a clear separation between PC groups. Therefore, the areas in which a clear response of the barley yields to the SPEI is identified correspond to dry environments. On the other hand, the most humid areas assigned to PC2+ and PC3+ do not show a clear response to drought.

The different PC groups of the wheat yield response to the SPEI time scales show clear different response in the discriminant function 1 between positive (PC1+, PC2+ and PC3+) and negative groups (PC1-, PC2- and PC3-). Discriminant function 1 for wheat yields is mostly representing water availability, with negative coefficients for the precipitation and the climatic balance at the annual and seasonal scales. Moreover, this function shows a positive coefficient for ETo during summer months, in which a high AED has a negative influence on water availability. Negative wheat yield patterns (PC1-, PC2- and PC3-) are characterized by positive correlations between the SPEI and the winter wheat yields for different seasons and SPEI time-scales before the wheat harvesting. These patterns are characterized by drier areas than positive groups. The areas represented by positive patterns (PC1+, PC2+ and PC3+) are dominated by negative or insignificant correlations between the SPEI and the winter wheat yields. Therefore, this behavior is principally assigned for humid areas (positive coefficients in the precipitation and the climatic water balance in the discriminant function 1). In these humid areas, it is found that even drought conditions may have a positive effect on the winter wheat crop yields. Nevertheless, although negative PC patterns are characterized by drier conditions than positive patterns, the discriminant function 1 establishes clear differences between PC1- and PC3- (positive values in the function) and PC2- (values close to 0). This finding stresses that PC1- and PC3-, which show the clearest patterns of wheat yield response to the SPEI, are representative of the most arid areas in the winter wheat belt. The different pattern found between PC1- and PC2- is explained by the function 2, which is positively represented by warm season temperatures. PC3- pattern would be characteristic of the colder areas than PC1- pattern, which would explain the later response of yields to longer SPEI timescales as wheat harvesting will be later.

The patterns of soybean response to the SPEI time-scales show little separation for the discriminant function 1. This function shows positive values for the different climatic variables, with the exception of the climate balance. It implies that average climate conditions are not the main driver of the spatial differences found in the response of the soybean yields to the different drought time-scales. Discriminant function 2 shows positive values for summer ETo, but there are no significant differences in the centroids of the positive PCs (which are clearly dominant for the soybean crop) in the function 2.

The discriminant analysis also shows complex results for the different groups of response of the corn yields to the various SPEI time-scales. In any case, function 1 shows the most clear separation between the four extracted PCs, with negative values for PC2+ and PC3+ and values close to 0 in PC1+ and PC4+. The main weight in the function 1 is recorded for precipitation and climatic balance variables, mainly during the cold season, confirming that, as opposed to other crops, a higher response of the interannual variability of yields to the SPEI is recorded in the most arid counties. Temperatures show a positive weight in the discriminant function 1, confirming that PC2+ and PC3+ are also characteristic of the colder areas than PC1+ and PC4+. Function 2 mostly represents the warm season climatic balance (with a positive weight) and the cold season temperature (with a negative weight in the function). This function mostly separates between positive and negative patterns for PC1 and PC2, which would indicate that patterns characterized by negative loadings in PC1 and PC2 are characterized by warmer and drier conditions than patterns characterized by positive loadings. Function 3 mostly represents the warm season temperature and separates the most between PC2+ and PC3+.

Finally, for cotton yields, function 1 mainly represents annual and cold season humidity conditions (both for precipitation and the climatic balance, showing a negative weight on function 1). PC2+ shows the centroid on positive values of this function, confirming again that this pattern is representative of dry counties.

4. Discussion and conclusions

This study assessed the response patterns of crop yields to drought in different cultivations across the United States. Drought severity was quantified at different time-scales using the Standardized Precipitation Evapotranspiration Index (SPEI). In general, results demonstrate a strong response in the interannual variability of crop yields to the SPEI time-scales in the different cultivations.

Nevertheless, this study clearly illustrated that the relationship between the interannual variability of droughts and crop yields may be highly spatially variable and dependent on the time-scale at which drought is measured. Table 2 summarises the well-defined patterns of crop yield response to drought time-scales found in this study. They correspond to very coherent spatial patterns and a clear response of the crop yields to a characteristic drought time-scale recorded for a certain period. Different studies have already showed this characteristic for natural vegetation (Ji and Peters, 2003; Pasho et al., 2011; Vicente-Serrano et al., 2014). Thus, the global response of different vegetation metrics (e.g. activity, growth and biomass) to drought in natural (i.e. uncultivated) areas is highly dependent on the time-scale of the drought index we use to measure drought (Vicente-Serrano et al., 2013), given the different resistance of vegetation types to water deficits. Previous studies analysed drought impacts on crops, suggesting different impacts, in response to different time-scales of drought indices (Wang et al., 2016; Zipper et al., 2016). Here, we found that the selected crops (barley, winter wheat, soybean, corn and cotton) show different patterns of the yield response to the various SPEI time-scales. These crop types showed considerable differences in the month in which their yields are mostly controlled by drought conditions. Barley showed more spatially homogeneous patterns in terms of its yield response to the SPEI time-scales. Thus, the majority of counties in which barley is cultivated show the same response, with a maximum correlation with the 3-month SPEI in July. The rest of the cultivations show more spatial differences. While the yield of some selected crops (e.g. winter wheat) responded to drought at medium-long SPEI time-scales in some counties, other cultivations responded to short or long drought time-scales in different regions.

Some studies have suggested that vegetation conditions may respond to rapid changes in soil water content, which would be reflected in the response to short SPEI time-scales (Hunt et al., 2014; Zipper et al., 2016). This behaviour could explain why the crop yields respond to short SPEI time-scales in some counties. For example, the main response of corn yields to the SPEI timescales in large areas of the central U.S. is recorded during August over a 3 month SPEI time-scale. In the same context, soybean yields also show a dominant response to the September 4-month SPEI in a large percentage of the counties. The maximum correlations in these dominant patterns are recorded between July and September, confirming the seasonality in the response of crop yields to drought. This seasonality would be related to the phenology, as numerous works suggest that the response of crops to drought is higher during the key phenological stages in which soil water availability is necessary (e.g. Araujo et al., 2016; Zipper et al., 2016). A representative example is corn, where the months with the maximum correlation with the SPEI corresponding to silking and reproductive phenological phases (Wu et al., 2004). But also for barley since in the East Coast planting starts on fall and in this region is clearly identified a specific pattern (PC3) that shows a different response to drought time-scales and in which drought indices during the fall period have the main role on crop yields. For soybean, we found a high response to the 4-month drought conditions recorded in September. Soybean is commonly planted between May and June; but soybean is usually at the pod fill stage in early September, showing very high sensitivy to soil water stress at that time (Wu et al., 2004).

Nevertheless, although the dominant pattern of crop yield response to drought was typically recorded for short drought time-scales during the key vegetative periods, there are noticeable spatial differences, with some crop areas showing a dominant response to medium (6-9 months) and long SPEI time-scales (9-12 months). As mentioned earlier, these patterns mainly correspond to winter wheat cultivation. The cycle of winter wheat is very different to those recorded for the other four crops. Winter wheat is usually planted in September-October and harvested between May and August, as a function of the climate characteristics. Winter wheat is mostly active during the cold season; the soil moisture recharge in winter wheat fields mostly occurs in winter months, as a consequence of the low AED (Austin et al., 1998; Liu et al., 2002; Burba and Verma, 2005). This would explain the high sensitivity to long SPEI time-scales, given that spring wheat growth depends on the soil moisture recharge some months in advance. Similar to winter wheat, a response to long SPEI time-scales has been also identified in some regions for the other four crops (e.g. in South central for cotton, in North central for corn and counties in the east and the centre for soybean). In these areas, there is a strong control of crop yields by drought severity, albeit with the strongest relationships over long SPEI time-scales. Indeed, this pattern is not specific to US crops, recalling that a range of studies that link drought indices with crop yields have already shown closer relationships of crop yield to long time-scales of the drought indices in China (Ming et al., 2015), Brazil (Fernandes and Heinemann, 2011) and the Great Plains of Nebraska (Yamoah et al., 2000).

Studies focusing on natural vegetation have suggested that general environmental conditions may explain the differences found in the patterns of response of vegetation growth/activity to the different time-scales at which drought indices are calculated. Among these different environmental conditions, climate characteristics seem to be the main controller of the different types of response (Pasho et al., 2011; Vicente-Serrano et al., 2013). Overall, the varying responses to SPEI time-scales can be explained by the different resistance of vegetation types to water deficits (Chaves et al., 2003), and the varied strategies of vegetation to cope with drought periods (McDowell et al., 2012).

Based on the selected five main crop types across the US, this study confirms that the differences in the patterns of crop yield response to drought time-scales are mostly controlled by climatology in general and water availability in particular. Overall, independently of the crop type, a stronger response in crop yield to the SPEI is recorded in more arid sites. For example, in the barley belt, the majority of the areas assigned to the general pattern, as suggested by PC results, are recorded across the driest counties with negative climate balances. In contrast, those counties that show a divergence to this general pattern are characterized by higher humidity conditions, with low sensitivity to the SPEI variability. This is also observed in some spatial patterns obtained for corn and cotton. Previous studies identified a non-linear response of crop yields to drought indices. Zipper et al. (2016) showed that the response of corn and soybean yields to the SPEI is mostly recorded for negative SPEI values, resulting in a dramatic reduction of yields. In contrast, high positive SPEI values do not guarantee a proportional increase in annual yields of these crops. A similar pattern was observed by Meyer et al. (1991) for the Great Plains and the Midwest of the US, where below-normal precipitation during the corn growing season was closely related with drought severity. Our results concur with these findings, given that we also identified a lower response to drought severity in humid environments and also that the response tends to be recorded on longer time-scales. Here, it is worth noting that although the standardized drought indices (e.g. the

SPEI) are comparable in space and time, independently of the climate magnitude and climate regimes (Heim, 2002; Vicente-Serrano et al., 2011), the same SPEI may represent strongly different magnitudes of the climatic balance. In humid environments, where water availability is usually above the current needs of cultivations, the negative SPEI values may correspond to an available total water magnitude that meets crop water requirements. Also, these environments are expected to respond to longer SPEI time-scales since the impacts of drought on soil moisture availability and crop stress conditions will be observed only when persistent long-term drought conditions are recorded.

However, although water availability is the main factor explaining the spatial differences in the response patterns of some crops to drought severity, the spatial differences of temperature and ETo also play an important role for other crops. This aspect is clearly identified for soybean crops, given that the most representative pattern of the yield response to the SPEI does not differ significantly from the other two identified spatial patterns in terms of the annual climate balance, albeit with strong differences (> 200 mm) in the average ETo. This pattern suggests that, within the soybean belt, warmer counties are more sensitive, and their response is observed at shorter drought time-scales than cold counties; this pattern could be explained by differences in phenology related to temperature variations (Piper and Boote, 1999), as well as the indirect effects of temperature on soil water availability, given reduced AED and consequently soil and plant evaporation.

Under changing climate conditions, drought management and monitoring will be even more essential today. In the U.S. although in general there is a complex situation with different SPEI time-scales needed for different seasons, crops and locations, here we have found a very coherent response of crop yields to SPEI time-scales over some homogeneous regions and crop types (see Table 2). In these regions, drought monitoring based on the identified SPEI time-scales during key periods of the year may contribute to better risk assessment and even to improve crop yield forecasting some months in advance. Moreover, given the spatial diversity of situations among crop types and regions, the results of this work reinforces the need for evaluating the crop response to drought characteristics prior developing predictive crop yield statistical models and proper drought monitoring and early warning/forecast systems.

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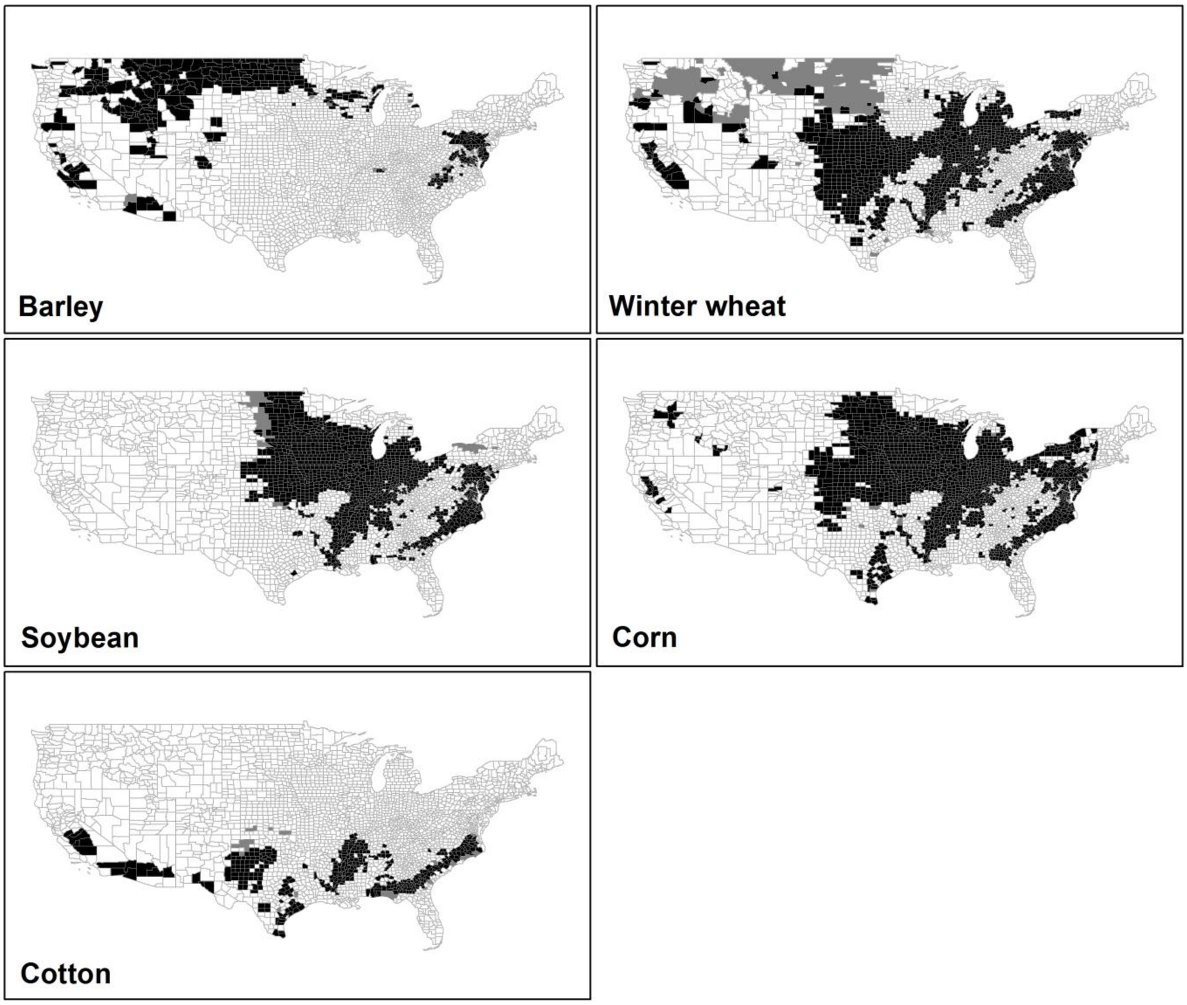

Figure 1. Spatial distribution of the US counties with a high/low percentage of lands cultivated by one of the five different crops (black/grey).

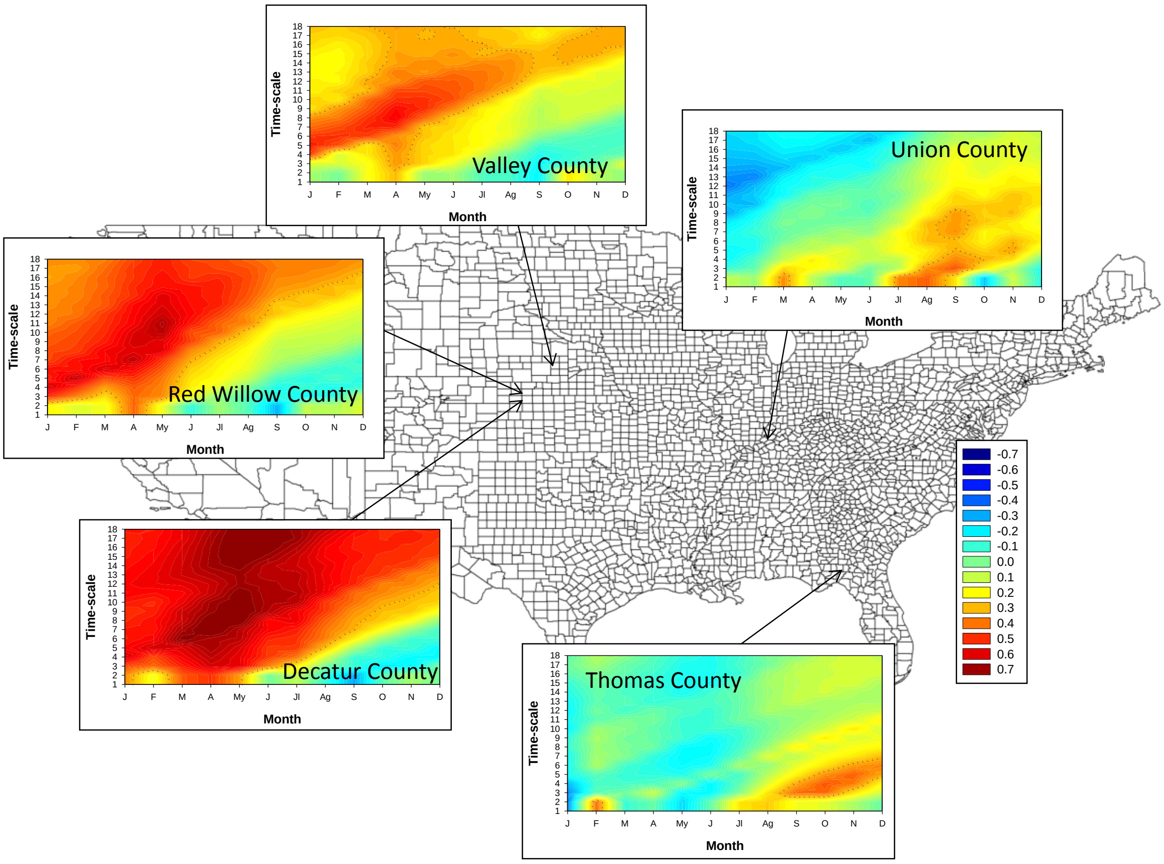

Figure 2. Example of the diverse patterns of correlation between annual winter wheat yields and 1- to 18-month SPEI timescales. Colors in the scale represent Person's r correlations and dotted lines outline only significant correlations at the 95% significance level ($p<0.05$).

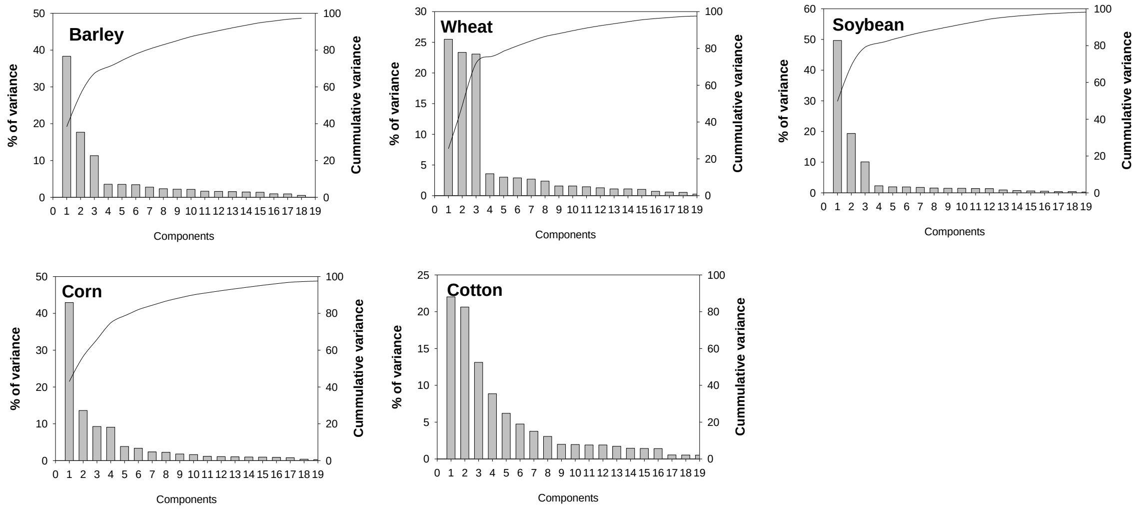

Figure 3. Scree plots summarizing the number of retained components for each crop type, following the PCA results applied to the different patterns of correlations between SPEI and crop yields.

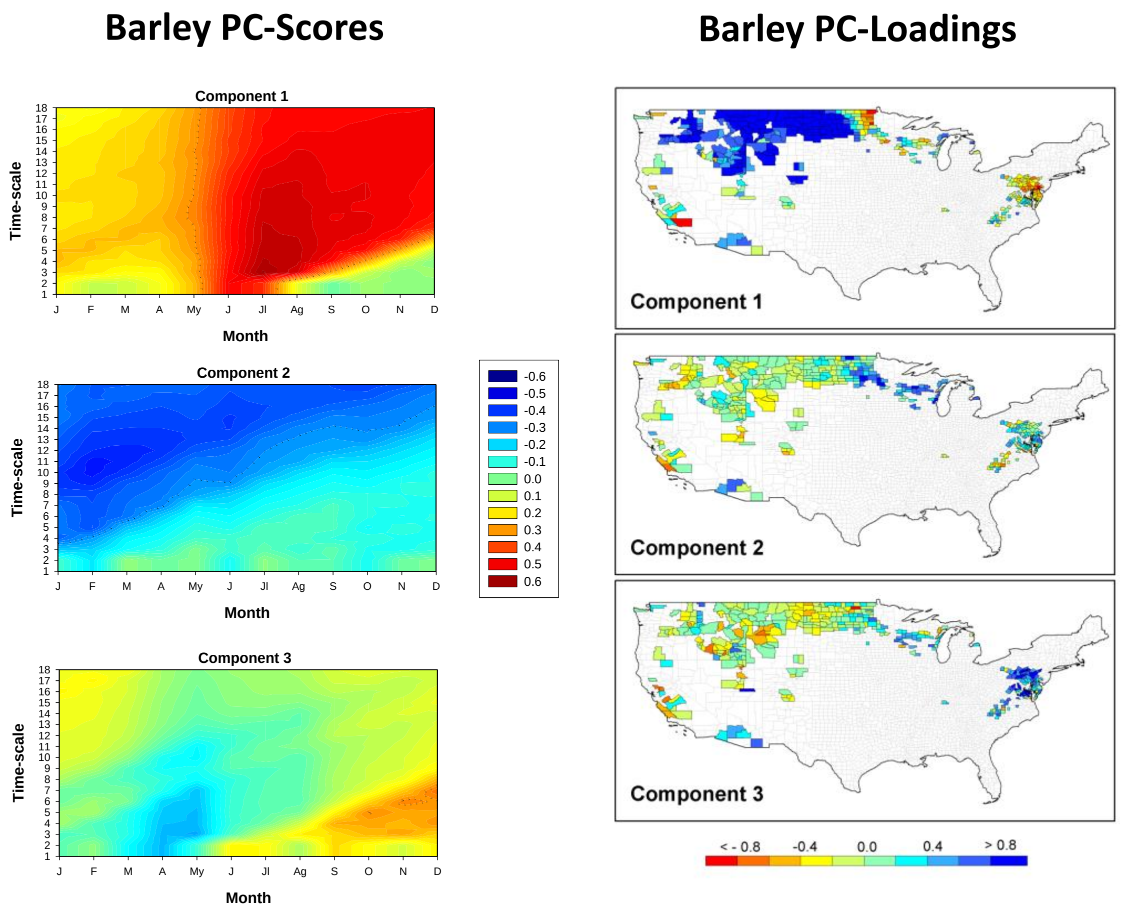

Figure 4. Left: PC-scores that represent extracted main patterns of correlation between 1- to 18-month SPEI time-scales and barley yields. Right: Spatial distribution of the PC-loadings of the extracted components. Dotted lines outline significant correlations at the 95% significance level ($p<0.05$).

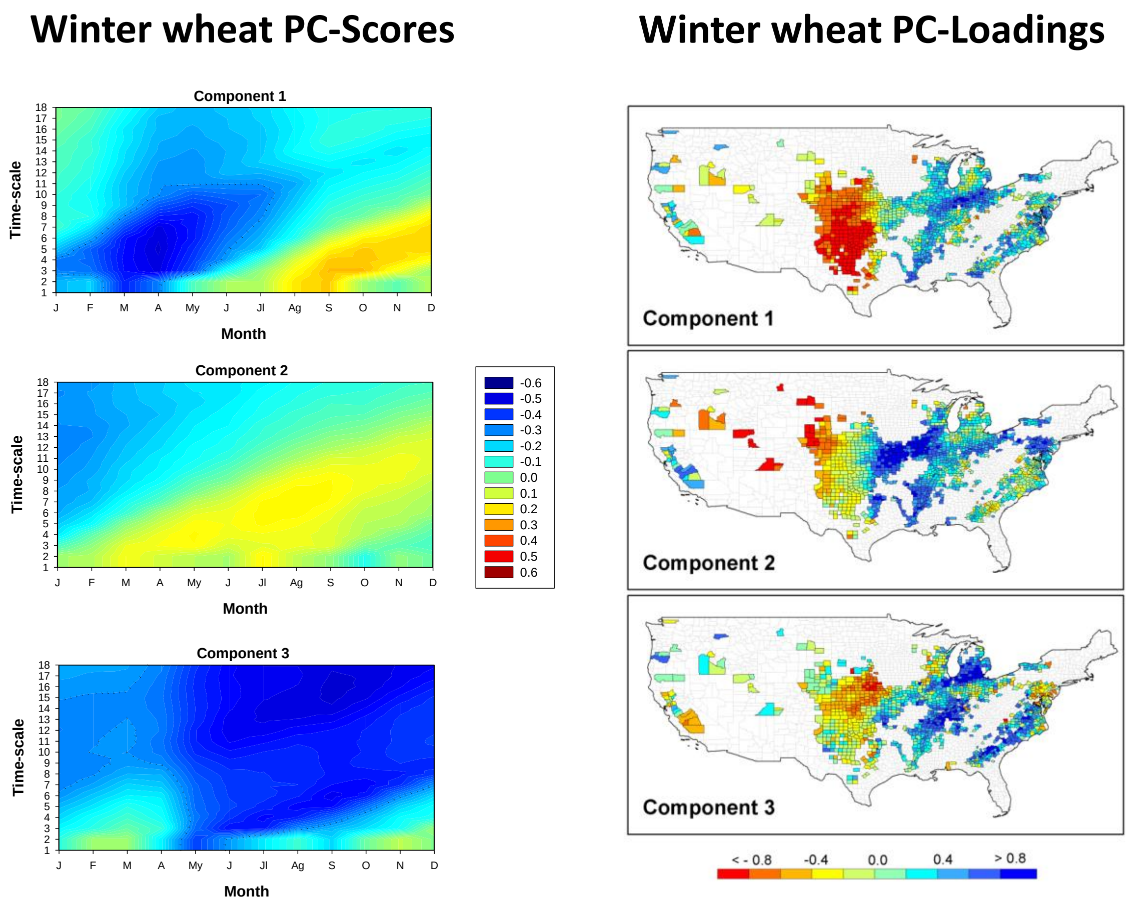

Figure 5. Left: PC-scores that represent extracted main patterns of correlation between 1- to 18-month SPEI time-scales and winter wheat yields. Right: Spatial distribution of the PC-loadings of the extracted components. Dotted lines outline significant correlations at the 95% significance level ($p<0.05$).

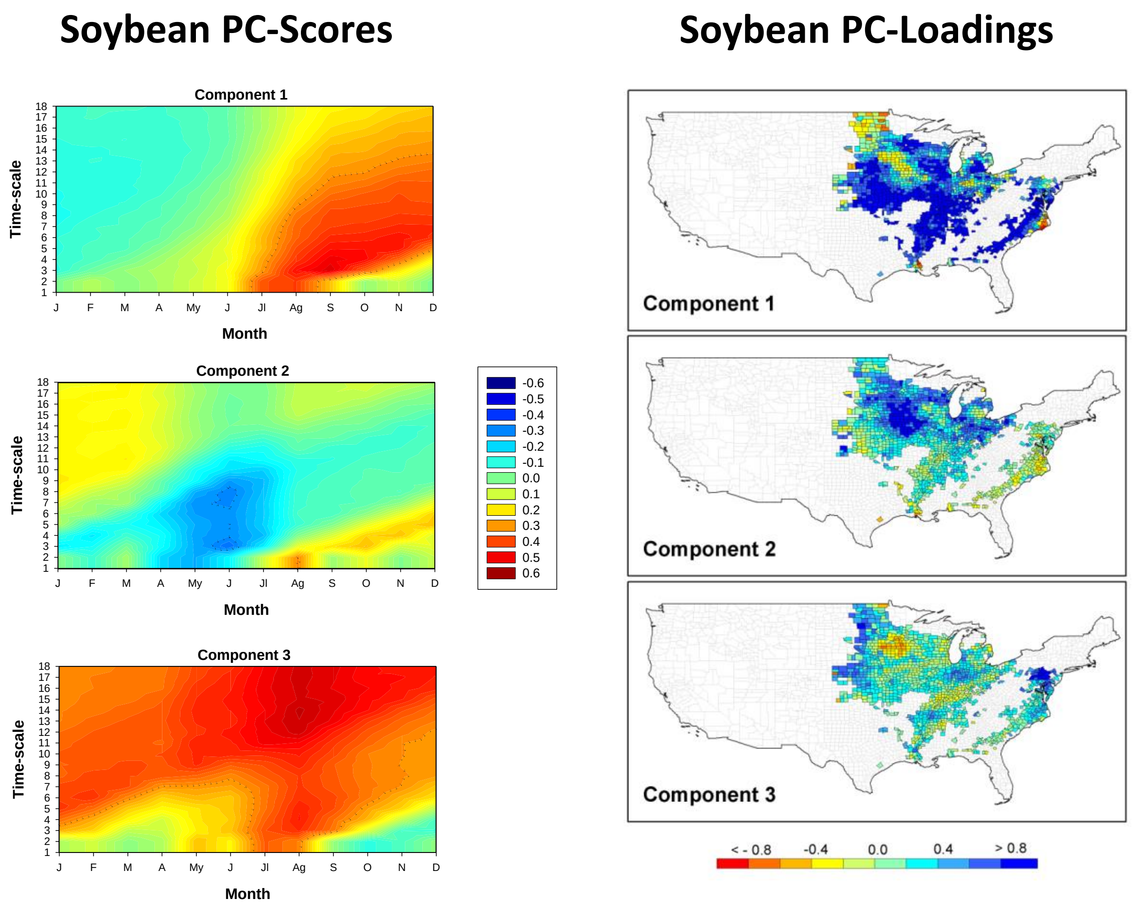

Figure 6. Left: PC-scores that represent extracted main patterns of correlation between 1- to 18-month SPEI time-scales and soybean yields. Right: Spatial distribution of the PC-loadings of the extracted components. Dotted lines outline significant correlations at the 95% significance level ($p<0.05$).

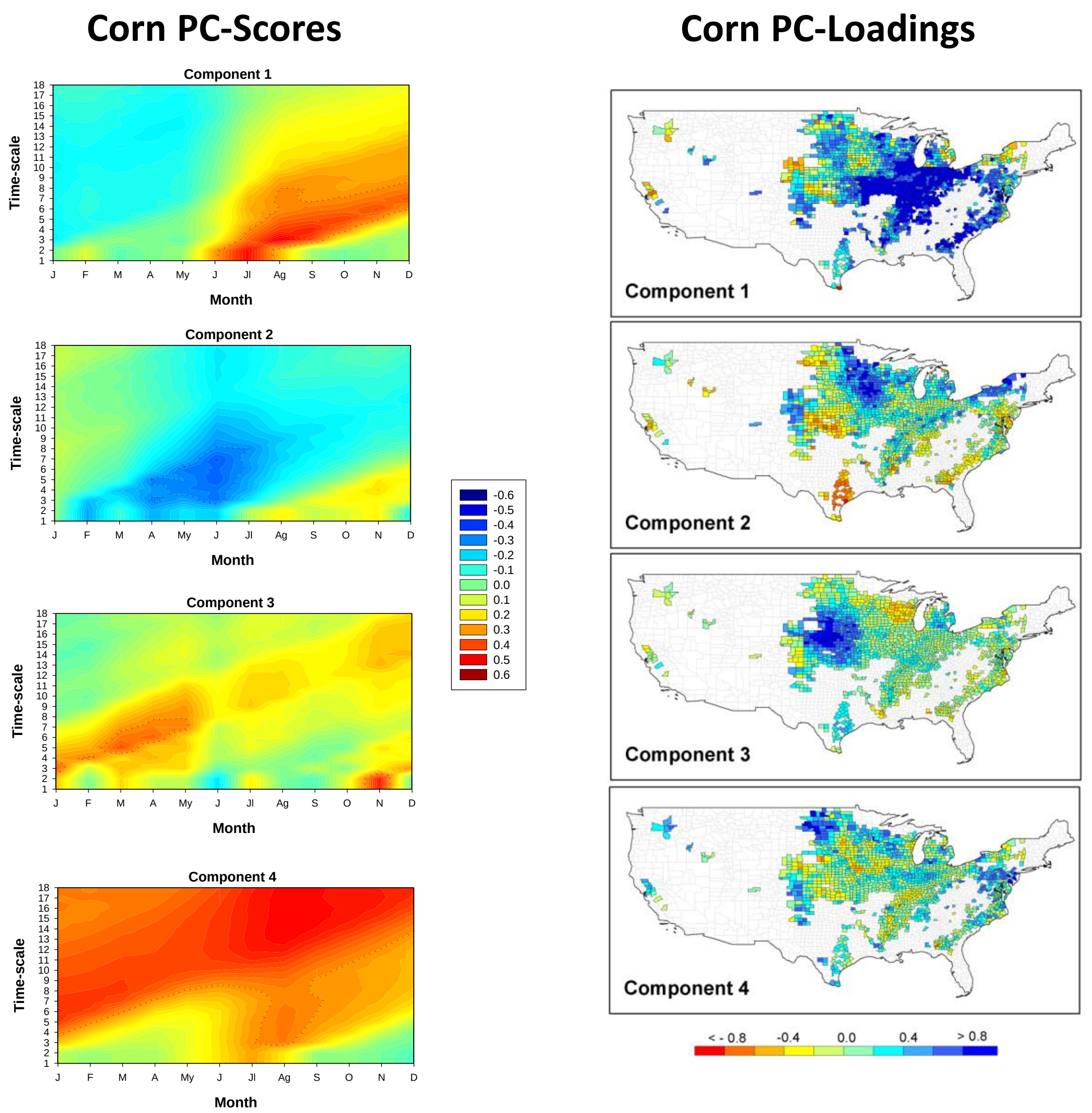

Figure 7. Left: PC-scores that represent extracted main patterns of correlation between 1- to 18-month SPEI time-scales and corn yields. Right: Spatial distribution of the PC-loadings of the extracted components. Dotted lines outline significant correlations at the 95% significance level ($p<0.05$).

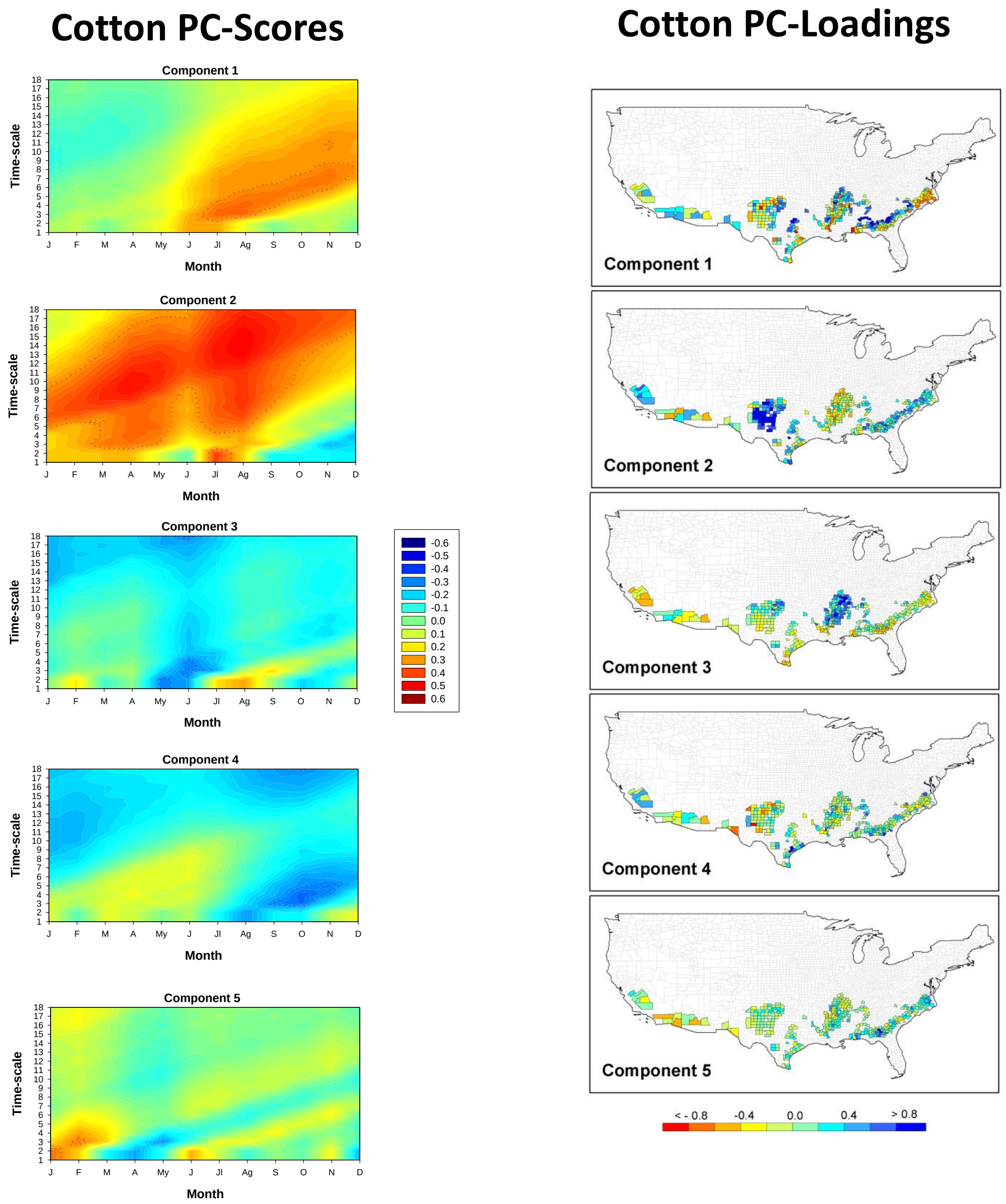

Figure 8. Left: PC-scores that represent extracted main patterns of correlation between 1- to 18-month SPEI time-scales and cotton yields. Right: Spatial distribution of the PC-loadings of the extracted components. Dotted lines outline significant correlations at the 95% significance level ($p<0.05$).

	Barley			Wheat			Soybean			Corn			Cotton		
	Function 1 (78.3%)	Function 2 (13.2%)	Function 3 (6.8%)	Function 1 (78.3%)	Function 2 (10.6%)	Function 3 (6.4%)	Function 1 (45.7%)	Function 2 (30.0%)	Function 3 (17.1%)	Function 1 (36.7%)	Function 2 (26.4%)	Function 3 (22.9%)	Function 1 (36.7%)	Function 2 (25.0%)	Function 3 (11.4%)
Precipitation (annual)	**0.67**	0.33	-0.11	**-0.62**	0.10	0.17	**0.55**	0.23	0.27	**0.71**	0.23	0.11	**-0.59**	**0.41**	-0.20
Precipitation (winter)	0.35	0.41	0.35	-0.43	-0.10	**0.44**	**0.54**	0.32	0.14	**0.75**	0.06	0.10	**-0.62**	0.37	0.00
Precipitation (spring)	**0.59**	0.36	-0.18	**-0.55**	0.13	-0.03	**0.66**	0.03	0.22	**0.62**	0.30	0.25	**-0.75**	0.23	-0.16
Precipitation (summer)	**0.59**	-0.02	-0.52	-0.44	0.25	0.02	0.07	0.15	**0.49**	0.27	0.40	-0.04	-0.17	**0.50**	-0.34
Precipitation (autumn)	**0.68**	0.27	-0.14	**-0.61**	0.19	-0.08	**0.50**	0.20	0.25	**0.70**	0.10	0.01	**-0.59**	0.39	-0.31
Mean temp. (annual)	0.39	0.37	0.19	0.02	0.37	0.21	**0.73**	0.37	0.30	**0.49**	**-0.40**	**0.49**	0.20	0.38	**0.42**
Mean temp. (winter)	0.25	**0.49**	0.30	0.02	0.24	0.32	**0.69**	0.39	0.24	**0.52**	**-0.40**	**0.45**	0.26	**0.50**	**0.42**
Mean temp. (spring)	0.42	0.35	0.14	0.01	0.39	0.19	**0.74**	0.35	0.33	**0.50**	-0.37	**0.48**	0.17	0.31	0.36
Mean temp. (summer)	0.42	0.09	-0.07	0.08	**0.51**	0.03	**0.75**	0.32	0.31	0.34	-0.36	**0.57**	0.11	0.07	0.38
Mean temp. (autumn)	0.45	0.30	0.19	-0.02	**0.40**	0.20	**0.71**	0.36	0.33	**0.52**	**-0.41**	**0.45**	0.17	0.43	**0.42**
Max. temp. (annual)	0.30	0.40	0.25	0.12	0.35	0.23	**0.75**	0.38	0.25	0.42	**-0.41**	**0.53**	0.36	0.22	**0.48**
Max. temp. (winter)	0.24	**0.51**	0.33	0.10	0.25	0.31	**0.70**	0.42	0.23	0.45	**-0.41**	**0.47**	0.41	0.39	0.40
Max. temp. (spring)	0.36	0.39	0.20	0.10	0.38	0.23	**0.76**	0.36	0.27	0.44	-0.37	**0.52**	0.37	0.16	**0.41**
Max. temp. (summer)	0.22	0.14	0.09	0.24	**0.44**	0.04	**0.77**	0.31	0.19	0.23	**-0.42**	**0.64**	0.25	-0.17	**0.50**
Max. temp. (autumn)	0.34	0.35	0.26	0.09	0.36	0.21	**0.74**	0.36	0.27	0.44	**-0.41**	**0.53**	0.25	0.30	**0.51**
Min. temp. (annual)	0.47	0.32	0.11	-0.09	0.38	0.19	**0.69**	0.34	0.35	**0.56**	-0.37	0.42	0.04	**0.47**	0.32
Min. temp. (winter)	0.26	**0.46**	0.27	-0.09	0.22	0.32	**0.67**	0.35	0.26	**0.59**	-0.38	0.42	0.08	**0.58**	**0.41**
Min. temp. (spring)	0.48	0.30	0.07	-0.09	0.39	0.14	**0.70**	0.33	0.39	**0.54**	-0.36	0.41	-0.01	0.40	0.27
Min. temp. (summer)	**0.56**	0.05	-0.21	-0.06	**0.55**	0.01	**0.71**	0.31	0.39	0.40	-0.29	**0.47**	-0.04	0.26	0.18

Min. temp. (autumn)	**0.55**	0.22	0.11	-0.13	**0.42**	0.18	**0.65**	0.34	0.38	**0.59**	-0.38	0.35	0.09	0.50	0.32
ETo (annual)	0.23	0.37	0.35	0.23	0.35	0.26	**0.74**	0.37	0.20	0.34	**-0.42**	**0.54**	0.45	-0.05	**0.51**
ETo (winter)	0.30	**0.47**	0.37	0.12	0.29	0.31	**0.66**	**0.44**	0.28	0.43	**-0.46**	**0.40**	0.43	0.29	0.38
ETo (spring)	0.34	0.38	0.27	0.17	0.38	0.29	**0.74**	0.36	0.21	0.39	-0.35	**0.53**	**0.50**	-0.05	0.40
ETo (summer)	-0.07	0.18	0.31	**0.51**	0.30	0.10	**0.69**	0.22	-0.08	0.01	-0.39	**0.63**	0.31	-0.40	**0.46**
ETo (autumn)	0.29	0.39	0.38	0.16	0.34	0.24	**0.74**	0.35	0.25	0.40	-0.42	**0.53**	0.30	0.10	**0.54**
Clim. Balance (annual)	0.43	0.07	-0.28	**-0.83**	-0.16	-0.02	0.16	0.01	0.21	**0.52**	**0.52**	-0.25	**-0.62**	0.37	-0.30
Clim. Balance (winter)	0.27	0.28	0.24	**-0.59**	-0.28	0.37	0.40	0.22	0.05	**0.70**	0.31	-0.08	**-0.68**	0.29	-0.08
Clim. Balance (spring)	0.27	0.06	-0.31	**-0.66**	-0.18	-0.26	0.20	-0.26	0.09	0.36	**0.55**	-0.11	**-0.77**	0.21	-0.24
Clim. Balance (summer)	0.46	-0.08	-0.51	**-0.60**	0.07	-0.03	-0.29	0.02	**0.46**	0.21	**0.49**	-0.31	-0.22	**0.51**	**-0.39**
Clim. Balance (autumn)	0.43	0.02	-0.33	**-0.68**	-0.07	-0.26	0.01	-0.04	0.10	0.42	0.38	-0.34	**-0.60**	0.30	**-0.43**
NDVI (winter)	**0.56**	0.20	-0.24	-0.27	0.08	0.26	0.02	0.19	-0.23	0.34	0.08	-0.15	-0.02	0.33	-0.11
NDVI (spring)	0.49	0.08	-0.32	-0.22	0.19	0.31	0.02	0.19	-0.23	0.30	0.06	-0.06	-0.08	0.20	-0.06
NDVI (summer)	-0.02	-0.08	-0.20	-0.06	0.09	0.35	0.07	0.01	-0.04	0.25	0.07	0.13	-0.11	-0.20	0.17
NDVI (autumn)	0.38	-0.04	-0.26	-0.22	0.16	**0.41**	0.07	0.02	-0.09	0.39	0.14	0.00	-0.12	0.03	0.08
Day maximum NDVI	-0.05	-0.06	0.18	-0.03	0.01	0.14	0.10	-0.13	0.22	0.10	0.10	0.11	-0.04	-0.01	0.15
Day gree up NDVI	-0.11	-0.09	0.18	0.01	-0.04	0.04	0.08	-0.12	0.19	0.05	0.08	0.05	-0.01	-0.05	0.11
Soil water capacity	0.11	0.01	0.07	0.03	0.10	**-0.40**	0.01	0.09	0.30	0.00	-0.14	0.17	-0.11	0.08	-0.14

Table 1. Structure matrix of the first three functions (the explained variance by each function is indicated in parentheses) of the predictive discriminant analysis (PDA) for each one of the five crop types. The correlation values computed for each predictor variable with the three discriminant functions are also included. The variables represented in each of the functions are depicted in bold according to $p < 0.05$.

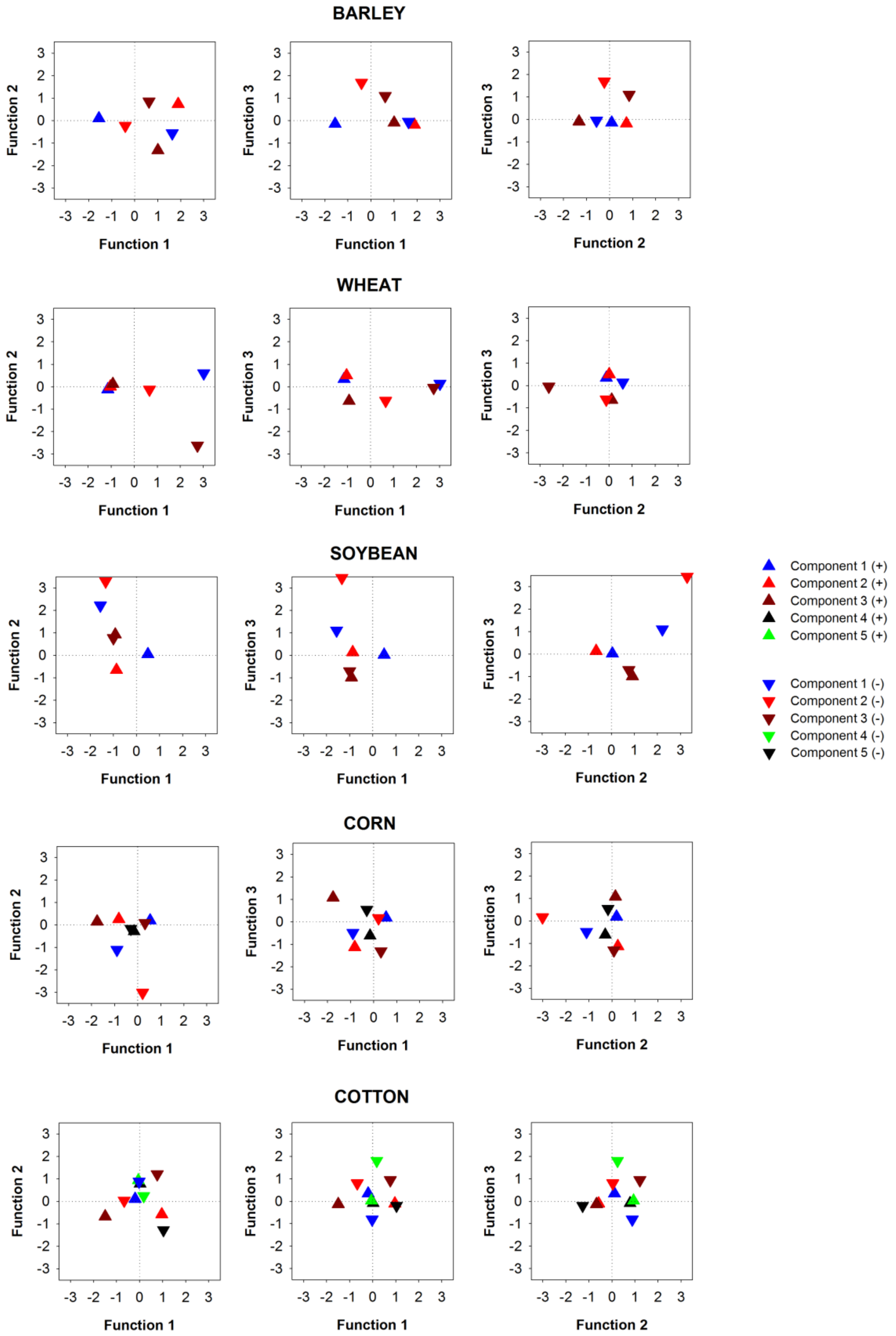

Figure 9: Centroids of the groups obtained through a principal component analysis corresponding to the first three functions of the predictive discriminant analysis (PDA) for each one of the five crop types.

Crop type	Geographical region	Most correlated drought time-scale	Month of maximum correlation
Barley	Central North U.S.	4 month	July
Winter wheat	Central U.S.	6 month	April
Soybean	The majority of the area of distribution	4 month	September
Corn	East and Northeast U.S.	4 month	August
Corn	Central U.S.	6 month	April

Table 2: Best defined patterns of crop yield response to drought time-scales in the different crop types across U.S.

Supplementary material:

Response of crop yield to different time-scales of drought in the United States: spatio-temporal patterns and climatic and environmental drivers

Marina Peña-Gallardo[1], Sergio M. Vicente-Serrano[1], Steven Quiring[2], Marc Svoboda[3], Jamie Hannaford[4], Miquel Tomas-Burguera[5], Natalia Martin-Hernandez[1], Fernando Domínguez-Castro[1], Ahmed El Kenawy[1,6]

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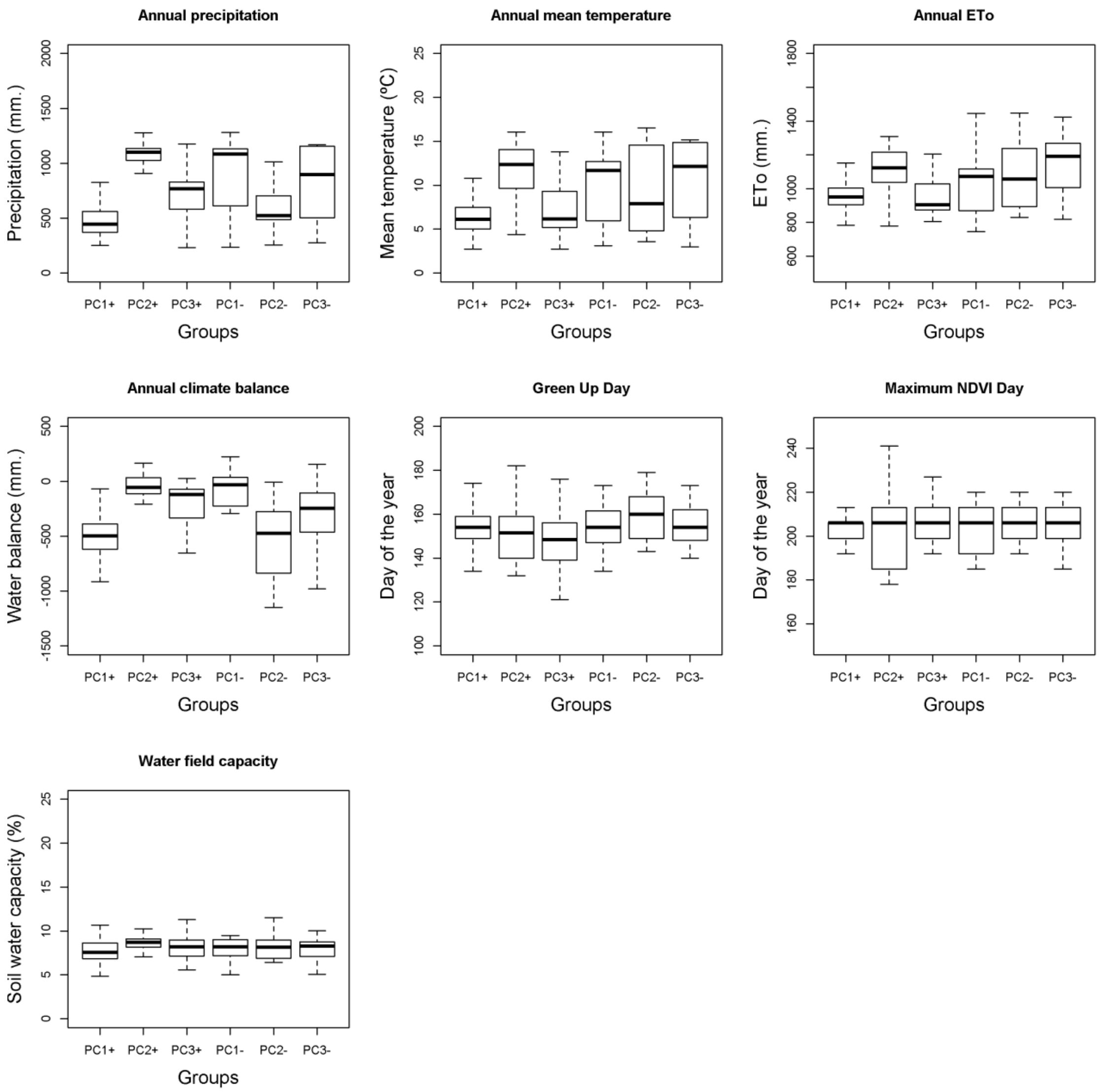
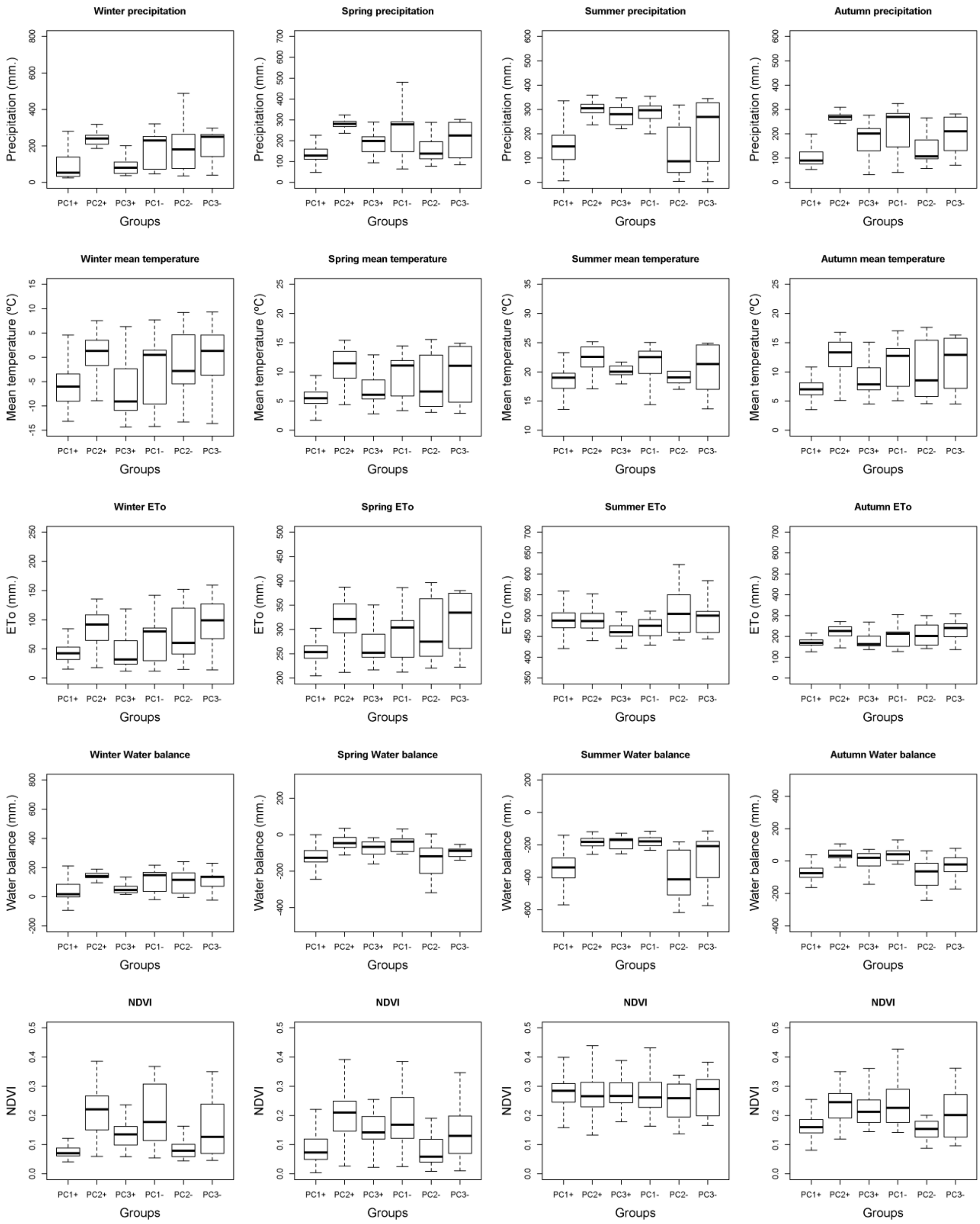
[2]Ohio State University, US
[3]National Drought Mitigation Centre, University of Nebraska-Lincoln, US
[4]Centre for Ecology and Hydrology, United Kingdom
[5] Estación Experimental de Aula Dei, Consejo Superior de Investigaciones Científicas (EEAD-CSIC), Spain
[6] Department of Geography, Mansoura University, Mansoura, Egypt

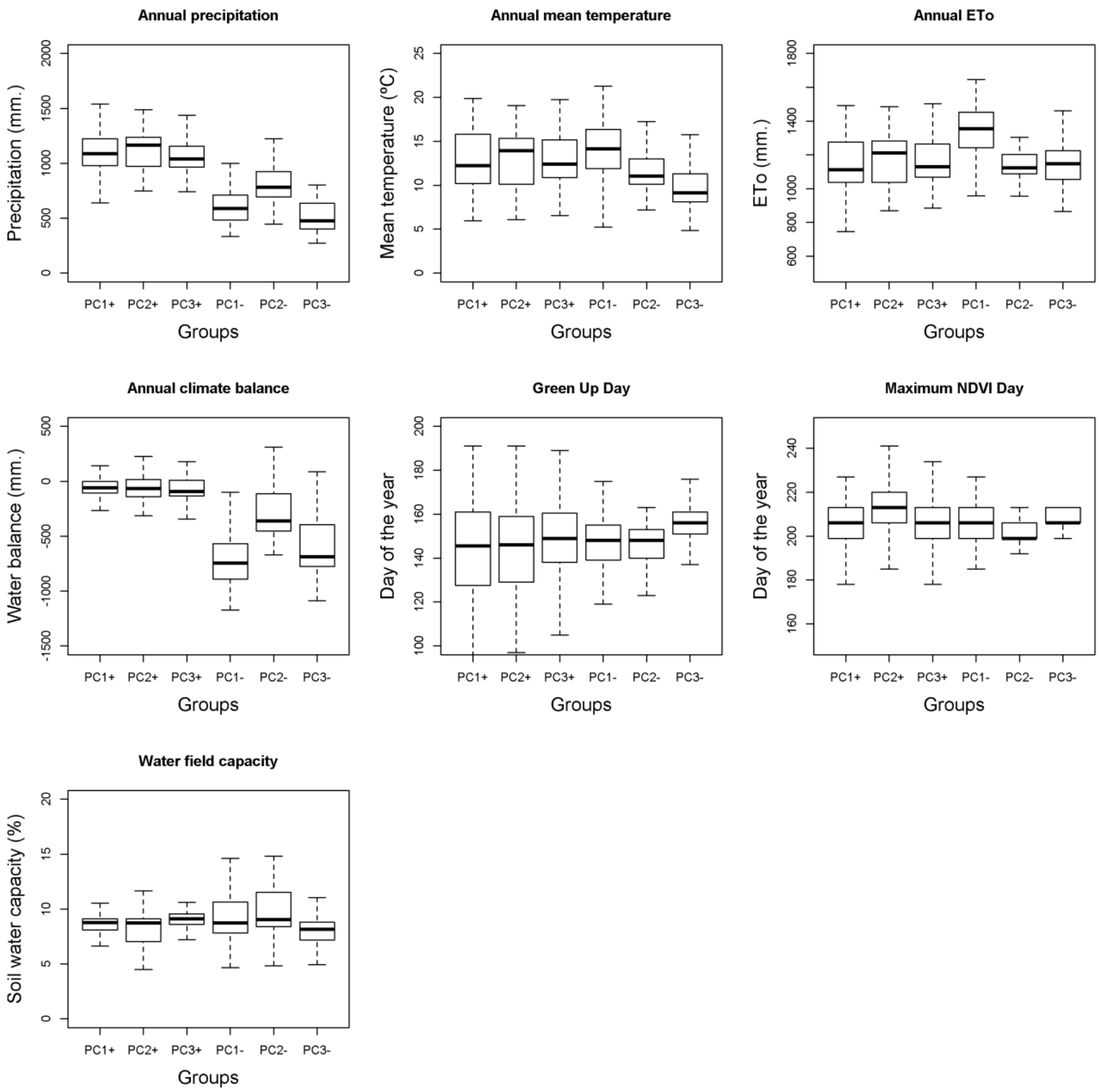
This document contains supplementary figures and statistical analysis



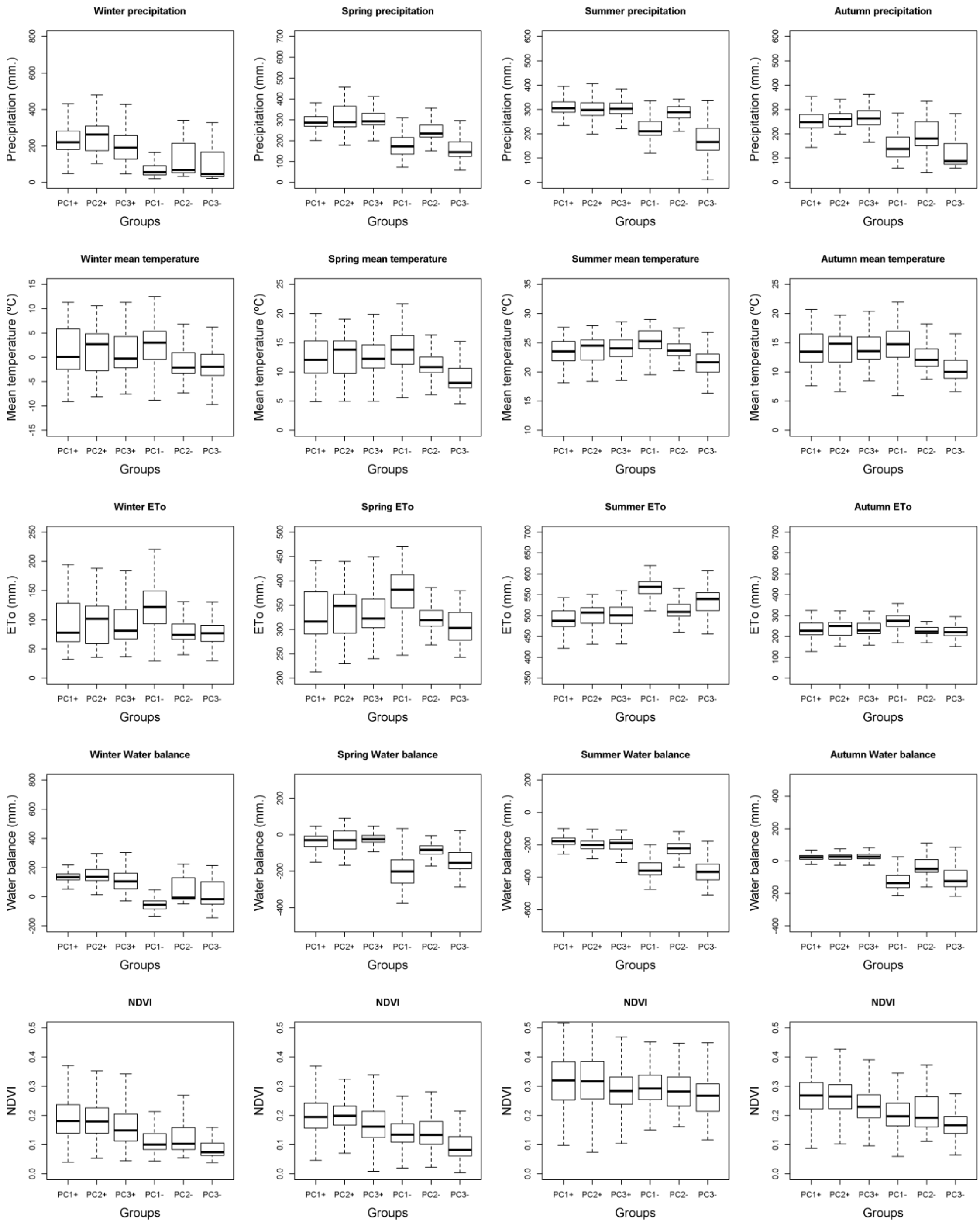
Supplementary Figure 1: Boxplots showing the statistical distribution of different annual climate and environmental variables corresponding to the different groups of response of the annual barley crop yields to different time-scales of the SPEI.



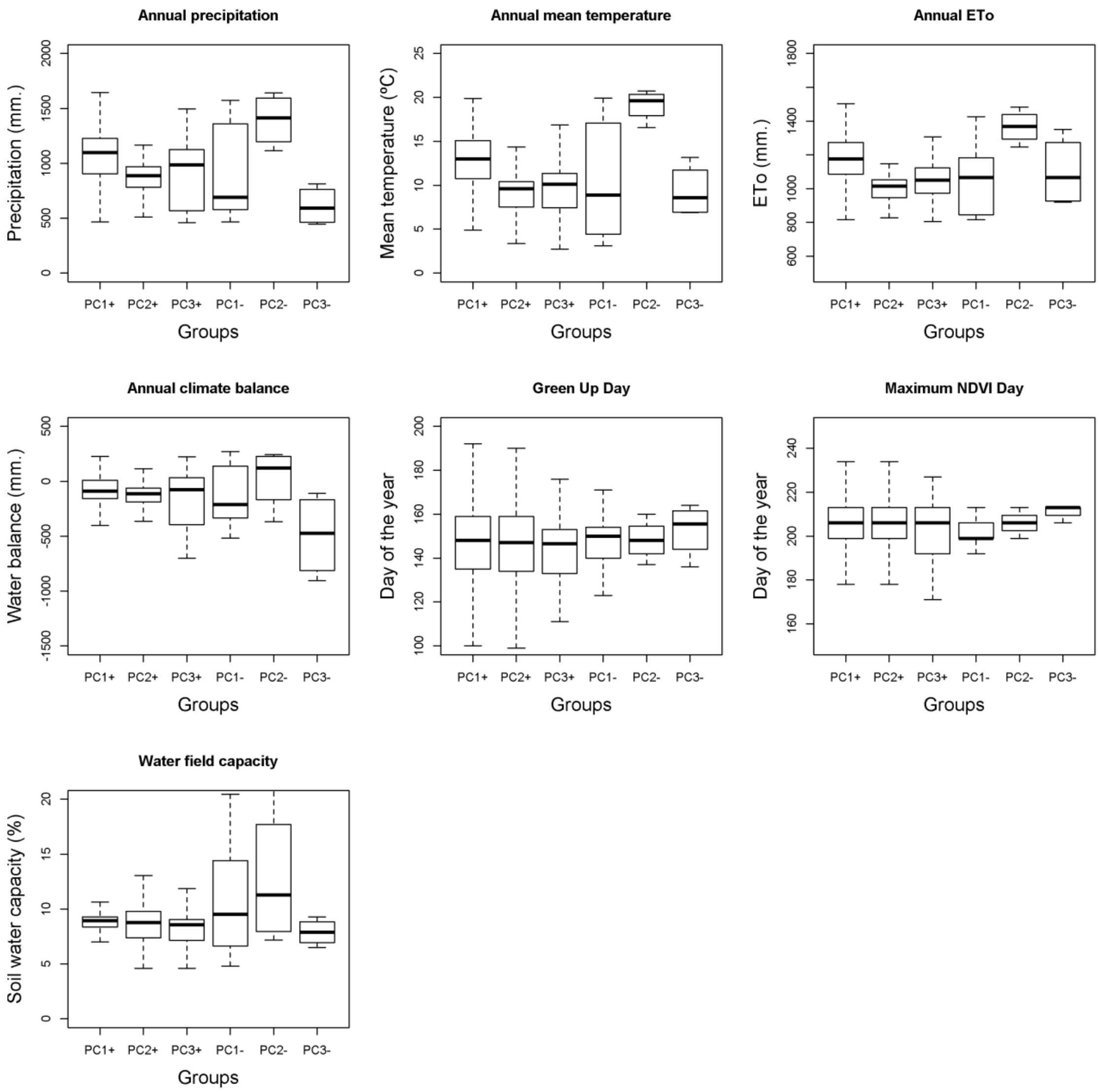
Supplementary Figure 2: Boxplots showing the statistical distribution of different seasonal climate variables and the NDVI corresponding to the different groups of response of the annual barley crop yields to different time-scales of the SPEI obtained by means of the PCA.



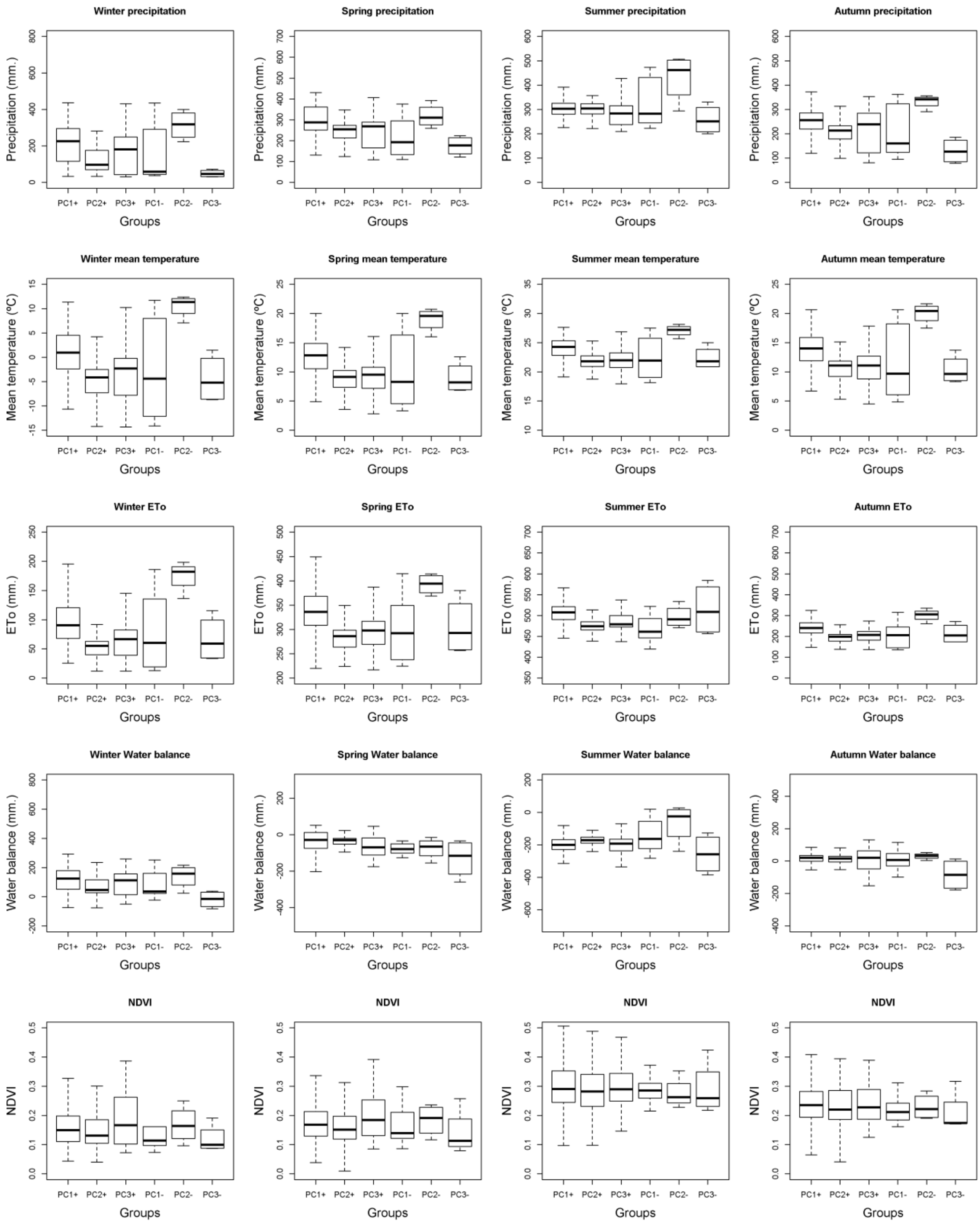
Supplementary Figure 3: Same as Supplementary Figure 1, but for winter wheat crop yields.



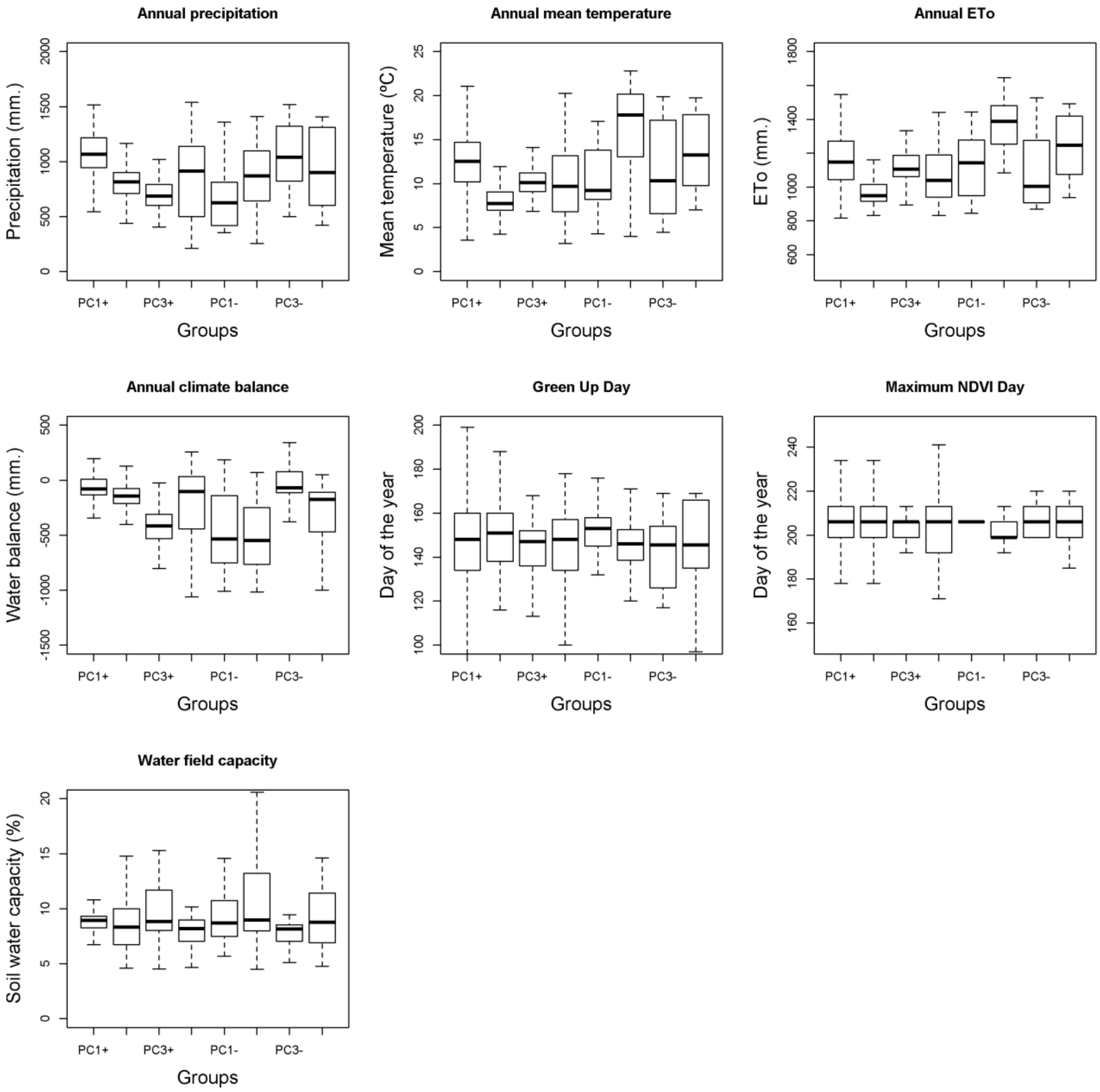
Supplementary Figure 4: Same as Supplementary Figure 2, but for winter wheat yields.



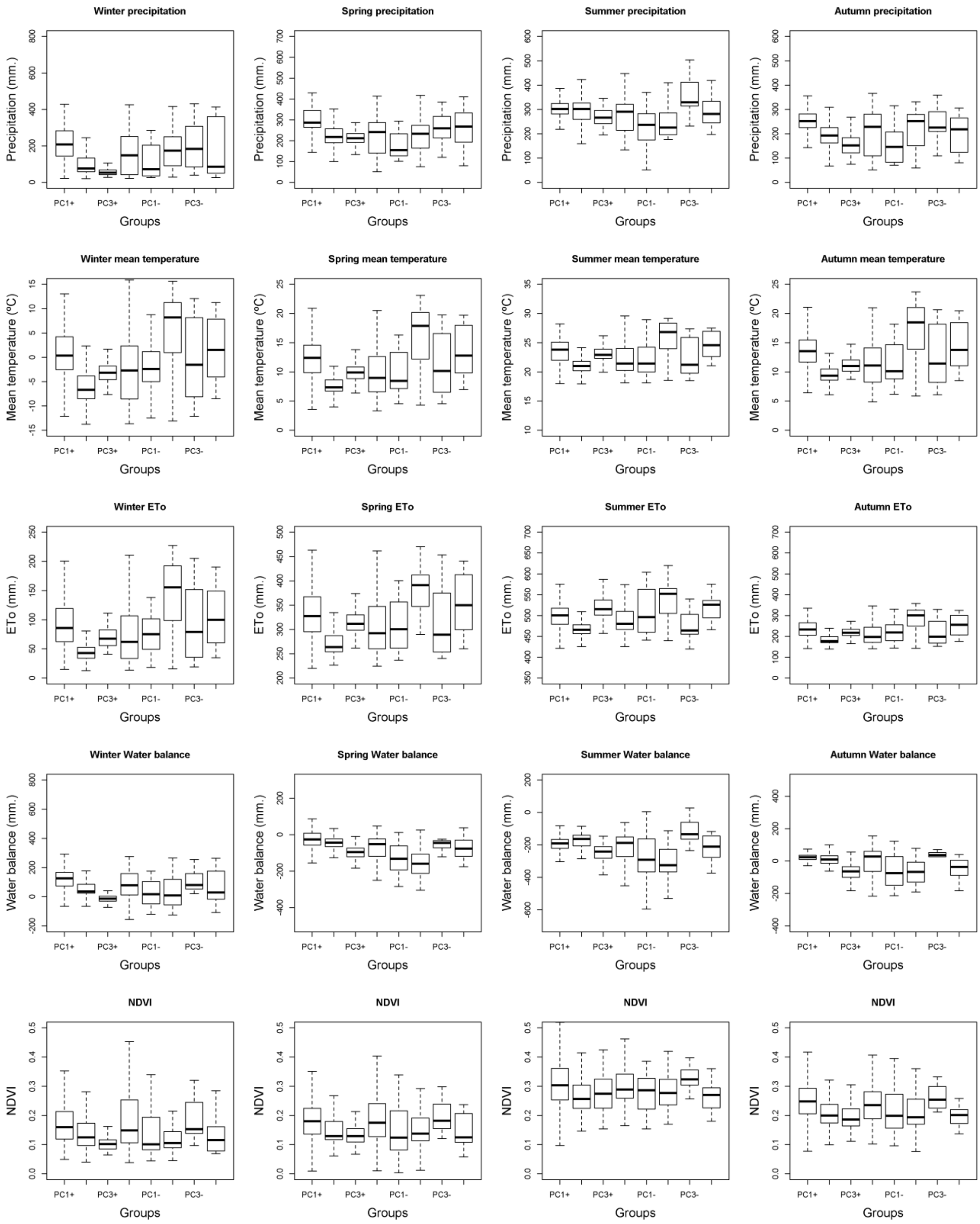
Supplementary Figure 5: Same as Supplementary Figure 1, but for soybean crop yields.



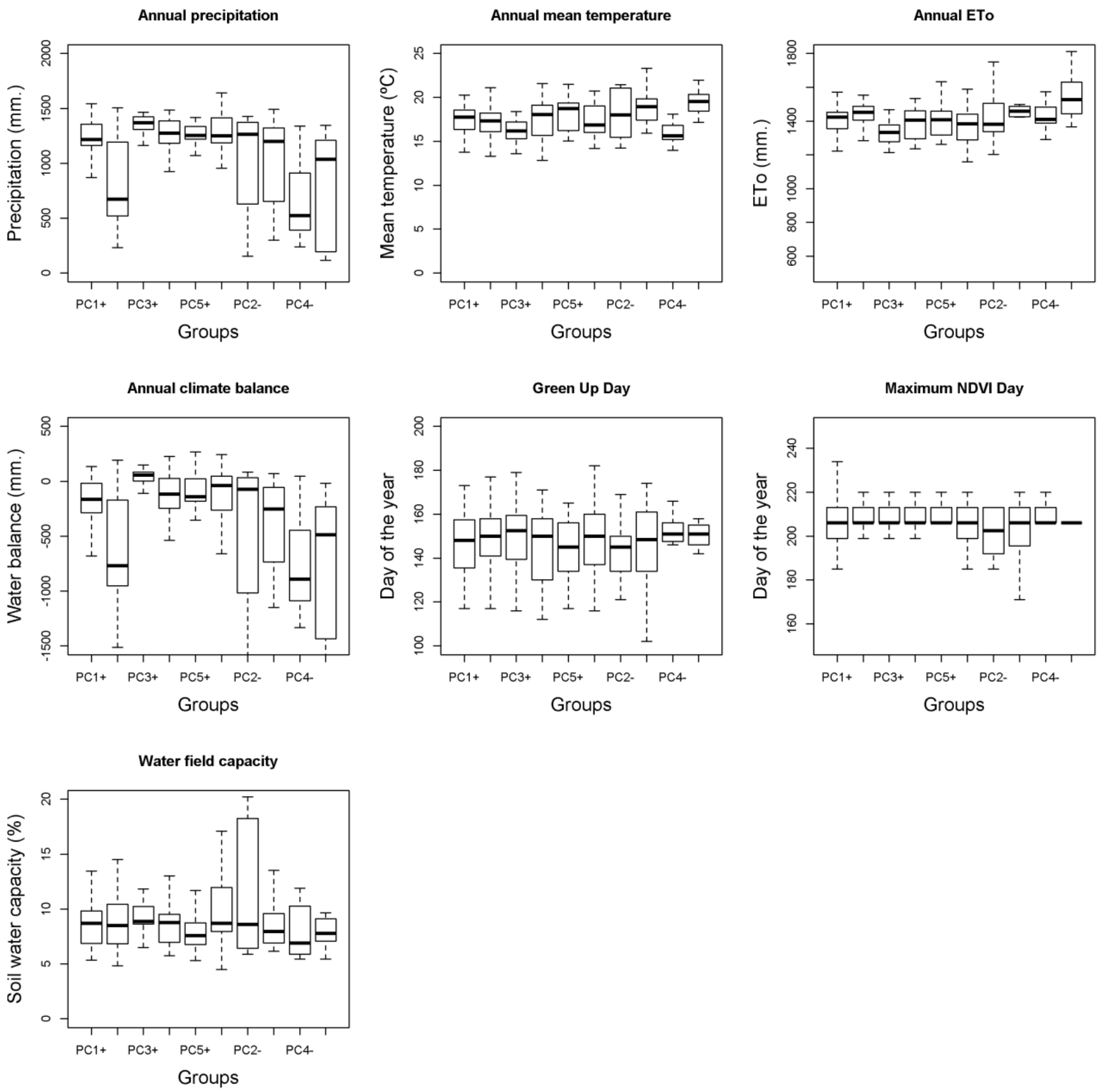
Supplementary Figure 6: Same as Supplementary Figure 2,but for soybean yields.



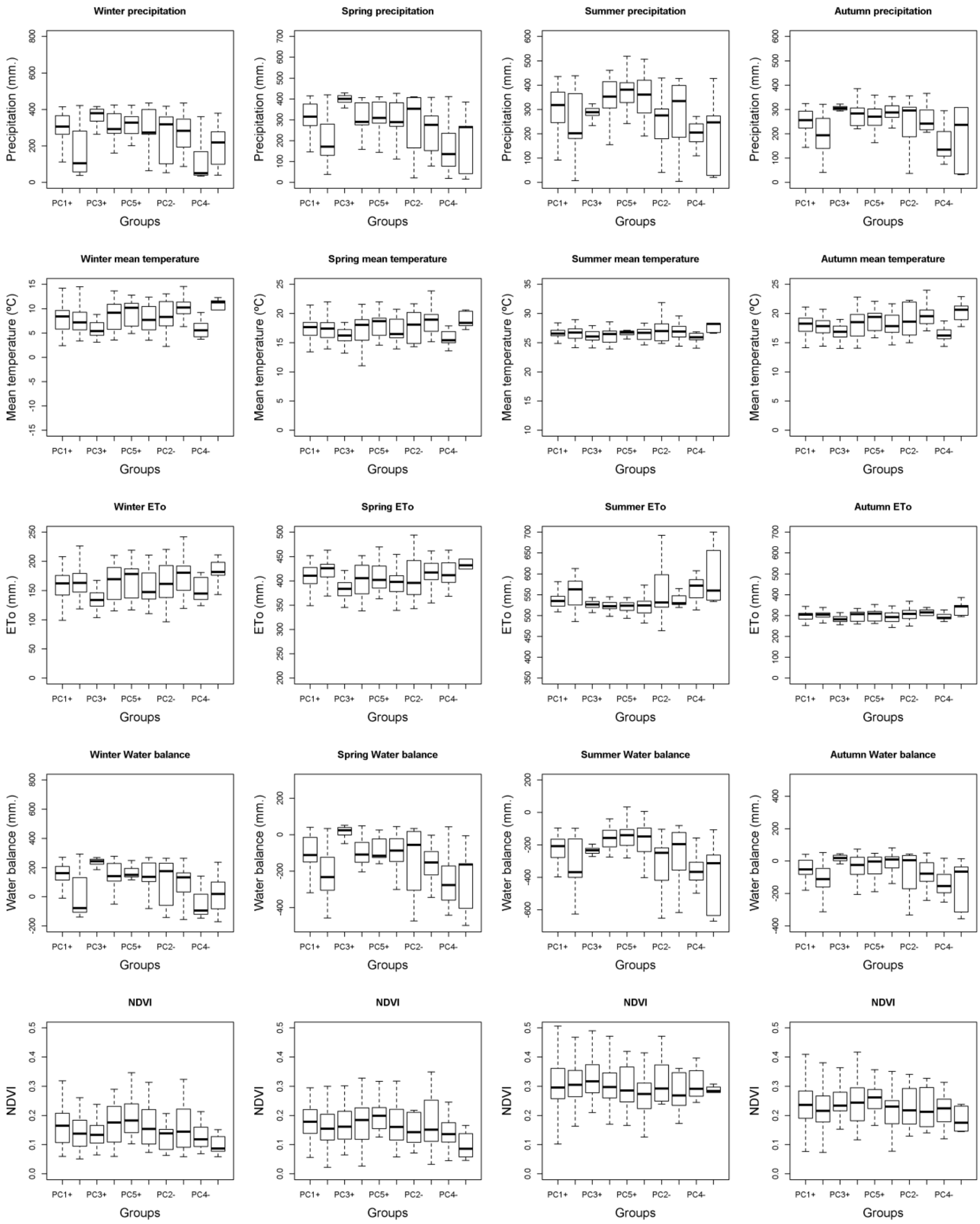
Supplementary Figure 7: Same as Supplementary Figure 1, but for corn crop yields.



Supplementary Figure 8: Same as Supplementary Figure 2, but for corn yields.



Supplementary Figure 9: Same as Supplementary Figure 1, but for cotton crop yields.



Supplementary Figure 10: Same as Supplementary Figure 2, but for cotton yields.

Supplementary statistical analysis:

Post-hoc statistical tests to determine the significance of the differences between climate and NDVI variables among the different groups of crop-yield response to the SPEI time-scales obtained by means of the PCA.

SIGNIFICATION CODES:

Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
(Adjusted p values reported -- single-step method)

1. BARLEY

Annual precipitation

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0    70.17      16.88   4.156  < 0.001 ***
Comp2(-) - Comp1(-) == 0    80.75      26.27   3.074  0.02436 *
Comp2(+) - Comp1(-) == 0   -23.75      18.43  -1.289  0.77463
Comp3(-) - Comp1(-) == 0    16.80      28.64   0.586  0.99088
Comp3(+) - Comp1(-) == 0   117.76      20.32   5.796  < 0.001 ***
Comp2(-) - Comp1(+) == 0    10.58      22.51   0.470  0.99676
Comp2(+) - Comp1(+) == 0   -93.92      12.48  -7.523  < 0.001 ***
Comp3(-) - Comp1(+) == 0   -53.37      25.23  -2.115  0.26236
Comp3(+) - Comp1(+) == 0    47.59      15.13   3.144  0.01965 *
Comp2(+) - Comp2(-) == 0  -104.50      23.69  -4.412  < 0.001 ***
Comp3(-) - Comp2(-) == 0   -63.95      32.28  -1.981  0.33332
Comp3(+) - Comp2(-) == 0    37.01      25.18   1.469  0.66293
Comp3(-) - Comp2(+) == 0    40.55      26.29   1.542  0.61485
Comp3(+) - Comp2(+) == 0   141.51      16.84   8.403  < 0.001 ***
Comp3(+) - Comp3(-) == 0   100.96      27.65   3.651  0.00363 **
```

Winter precipitation

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   -1.150     18.720  -0.061  1.00000
Comp2(-) - Comp1(-) == 0    1.319     29.129   0.045  1.00000
Comp2(+) - Comp1(-) == 0  -25.796     20.432  -1.263  0.78932
Comp3(-) - Comp1(-) == 0  -34.371     31.758  -1.082  0.87775
Comp3(+) - Comp1(-) == 0   46.116     22.526   2.047  0.29726
Comp2(-) - Comp1(+) == 0    2.469     24.952   0.099  1.00000
Comp2(+) - Comp1(+) == 0  -24.646     13.841  -1.781  0.45594
Comp3(-) - Comp1(+) == 0  -33.221     27.977  -1.187  0.82909
Comp3(+) - Comp1(+) == 0   47.266     16.779   2.817  0.05145 .
Comp2(+) - Comp2(-) == 0  -27.115     26.261  -1.033  0.89767
Comp3(-) - Comp2(-) == 0  -35.690     35.788  -0.997  0.91051
Comp3(+) - Comp2(-) == 0   44.797     27.921   1.604  0.57317
Comp3(-) - Comp2(+) == 0   -8.575     29.150  -0.294  0.99966
Comp3(+) - Comp2(+) == 0   71.912     18.670   3.852  0.00168 **
Comp3(+) - Comp3(-) == 0   80.488     30.654   2.626  0.08501 .
```

Spring precipitation

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   -99.59      16.39  -6.075  < 0.001 ***
Comp2(-) - Comp1(-) == 0   -88.27      25.51  -3.460  0.00703 **
Comp2(+) - Comp1(-) == 0    27.21      17.89   1.521  0.62917
Comp3(-) - Comp1(-) == 0   -31.16      27.81  -1.120  0.86121
Comp3(+) - Comp1(-) == 0   -55.48      19.73  -2.812  0.05217 .
Comp2(-) - Comp1(+) == 0    11.32      21.85   0.518  0.99487
```

Comp2(+) - Comp1(+) == 0	126.80	12.12	10.461	< 0.001	***
Comp3(-) - Comp1(+) == 0	68.43	24.50	2.793	0.05503	.
Comp3(+) - Comp1(+) == 0	44.11	14.69	3.002	0.03050	*
Comp2(+) - Comp2(-) == 0	115.48	23.00	5.021	< 0.001	***
Comp3(-) - Comp2(-) == 0	57.11	31.34	1.822	0.42932	
Comp3(+) - Comp2(-) == 0	32.79	24.45	1.341	0.74407	
Comp3(-) - Comp2(+) == 0	-58.37	25.53	-2.286	0.18671	
Comp3(+) - Comp2(+) == 0	-82.70	16.35	-5.058	< 0.001	***
Comp3(+) - Comp3(-) == 0	-24.33	26.85	-0.906	0.93895	

Summer precipitation

	Estimate	Std. Error	t value	Pr(>|t|)	
Comp1(+) - Comp1(-) == 0	-63.071	18.060	-3.492	0.00642	**
Comp2(-) - Comp1(-) == 0	17.343	28.103	0.617	0.98849	
Comp2(+) - Comp1(-) == 0	10.074	19.712	0.511	0.99519	
Comp3(-) - Comp1(-) == 0	16.343	30.639	0.533	0.99413	
Comp3(+) - Comp1(-) == 0	-18.962	21.733	-0.872	0.94774	
Comp2(-) - Comp1(+) == 0	80.414	24.073	3.340	0.01071	*
Comp2(+) - Comp1(+) == 0	73.144	13.353	5.478	< 0.001	***
Comp3(-) - Comp1(+) == 0	79.414	26.991	2.942	0.03619	*
Comp3(+) - Comp1(+) == 0	44.109	16.187	2.725	0.06582	.
Comp2(+) - Comp2(-) == 0	-7.269	25.336	-0.287	0.99970	
Comp3(-) - Comp2(-) == 0	-1.000	34.527	-0.029	1.00000	
Comp3(+) - Comp2(-) == 0	-36.304	26.937	-1.348	0.73985	
Comp3(-) - Comp2(+) == 0	6.269	28.123	0.223	0.99991	
Comp3(+) - Comp2(+) == 0	-29.035	18.012	-1.612	0.56801	
Comp3(+) - Comp3(-) == 0	-35.304	29.574	-1.194	0.82592	

Autumn precipitation

	Estimate	Std. Error	t value	Pr(>|t|)	
Comp1(+) - Comp1(-) == 0	31.323	18.622	1.682	0.5210	
Comp2(-) - Comp1(-) == 0	1.583	28.977	0.055	1.0000	
Comp2(+) - Comp1(-) == 0	16.689	20.325	0.821	0.9595	
Comp3(-) - Comp1(-) == 0	6.829	31.592	0.216	0.9999	
Comp3(+) - Comp1(-) == 0	-41.768	22.408	-1.864	0.4030	
Comp2(-) - Comp1(+) == 0	-29.741	24.821	-1.198	0.8236	
Comp2(+) - Comp1(+) == 0	-14.634	13.768	-1.063	0.8857	
Comp3(-) - Comp1(+) == 0	-24.495	27.830	-0.880	0.9458	
Comp3(+) - Comp1(+) == 0	-73.091	16.691	-4.379	<0.001	***
Comp2(+) - Comp2(-) == 0	15.107	26.124	0.578	0.9915	
Comp3(-) - Comp2(-) == 0	5.246	35.601	0.147	1.0000	
Comp3(+) - Comp2(-) == 0	-43.350	27.775	-1.561	0.6026	
Comp3(-) - Comp2(+) == 0	-9.861	28.998	-0.340	0.9993	
Comp3(+) - Comp2(+) == 0	-58.457	18.572	-3.148	0.0196	*
Comp3(+) - Comp3(-) == 0	-48.596	30.494	-1.594	0.5804	

Annual mean temperature

	Estimate	Std. Error	t value	Pr(>|t|)	
Comp1(+) - Comp1(-) == 0	104.841	17.209	6.092	< 0.001	***
Comp2(-) - Comp1(-) == 0	78.094	26.778	2.916	0.03913	*
Comp2(+) - Comp1(-) == 0	4.179	18.783	0.222	0.99991	
Comp3(-) - Comp1(-) == 0	41.943	29.195	1.437	0.68432	
Comp3(+) - Comp1(-) == 0	74.350	20.708	3.590	0.00455	**
Comp2(-) - Comp1(+) == 0	-26.747	22.938	-1.166	0.83971	
Comp2(+) - Comp1(+) == 0	-100.661	12.723	-7.911	< 0.001	***

	Estimate	Std. Error	t value	Pr(>|t|)	
Comp3(-) - Comp1(+) == 0	-62.898	25.718	-2.446	0.13109	
Comp3(+) - Comp1(+) == 0	-30.491	15.424	-1.977	0.33599	
Comp2(+) - Comp2(-) == 0	-73.915	24.141	-3.062	0.02550	*
Comp3(-) - Comp2(-) == 0	-36.151	32.899	-1.099	0.87062	
Comp3(+) - Comp2(-) == 0	-3.744	25.667	-0.146	0.99999	
Comp3(-) - Comp2(+) == 0	37.764	26.797	1.409	0.70182	
Comp3(+) - Comp2(+) == 0	70.171	17.163	4.089	< 0.001	***
Comp3(+) - Comp3(-) == 0	32.407	28.180	1.150	0.84742	

Winter mean temperature

	Estimate	Std. Error	t value	Pr(>|t|)	
Comp1(+) - Comp1(-) == 0	-50.725	18.473	-2.746	0.0625	.
Comp2(-) - Comp1(-) == 0	-13.830	28.745	-0.481	0.9964	
Comp2(+) - Comp1(-) == 0	11.319	20.163	0.561	0.9925	
Comp3(-) - Comp1(-) == 0	14.471	31.340	0.462	0.9970	
Comp3(+) - Comp1(-) == 0	-30.516	22.229	-1.373	0.7246	
Comp2(-) - Comp1(+) == 0	36.895	24.623	1.498	0.6440	
Comp2(+) - Comp1(+) == 0	62.045	13.658	4.543	<0.001	***
Comp3(-) - Comp1(+) == 0	65.197	27.608	2.362	0.1587	
Comp3(+) - Comp1(+) == 0	20.209	16.557	1.221	0.8120	
Comp2(+) - Comp2(-) == 0	25.150	25.915	0.970	0.9196	
Comp3(-) - Comp2(-) == 0	28.302	35.316	0.801	0.9634	
Comp3(+) - Comp2(-) == 0	-16.686	27.553	-0.606	0.9894	
Comp3(-) - Comp2(+) == 0	3.152	28.766	0.110	1.0000	
Comp3(+) - Comp2(+) == 0	-41.836	18.424	-2.271	0.1932	
Comp3(+) - Comp3(-) == 0	-44.988	30.250	-1.487	0.6515	

Spring mean temperature

	Estimate	Std. Error	t value	Pr(>|t|)	
Comp1(+) - Comp1(-) == 0	91.09	18.18	5.010	< 0.001	***
Comp2(-) - Comp1(-) == 0	59.40	28.29	2.100	0.27013	
Comp2(+) - Comp1(-) == 0	37.72	19.84	1.901	0.38059	
Comp3(-) - Comp1(-) == 0	23.73	30.85	0.769	0.96932	
Comp3(+) - Comp1(-) == 0	87.51	21.88	4.000	< 0.001	***
Comp2(-) - Comp1(+) == 0	-31.69	24.23	-1.308	0.76366	
Comp2(+) - Comp1(+) == 0	-53.38	13.44	-3.970	0.00114	**
Comp3(-) - Comp1(+) == 0	-67.37	27.17	-2.479	0.12144	
Comp3(+) - Comp1(+) == 0	-3.58	16.30	-0.220	0.99992	
Comp2(+) - Comp2(-) == 0	-21.68	25.51	-0.850	0.95309	
Comp3(-) - Comp2(-) == 0	-35.67	34.76	-1.026	0.90002	
Comp3(+) - Comp2(-) == 0	28.11	27.12	1.037	0.89610	
Comp3(-) - Comp2(+) == 0	-13.99	28.31	-0.494	0.99590	
Comp3(+) - Comp2(+) == 0	49.80	18.13	2.746	0.06242	.
Comp3(+) - Comp3(-) == 0	63.79	29.77	2.142	0.24908	

Summer mean temperature

	Estimate	Std. Error	t value	Pr(>|t|)	
Comp1(+) - Comp1(-) == 0	-110.826	15.351	-7.219	< 0.001	***
Comp2(-) - Comp1(-) == 0	-85.838	23.887	-3.593	0.00454	**
Comp2(+) - Comp1(-) == 0	35.931	16.755	2.144	0.24795	
Comp3(-) - Comp1(-) == 0	-23.886	26.043	-0.917	0.93588	
Comp3(+) - Comp1(-) == 0	-30.128	18.473	-1.631	0.55519	
Comp2(-) - Comp1(+) == 0	24.988	20.462	1.221	0.81162	
Comp2(+) - Comp1(+) == 0	146.757	11.350	12.930	< 0.001	***
Comp3(-) - Comp1(+) == 0	86.940	22.942	3.790	0.00221	**
Comp3(+) - Comp1(+) == 0	80.698	13.759	5.865	< 0.001	***
Comp2(+) - Comp2(-) == 0	121.769	21.535	5.654	< 0.001	***

```
Comp3(-) - Comp2(-) == 0   61.952     29.348   2.111  0.26430
Comp3(+) - Comp2(-) == 0   55.710     22.897   2.433  0.13530
Comp3(-) - Comp2(+) == 0  -59.817     23.905  -2.502  0.11515
Comp3(+) - Comp2(+) == 0  -66.059     15.310  -4.315  < 0.001 ***
Comp3(+) - Comp3(-) == 0   -6.242     25.138  -0.248  0.99985
```

Autumn mean temperature

```
                          Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  107.8434    16.0900   6.703  < 0.001 ***
Comp2(-) - Comp1(-) == 0   68.1397    25.0369   2.722  0.06647 .
Comp2(+) - Comp1(-) == 0  -18.5099    17.5619  -1.054  0.88933
Comp3(-) - Comp1(-) == 0   -0.1143    27.2969  -0.004  1.00000
Comp3(+) - Comp1(-) == 0   93.2894    19.3617   4.818  < 0.001 ***
Comp2(-) - Comp1(+) == 0  -39.7037    21.4465  -1.851  0.41075
Comp2(+) - Comp1(+) == 0 -126.3533    11.8964 -10.621  < 0.001 ***
Comp3(-) - Comp1(+) == 0 -107.9577    24.0463  -4.490  < 0.001 ***
Comp3(+) - Comp1(+) == 0  -14.5539    14.4214  -1.009  0.90624
Comp2(+) - Comp2(-) == 0  -86.6496    22.5718  -3.839  0.00186 **
Comp3(-) - Comp2(-) == 0  -68.2540    30.7601  -2.219  0.21431
Comp3(+) - Comp2(-) == 0   25.1498    23.9987   1.048  0.89165
Comp3(-) - Comp2(+) == 0   18.3956    25.0551   0.734  0.97497
Comp3(+) - Comp2(+) == 0  111.7993    16.0472   6.967  < 0.001 ***
Comp3(+) - Comp3(-) == 0   93.4037    26.3479   3.545  0.00527 **
```

Annual ETo

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   89.029     17.491   5.090   <0.001 ***
Comp2(-) - Comp1(-) == 0   19.486     27.217   0.716   0.9776
Comp2(+) - Comp1(-) == 0   -3.104     19.091  -0.163   1.0000
Comp3(-) - Comp1(-) == 0    9.343     29.674   0.315   0.9995
Comp3(+) - Comp1(-) == 0   68.681     21.048   3.263   0.0136 *
Comp2(-) - Comp1(+) == 0  -69.543     23.314  -2.983   0.0321 *
Comp2(+) - Comp1(+) == 0  -92.133     12.932  -7.124   <0.001 ***
Comp3(-) - Comp1(+) == 0  -79.686     26.140  -3.048   0.0265 *
Comp3(+) - Comp1(+) == 0  -20.348     15.677  -1.298   0.7693
Comp2(+) - Comp2(-) == 0  -22.590     24.537  -0.921   0.9349
Comp3(-) - Comp2(-) == 0  -10.143     33.439  -0.303   0.9996
Comp3(+) - Comp2(-) == 0   49.196     26.088   1.886   0.3897
Comp3(-) - Comp2(+) == 0   12.447     27.237   0.457   0.9972
Comp3(+) - Comp2(+) == 0   71.785     17.444   4.115   <0.001 ***
Comp3(+) - Comp3(-) == 0   59.339     28.642   2.072   0.2841
```

Winter ETo

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   -3.058     18.957  -0.161    1.000
Comp2(-) - Comp1(-) == 0  -24.200     29.498  -0.820    0.960
Comp2(+) - Comp1(-) == 0  -10.713     20.691  -0.518    0.995
Comp3(-) - Comp1(-) == 0  -36.843     32.160  -1.146    0.849
Comp3(+) - Comp1(-) == 0  -44.004     22.811  -1.929    0.364
Comp2(-) - Comp1(+) == 0  -21.142     25.268  -0.837    0.956
Comp2(+) - Comp1(+) == 0   -7.655     14.016  -0.546    0.993
Comp3(-) - Comp1(+) == 0  -33.785     28.331  -1.193    0.827
Comp3(+) - Comp1(+) == 0  -40.946     16.991  -2.410    0.143
Comp2(+) - Comp2(-) == 0   13.487     26.593   0.507    0.995
Comp3(-) - Comp2(-) == 0  -12.643     36.241  -0.349    0.999
Comp3(+) - Comp2(-) == 0  -19.804     28.275  -0.700    0.980
Comp3(-) - Comp2(+) == 0  -26.130     29.519  -0.885    0.945
```

```
Comp3(+) - Comp2(+) == 0  -33.292     18.906  -1.761    0.469
Comp3(+) - Comp3(-) == 0   -7.161     31.042  -0.231    1.000
(Adjusted p values reported -- single-step method)
```

Spring ETo

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   -70.05      16.29  -4.299  < 0.001 ***
Comp2(-) - Comp1(-) == 0   -13.83      25.35  -0.545  0.99348
Comp2(+) - Comp1(-) == 0    59.20      17.78   3.329  0.01107 *
Comp3(-) - Comp1(-) == 0    47.09      27.64   1.703  0.50679
Comp3(+) - Comp1(-) == 0   -52.71      19.61  -2.688  0.07232 .
Comp2(-) - Comp1(+) == 0    56.22      21.72   2.589  0.09318 .
Comp2(+) - Comp1(+) == 0   129.25      12.05  10.729  < 0.001 ***
Comp3(-) - Comp1(+) == 0   117.13      24.35   4.810  < 0.001 ***
Comp3(+) - Comp1(+) == 0    17.34      14.60   1.188  0.82900
Comp2(+) - Comp2(-) == 0    73.03      22.86   3.195  0.01703 *
Comp3(-) - Comp2(-) == 0    60.91      31.15   1.955  0.34813
Comp3(+) - Comp2(-) == 0   -38.88      24.30  -1.600  0.57626
Comp3(-) - Comp2(+) == 0   -12.12      25.37  -0.478  0.99650
Comp3(+) - Comp2(+) == 0  -111.91      16.25  -6.886  < 0.001 ***
Comp3(+) - Comp3(-) == 0   -99.79      26.68  -3.740  0.00272 **
```

Summer ETo

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   52.233     18.304   2.854  0.04629 *
Comp2(-) - Comp1(-) == 0   73.319     28.482   2.574  0.09670 .
Comp2(+) - Comp1(-) == 0   45.704     19.979   2.288  0.18605
Comp3(-) - Comp1(-) == 0   60.057     31.053   1.934  0.36062
Comp3(+) - Comp1(-) == 0  -28.427     22.026  -1.291  0.77339
Comp2(-) - Comp1(+) == 0   21.086     24.398   0.864  0.94974
Comp2(+) - Comp1(+) == 0   -6.529     13.533  -0.482  0.99633
Comp3(-) - Comp1(+) == 0    7.825     27.355   0.286  0.99971
Comp3(+) - Comp1(+) == 0  -80.660     16.406  -4.916  < 0.001 ***
Comp2(+) - Comp2(-) == 0  -27.615     25.678  -1.075  0.88061
Comp3(-) - Comp2(-) == 0  -13.262     34.993  -0.379  0.99884
Comp3(+) - Comp2(-) == 0 -101.746     27.301  -3.727  0.00293 **
Comp3(-) - Comp2(+) == 0   14.353     28.503   0.504  0.99552
Comp3(+) - Comp2(+) == 0  -74.131     18.255  -4.061  < 0.001 ***
Comp3(+) - Comp3(-) == 0  -88.484     29.974  -2.952  0.03523 *
```

Autumn ETo

```
                          Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  -55.9744    16.5216  -3.388  0.00900 **
Comp2(-) - Comp1(-) == 0    6.3095    25.7086   0.245  0.99986
Comp2(+) - Comp1(-) == 0   63.0403    18.0330   3.496  0.00624 **
Comp3(-) - Comp1(-) == 0   70.2857    28.0292   2.508  0.11380
Comp3(+) - Comp1(-) == 0  -55.3137    19.8811  -2.782  0.05645 .
Comp2(-) - Comp1(+) == 0   62.2840    22.0218   2.828  0.04989 *
Comp2(+) - Comp1(+) == 0  119.0147    12.2155   9.743  < 0.001 ***
Comp3(-) - Comp1(+) == 0  126.2601    24.6913   5.114  < 0.001 ***
Comp3(+) - Comp1(+) == 0    0.6608    14.8083   0.045  1.00000
Comp2(+) - Comp2(-) == 0   56.7308    23.1773   2.448  0.13103
Comp3(-) - Comp2(-) == 0   63.9762    31.5853   2.026  0.30869
Comp3(+) - Comp2(-) == 0  -61.6232    24.6425  -2.501  0.11561
Comp3(-) - Comp2(+) == 0    7.2454    25.7272   0.282  0.99973
Comp3(+) - Comp2(+) == 0 -118.3540    16.4776  -7.183  < 0.001 ***
Comp3(+) - Comp3(-) == 0 -125.5994    27.0547  -4.642  < 0.001 ***
```

Annual climate balance

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0 -23.0208    18.8935  -1.218   0.8132
Comp2(-) - Comp1(-) == 0 -23.1937    29.3994  -0.789   0.9658
Comp2(+) - Comp1(-) == 0   2.4645    20.6219   0.120   1.0000
Comp3(-) - Comp1(-) == 0 -27.3286    32.0531  -0.853   0.9525
Comp3(+) - Comp1(-) == 0 -51.2975    22.7353  -2.256   0.1991
Comp2(-) - Comp1(+) == 0  -0.1728    25.1833  -0.007   1.0000
Comp2(+) - Comp1(+) == 0  25.4853    13.9692   1.824   0.4280
Comp3(-) - Comp1(+) == 0  -4.3078    28.2361  -0.153   1.0000
Comp3(+) - Comp1(+) == 0 -28.2767    16.9342  -1.670   0.5293
Comp2(+) - Comp2(-) == 0  25.6581    26.5047   0.968   0.9204
Comp3(-) - Comp2(-) == 0  -4.1349    36.1198  -0.114   1.0000
Comp3(+) - Comp2(-) == 0 -28.1039    28.1803  -0.997   0.9105
Comp3(-) - Comp2(+) == 0 -29.7930    29.4207  -1.013   0.9050
Comp3(+) - Comp2(+) == 0 -53.7620    18.8432  -2.853   0.0467 *
Comp3(+) - Comp3(-) == 0 -23.9689    30.9388  -0.775   0.9684
```

Winter climate balance

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  -41.620     18.333  -2.270    0.193
Comp2(-) - Comp1(-) == 0    1.189     28.528   0.042    1.000
Comp2(+) - Comp1(-) == 0  -45.136     20.010  -2.256    0.199
Comp3(-) - Comp1(-) == 0  -10.700     31.103  -0.344    0.999
Comp3(+) - Comp1(-) == 0   40.191     22.061   1.822    0.429
Comp2(-) - Comp1(+) == 0   42.809     24.437   1.752    0.475
Comp2(+) - Comp1(+) == 0   -3.516     13.555  -0.259    1.000
Comp3(-) - Comp1(+) == 0   30.920     27.399   1.128    0.857
Comp3(+) - Comp1(+) == 0   81.811     16.432   4.979   <0.001 ***
Comp2(+) - Comp2(-) == 0  -46.325     25.719  -1.801    0.443
Comp3(-) - Comp2(-) == 0  -11.889     35.049  -0.339    0.999
Comp3(+) - Comp2(-) == 0   39.002     27.345   1.426    0.691
Comp3(-) - Comp2(+) == 0   34.436     28.548   1.206    0.820
Comp3(+) - Comp2(+) == 0   85.327     18.285   4.667   <0.001 ***
Comp3(+) - Comp3(-) == 0   50.891     30.022   1.695    0.512
```

Spring climate balance

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  -45.745     17.561  -2.605   0.0896 .
Comp2(-) - Comp1(-) == 0  -23.832     27.326  -0.872   0.9478
Comp2(+) - Comp1(-) == 0   56.788     19.168   2.963   0.0343 *
Comp3(-) - Comp1(-) == 0   29.843     29.793   1.002   0.9090
Comp3(+) - Comp1(-) == 0   -3.573     21.132  -0.169   1.0000
Comp2(-) - Comp1(+) == 0   21.914     23.407   0.936   0.9303
Comp2(+) - Comp1(+) == 0  102.533     12.984   7.897   <0.001 ***
Comp3(-) - Comp1(+) == 0   75.588     26.245   2.880   0.0431 *
Comp3(+) - Comp1(+) == 0   42.172     15.740   2.679   0.0744 .
Comp2(+) - Comp2(-) == 0   80.620     24.635   3.273   0.0131 *
Comp3(-) - Comp2(-) == 0   53.675     33.572   1.599   0.5770
Comp3(+) - Comp2(-) == 0   20.258     26.193   0.773   0.9686
Comp3(-) - Comp2(+) == 0  -26.945     27.346  -0.985   0.9146
Comp3(+) - Comp2(+) == 0  -60.361     17.514  -3.446   0.0074 **
Comp3(+) - Comp3(-) == 0  -33.416     28.757  -1.162   0.8417
```

Summer climate balance

```
                         Estimate Std. Error t value Pr(>|t|)
```

```
Comp1(+) - Comp1(-) == 0  147.228     13.866  10.618  < 0.001 ***
Comp2(-) - Comp1(-) == 0  165.710     21.576   7.680  < 0.001 ***
Comp2(+) - Comp1(-) == 0    4.312     15.135   0.285  0.99971
Comp3(-) - Comp1(-) == 0   74.757     23.524   3.178  0.01782 *
Comp3(+) - Comp1(-) == 0   12.347     16.686   0.740  0.97410
Comp2(-) - Comp1(+) == 0   18.481     18.482   1.000  0.90954
Comp2(+) - Comp1(+) == 0 -142.916     10.252 -13.940  < 0.001 ***
Comp3(-) - Comp1(+) == 0  -72.471     20.723  -3.497  0.00634 **
Comp3(+) - Comp1(+) == 0 -134.881     12.428 -10.853  < 0.001 ***
Comp2(+) - Comp2(-) == 0 -161.397     19.452  -8.297  < 0.001 ***
Comp3(-) - Comp2(-) == 0  -90.952     26.509  -3.431  0.00763 **
Comp3(+) - Comp2(-) == 0 -153.362     20.682  -7.415  < 0.001 ***
Comp3(-) - Comp2(+) == 0   70.445     21.592   3.263  0.01364 *
Comp3(+) - Comp2(+) == 0    8.035     13.829   0.581  0.99126
Comp3(+) - Comp3(-) == 0  -62.410     22.706  -2.749  0.06189 .
```

Autumn climate balance

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0 -110.310     16.014  -6.888   <0.001 ***
Comp2(-) - Comp1(-) == 0 -103.606     24.918  -4.158   <0.001 ***
Comp2(+) - Comp1(-) == 0   21.646     17.479   1.238   0.8026
Comp3(-) - Comp1(-) == 0  -55.257     27.167  -2.034   0.3043
Comp3(+) - Comp1(-) == 0  -42.307     19.270  -2.195   0.2246
Comp2(-) - Comp1(+) == 0    6.704     21.345   0.314   0.9995
Comp2(+) - Comp1(+) == 0  131.956     11.840  11.145   <0.001 ***
Comp3(-) - Comp1(+) == 0   55.053     23.932   2.300   0.1810
Comp3(+) - Comp1(+) == 0   68.003     14.353   4.738   <0.001 ***
Comp2(+) - Comp2(-) == 0  125.252     22.465   5.576   <0.001 ***
Comp3(-) - Comp2(-) == 0   48.349     30.614   1.579   0.5900
Comp3(+) - Comp2(-) == 0   61.300     23.885   2.566   0.0987 .
Comp3(-) - Comp2(+) == 0  -76.903     24.936  -3.084   0.0240 *
Comp3(+) - Comp2(+) == 0  -63.953     15.971  -4.004   <0.001 ***
Comp3(+) - Comp3(-) == 0   12.950     26.223   0.494   0.9959
```

Winter NDVI

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  -144.48      14.21 -10.168  < 0.001 ***
Comp2(-) - Comp1(-) == 0  -132.92      22.11  -6.012  < 0.001 ***
Comp2(+) - Comp1(-) == 0    10.51      15.51   0.677  0.98247
Comp3(-) - Comp1(-) == 0   -69.56      24.11  -2.885  0.04261 *
Comp3(+) - Comp1(-) == 0   -43.59      17.10  -2.549  0.10274
Comp2(-) - Comp1(+) == 0    11.56      18.94   0.610  0.98908
Comp2(+) - Comp1(+) == 0   154.98      10.51  14.752  < 0.001 ***
Comp3(-) - Comp1(+) == 0    74.92      21.24   3.528  0.00556 **
Comp3(+) - Comp1(+) == 0   100.89      12.74   7.922  < 0.001 ***
Comp2(+) - Comp2(-) == 0   143.43      19.93   7.195  < 0.001 ***
Comp3(-) - Comp2(-) == 0    63.37      27.16   2.333  0.16912
Comp3(+) - Comp2(-) == 0    89.33      21.19   4.215  < 0.001 ***
Comp3(-) - Comp2(+) == 0   -80.06      22.13  -3.618  0.00404 **
Comp3(+) - Comp2(+) == 0   -54.10      14.17  -3.817  0.00202 **
Comp3(+) - Comp3(-) == 0    25.97      23.27   1.116  0.86314
```

Spring NDVI

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  -123.17      15.04  -8.187   <0.001 ***
Comp2(-) - Comp1(-) == 0  -136.11      23.41  -5.814   <0.001 ***
Comp2(+) - Comp1(-) == 0    18.26      16.42   1.112   0.8648
```

Comp3(-) - Comp1(-) == 0	-59.66	25.52	-2.337	0.1673	
Comp3(+) - Comp1(-) == 0	-24.14	18.10	-1.333	0.7484	
Comp2(-) - Comp1(+) == 0	-12.94	20.05	-0.645	0.9859	
Comp2(+) - Comp1(+) == 0	141.43	11.12	12.715	<0.001	***
Comp3(-) - Comp1(+) == 0	63.51	22.48	2.825	0.0502	.
Comp3(+) - Comp1(+) == 0	99.03	13.48	7.344	<0.001	***
Comp2(+) - Comp2(-) == 0	154.37	21.11	7.314	<0.001	***
Comp3(-) - Comp2(-) == 0	76.45	28.76	2.658	0.0783	.
Comp3(+) - Comp2(-) == 0	111.97	22.44	4.990	<0.001	***
Comp3(-) - Comp2(+) == 0	-77.92	23.43	-3.326	0.0111	*
Comp3(+) - Comp2(+) == 0	-42.40	15.00	-2.826	0.0503	.
Comp3(+) - Comp3(-) == 0	35.52	24.64	1.442	0.6811	

Summer NDVI

	Estimate	Std. Error	t value	Pr(>|t|)
Comp1(+) - Comp1(-) == 0	17.950	19.035	0.943	0.928
Comp2(-) - Comp1(-) == 0	-26.137	29.620	-0.882	0.945
Comp2(+) - Comp1(-) == 0	-1.722	20.776	-0.083	1.000
Comp3(-) - Comp1(-) == 0	6.586	32.293	0.204	1.000
Comp3(+) - Comp1(-) == 0	9.977	22.906	0.436	0.998
Comp2(-) - Comp1(+) == 0	-44.086	25.372	-1.738	0.484
Comp2(+) - Comp1(+) == 0	-19.672	14.074	-1.398	0.709
Comp3(-) - Comp1(+) == 0	-11.364	28.448	-0.399	0.999
Comp3(+) - Comp1(+) == 0	-7.973	17.061	-0.467	0.997
Comp2(+) - Comp2(-) == 0	24.415	26.703	0.914	0.937
Comp3(-) - Comp2(-) == 0	32.722	36.390	0.899	0.941
Comp3(+) - Comp2(-) == 0	36.114	28.391	1.272	0.784
Comp3(-) - Comp2(+) == 0	8.308	29.641	0.280	1.000
Comp3(+) - Comp2(+) == 0	11.699	18.984	0.616	0.989
Comp3(+) - Comp3(-) == 0	3.391	31.171	0.109	1.000

Autumn NDVI

	Estimate	Std. Error	t value	Pr(>|t|)	
Comp1(+) - Comp1(-) == 0	-109.035	16.295	-6.691	<0.001	***
Comp2(-) - Comp1(-) == 0	-126.868	25.356	-5.004	<0.001	***
Comp2(+) - Comp1(-) == 0	3.615	17.785	0.203	0.9999	
Comp3(-) - Comp1(-) == 0	-44.757	27.644	-1.619	0.5633	
Comp3(+) - Comp1(-) == 0	-13.605	19.608	-0.694	0.9805	
Comp2(-) - Comp1(+) == 0	-17.833	21.720	-0.821	0.9595	
Comp2(+) - Comp1(+) == 0	112.650	12.048	9.350	<0.001	***
Comp3(-) - Comp1(+) == 0	64.278	24.352	2.639	0.0821	.
Comp3(+) - Comp1(+) == 0	95.430	14.605	6.534	<0.001	***
Comp2(+) - Comp2(-) == 0	130.483	22.859	5.708	<0.001	***
Comp3(-) - Comp2(-) == 0	82.111	31.152	2.636	0.0830	.
Comp3(+) - Comp2(-) == 0	113.263	24.304	4.660	<0.001	***
Comp3(-) - Comp2(+) == 0	-48.372	25.374	-1.906	0.3771	
Comp3(+) - Comp2(+) == 0	-17.220	16.251	-1.060	0.8870	
Comp3(+) - Comp3(-) == 0	31.152	26.683	1.167	0.8390	

Average day of the year recording the maximum NDVI

	Estimate	Std. Error	t value	Pr(>|t|)	
Comp1(+) - Comp1(-) == 0	-1.9603	0.6685	-2.932	0.0373	*
Comp2(-) - Comp1(-) == 0	-1.0159	1.0402	-0.977	0.9176	
Comp2(+) - Comp1(-) == 0	0.9158	0.7296	1.255	0.7934	
Comp3(-) - Comp1(-) == 0	-0.8571	1.1341	-0.756	0.9716	
Comp3(+) - Comp1(-) == 0	-0.1584	0.8044	-0.197	1.0000	
Comp2(-) - Comp1(+) == 0	0.9444	0.8910	1.060	0.8869	

```
Comp2(+) - Comp1(+) == 0   2.8761     0.4943   5.819   <0.001 ***
Comp3(-) - Comp1(+) == 0   1.1032     0.9990   1.104   0.8683
Comp3(+) - Comp1(+) == 0   1.8019     0.5992   3.007   0.0300 *
Comp2(+) - Comp2(-) == 0   1.9316     0.9378   2.060   0.2904
Comp3(-) - Comp2(-) == 0   0.1587     1.2780   0.124   1.0000
Comp3(+) - Comp2(-) == 0   0.8575     0.9971   0.860   0.9508
Comp3(-) - Comp2(+) == 0  -1.7729     1.0410  -1.703   0.5068
Comp3(+) - Comp2(+) == 0  -1.0741     0.6667  -1.611   0.5686
Comp3(+) - Comp3(-) == 0   0.6988     1.0947   0.638   0.9866
```

Average day of the year recording the green up

```
                          Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0 -4.73862    2.35722  -2.010  0.31724
Comp2(-) - Comp1(-) == 0  1.29841    3.66797   0.354  0.99917
Comp2(+) - Comp1(-) == 0  0.01209    2.57286   0.005  1.00000
Comp3(-) - Comp1(-) == 0 -3.11429    3.99906  -0.779  0.96766
Comp3(+) - Comp1(-) == 0 -8.06149    2.83653  -2.842  0.04800 *
Comp2(-) - Comp1(+) == 0  6.03704    3.14196   1.921  0.36829
Comp2(+) - Comp1(+) == 0  4.75071    1.74284   2.726  0.06571 .
Comp3(-) - Comp1(+) == 0  1.62434    3.52284   0.461  0.99704
Comp3(+) - Comp1(+) == 0 -3.32287    2.11277  -1.573  0.59441
Comp2(+) - Comp2(-) == 0 -1.28632    3.30681  -0.389  0.99869
Comp3(-) - Comp2(-) == 0 -4.41270    4.50643  -0.979  0.91668
Comp3(+) - Comp2(-) == 0 -9.35990    3.51587  -2.662  0.07752 .
Comp3(-) - Comp2(+) == 0 -3.12637    3.67063  -0.852  0.95273
Comp3(+) - Comp2(+) == 0 -8.07358    2.35094  -3.434  0.00743 **
Comp3(+) - Comp3(-) == 0 -4.94720    3.86003  -1.282  0.77862
```

Soil water capacity

```
                          Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  -39.124     18.083  -2.164    0.239
Comp2(-) - Comp1(-) == 0  -60.457     28.138  -2.149    0.246
Comp2(+) - Comp1(-) == 0   41.492     19.737   2.102    0.269
Comp3(-) - Comp1(-) == 0  -12.886     30.678  -0.420    0.998
Comp3(+) - Comp1(-) == 0  -31.283     21.760  -1.438    0.684
Comp2(-) - Comp1(+) == 0  -21.333     24.103  -0.885    0.945
Comp2(+) - Comp1(+) == 0   80.615     13.370   6.030   <0.001 ***
Comp3(-) - Comp1(+) == 0   26.238     27.025   0.971    0.919
Comp3(+) - Comp1(+) == 0    7.841     16.208   0.484    0.996
Comp2(+) - Comp2(-) == 0  101.949     25.368   4.019   <0.001 ***
Comp3(-) - Comp2(-) == 0   47.571     34.570   1.376    0.723
Comp3(+) - Comp2(-) == 0   29.174     26.971   1.082    0.878
Comp3(-) - Comp2(+) == 0  -54.377     28.159  -1.931    0.362
Comp3(+) - Comp2(+) == 0  -72.775     18.035  -4.035   <0.001 ***
Comp3(+) - Comp3(-) == 0  -18.398     29.612  -0.621    0.988
```

2. WHEAT

Annual precipitation

```
                           Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  -229.87      34.19  -6.722  < 0.001 ***
Comp2(-) - Comp1(-) == 0   -13.82      45.93  -0.301  0.99964
Comp2(+) - Comp1(-) == 0  -218.49      30.48  -7.168  < 0.001 ***
Comp3(-) - Comp1(-) == 0  -125.98      53.36  -2.361  0.15981
Comp3(+) - Comp1(-) == 0  -185.10      30.41  -6.086  < 0.001 ***
Comp2(-) - Comp1(+) == 0   216.05      46.64   4.633  < 0.001 ***
Comp2(+) - Comp1(+) == 0    11.38      31.53   0.361  0.99913
Comp3(-) - Comp1(+) == 0   103.89      53.97   1.925  0.36983
Comp3(+) - Comp1(+) == 0    44.77      31.46   1.423  0.69837
Comp2(+) - Comp2(-) == 0  -204.67      43.99  -4.653  < 0.001 ***
Comp3(-) - Comp2(-) == 0  -112.16      62.07  -1.807  0.44394
Comp3(+) - Comp2(-) == 0  -171.28      43.94  -3.898  0.00129 **
Comp3(-) - Comp2(+) == 0    92.51      51.70   1.790  0.45505
Comp3(+) - Comp2(+) == 0    33.39      27.38   1.220  0.81680
Comp3(+) - Comp3(-) == 0   -59.12      51.66  -1.145  0.85366
```

Winter precipitation

```
                           Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  -311.48      31.88  -9.770  < 0.001 ***
Comp2(-) - Comp1(-) == 0    38.47      42.82   0.898  0.94290
Comp2(+) - Comp1(-) == 0  -325.63      28.42 -11.458  < 0.001 ***
Comp3(-) - Comp1(-) == 0  -149.63      49.75  -3.008  0.02935 *
Comp3(+) - Comp1(-) == 0  -392.19      28.35 -13.832  < 0.001 ***
Comp2(-) - Comp1(+) == 0   349.94      43.48   8.049  < 0.001 ***
Comp2(+) - Comp1(+) == 0   -14.15      29.40  -0.481  0.99652
Comp3(-) - Comp1(+) == 0   161.85      50.32   3.217  0.01527 *
Comp3(+) - Comp1(+) == 0   -80.71      29.33  -2.752  0.06114 .
Comp2(+) - Comp2(-) == 0  -364.09      41.01  -8.879  < 0.001 ***
Comp3(-) - Comp2(-) == 0  -188.09      57.87  -3.250  0.01367 *
Comp3(+) - Comp2(-) == 0  -430.66      40.96 -10.513  < 0.001 ***
Comp3(-) - Comp2(+) == 0   176.00      48.20   3.652  0.00342 **
Comp3(+) - Comp2(+) == 0   -66.56      25.53  -2.607  0.08878 .
Comp3(+) - Comp3(-) == 0  -242.56      48.16  -5.037  < 0.001 ***
```

Spring precipitation

```
                           Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   445.16      29.22  15.237   <0.001 ***
Comp2(-) - Comp1(-) == 0   156.38      39.24   3.985   <0.001 ***
Comp2(+) - Comp1(-) == 0   489.74      26.04  18.804   <0.001 ***
Comp3(-) - Comp1(-) == 0    21.43      45.59   0.470    0.997
Comp3(+) - Comp1(-) == 0   506.56      25.98  19.495   <0.001 ***
Comp2(-) - Comp1(+) == 0  -288.78      39.85  -7.248   <0.001 ***
Comp2(+) - Comp1(+) == 0    44.57      26.94   1.654    0.545
Comp3(-) - Comp1(+) == 0  -423.73      46.11  -9.189   <0.001 ***
Comp3(+) - Comp1(+) == 0    61.39      26.88   2.284    0.189
Comp2(+) - Comp2(-) == 0   333.36      37.58   8.870   <0.001 ***
Comp3(-) - Comp2(-) == 0  -134.95      53.04  -2.544    0.104
Comp3(+) - Comp2(-) == 0   350.18      37.54   9.328   <0.001 ***
Comp3(-) - Comp2(+) == 0  -468.31      44.17 -10.602   <0.001 ***
Comp3(+) - Comp2(+) == 0    16.82      23.40   0.719    0.978
Comp3(+) - Comp3(-) == 0   485.13      44.13  10.992   <0.001 ***
```

Summer precipitation

```
                        Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   577.37      29.37  19.661   <0.001 ***
Comp2(-) - Comp1(-) == 0   412.40      39.45  10.455   <0.001 ***
Comp2(+) - Comp1(-) == 0   487.21      26.18  18.611   <0.001 ***
Comp3(-) - Comp1(-) == 0   195.99      45.83   4.277   <0.001 ***
Comp3(+) - Comp1(-) == 0   516.18      26.12  19.764   <0.001 ***
Comp2(-) - Comp1(+) == 0  -164.98      40.05  -4.119   <0.001 ***
Comp2(+) - Comp1(+) == 0   -90.17      27.08  -3.330   0.0105 *
Comp3(-) - Comp1(+) == 0  -381.38      46.35  -8.228   <0.001 ***
Comp3(+) - Comp1(+) == 0   -61.19      27.02  -2.265   0.1969
Comp2(+) - Comp2(-) == 0    74.81      37.77   1.980   0.3373
Comp3(-) - Comp2(-) == 0  -216.40      53.31  -4.059   <0.001 ***
Comp3(+) - Comp2(-) == 0   103.78      37.73   2.751   0.0609 .
Comp3(-) - Comp2(+) == 0  -291.21      44.40  -6.559   <0.001 ***
Comp3(+) - Comp2(+) == 0    28.98      23.52   1.232   0.8102
Comp3(+) - Comp3(-) == 0   320.19      44.36   7.218   <0.001 ***
```

Autumn precipitation

```
                        Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   215.46      32.85   6.559  < 0.001 ***
Comp2(-) - Comp1(-) == 0   -44.70      44.13  -1.013  0.90759
Comp2(+) - Comp1(-) == 0   268.39      29.28   9.165  < 0.001 ***
Comp3(-) - Comp1(-) == 0   377.96      51.27   7.373  < 0.001 ***
Comp3(+) - Comp1(-) == 0   323.81      29.22  11.083  < 0.001 ***
Comp2(-) - Comp1(+) == 0  -260.16      44.80  -5.807  < 0.001 ***
Comp2(+) - Comp1(+) == 0    52.93      30.29   1.747  0.48272
Comp3(-) - Comp1(+) == 0   162.50      51.85   3.134  0.01991 *
Comp3(+) - Comp1(+) == 0   108.36      30.23   3.585  0.00428 **
Comp2(+) - Comp2(-) == 0   313.08      42.26   7.409  < 0.001 ***
Comp3(-) - Comp2(-) == 0   422.66      59.63   7.087  < 0.001 ***
Comp3(+) - Comp2(-) == 0   368.51      42.21   8.731  < 0.001 ***
Comp3(-) - Comp2(+) == 0   109.57      49.67   2.206  0.22171
Comp3(+) - Comp2(+) == 0    55.43      26.31   2.107  0.26872
Comp3(+) - Comp3(-) == 0   -54.14      49.63  -1.091  0.87733
```

Annual mean temperature

```
                        Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   -25.19      34.36  -0.733  0.97601
Comp2(-) - Comp1(-) == 0  -100.36      46.15  -2.175  0.23587
Comp2(+) - Comp1(-) == 0    87.04      30.63   2.842  0.04734 *
Comp3(-) - Comp1(-) == 0   246.66      53.62   4.600  < 0.001 ***
Comp3(+) - Comp1(-) == 0   -68.59      30.56  -2.245  0.20494
Comp2(-) - Comp1(+) == 0   -75.18      46.86  -1.604  0.57870
Comp2(+) - Comp1(+) == 0   112.23      31.68   3.542  0.00495 **
Comp3(-) - Comp1(+) == 0   271.85      54.23   5.013  < 0.001 ***
Comp3(+) - Comp1(+) == 0   -43.40      31.62  -1.373  0.72968
Comp2(+) - Comp2(-) == 0   187.40      44.20   4.240  < 0.001 ***
Comp3(-) - Comp2(-) == 0   347.02      62.37   5.564  < 0.001 ***
Comp3(+) - Comp2(-) == 0    31.77      44.15   0.720  0.97788
Comp3(-) - Comp2(+) == 0   159.62      51.95   3.073  0.02406 *
Comp3(+) - Comp2(+) == 0  -155.63      27.52  -5.656  < 0.001 ***
Comp3(+) - Comp3(-) == 0  -315.25      51.90  -6.074  < 0.001 ***
```

Winter mean temperature

```
                        Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   -91.03      34.06  -2.673   0.0751 .
```

```
Comp2(-) - Comp1(-) == 0  -221.72      45.75  -4.847   <0.001 ***
Comp2(+) - Comp1(-) == 0    36.33      30.36   1.197   0.8285
Comp3(-) - Comp1(-) == 0  -240.93      53.15  -4.533   <0.001 ***
Comp3(+) - Comp1(-) == 0  -161.28      30.29  -5.325   <0.001 ***
Comp2(-) - Comp1(+) == 0  -130.69      46.45  -2.814   0.0513 .
Comp2(+) - Comp1(+) == 0   127.36      31.40   4.055   <0.001 ***
Comp3(-) - Comp1(+) == 0  -149.90      53.75  -2.789   0.0548 .
Comp3(+) - Comp1(+) == 0   -70.25      31.34  -2.242   0.2064
Comp2(+) - Comp2(-) == 0   258.05      43.81   5.891   <0.001 ***
Comp3(-) - Comp2(-) == 0   -19.21      61.82  -0.311   0.9996
Comp3(+) - Comp2(-) == 0    60.44      43.76   1.381   0.7244
Comp3(-) - Comp2(+) == 0  -277.26      51.49  -5.385   <0.001 ***
Comp3(+) - Comp2(+) == 0  -197.61      27.27  -7.246   <0.001 ***
Comp3(+) - Comp3(-) == 0    79.65      51.45   1.548   0.6164
```

Spring mean temperature

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0    74.52      34.16   2.182  0.23289
Comp2(-) - Comp1(-) == 0   -76.74      45.88  -1.673  0.53255
Comp2(+) - Comp1(-) == 0    96.29      30.45   3.162  0.01826 *
Comp3(-) - Comp1(-) == 0   329.84      53.31   6.188  < 0.001 ***
Comp3(+) - Comp1(-) == 0   -53.45      30.38  -1.759  0.47481
Comp2(-) - Comp1(+) == 0  -151.26      46.59  -3.247  0.01395 *
Comp2(+) - Comp1(+) == 0    21.77      31.50   0.691  0.98154
Comp3(-) - Comp1(+) == 0   255.32      53.91   4.736  < 0.001 ***
Comp3(+) - Comp1(+) == 0  -127.97      31.43  -4.071  < 0.001 ***
Comp2(+) - Comp2(-) == 0   173.03      43.94   3.938  0.00105 **
Comp3(-) - Comp2(-) == 0   406.58      62.01   6.557  < 0.001 ***
Comp3(+) - Comp2(-) == 0    23.30      43.89   0.531  0.99448
Comp3(-) - Comp2(+) == 0   233.55      51.64   4.522  < 0.001 ***
Comp3(+) - Comp2(+) == 0  -149.73      27.35  -5.474  < 0.001 ***
Comp3(+) - Comp3(-) == 0  -383.28      51.60  -7.428  < 0.001 ***
```

Summer mean temperature

```
                          Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0 -282.4555    33.3954  -8.458   <0.001 ***
Comp2(-) - Comp1(-) == 0 -282.0756    44.8585  -6.288   <0.001 ***
Comp2(+) - Comp1(-) == 0 -211.6171    29.7696  -7.108   <0.001 ***
Comp3(-) - Comp1(-) == 0 -536.6358    52.1156 -10.297   <0.001 ***
Comp3(+) - Comp1(-) == 0 -217.1980    29.7007  -7.313   <0.001 ***
Comp2(-) - Comp1(+) == 0    0.3798    45.5454   0.008    1.000
Comp2(+) - Comp1(+) == 0   70.8384    30.7949   2.300    0.182
Comp3(-) - Comp1(+) == 0 -254.1803    52.7080  -4.822   <0.001 ***
Comp3(+) - Comp1(+) == 0   65.2575    30.7283   2.124    0.261
Comp2(+) - Comp2(-) == 0   70.4586    42.9576   1.640    0.554
Comp3(-) - Comp2(-) == 0 -254.5602    60.6232  -4.199   <0.001 ***
Comp3(+) - Comp2(-) == 0   64.8777    42.9099   1.512    0.640
Comp3(-) - Comp2(+) == 0 -325.0187    50.4887  -6.437   <0.001 ***
Comp3(+) - Comp2(+) == 0   -5.5809    26.7433  -0.209    1.000
Comp3(+) - Comp3(-) == 0  319.4378    50.4481   6.332   <0.001 ***
```

Autumn mean temperature

```
Comp2(-) - Comp1(-) == 0  -230.07      46.45  -4.953  < 0.001 ***
Comp2(+) - Comp1(-) == 0   -52.62      30.83  -1.707  0.50948
Comp3(-) - Comp1(-) == 0   127.78      53.96   2.368  0.15737
Comp3(+) - Comp1(-) == 0  -116.53      30.75  -3.789  0.00192 **
Comp2(-) - Comp1(+) == 0  -190.55      47.16  -4.040  < 0.001 ***
```

```
Comp2(+) - Comp1(+) == 0   -13.10      31.89  -0.411  0.99837
Comp3(-) - Comp1(+) == 0   167.31      54.58   3.065  0.02475 *
Comp3(+) - Comp1(+) == 0   -77.01      31.82  -2.420  0.13970
Comp2(+) - Comp2(-) == 0   177.45      44.48   3.989  < 0.001 ***
Comp3(-) - Comp2(-) == 0   357.86      62.77   5.701  < 0.001 ***
Comp3(+) - Comp2(-) == 0   113.54      44.43   2.555  0.10109
Comp3(-) - Comp2(+) == 0   180.40      52.28   3.451  0.00693 **
Comp3(+) - Comp2(+) == 0   -63.91      27.69  -2.308  0.17929
Comp3(+) - Comp3(-) == 0  -244.31      52.24  -4.677  < 0.001 ***
```

Annual ETo

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  -255.24      33.18  -7.694  < 0.001 ***
Comp2(-) - Comp1(-) == 0  -412.58      44.56  -9.258  < 0.001 ***
Comp2(+) - Comp1(-) == 0  -121.51      29.57  -4.109  < 0.001 ***
Comp3(-) - Comp1(-) == 0  -335.28      51.77  -6.476  < 0.001 ***
Comp3(+) - Comp1(-) == 0  -293.58      29.51  -9.950  < 0.001 ***
Comp2(-) - Comp1(+) == 0  -157.34      45.25  -3.477  0.00631 **
Comp2(+) - Comp1(+) == 0   133.74      30.59   4.371  < 0.001 ***
Comp3(-) - Comp1(+) == 0   -80.04      52.36  -1.529  0.62948
Comp3(+) - Comp1(+) == 0   -38.34      30.53  -1.256  0.79745
Comp2(+) - Comp2(-) == 0   291.07      42.68   6.821  < 0.001 ***
Comp3(-) - Comp2(-) == 0    77.30      60.23   1.284  0.78212
Comp3(+) - Comp2(-) == 0   119.00      42.63   2.792  0.05461 .
Comp3(-) - Comp2(+) == 0  -213.77      50.16  -4.262  < 0.001 ***
Comp3(+) - Comp2(+) == 0  -172.07      26.57  -6.477  < 0.001 ***
Comp3(+) - Comp3(-) == 0    41.70      50.12   0.832  0.95854
```

Winter ETo

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0    80.07      33.95   2.359  0.16048
Comp2(-) - Comp1(-) == 0   303.41      45.60   6.654  < 0.001 ***
Comp2(+) - Comp1(-) == 0    18.79      30.26   0.621  0.98863
Comp3(-) - Comp1(-) == 0   236.12      52.98   4.457  < 0.001 ***
Comp3(+) - Comp1(-) == 0   199.33      30.19   6.602  < 0.001 ***
Comp2(-) - Comp1(+) == 0   223.33      46.30   4.824  < 0.001 ***
Comp2(+) - Comp1(+) == 0   -61.29      31.30  -1.958  0.35048
Comp3(-) - Comp1(+) == 0   156.05      53.58   2.912  0.03879 *
Comp3(+) - Comp1(+) == 0   119.26      31.24   3.818  0.00182 **
Comp2(+) - Comp2(-) == 0  -284.62      43.67  -6.518  < 0.001 ***
Comp3(-) - Comp2(-) == 0   -67.28      61.63  -1.092  0.87691
Comp3(+) - Comp2(-) == 0  -104.07      43.62  -2.386  0.15089
Comp3(-) - Comp2(+) == 0   217.34      51.32   4.235  < 0.001 ***
Comp3(+) - Comp2(+) == 0   180.55      27.19   6.641  < 0.001 ***
Comp3(+) - Comp3(-) == 0   -36.79      51.28  -0.717  0.97819
```

Spring ETo

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0 -347.443     32.736 -10.614  < 0.001 ***
Comp2(-) - Comp1(-) == 0 -399.861     43.973  -9.093  < 0.001 ***
Comp2(+) - Comp1(-) == 0 -264.567     29.182  -9.066  < 0.001 ***
Comp3(-) - Comp1(-) == 0 -454.325     51.086  -8.893  < 0.001 ***
Comp3(+) - Comp1(-) == 0 -352.920     29.114 -12.122  < 0.001 ***
Comp2(-) - Comp1(+) == 0  -52.418     44.646  -1.174  0.83966
Comp2(+) - Comp1(+) == 0   82.876     30.187   2.745  0.06203 .
Comp3(-) - Comp1(+) == 0 -106.882     51.667  -2.069  0.28874
Comp3(+) - Comp1(+) == 0   -5.478     30.121  -0.182  0.99997
```

```
Comp2(+) - Comp2(-) == 0  135.294     42.109   3.213  0.01540 *
Comp3(-) - Comp2(-) == 0  -54.464     59.426  -0.917  0.93801
Comp3(+) - Comp2(-) == 0   46.940     42.062   1.116  0.86654
Comp3(-) - Comp2(+) == 0 -189.758     49.492  -3.834  0.00174 **
Comp3(+) - Comp2(+) == 0  -88.353     26.215  -3.370  0.00927 **
Comp3(+) - Comp3(-) == 0  101.405     49.452   2.051  0.29824
```

Summer ETo

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  -655.36      27.87 -23.513  < 0.001 ***
Comp2(-) - Comp1(-) == 0  -442.26      37.44 -11.813  < 0.001 ***
Comp2(+) - Comp1(-) == 0  -540.11      24.85 -21.739  < 0.001 ***
Comp3(-) - Comp1(-) == 0  -234.49      43.50  -5.391  < 0.001 ***
Comp3(+) - Comp1(-) == 0  -559.91      24.79 -22.588  < 0.001 ***
Comp2(-) - Comp1(+) == 0   213.10      38.01   5.606  < 0.001 ***
Comp2(+) - Comp1(+) == 0   115.25      25.70   4.484  < 0.001 ***
Comp3(-) - Comp1(+) == 0   420.87      43.99   9.567  < 0.001 ***
Comp3(+) - Comp1(+) == 0    95.45      25.65   3.722  0.00269 **
Comp2(+) - Comp2(-) == 0   -97.86      35.85  -2.729  0.06471 .
Comp3(-) - Comp2(-) == 0   207.76      50.60   4.106  < 0.001 ***
Comp3(+) - Comp2(-) == 0  -117.65      35.81  -3.285  0.01201 *
Comp3(-) - Comp2(+) == 0   305.62      42.14   7.253  < 0.001 ***
Comp3(+) - Comp2(+) == 0   -19.80      22.32  -0.887  0.94581
Comp3(+) - Comp3(-) == 0  -325.42      42.10  -7.729  < 0.001 ***
```

Autumn ETo

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0 -336.659     32.907 -10.230  < 0.001 ***
Comp2(-) - Comp1(-) == 0 -414.251     44.203  -9.372  < 0.001 ***
Comp2(+) - Comp1(-) == 0 -260.277     29.335  -8.873  < 0.001 ***
Comp3(-) - Comp1(-) == 0 -423.950     51.354  -8.255  < 0.001 ***
Comp3(+) - Comp1(-) == 0 -333.918     29.267 -11.409  < 0.001 ***
Comp2(-) - Comp1(+) == 0  -77.591     44.880  -1.729  0.49488
Comp2(+) - Comp1(+) == 0   76.382     30.345   2.517  0.11121
Comp3(-) - Comp1(+) == 0  -87.291     51.938  -1.681  0.52714
Comp3(+) - Comp1(+) == 0    2.741     30.279   0.091  1.00000
Comp2(+) - Comp2(-) == 0  153.974     42.330   3.637  0.00353 **
Comp3(-) - Comp2(-) == 0   -9.700     59.737  -0.162  0.99998
Comp3(+) - Comp2(-) == 0   80.332     42.283   1.900  0.38518
Comp3(-) - Comp2(+) == 0 -163.673     49.751  -3.290  0.01208 *
Comp3(+) - Comp2(+) == 0  -73.641     26.353  -2.794  0.05438 .
Comp3(+) - Comp3(-) == 0   90.032     49.711   1.811  0.44091
```

Annual climate balance

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  -79.377     34.988  -2.269  0.19516
Comp2(-) - Comp1(-) == 0 -124.022     46.998  -2.639  0.08220 .
Comp2(+) - Comp1(-) == 0 -102.665     31.189  -3.292  0.01187 *
Comp3(-) - Comp1(-) == 0  -73.914     54.601  -1.354  0.74117
Comp3(+) - Comp1(-) == 0 -122.049     31.117  -3.922  0.00117 **
Comp2(-) - Comp1(+) == 0  -44.646     47.717  -0.936  0.93260
Comp2(+) - Comp1(+) == 0  -23.288     32.263  -0.722  0.97759
Comp3(-) - Comp1(+) == 0    5.463     55.222   0.099  1.00000
Comp3(+) - Comp1(+) == 0  -42.672     32.194  -1.325  0.75802
Comp2(+) - Comp2(-) == 0   21.357     45.006   0.475  0.99675
Comp3(-) - Comp2(-) == 0   50.108     63.514   0.789  0.96697
Comp3(+) - Comp2(-) == 0    1.973     44.956   0.044  1.00000
```

```
Comp3(-) - Comp2(+) == 0   28.751     52.896   0.544  0.99384
Comp3(+) - Comp2(+) == 0  -19.384     28.019  -0.692  0.98143
Comp3(+) - Comp3(-) == 0  -48.135     52.854  -0.911  0.93962
```

Winter climate balance

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   457.23      27.35  16.718   <0.001 ***
Comp2(-) - Comp1(-) == 0   149.80      36.74   4.078   <0.001 ***
Comp2(+) - Comp1(-) == 0   511.04      24.38  20.961   <0.001 ***
Comp3(-) - Comp1(-) == 0   198.12      42.68   4.642   <0.001 ***
Comp3(+) - Comp1(-) == 0   640.65      24.32  26.338   <0.001 ***
Comp2(-) - Comp1(+) == 0  -307.43      37.30  -8.242   <0.001 ***
Comp2(+) - Comp1(+) == 0    53.81      25.22   2.134    0.256
Comp3(-) - Comp1(+) == 0  -259.11      43.17  -6.003   <0.001 ***
Comp3(+) - Comp1(+) == 0   183.42      25.17   7.288   <0.001 ***
Comp2(+) - Comp2(-) == 0   361.24      35.18  10.268   <0.001 ***
Comp3(-) - Comp2(-) == 0    48.32      49.65   0.973    0.921
Comp3(+) - Comp2(-) == 0   490.85      35.14  13.968   <0.001 ***
Comp3(-) - Comp2(+) == 0  -312.92      41.35  -7.568   <0.001 ***
Comp3(+) - Comp2(+) == 0   129.61      21.90   5.918   <0.001 ***
Comp3(+) - Comp3(-) == 0   442.52      41.31  10.711   <0.001 ***
```

Spring climate balance

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  244.654     33.033   7.406  < 0.001 ***
Comp2(-) - Comp1(-) == 0  238.248     44.372   5.369  < 0.001 ***
Comp2(+) - Comp1(-) == 0  362.153     29.447  12.299  < 0.001 ***
Comp3(-) - Comp1(-) == 0   37.035     51.550   0.718  0.97805
Comp3(+) - Comp1(-) == 0  276.162     29.379   9.400  < 0.001 ***
Comp2(-) - Comp1(+) == 0   -6.406     45.051  -0.142  0.99999
Comp2(+) - Comp1(+) == 0  117.498     30.461   3.857  0.00154 **
Comp3(-) - Comp1(+) == 0 -207.619     52.136  -3.982  0.00108 **
Comp3(+) - Comp1(+) == 0   31.508     30.395   1.037  0.89896
Comp2(+) - Comp2(-) == 0  123.904     42.492   2.916  0.03861 *
Comp3(-) - Comp2(-) == 0 -201.213     59.966  -3.355  0.00968 **
Comp3(+) - Comp2(-) == 0   37.914     42.444   0.893  0.94422
Comp3(-) - Comp2(+) == 0 -325.117     49.941  -6.510  < 0.001 ***
Comp3(+) - Comp2(+) == 0  -85.990     26.453  -3.251  0.01360 *
Comp3(+) - Comp3(-) == 0  239.127     49.901   4.792  < 0.001 ***
```

Summer climate balance

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  -613.17      27.97 -21.926  < 0.001 ***
Comp2(-) - Comp1(-) == 0  -355.43      37.57  -9.462  < 0.001 ***
Comp2(+) - Comp1(-) == 0  -516.83      24.93 -20.732  < 0.001 ***
Comp3(-) - Comp1(-) == 0   -44.07      43.64  -1.010  0.90869
Comp3(+) - Comp1(-) == 0  -534.37      24.87 -21.485  < 0.001 ***
Comp2(-) - Comp1(+) == 0   257.74      38.14   6.758  < 0.001 ***
Comp2(+) - Comp1(+) == 0    96.34      25.79   3.736  0.00254 **
Comp3(-) - Comp1(+) == 0   569.10      44.14  12.894  < 0.001 ***
Comp3(+) - Comp1(+) == 0    78.80      25.73   3.062  0.02478 *
Comp2(+) - Comp2(-) == 0  -161.40      35.97  -4.487  < 0.001 ***
Comp3(-) - Comp2(-) == 0   311.36      50.77   6.133  < 0.001 ***
Comp3(+) - Comp2(-) == 0  -178.94      35.93  -4.980  < 0.001 ***
Comp3(-) - Comp2(+) == 0   472.76      42.28  11.182  < 0.001 ***
Comp3(+) - Comp2(+) == 0   -17.54      22.40  -0.783  0.96800
Comp3(+) - Comp3(-) == 0  -490.30      42.25 -11.606  < 0.001 ***
```

Autumn climate balance

```
                       Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  558.897     27.440  20.368  < 1e-04 ***
Comp2(-) - Comp1(-) == 0  265.202     36.859   7.195  < 1e-04 ***
Comp2(+) - Comp1(-) == 0  558.522     24.461  22.833  < 1e-04 ***
Comp3(-) - Comp1(-) == 0   57.603     42.822   1.345 0.746338
Comp3(+) - Comp1(-) == 0  570.917     24.404  23.394  < 1e-04 ***
Comp2(-) - Comp1(+) == 0 -293.695     37.423  -7.848  < 1e-04 ***
Comp2(+) - Comp1(+) == 0   -0.375     25.303  -0.015 1.000000
Comp3(-) - Comp1(+) == 0 -501.294     43.309 -11.575  < 1e-04 ***
Comp3(+) - Comp1(+) == 0   12.020     25.248   0.476 0.996695
Comp2(+) - Comp2(-) == 0  293.320     35.297   8.310  < 1e-04 ***
Comp3(-) - Comp2(-) == 0 -207.599     49.812  -4.168 0.000442 ***
Comp3(+) - Comp2(-) == 0  305.715     35.258   8.671  < 1e-04 ***
Comp3(-) - Comp2(+) == 0 -500.919     41.485 -12.075  < 1e-04 ***
Comp3(+) - Comp2(+) == 0   12.395     21.974   0.564 0.992679
Comp3(+) - Comp3(-) == 0  513.314     41.452  12.383  < 1e-04 ***
```

Winter NDVI

```
                       Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   432.91      30.82  14.048  < 0.001 ***
Comp2(-) - Comp1(-) == 0    95.25      41.39   2.301  0.18225
Comp2(+) - Comp1(-) == 0   417.56      27.47  15.200  < 0.001 ***
Comp3(-) - Comp1(-) == 0  -119.33      48.09  -2.481  0.12119
Comp3(+) - Comp1(-) == 0   293.76      27.41  10.719  < 0.001 ***
Comp2(-) - Comp1(+) == 0  -337.66      42.03  -8.034  < 0.001 ***
Comp2(+) - Comp1(+) == 0   -15.35      28.42  -0.540  0.99402
Comp3(-) - Comp1(+) == 0  -552.24      48.64 -11.354  < 0.001 ***
Comp3(+) - Comp1(+) == 0  -139.15      28.36  -4.907  < 0.001 ***
Comp2(+) - Comp2(-) == 0   322.31      39.64   8.131  < 0.001 ***
Comp3(-) - Comp2(-) == 0  -214.57      55.94  -3.836  0.00165 **
Comp3(+) - Comp2(-) == 0   198.51      39.60   5.013  < 0.001 ***
Comp3(-) - Comp2(+) == 0  -536.89      46.59 -11.524  < 0.001 ***
Comp3(+) - Comp2(+) == 0  -123.80      24.68  -5.017  < 0.001 ***
Comp3(+) - Comp3(-) == 0   413.09      46.55   8.874  < 0.001 ***
```

Spring NDVI

```
                       Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  335.106     32.109  10.437  < 0.001 ***
Comp2(-) - Comp1(-) == 0   40.199     43.130   0.932  0.93364
Comp2(+) - Comp1(-) == 0  329.622     28.623  11.516  < 0.001 ***
Comp3(-) - Comp1(-) == 0 -194.210     50.108  -3.876  0.00159 **
Comp3(+) - Comp1(-) == 0  172.675     28.557   6.047  < 0.001 ***
Comp2(-) - Comp1(+) == 0 -294.907     43.791  -6.734  < 0.001 ***
Comp2(+) - Comp1(+) == 0   -5.484     29.609  -0.185  0.99997
Comp3(-) - Comp1(+) == 0 -529.316     50.678 -10.445  < 0.001 ***
Comp3(+) - Comp1(+) == 0 -162.430     29.545  -5.498  < 0.001 ***
Comp2(+) - Comp2(-) == 0  289.423     41.303   7.007  < 0.001 ***
Comp3(-) - Comp2(-) == 0 -234.409     58.288  -4.022  < 0.001 ***
Comp3(+) - Comp2(-) == 0  132.476     41.257   3.211  0.01561 *
Comp3(-) - Comp2(+) == 0 -523.832     48.544 -10.791  < 0.001 ***
Comp3(+) - Comp2(+) == 0 -156.947     25.713  -6.104  < 0.001 ***
Comp3(+) - Comp3(-) == 0  366.885     48.505   7.564  < 0.001 ***
```

Summer NDVI

```
                     Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   96.021     34.545   2.780  0.05649 .
Comp2(-) - Comp1(-) == 0  -69.110     46.403  -1.489  0.65534
Comp2(+) - Comp1(-) == 0   99.489     30.795   3.231  0.01458 *
Comp3(-) - Comp1(-) == 0 -131.934     53.910  -2.447  0.13130
Comp3(+) - Comp1(-) == 0  -42.340     30.723  -1.378  0.72628
Comp2(-) - Comp1(+) == 0 -165.131     47.114  -3.505  0.00561 **
Comp2(+) - Comp1(+) == 0    3.468     31.855   0.109  1.00000
Comp3(-) - Comp1(+) == 0 -227.955     54.523  -4.181  < 0.001 ***
Comp3(+) - Comp1(+) == 0 -138.361     31.786  -4.353  < 0.001 ***
Comp2(+) - Comp2(-) == 0  168.598     44.437   3.794  0.00192 **
Comp3(-) - Comp2(-) == 0  -62.825     62.711  -1.002  0.91148
Comp3(+) - Comp2(-) == 0   26.769     44.388   0.603  0.99003
Comp3(-) - Comp2(+) == 0 -231.423     52.227  -4.431  < 0.001 ***
Comp3(+) - Comp2(+) == 0 -141.829     27.664  -5.127  < 0.001 ***
Comp3(+) - Comp3(-) == 0   89.594     52.185   1.717  0.50322
```

Autumn NDVI

```
                     Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  336.1088    32.1476  10.455  < 0.001 ***
Comp2(-) - Comp1(-) == 0   37.9673    43.1823   0.879  0.94777
Comp2(+) - Comp1(-) == 0  336.4464    28.6573  11.740  < 0.001 ***
Comp3(-) - Comp1(-) == 0 -166.3353    50.1683  -3.316  0.01122 *
Comp3(+) - Comp1(-) == 0  172.9737    28.5909   6.050  < 0.001 ***
Comp2(-) - Comp1(+) == 0 -298.1415    43.8436  -6.800  < 0.001 ***
Comp2(+) - Comp1(+) == 0    0.3376    29.6443   0.011  1.00000
Comp3(-) - Comp1(+) == 0 -502.4441    50.7386  -9.903  < 0.001 ***
Comp3(+) - Comp1(+) == 0 -163.1351    29.5801  -5.515  < 0.001 ***
Comp2(+) - Comp2(-) == 0  298.4791    41.3525   7.218  < 0.001 ***
Comp3(-) - Comp2(-) == 0 -204.3026    58.3580  -3.501  0.00586 **
Comp3(+) - Comp2(-) == 0  135.0064    41.3066   3.268  0.01282 *
Comp3(-) - Comp2(+) == 0 -502.7817    48.6022 -10.345  < 0.001 ***
Comp3(+) - Comp2(+) == 0 -163.4727    25.7441  -6.350  < 0.001 ***
Comp3(+) - Comp3(-) == 0  339.3090    48.5631   6.987  < 0.001 ***
```

Average day of the year recording the maximum NDVI

```
                     Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   2.2663     0.4383   5.171  < 0.001 ***
Comp2(-) - Comp1(-) == 0   0.1933     0.5888   0.328  0.99945
Comp2(+) - Comp1(-) == 0   1.9048     0.3907   4.875  < 0.001 ***
Comp3(-) - Comp1(-) == 0   0.4972     0.6840   0.727  0.97688
Comp3(+) - Comp1(-) == 0   1.4834     0.3898   3.805  0.00187 **
Comp2(-) - Comp1(+) == 0  -2.0730     0.5978  -3.468  0.00652 **
Comp2(+) - Comp1(+) == 0  -0.3616     0.4042  -0.895  0.94388
Comp3(-) - Comp1(+) == 0  -1.7691     0.6918  -2.557  0.10076
Comp3(+) - Comp1(+) == 0  -0.7829     0.4033  -1.941  0.36006
Comp2(+) - Comp2(-) == 0   1.7114     0.5638   3.035  0.02681 *
Comp3(-) - Comp2(-) == 0   0.3039     0.7957   0.382  0.99885
Comp3(+) - Comp2(-) == 0   1.2901     0.5632   2.291  0.18604
Comp3(-) - Comp2(+) == 0  -1.4076     0.6627  -2.124  0.26041
Comp3(+) - Comp2(+) == 0  -0.4213     0.3510  -1.200  0.82661
Comp3(+) - Comp3(-) == 0   0.9862     0.6621   1.489  0.65538
```

Average day of the year recording the green up

```
                     Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   5.7118     2.0853   2.739   0.0631 .
Comp2(-) - Comp1(-) == 0   0.6447     2.8010   0.230   0.9999
```

```
Comp2(+) - Comp1(-) == 0   1.0980     1.8589   0.591   0.9909
Comp3(-) - Comp1(-) == 0  10.1321     3.2542   3.114   0.0211 *
Comp3(+) - Comp1(-) == 0   5.3079     1.8546   2.862   0.0447 *
Comp2(-) - Comp1(+) == 0  -5.0672     2.8439  -1.782   0.4600
Comp2(+) - Comp1(+) == 0  -4.6138     1.9229  -2.399   0.1468
Comp3(-) - Comp1(+) == 0   4.4203     3.2912   1.343   0.7475
Comp3(+) - Comp1(+) == 0  -0.4040     1.9187  -0.211   0.9999
Comp2(+) - Comp2(-) == 0   0.4533     2.6823   0.169   1.0000
Comp3(-) - Comp2(-) == 0   9.4875     3.7854   2.506   0.1143
Comp3(+) - Comp2(-) == 0   4.6632     2.6794   1.740   0.4871
Comp3(-) - Comp2(+) == 0   9.0341     3.1526   2.866   0.0442 *
Comp3(+) - Comp2(+) == 0   4.2099     1.6699   2.521   0.1101
Comp3(+) - Comp3(-) == 0  -4.8243     3.1501  -1.531   0.6276
```

Soil water capacity

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  170.510     34.516   4.940  < 0.001 ***
Comp2(-) - Comp1(-) == 0   60.380     46.364   1.302  0.77147
Comp2(+) - Comp1(-) == 0  127.987     30.769   4.160  < 0.001 ***
Comp3(-) - Comp1(-) == 0  -57.831     53.865  -1.074  0.88450
Comp3(+) - Comp1(-) == 0  177.195     30.698   5.772  < 0.001 ***
Comp2(-) - Comp1(+) == 0 -110.131     47.074  -2.340  0.16737
Comp2(+) - Comp1(+) == 0  -42.523     31.829  -1.336  0.75173
Comp3(-) - Comp1(+) == 0 -228.341     54.477  -4.192  < 0.001 ***
Comp3(+) - Comp1(+) == 0    6.684     31.760   0.210  0.99994
Comp2(+) - Comp2(-) == 0   67.607     44.399   1.523  0.63343
Comp3(-) - Comp2(-) == 0 -118.211     62.658  -1.887  0.39296
Comp3(+) - Comp2(-) == 0  116.815     44.350   2.634  0.08324 .
Comp3(-) - Comp2(+) == 0 -185.818     52.183  -3.561  0.00468 **
Comp3(+) - Comp2(+) == 0   49.208     27.641   1.780  0.46103
Comp3(+) - Comp3(-) == 0  235.025     52.141   4.507  < 0.001 ***
```

3. SOYBEAN

Annual precipitation

```
                       Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   -53.08      70.13  -0.757   0.9654
Comp2(-) - Comp1(-) == 0  -157.84     186.02  -0.848   0.9441
Comp2(+) - Comp1(-) == 0   222.20      71.84   3.093   0.0176 *
Comp3(-) - Comp1(-) == 0   114.16     186.02   0.614   0.9863
Comp3(+) - Comp1(-) == 0  -108.64      77.09  -1.409   0.6633
Comp2(-) - Comp1(+) == 0  -104.76     173.14  -0.605   0.9871
Comp2(+) - Comp1(+) == 0   275.28      23.07  11.930   <0.001 ***
Comp3(-) - Comp1(+) == 0   167.24     173.14   0.966   0.9063
Comp3(+) - Comp1(+) == 0   -55.56      36.26  -1.532   0.5789
Comp2(+) - Comp2(-) == 0   380.04     173.84   2.186   0.1937
Comp3(-) - Comp2(-) == 0   272.00     244.26   1.114   0.8414
Comp3(+) - Comp2(-) == 0    49.20     176.07   0.279   0.9997
Comp3(-) - Comp2(+) == 0  -108.04     173.84  -0.622   0.9854
Comp3(+) - Comp2(+) == 0  -330.85      39.46  -8.384   <0.001 ***
Comp3(+) - Comp3(-) == 0  -222.80     176.07  -1.265   0.7563
```

Winter precipitation

```
                        Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0 -238.215     73.797  -3.228   0.0114 *
Comp2(-) - Comp1(-) == 0 -193.650    195.753  -0.989   0.8974
Comp2(+) - Comp1(-) == 0 -167.231     75.594  -2.212   0.1840
Comp3(-) - Comp1(-) == 0   39.100    195.753   0.200   0.9999
Comp3(+) - Comp1(-) == 0 -234.184     81.123  -2.887   0.0326 *
Comp2(-) - Comp1(+) == 0   44.565    182.194   0.245   0.9998
Comp2(+) - Comp1(+) == 0   70.984     24.281   2.923   0.0292 *
Comp3(-) - Comp1(+) == 0  277.315    182.194   1.522   0.5858
Comp3(+) - Comp1(+) == 0    4.031     38.158   0.106   1.0000
Comp2(+) - Comp2(-) == 0   26.419    182.929   0.144   1.0000
Comp3(-) - Comp2(-) == 0  232.750    257.037   0.906   0.9274
Comp3(+) - Comp2(-) == 0  -40.534    185.282  -0.219   0.9999
Comp3(-) - Comp2(+) == 0  206.331    182.929   1.128   0.8341
Comp3(+) - Comp2(+) == 0  -66.953     41.527  -1.612   0.5235
Comp3(+) - Comp3(-) == 0 -273.284    185.282  -1.475   0.6186
```

Spring precipitation

```
                        Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   308.06      68.27   4.513  < 0.001 ***
Comp2(-) - Comp1(-) == 0   422.94     181.08   2.336  0.13995
Comp2(+) - Comp1(-) == 0     5.20      69.93   0.074  1.00000
Comp3(-) - Comp1(-) == 0  -309.31     181.08  -1.708  0.45838
Comp3(+) - Comp1(-) == 0    25.48      75.04   0.340  0.99916
Comp2(-) - Comp1(+) == 0   114.88     168.54   0.682  0.97805
Comp2(+) - Comp1(+) == 0  -302.86      22.46 -13.484  < 0.001 ***
Comp3(-) - Comp1(+) == 0  -617.37     168.54  -3.663  0.00244 **
Comp3(+) - Comp1(+) == 0  -282.58      35.30  -8.006  < 0.001 ***
Comp2(+) - Comp2(-) == 0  -417.74     169.22  -2.469  0.10141
Comp3(-) - Comp2(-) == 0  -732.25     237.77  -3.080  0.01755 *
Comp3(+) - Comp2(-) == 0  -397.46     171.40  -2.319  0.14492
Comp3(-) - Comp2(+) == 0  -314.51     169.22  -1.859  0.36185
Comp3(+) - Comp2(+) == 0    20.28      38.41   0.528  0.99310
Comp3(+) - Comp3(-) == 0   334.79     171.40   1.953  0.30662
```

Summer precipitation

```
                     Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0    3.916     73.605   0.053  1.00000
Comp2(-) - Comp1(-) == 0  425.040    195.245   2.177  0.19837
Comp2(+) - Comp1(-) == 0   -7.038     75.398  -0.093  1.00000
Comp3(-) - Comp1(-) == 0 -289.460    195.245  -1.483  0.61265
Comp3(+) - Comp1(-) == 0 -157.901     80.912  -1.952  0.30768
Comp2(-) - Comp1(+) == 0  421.124    181.721   2.317  0.14571
Comp2(+) - Comp1(+) == 0  -10.954     24.218  -0.452  0.99666
Comp3(-) - Comp1(+) == 0 -293.376    181.721  -1.614  0.52210
Comp3(+) - Comp1(+) == 0 -161.817     38.059  -4.252  < 0.001 ***
Comp2(+) - Comp2(-) == 0 -432.078    182.454  -2.368  0.12901
Comp3(-) - Comp2(-) == 0 -714.500    256.370  -2.787  0.04427 *
Comp3(+) - Comp2(-) == 0 -582.941    184.801  -3.154  0.01386 *
Comp3(-) - Comp2(+) == 0 -282.422    182.454  -1.548  0.56773
Comp3(+) - Comp2(+) == 0 -150.863     41.419  -3.642  0.00263 **
Comp3(+) - Comp3(-) == 0  131.559    184.801   0.712  0.97346
```

Autumn precipitation

```
                     Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   108.07      70.01   1.544   0.5708
Comp2(-) - Comp1(-) == 0   583.32     185.70   3.141   0.0149 *
Comp2(+) - Comp1(-) == 0  -174.66      71.71  -2.436   0.1103
Comp3(-) - Comp1(-) == 0   120.57     185.70   0.649   0.9823
Comp3(+) - Comp1(-) == 0    60.01      76.96   0.780   0.9607
Comp2(-) - Comp1(+) == 0   475.25     172.84   2.750   0.0483 *
Comp2(+) - Comp1(+) == 0  -282.73      23.03 -12.275   <0.001 ***
Comp3(-) - Comp1(+) == 0    12.50     172.84   0.072   1.0000
Comp3(+) - Comp1(+) == 0   -48.06      36.20  -1.328   0.7173
Comp2(+) - Comp2(-) == 0  -757.98     173.54  -4.368   <0.001 ***
Comp3(-) - Comp2(-) == 0  -462.75     243.84  -1.898   0.3387
Comp3(+) - Comp2(-) == 0  -523.31     175.77  -2.977   0.0249 *
Comp3(-) - Comp2(+) == 0   295.23     173.54   1.701   0.4629
Comp3(+) - Comp2(+) == 0   234.67      39.39   5.957   <0.001 ***
Comp3(+) - Comp3(-) == 0   -60.56     175.77  -0.345   0.9991
```

Annual mean temperature

```
                     Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0 -255.652     73.749  -3.467  0.00496 **
Comp2(-) - Comp1(-) == 0  -42.370    195.626  -0.217  0.99991
Comp2(+) - Comp1(-) == 0 -178.915     75.545  -2.368  0.12881
Comp3(-) - Comp1(-) == 0 -263.870    195.626  -1.349  0.70365
Comp3(+) - Comp1(-) == 0 -222.551     81.070  -2.745  0.04889 *
Comp2(-) - Comp1(+) == 0  213.282    182.075   1.171  0.81094
Comp2(+) - Comp1(+) == 0   76.737     24.265   3.162  0.01451 *
Comp3(-) - Comp1(+) == 0   -8.218    182.075  -0.045  1.00000
Comp3(+) - Comp1(+) == 0   33.101     38.133   0.868  0.93867
Comp2(+) - Comp2(-) == 0 -136.545    182.810  -0.747  0.96732
Comp3(-) - Comp2(-) == 0 -221.500    256.869  -0.862  0.94027
Comp3(+) - Comp2(-) == 0 -180.181    185.161  -0.973  0.90363
Comp3(-) - Comp2(+) == 0  -84.955    182.810  -0.465  0.99620
Comp3(+) - Comp2(+) == 0  -43.636     41.500  -1.051  0.87104
Comp3(+) - Comp3(-) == 0   41.319    185.161   0.223  0.99989
```

Winter mean temperature

```
                     Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0    89.83      69.45   1.294   0.7391
```

```
Comp2(-) - Comp1(-) == 0   343.92     184.21   1.867   0.3570
Comp2(+) - Comp1(-) == 0  -192.85      71.14  -2.711   0.0540 .
Comp3(-) - Comp1(-) == 0   -43.58     184.21  -0.237   0.9999
Comp3(+) - Comp1(-) == 0  -173.84      76.34  -2.277   0.1593
Comp2(-) - Comp1(+) == 0   254.09     171.45   1.482   0.6131
Comp2(+) - Comp1(+) == 0  -282.68      22.85 -12.371   <0.001 ***
Comp3(-) - Comp1(+) == 0  -133.41     171.45  -0.778   0.9610
Comp3(+) - Comp1(+) == 0  -263.67      35.91  -7.343   <0.001 ***
Comp2(+) - Comp2(-) == 0  -536.77     172.14  -3.118   0.0159 *
Comp3(-) - Comp2(-) == 0  -387.50     241.88  -1.602   0.5305
Comp3(+) - Comp2(-) == 0  -517.76     174.36  -2.970   0.0255 *
Comp3(-) - Comp2(+) == 0   149.27     172.14   0.867   0.9389
Comp3(+) - Comp2(+) == 0    19.00      39.08   0.486   0.9953
Comp3(+) - Comp3(-) == 0  -130.26     174.36  -0.747   0.9672
```

Spring mean temperature

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0 -225.9965    72.1857  -3.131   0.0151 *
Comp2(-) - Comp1(-) == 0  -39.6900   191.4794  -0.207   0.9999
Comp2(+) - Comp1(-) == 0  -39.4822    73.9435  -0.534   0.9927
Comp3(-) - Comp1(-) == 0   42.3100   191.4794   0.221   0.9999
Comp3(+) - Comp1(-) == 0  -67.3616    79.3514  -0.849   0.9440
Comp2(-) - Comp1(+) == 0  186.3065   178.2157   1.045   0.8738
Comp2(+) - Comp1(+) == 0  186.5143    23.7508   7.853   <0.001 ***
Comp3(-) - Comp1(+) == 0  268.3065   178.2157   1.506   0.5969
Comp3(+) - Comp1(+) == 0  158.6349    37.3245   4.250   <0.001 ***
Comp2(+) - Comp2(-) == 0    0.2078   178.9349   0.001   1.0000
Comp3(-) - Comp2(-) == 0   82.0000   251.4247   0.326   0.9993
Comp3(+) - Comp2(-) == 0  -27.6716   181.2366  -0.153   1.0000
Comp3(-) - Comp2(+) == 0   81.7922   178.9349   0.457   0.9965
Comp3(+) - Comp2(+) == 0  -27.8794    40.6200  -0.686   0.9774
Comp3(+) - Comp3(-) == 0 -109.6716   181.2366  -0.605   0.9871
```

Summer mean temperature

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   203.04      64.25   3.160  0.01388 *
Comp2(-) - Comp1(-) == 0   646.93     170.44   3.796  0.00156 **
Comp2(+) - Comp1(-) == 0  -200.41      65.82  -3.045  0.02015 *
Comp3(-) - Comp1(-) == 0   -99.07     170.44  -0.581  0.98925
Comp3(+) - Comp1(-) == 0  -133.86      70.63  -1.895  0.34015
Comp2(-) - Comp1(+) == 0   443.89     158.63   2.798  0.04199 *
Comp2(+) - Comp1(+) == 0  -403.45      21.14 -19.084  < 0.001 ***
Comp3(-) - Comp1(+) == 0  -302.11     158.63  -1.904  0.33434
Comp3(+) - Comp1(+) == 0  -336.90      33.22 -10.140  < 0.001 ***
Comp2(+) - Comp2(-) == 0  -847.34     159.27  -5.320  < 0.001 ***
Comp3(-) - Comp2(-) == 0  -746.00     223.80  -3.333  0.00766 **
Comp3(+) - Comp2(-) == 0  -780.79     161.32  -4.840  < 0.001 ***
Comp3(-) - Comp2(+) == 0   101.34     159.27   0.636  0.98381
Comp3(+) - Comp2(+) == 0    66.55      36.16   1.841  0.37300
Comp3(+) - Comp3(-) == 0   -34.79     161.32  -0.216  0.99991
```

Autumn mean temperature

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0 -402.8697    73.1359  -5.509   <0.001 ***
Comp2(-) - Comp1(-) == 0  -40.6200   193.9999  -0.209    1.000
Comp2(+) - Comp1(-) == 0 -452.5226    74.9168  -6.040   <0.001 ***
Comp3(-) - Comp1(-) == 0 -318.3700   193.9999  -1.641    0.503
```

Comp3(+) - Comp1(-) == 0	-452.9827	80.3960	-5.634	<0.001	***
Comp2(-) - Comp1(+) == 0	362.2497	180.5616	2.006	0.278	
Comp2(+) - Comp1(+) == 0	-49.6529	24.0635	-2.063	0.249	
Comp3(-) - Comp1(+) == 0	84.4997	180.5616	0.468	0.996	
Comp3(+) - Comp1(+) == 0	-50.1130	37.8158	-1.325	0.719	
Comp2(+) - Comp2(-) == 0	-411.9026	181.2903	-2.272	0.161	
Comp3(-) - Comp2(-) == 0	-277.7500	254.7344	-1.090	0.853	
Comp3(+) - Comp2(-) == 0	-412.3627	183.6223	-2.246	0.170	
Comp3(-) - Comp2(+) == 0	134.1526	181.2903	0.740	0.969	
Comp3(+) - Comp2(+) == 0	-0.4601	41.1547	-0.011	1.000	
Comp3(+) - Comp3(-) == 0	-134.6127	183.6223	-0.733	0.970	

Annual ETo

	Estimate	Std. Error	t value	Pr(>|t|)	
Comp1(+) - Comp1(-) == 0	-179.04	74.01	-2.419	0.1144	
Comp2(-) - Comp1(-) == 0	47.12	196.31	0.240	0.9998	
Comp2(+) - Comp1(-) == 0	-182.38	75.81	-2.406	0.1182	
Comp3(-) - Comp1(-) == 0	94.87	196.31	0.483	0.9954	
Comp3(+) - Comp1(-) == 0	-236.63	81.35	-2.909	0.0311	*
Comp2(-) - Comp1(+) == 0	226.16	182.71	1.238	0.7730	
Comp2(+) - Comp1(+) == 0	-3.34	24.35	-0.137	1.0000	
Comp3(-) - Comp1(+) == 0	273.91	182.71	1.499	0.6019	
Comp3(+) - Comp1(+) == 0	-57.59	38.27	-1.505	0.5977	
Comp2(+) - Comp2(-) == 0	-229.50	183.45	-1.251	0.7651	
Comp3(-) - Comp2(-) == 0	47.75	257.77	0.185	1.0000	
Comp3(+) - Comp2(-) == 0	-283.75	185.81	-1.527	0.5825	
Comp3(-) - Comp2(+) == 0	277.25	183.45	1.511	0.5931	
Comp3(+) - Comp2(+) == 0	-54.25	41.65	-1.303	0.7329	
Comp3(+) - Comp3(-) == 0	-331.50	185.81	-1.784	0.4085	

Winter ETo

	Estimate	Std. Error	t value	Pr(>|t|)	
Comp1(+) - Comp1(-) == 0	284.75	73.69	3.864	0.00106	**
Comp2(-) - Comp1(-) == 0	-0.54	195.48	-0.003	1.00000	
Comp2(+) - Comp1(-) == 0	323.15	75.49	4.281	< 0.001	***
Comp3(-) - Comp1(-) == 0	190.96	195.48	0.977	0.90219	
Comp3(+) - Comp1(-) == 0	336.70	81.01	4.156	< 0.001	***
Comp2(-) - Comp1(+) == 0	-285.29	181.94	-1.568	0.55377	
Comp2(+) - Comp1(+) == 0	38.40	24.25	1.584	0.54336	
Comp3(-) - Comp1(+) == 0	-93.79	181.94	-0.516	0.99382	
Comp3(+) - Comp1(+) == 0	51.94	38.10	1.363	0.69430	
Comp2(+) - Comp2(-) == 0	323.69	182.68	1.772	0.41675	
Comp3(-) - Comp2(-) == 0	191.50	256.68	0.746	0.96748	
Comp3(+) - Comp2(-) == 0	337.24	185.03	1.823	0.38402	
Comp3(-) - Comp2(+) == 0	-132.19	182.68	-0.724	0.97146	
Comp3(+) - Comp2(+) == 0	13.54	41.47	0.327	0.99930	
Comp3(+) - Comp3(-) == 0	145.74	185.03	0.788	0.95900	

Spring ETo

	Estimate	Std. Error	t value	Pr(>|t|)	
Comp1(+) - Comp1(-) == 0	266.93	63.63	4.195	< 0.001	***
Comp2(-) - Comp1(-) == 0	645.80	168.77	3.826	0.00124	**
Comp2(+) - Comp1(-) == 0	-158.53	65.17	-2.432	0.11121	
Comp3(-) - Comp1(-) == 0	17.05	168.77	0.101	1.00000	
Comp3(+) - Comp1(-) == 0	-34.11	69.94	-0.488	0.99523	
Comp2(-) - Comp1(+) == 0	378.87	157.08	2.412	0.11654	
Comp2(+) - Comp1(+) == 0	-425.46	20.93	-20.324	< 0.001	***

```
Comp3(-) - Comp1(+) == 0  -249.88     157.08  -1.591  0.53817
Comp3(+) - Comp1(+) == 0  -301.04      32.90  -9.151  < 0.001 ***
Comp2(+) - Comp2(-) == 0  -804.33     157.71  -5.100  < 0.001 ***
Comp3(-) - Comp2(-) == 0  -628.75     221.61  -2.837  0.03818 *
Comp3(+) - Comp2(-) == 0  -679.91     159.74  -4.256  < 0.001 ***
Comp3(-) - Comp2(+) == 0   175.58     157.71   1.113  0.84149
Comp3(+) - Comp2(+) == 0   124.42      35.80   3.475  0.00452 **
Comp3(+) - Comp3(-) == 0   -51.16     159.74  -0.320  0.99936
```

Summer ETo

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   453.84      64.98   6.984    <0.01 ***
Comp2(-) - Comp1(-) == 0   335.38     172.37   1.946    0.310
Comp2(+) - Comp1(-) == 0    58.84      66.56   0.884    0.934
Comp3(-) - Comp1(-) == 0   379.88     172.37   2.204    0.187
Comp3(+) - Comp1(-) == 0   197.83      71.43   2.769    0.046 *
Comp2(-) - Comp1(+) == 0  -118.46     160.43  -0.738    0.969
Comp2(+) - Comp1(+) == 0  -395.00      21.38 -18.474    <0.01 ***
Comp3(-) - Comp1(+) == 0   -73.96     160.43  -0.461    0.996
Comp3(+) - Comp1(+) == 0  -256.01      33.60  -7.619    <0.01 ***
Comp2(+) - Comp2(-) == 0  -276.54     161.08  -1.717    0.452
Comp3(-) - Comp2(-) == 0    44.50     226.34   0.197    1.000
Comp3(+) - Comp2(-) == 0  -137.55     163.15  -0.843    0.946
Comp3(-) - Comp2(+) == 0   321.04     161.08   1.993    0.285
Comp3(+) - Comp2(+) == 0   138.99      36.57   3.801    <0.01 **
Comp3(+) - Comp3(-) == 0  -182.05     163.15  -1.116    0.840
```

Autumn ETo

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   261.38      63.90   4.091   <0.001 ***
Comp2(-) - Comp1(-) == 0   669.13     169.49   3.948   <0.001 ***
Comp2(+) - Comp1(-) == 0  -156.80      65.45  -2.396   0.1210
Comp3(-) - Comp1(-) == 0    24.13     169.49   0.142   1.0000
Comp3(+) - Comp1(-) == 0   -44.41      70.24  -0.632   0.9843
Comp2(-) - Comp1(+) == 0   407.75     157.75   2.585   0.0755 .
Comp2(+) - Comp1(+) == 0  -418.18      21.02 -19.891   <0.001 ***
Comp3(-) - Comp1(+) == 0  -237.25     157.75  -1.504   0.5983
Comp3(+) - Comp1(+) == 0  -305.79      33.04  -9.255   <0.001 ***
Comp2(+) - Comp2(-) == 0  -825.93     158.39  -5.215   <0.001 ***
Comp3(-) - Comp2(-) == 0  -645.00     222.56  -2.898   0.0318 *
Comp3(+) - Comp2(-) == 0  -713.54     160.43  -4.448   <0.001 ***
Comp3(-) - Comp2(+) == 0   180.93     158.39   1.142   0.8264
Comp3(+) - Comp2(+) == 0   112.39      35.96   3.126   0.0154 *
Comp3(+) - Comp3(-) == 0   -68.54     160.43  -0.427   0.9974
```

Annual climate balance

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   -98.66      72.51  -1.361  0.69591
Comp2(-) - Comp1(-) == 0   211.20     192.35   1.098  0.84918
Comp2(+) - Comp1(-) == 0  -240.58      74.28  -3.239  0.01091 *
Comp3(-) - Comp1(-) == 0  -202.55     192.35  -1.053  0.87035
Comp3(+) - Comp1(-) == 0    41.45      79.71   0.520  0.99357
Comp2(-) - Comp1(+) == 0   309.86     179.03   1.731  0.44276
Comp2(+) - Comp1(+) == 0  -141.92      23.86  -5.948  < 0.001 ***
Comp3(-) - Comp1(+) == 0  -103.89     179.03  -0.580  0.98933
Comp3(+) - Comp1(+) == 0   140.10      37.49   3.737  0.00187 **
Comp2(+) - Comp2(-) == 0  -451.78     179.75  -2.513  0.09047 .
```

```
Comp3(-) - Comp2(-) == 0  -413.75     252.57  -1.638  0.50559
Comp3(+) - Comp2(-) == 0  -169.75     182.06  -0.932  0.91850
Comp3(-) - Comp2(+) == 0    38.03     179.75   0.212  0.99992
Comp3(+) - Comp2(+) == 0   282.03      40.80   6.912  < 0.001 ***
Comp3(+) - Comp3(-) == 0   244.00     182.06   1.340  0.70878
```

Winter climate balance

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   -36.08      73.38  -0.492  0.99504
Comp2(-) - Comp1(-) == 0   -30.85     194.66  -0.158  0.99998
Comp2(+) - Comp1(-) == 0    48.67      75.17   0.647  0.98251
Comp3(-) - Comp1(-) == 0  -152.35     194.66  -0.783  0.96007
Comp3(+) - Comp1(-) == 0  -185.02      80.67  -2.294  0.15337
Comp2(-) - Comp1(+) == 0     5.23     181.17   0.029  1.00000
Comp2(+) - Comp1(+) == 0    84.75      24.14   3.510  0.00453 **
Comp3(-) - Comp1(+) == 0  -116.27     181.17  -0.642  0.98321
Comp3(+) - Comp1(+) == 0  -148.94      37.94  -3.925  < 0.001 ***
Comp2(+) - Comp2(-) == 0    79.52     181.90   0.437  0.99715
Comp3(-) - Comp2(-) == 0  -121.50     255.60  -0.475  0.99577
Comp3(+) - Comp2(-) == 0  -154.17     184.24  -0.837  0.94724
Comp3(-) - Comp2(+) == 0  -201.02     181.90  -1.105  0.84564
Comp3(+) - Comp2(+) == 0  -233.69      41.29  -5.659  < 0.001 ***
Comp3(+) - Comp3(-) == 0   -32.67     184.24  -0.177  0.99997
```

Spring climate balance

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  171.460     72.457   2.366    0.130
Comp2(-) - Comp1(-) == 0  -52.650    192.200  -0.274    1.000
Comp2(+) - Comp1(-) == 0   27.165     74.222   0.366    0.999
Comp3(-) - Comp1(-) == 0  -55.650    192.200  -0.290    1.000
Comp3(+) - Comp1(-) == 0  -57.459     79.650  -0.721    0.972
Comp2(-) - Comp1(+) == 0 -224.110    178.887  -1.253    0.764
Comp2(+) - Comp1(+) == 0 -144.295     23.840  -6.053   <0.001 ***
Comp3(-) - Comp1(+) == 0 -227.110    178.887  -1.270    0.754
Comp3(+) - Comp1(+) == 0 -228.919     37.465  -6.110   <0.001 ***
Comp2(+) - Comp2(-) == 0   79.815    179.609   0.444    0.997
Comp3(-) - Comp2(-) == 0   -3.000    252.371  -0.012    1.000
Comp3(+) - Comp2(-) == 0   -4.809    181.919  -0.026    1.000
Comp3(-) - Comp2(+) == 0  -82.815    179.609  -0.461    0.996
Comp3(+) - Comp2(+) == 0  -84.624     40.773  -2.075    0.244
Comp3(+) - Comp3(-) == 0   -1.809    181.919  -0.010    1.000
```

Summer climate balance

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0 -177.393     70.809  -2.505   0.0924 .
Comp2(-) - Comp1(-) == 0  352.760    187.828   1.878   0.3500
Comp2(+) - Comp1(-) == 0 -402.928     72.534  -5.555   <0.001 ***
Comp3(-) - Comp1(-) == 0 -100.990    187.828  -0.538   0.9925
Comp3(+) - Comp1(-) == 0 -101.642     77.838  -1.306   0.7310
Comp2(-) - Comp1(+) == 0  530.153    174.817   3.033   0.0210 *
Comp2(+) - Comp1(+) == 0 -225.535     23.298  -9.680   <0.001 ***
Comp3(-) - Comp1(+) == 0   76.403    174.817   0.437   0.9972
Comp3(+) - Comp1(+) == 0   75.751     36.613   2.069   0.2468
Comp2(+) - Comp2(-) == 0 -755.688    175.523  -4.305   <0.001 ***
Comp3(-) - Comp2(-) == 0 -453.750    246.631  -1.840   0.3734
Comp3(+) - Comp2(-) == 0 -454.402    177.781  -2.556   0.0811 .
Comp3(-) - Comp2(+) == 0  301.938    175.523   1.720   0.4498
```

```
Comp3(+) - Comp2(+) == 0  301.286     39.845   7.561   <0.001 ***
Comp3(+) - Comp3(-) == 0   -0.652    177.781  -0.004   1.0000
```

Autumn climate balance

```
                          Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   70.811     73.859   0.959   0.9090
Comp2(-) - Comp1(-) == 0  395.210    195.917   2.017   0.2729
Comp2(+) - Comp1(-) == 0    8.022     75.657   0.106   1.0000
Comp3(-) - Comp1(-) == 0 -420.540    195.917  -2.147   0.2107
Comp3(+) - Comp1(-) == 0   56.548     81.191   0.696   0.9759
Comp2(-) - Comp1(+) == 0  324.399    182.346   1.779   0.4113
Comp2(+) - Comp1(+) == 0  -62.789     24.301  -2.584   0.0758 .
Comp3(-) - Comp1(+) == 0 -491.351    182.346  -2.695   0.0564 .
Comp3(+) - Comp1(+) == 0  -14.262     38.190  -0.373   0.9987
Comp2(+) - Comp2(-) == 0 -387.188    183.082  -2.115   0.2249
Comp3(-) - Comp2(-) == 0 -815.750    257.252  -3.171   0.0132 *
Comp3(+) - Comp2(-) == 0 -338.662    185.437  -1.826   0.3815
Comp3(-) - Comp2(+) == 0 -428.562    183.082  -2.341   0.1382
Comp3(+) - Comp2(+) == 0   48.527     41.561   1.168   0.8131
Comp3(+) - Comp3(-) == 0  477.088    185.437   2.573   0.0785 .
```

Winter NDVI

```
                          Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  111.492     73.852   1.510  0.59447
Comp2(-) - Comp1(-) == 0  180.900    195.899   0.923  0.92140
Comp2(+) - Comp1(-) == 0   45.582     75.650   0.603  0.98735
Comp3(-) - Comp1(-) == 0 -149.100    195.899  -0.761  0.96456
Comp3(+) - Comp1(-) == 0  189.047     81.183   2.329  0.14165
Comp2(-) - Comp1(+) == 0   69.408    182.329   0.381  0.99853
Comp2(+) - Comp1(+) == 0  -65.911     24.299  -2.712  0.05370 .
Comp3(-) - Comp1(+) == 0 -260.592    182.329  -1.429  0.64930
Comp3(+) - Comp1(+) == 0   77.555     38.186   2.031  0.26544
Comp2(+) - Comp2(-) == 0 -135.318    183.065  -0.739  0.96872
Comp3(-) - Comp2(-) == 0 -330.000    257.227  -1.283  0.74546
Comp3(+) - Comp2(-) == 0    8.147    185.419   0.044  1.00000
Comp3(-) - Comp2(+) == 0 -194.682    183.065  -1.063  0.86546
Comp3(+) - Comp2(+) == 0  143.465     41.557   3.452  0.00563 **
Comp3(+) - Comp3(-) == 0  338.147    185.419   1.824  0.38343
```

Spring NDVI

```
                          Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   68.465     73.697   0.929   0.9196
Comp2(-) - Comp1(-) == 0  146.370    195.487   0.749   0.9670
Comp2(+) - Comp1(-) == 0   -9.227     75.491  -0.122   1.0000
Comp3(-) - Comp1(-) == 0 -187.380    195.487  -0.959   0.9090
Comp3(+) - Comp1(-) == 0  167.395     81.012   2.066   0.2476
Comp2(-) - Comp1(+) == 0   77.905    181.946   0.428   0.9974
Comp2(+) - Comp1(+) == 0  -77.692     24.248  -3.204   0.0121 *
Comp3(-) - Comp1(+) == 0 -255.845    181.946  -1.406   0.6653
Comp3(+) - Comp1(+) == 0   98.929     38.106   2.596   0.0729 .
Comp2(+) - Comp2(-) == 0 -155.597    182.680  -0.852   0.9433
Comp3(-) - Comp2(-) == 0 -333.750    256.687  -1.300   0.7346
Comp3(+) - Comp2(-) == 0   21.025    185.030   0.114   1.0000
Comp3(-) - Comp2(+) == 0 -178.153    182.680  -0.975   0.9029
Comp3(+) - Comp2(+) == 0  176.622     41.470   4.259   <0.001 ***
Comp3(+) - Comp3(-) == 0  354.775    185.030   1.917   0.3270
```

Summer NDVI

	Estimate	Std. Error	t value	Pr(>|t|)
Comp1(+) - Comp1(-) == 0	48.348	74.269	0.651	0.982
Comp2(-) - Comp1(-) == 0	-69.640	197.005	-0.353	0.999
Comp2(+) - Comp1(-) == 0	8.321	76.077	0.109	1.000
Comp3(-) - Comp1(-) == 0	-43.640	197.005	-0.222	1.000
Comp3(+) - Comp1(-) == 0	34.301	81.641	0.420	0.998
Comp2(-) - Comp1(+) == 0	-117.988	183.358	-0.643	0.983
Comp2(+) - Comp1(+) == 0	-40.027	24.436	-1.638	0.505
Comp3(-) - Comp1(+) == 0	-91.988	183.358	-0.502	0.995
Comp3(+) - Comp1(+) == 0	-14.047	38.402	-0.366	0.999
Comp2(+) - Comp2(-) == 0	77.961	184.098	0.423	0.998
Comp3(-) - Comp2(-) == 0	26.000	258.680	0.101	1.000
Comp3(+) - Comp2(-) == 0	103.941	186.466	0.557	0.991
Comp3(-) - Comp2(+) == 0	-51.961	184.098	-0.282	1.000
Comp3(+) - Comp2(+) == 0	25.980	41.792	0.622	0.985
Comp3(+) - Comp3(-) == 0	77.941	186.466	0.418	0.998

(Adjusted p values reported -- single-step method)

Autumn NDVI

	Estimate	Std. Error	t value	Pr(>|t|)
Comp1(+) - Comp1(-) == 0	123.783	74.126	1.670	0.484
Comp2(-) - Comp1(-) == 0	69.760	196.626	0.355	0.999
Comp2(+) - Comp1(-) == 0	71.344	75.931	0.940	0.916
Comp3(-) - Comp1(-) == 0	-107.240	196.626	-0.545	0.992
Comp3(+) - Comp1(-) == 0	118.564	81.484	1.455	0.632
Comp2(-) - Comp1(+) == 0	-54.023	183.006	-0.295	1.000
Comp2(+) - Comp1(+) == 0	-52.439	24.389	-2.150	0.210
Comp3(-) - Comp1(+) == 0	-231.023	183.006	-1.262	0.758
Comp3(+) - Comp1(+) == 0	-5.219	38.328	-0.136	1.000
Comp2(+) - Comp2(-) == 0	1.584	183.744	0.009	1.000
Comp3(-) - Comp2(-) == 0	-177.000	258.182	-0.686	0.977
Comp3(+) - Comp2(-) == 0	48.804	186.108	0.262	1.000
Comp3(-) - Comp2(+) == 0	-178.584	183.744	-0.972	0.904
Comp3(+) - Comp2(+) == 0	47.220	41.712	1.132	0.832
Comp3(+) - Comp3(-) == 0	225.804	186.108	1.213	0.787

Average day of the year recording the maximum NDVI

	Estimate	Std. Error	t value	Pr(>|t|)
Comp1(+) - Comp1(-) == 0	-0.04224	0.83213	-0.051	1.000
Comp2(-) - Comp1(-) == 0	-1.12000	2.20730	-0.507	0.994
Comp2(+) - Comp1(-) == 0	-0.56481	0.85239	-0.663	0.981
Comp3(-) - Comp1(-) == 0	-0.37000	2.20730	-0.168	1.000
Comp3(+) - Comp1(-) == 0	0.27216	0.91473	0.298	1.000
Comp2(-) - Comp1(+) == 0	-1.07776	2.05440	-0.525	0.993
Comp2(+) - Comp1(+) == 0	-0.52257	0.27379	-1.909	0.332
Comp3(-) - Comp1(+) == 0	-0.32776	2.05440	-0.160	1.000
Comp3(+) - Comp1(+) == 0	0.31439	0.43026	0.731	0.970
Comp2(+) - Comp2(-) == 0	0.55519	2.06269	0.269	1.000
Comp3(-) - Comp2(-) == 0	0.75000	2.89833	0.259	1.000
Comp3(+) - Comp2(-) == 0	1.39216	2.08923	0.666	0.980
Comp3(-) - Comp2(+) == 0	0.19481	2.06269	0.094	1.000
Comp3(+) - Comp2(+) == 0	0.83696	0.46825	1.787	0.407
Comp3(+) - Comp3(-) == 0	0.64216	2.08923	0.307	0.999

Average day of the year recording the green up

```
                        Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  2.19441    4.52129   0.485   0.9953
Comp2(-) - Comp1(-) == 0  0.50000   11.99314   0.042   1.0000
Comp2(+) - Comp1(-) == 0  0.40584    4.63138   0.088   1.0000
Comp3(-) - Comp1(-) == 0  5.50000   11.99314   0.459   0.9964
Comp3(+) - Comp1(-) == 0  7.55882    4.97011   1.521   0.5865
Comp2(-) - Comp1(+) == 0 -1.69441   11.16238  -0.152   1.0000
Comp2(+) - Comp1(+) == 0 -1.78857    1.48761  -1.202   0.7937
Comp3(-) - Comp1(+) == 0  3.30559   11.16238   0.296   0.9996
Comp3(+) - Comp1(+) == 0  5.36441    2.33779   2.295   0.1531
Comp2(+) - Comp2(-) == 0 -0.09416   11.20743  -0.008   1.0000
Comp3(-) - Comp2(-) == 0  5.00000   15.74777   0.318   0.9994
Comp3(+) - Comp2(-) == 0  7.05882   11.35159   0.622   0.9854
Comp3(-) - Comp2(+) == 0  5.09416   11.20743   0.455   0.9966
Comp3(+) - Comp2(+) == 0  7.15298    2.54420   2.811   0.0407 *
Comp3(+) - Comp3(-) == 0  2.05882   11.35159   0.181   1.0000
```

Soil water capacity

```
                        Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   340.68      72.71   4.685   <0.001 ***
Comp2(-) - Comp1(-) == 0    42.52     192.87   0.220   0.9999
Comp2(+) - Comp1(-) == 0   198.30      74.48   2.662   0.0615 .
Comp3(-) - Comp1(-) == 0   302.27     192.87   1.567   0.5546
Comp3(+) - Comp1(-) == 0   226.14      79.93   2.829   0.0391 *
Comp2(-) - Comp1(+) == 0  -298.16     179.51  -1.661   0.4899
Comp2(+) - Comp1(+) == 0  -142.38      23.92  -5.951   <0.001 ***
Comp3(-) - Comp1(+) == 0   -38.41     179.51  -0.214   0.9999
Comp3(+) - Comp1(+) == 0  -114.54      37.60  -3.047   0.0197 *
Comp2(+) - Comp2(-) == 0   155.78     180.24   0.864   0.9397
Comp3(-) - Comp2(-) == 0   259.75     253.25   1.026   0.8823
Comp3(+) - Comp2(-) == 0   183.62     182.55   1.006   0.8907
Comp3(-) - Comp2(+) == 0   103.97     180.24   0.577   0.9896
Comp3(+) - Comp2(+) == 0    27.84      40.92   0.680   0.9782
Comp3(+) - Comp3(-) == 0   -76.13     182.55  -0.417   0.9977
```

4. CORN

Annual precipitation

```
                        Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  -43.698     84.758  -0.516    0.999
Comp2(-) - Comp1(-) == 0   38.708     99.310   0.390    1.000
Comp2(+) - Comp1(-) == 0  189.519     88.484   2.142    0.339
Comp3(-) - Comp1(-) == 0   87.137    130.634   0.667    0.997
Comp3(+) - Comp1(-) == 0  197.711     90.087   2.195    0.308
Comp4(-) - Comp1(-) == 0   65.049    141.232   0.461    1.000
Comp4(+) - Comp1(-) == 0  -95.132     91.833  -1.036    0.960
Comp2(-) - Comp1(+) == 0   82.406     55.531   1.484    0.780
Comp2(+) - Comp1(+) == 0  233.218     32.416   7.195   <0.001 ***
Comp3(-) - Comp1(+) == 0  130.835    101.423   1.290    0.879
Comp3(+) - Comp1(+) == 0  241.409     36.565   6.602   <0.001 ***
Comp4(-) - Comp1(+) == 0  108.748    114.751   0.948    0.975
Comp4(+) - Comp1(+) == 0  -51.433     40.678  -1.264    0.890
Comp2(+) - Comp2(-) == 0  150.811     61.068   2.470    0.176
Comp3(-) - Comp2(-) == 0   48.429    113.865   0.425    1.000
Comp3(+) - Comp2(-) == 0  159.003     63.369   2.509    0.160
Comp4(-) - Comp2(-) == 0   26.341    125.882   0.209    1.000
Comp4(+) - Comp2(-) == 0 -133.840     65.827  -2.033    0.408
Comp3(-) - Comp2(+) == 0 -102.383    104.557  -0.979    0.970
Comp3(+) - Comp2(+) == 0    8.192     44.527   0.184    1.000
Comp4(-) - Comp2(+) == 0 -124.470    117.530  -1.059    0.955
Comp4(+) - Comp2(+) == 0 -284.651     47.961  -5.935   <0.001 ***
Comp3(+) - Comp3(-) == 0  110.574    105.917   1.044    0.958
Comp4(-) - Comp3(-) == 0  -22.087    151.820  -0.145    1.000
Comp4(+) - Comp3(-) == 0 -182.268    107.406  -1.697    0.641
Comp4(-) - Comp3(+) == 0 -132.662    118.742  -1.117    0.940
Comp4(+) - Comp3(+) == 0 -292.843     50.858  -5.758   <0.001 ***
Comp4(+) - Comp4(-) == 0 -160.181    120.072  -1.334    0.860
```

Winter precipitation

```
                        Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0 -139.163     79.260  -1.756  0.60015
Comp2(-) - Comp1(-) == 0 -124.143     92.868  -1.337  0.85856
Comp2(+) - Comp1(-) == 0  241.846     82.745   2.923  0.05464 .
Comp3(-) - Comp1(-) == 0  303.778    122.161   2.487  0.16837
Comp3(+) - Comp1(-) == 0  325.256     84.244   3.861  0.00243 **
Comp4(-) - Comp1(-) == 0  332.786    132.071   2.520  0.15685
Comp4(+) - Comp1(-) == 0   33.488     85.877   0.390  0.99991
Comp2(-) - Comp1(+) == 0   15.020     51.930   0.289  0.99999
Comp2(+) - Comp1(+) == 0  381.009     30.313  12.569  < 0.001 ***
Comp3(-) - Comp1(+) == 0  442.941     94.845   4.670  < 0.001 ***
Comp3(+) - Comp1(+) == 0  464.419     34.194  13.582  < 0.001 ***
Comp4(-) - Comp1(+) == 0  471.949    107.308   4.398  < 0.001 ***
Comp4(+) - Comp1(+) == 0  172.651     38.039   4.539  < 0.001 ***
Comp2(+) - Comp2(-) == 0  365.989     57.107   6.409  < 0.001 ***
Comp3(-) - Comp2(-) == 0  427.921    106.479   4.019  0.00123 **
Comp3(+) - Comp2(-) == 0  449.399     59.259   7.584  < 0.001 ***
Comp4(-) - Comp2(-) == 0  456.929    117.717   3.882  0.00218 **
Comp4(+) - Comp2(-) == 0  157.631     61.558   2.561  0.14167
Comp3(-) - Comp2(+) == 0   61.932     97.776   0.633  0.99783
Comp3(+) - Comp2(+) == 0   83.410     41.639   2.003  0.42746
Comp4(-) - Comp2(+) == 0   90.940    109.907   0.827  0.98873
Comp4(+) - Comp2(+) == 0 -208.358     44.851  -4.646  < 0.001 ***
Comp3(+) - Comp3(-) == 0   21.478     99.047   0.217  1.00000
```

```
Comp4(-) - Comp3(-) == 0   29.008    141.972   0.204  1.00000
Comp4(+) - Comp3(-) == 0 -270.290    100.440  -2.691  0.10268
Comp4(-) - Comp3(+) == 0    7.529    111.040   0.068  1.00000
Comp4(+) - Comp3(+) == 0 -291.768     47.559  -6.135  < 0.001 ***
Comp4(+) - Comp4(-) == 0 -299.298    112.284  -2.666  0.10980
```

Spring precipitation

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   652.45      74.26   8.786  < 0.001 ***
Comp2(-) - Comp1(-) == 0   280.46      87.01   3.223  0.02197 *
Comp2(+) - Comp1(-) == 0   185.69      77.52   2.395  0.20650
Comp3(-) - Comp1(-) == 0   461.20     114.45   4.030  0.00116 **
Comp3(+) - Comp1(-) == 0    88.08      78.93   1.116  0.94060
Comp4(-) - Comp1(-) == 0   595.59     123.74   4.813  < 0.001 ***
Comp4(+) - Comp1(-) == 0   358.44      80.46   4.455  < 0.001 ***
Comp2(-) - Comp1(+) == 0  -371.99      48.65  -7.646  < 0.001 ***
Comp2(+) - Comp1(+) == 0  -466.76      28.40 -16.435  < 0.001 ***
Comp3(-) - Comp1(+) == 0  -191.25      88.86  -2.152  0.33291
Comp3(+) - Comp1(+) == 0  -564.37      32.04 -17.616  < 0.001 ***
Comp4(-) - Comp1(+) == 0   -56.85     100.54  -0.565  0.99895
Comp4(+) - Comp1(+) == 0  -294.01      35.64  -8.249  < 0.001 ***
Comp2(+) - Comp2(-) == 0   -94.77      53.50  -1.771  0.58872
Comp3(-) - Comp2(-) == 0   180.74      99.76   1.812  0.56056
Comp3(+) - Comp2(-) == 0  -192.38      55.52  -3.465  0.00985 **
Comp4(-) - Comp2(-) == 0   315.13     110.29   2.857  0.06645 .
Comp4(+) - Comp2(-) == 0    77.98      57.67   1.352  0.85113
Comp3(-) - Comp2(+) == 0   275.51      91.61   3.008  0.04308 *
Comp3(+) - Comp2(+) == 0   -97.61      39.01  -2.502  0.16227
Comp4(-) - Comp2(+) == 0   409.91     102.97   3.981  0.00174 **
Comp4(+) - Comp2(+) == 0   172.75      42.02   4.111  < 0.001 ***
Comp3(+) - Comp3(-) == 0  -373.12      92.80  -4.021  0.00128 **
Comp4(-) - Comp3(-) == 0   134.40     133.02   1.010  0.96487
Comp4(+) - Comp3(-) == 0  -102.76      94.10  -1.092  0.94695
Comp4(-) - Comp3(+) == 0   507.52     104.04   4.878  < 0.001 ***
Comp4(+) - Comp3(+) == 0   270.36      44.56   6.068  < 0.001 ***
Comp4(+) - Comp4(-) == 0  -237.15     105.20  -2.254  0.27539
```

Summer precipitation

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   252.75      83.05   3.043  0.03879 *
Comp2(-) - Comp1(-) == 0  -148.37      97.31  -1.525  0.75514
Comp2(+) - Comp1(-) == 0   183.52      86.70   2.117  0.35461
Comp3(-) - Comp1(-) == 0   554.72     128.01   4.334  < 0.001 ***
Comp3(+) - Comp1(-) == 0   -88.97      88.28  -1.008  0.96533
Comp4(-) - Comp1(-) == 0   160.00     138.39   1.156  0.92889
Comp4(+) - Comp1(-) == 0    87.36      89.99   0.971  0.97181
Comp2(-) - Comp1(+) == 0  -401.12      54.41  -7.372  < 0.001 ***
Comp2(+) - Comp1(+) == 0   -69.23      31.76  -2.180  0.31660
Comp3(-) - Comp1(+) == 0   301.97      99.38   3.038  0.03919 *
Comp3(+) - Comp1(+) == 0  -341.72      35.83  -9.537  < 0.001 ***
Comp4(-) - Comp1(+) == 0   -92.75     112.44  -0.825  0.98896
Comp4(+) - Comp1(+) == 0  -165.39      39.86  -4.149  < 0.001 ***
Comp2(+) - Comp2(-) == 0   331.89      59.84   5.546  < 0.001 ***
Comp3(-) - Comp2(-) == 0   703.10     111.57   6.302  < 0.001 ***
Comp3(+) - Comp2(-) == 0    59.40      62.09   0.957  0.97400
Comp4(-) - Comp2(-) == 0   308.37     123.35   2.500  0.16341
Comp4(+) - Comp2(-) == 0   235.74      64.50   3.655  0.00509 **
Comp3(-) - Comp2(+) == 0   371.20     102.45   3.623  0.00604 **
```

```
Comp3(+) - Comp2(+) == 0  -272.49      43.63  -6.245  < 0.001 ***
Comp4(-) - Comp2(+) == 0   -23.52     115.17  -0.204  1.00000
Comp4(+) - Comp2(+) == 0   -96.15      47.00  -2.046  0.39961
Comp3(+) - Comp3(-) == 0  -643.69     103.79  -6.202  < 0.001 ***
Comp4(-) - Comp3(-) == 0  -394.72     148.77  -2.653  0.11289
Comp4(+) - Comp3(-) == 0  -467.36     105.25  -4.441  < 0.001 ***
Comp4(-) - Comp3(+) == 0   248.97     116.35   2.140  0.34074
Comp4(+) - Comp3(+) == 0   176.33      49.84   3.538  0.00786 **
Comp4(+) - Comp4(-) == 0   -72.64     117.66  -0.617  0.99815
```

Autumn precipitation

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0 -102.853     79.844  -1.288   0.8803
Comp2(-) - Comp1(-) == 0  -27.891     93.553  -0.298   1.0000
Comp2(+) - Comp1(-) == 0 -430.760     83.355  -5.168   <0.001 ***
Comp3(-) - Comp1(-) == 0 -218.923    123.062  -1.779   0.5838
Comp3(+) - Comp1(-) == 0 -564.336     84.865  -6.650   <0.001 ***
Comp4(-) - Comp1(-) == 0 -294.352    133.045  -2.212   0.2978
Comp4(+) - Comp1(-) == 0  -33.843     86.510  -0.391   0.9999
Comp2(-) - Comp1(+) == 0   74.961     52.312   1.433   0.8090
Comp2(+) - Comp1(+) == 0 -327.907     30.537 -10.738   <0.001 ***
Comp3(-) - Comp1(+) == 0 -116.070     95.544  -1.215   0.9093
Comp3(+) - Comp1(+) == 0 -461.483     34.446 -13.397   <0.001 ***
Comp4(-) - Comp1(+) == 0 -191.499    108.099  -1.772   0.5890
Comp4(+) - Comp1(+) == 0   69.010     38.320   1.801   0.5691
Comp2(+) - Comp2(-) == 0 -402.868     57.528  -7.003   <0.001 ***
Comp3(-) - Comp2(-) == 0 -191.032    107.264  -1.781   0.5822
Comp3(+) - Comp2(-) == 0 -536.444     59.695  -8.986   <0.001 ***
Comp4(-) - Comp2(-) == 0 -266.460    118.585  -2.247   0.2792
Comp4(+) - Comp2(-) == 0   -5.952     62.012  -0.096   1.0000
Comp3(-) - Comp2(+) == 0  211.836     98.496   2.151   0.3339
Comp3(+) - Comp2(+) == 0 -133.576     41.946  -3.184   0.0251 *
Comp4(-) - Comp2(+) == 0  136.408    110.717   1.232   0.9027
Comp4(+) - Comp2(+) == 0  396.916     45.181   8.785   <0.001 ***
Comp3(+) - Comp3(-) == 0 -345.413     99.778  -3.462   0.0102 *
Comp4(-) - Comp3(-) == 0  -75.429    143.019  -0.527   0.9993
Comp4(+) - Comp3(-) == 0  185.080    101.180   1.829   0.5486
Comp4(-) - Comp3(+) == 0  269.984    111.859   2.414   0.1983
Comp4(+) - Comp3(+) == 0  530.493     47.910  11.073   <0.001 ***
Comp4(+) - Comp4(-) == 0  260.509    113.112   2.303   0.2497
```

Annual mean temperature

```
                          Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0 -331.0045    82.7174  -4.002  0.00127 **
Comp2(-) - Comp1(-) == 0 -222.0000    96.9192  -2.291  0.25618
Comp2(+) - Comp1(-) == 0   62.0701    86.3543   0.719  0.99520
Comp3(-) - Comp1(-) == 0  -58.1111   127.4897  -0.456  0.99975
Comp3(+) - Comp1(-) == 0 -222.5813    87.9188  -2.532  0.15192
Comp4(-) - Comp1(-) == 0 -175.7143   137.8323  -1.275  0.88590
Comp4(+) - Comp1(-) == 0 -177.0560    89.6228  -1.976  0.44696
Comp2(-) - Comp1(+) == 0  109.0045    54.1947   2.011  0.42141
Comp2(+) - Comp1(+) == 0  393.0746    31.6353  12.425  < 0.001 ***
Comp3(-) - Comp1(+) == 0  272.8934    98.9816   2.757  0.08668 .
Comp3(+) - Comp1(+) == 0  108.4232    35.6853   3.038  0.03897 *
Comp4(-) - Comp1(+) == 0  155.2902   111.9888   1.387  0.83349
Comp4(+) - Comp1(+) == 0  153.9485    39.6986   3.878  0.00220 **
Comp2(+) - Comp2(-) == 0  284.0701    59.5984   4.766  < 0.001 ***
Comp3(-) - Comp2(-) == 0  163.8889   111.1240   1.475  0.78519
```

```
Comp3(+) - Comp2(-) == 0   -0.5813    61.8435  -0.009  1.00000
Comp4(-) - Comp2(-) == 0   46.2857   122.8522   0.377  0.99993
Comp4(+) - Comp2(-) == 0   44.9440    64.2430   0.700  0.99594
Comp3(-) - Comp2(+) == 0 -120.1812   102.0405  -1.178  0.92183
Comp3(+) - Comp2(+) == 0 -284.6513    43.4551  -6.550  < 0.001 ***
Comp4(-) - Comp2(+) == 0 -237.7844   114.7013  -2.073  0.38212
Comp4(+) - Comp2(+) == 0 -239.1261    46.8069  -5.109  < 0.001 ***
Comp3(+) - Comp3(-) == 0 -164.4701   103.3679  -1.591  0.71295
Comp4(-) - Comp3(-) == 0 -117.6032   148.1653  -0.794  0.99122
Comp4(+) - Comp3(-) == 0 -118.9449   104.8211  -1.135  0.93531
Comp4(-) - Comp3(+) == 0   46.8670   115.8837   0.404  0.99989
Comp4(+) - Comp3(+) == 0   45.5253    49.6340   0.917  0.97948
Comp4(+) - Comp4(-) == 0   -1.3417   117.1818  -0.011  1.00000
```

Winter mean temperature

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  171.406     83.807   2.045  0.39958
Comp2(-) - Comp1(-) == 0  372.778     98.196   3.796  0.00305 **
Comp2(+) - Comp1(-) == 0    6.846     87.492   0.078  1.00000
Comp3(-) - Comp1(-) == 0  336.278    129.169   2.603  0.12833
Comp3(+) - Comp1(-) == 0 -155.694     89.077  -1.748  0.60576
Comp4(-) - Comp1(-) == 0  215.857    139.648   1.546  0.74191
Comp4(+) - Comp1(-) == 0   87.104     90.804   0.959  0.97365
Comp2(-) - Comp1(+) == 0  201.372     54.909   3.667  0.00492 **
Comp2(+) - Comp1(+) == 0 -164.560     32.052  -5.134  < 0.001 ***
Comp3(-) - Comp1(+) == 0  164.872    100.286   1.644  0.67774
Comp3(+) - Comp1(+) == 0 -327.100     36.156  -9.047  < 0.001 ***
Comp4(-) - Comp1(+) == 0   44.451    113.464   0.392  0.99991
Comp4(+) - Comp1(+) == 0  -84.302     40.222  -2.096  0.36721
Comp2(+) - Comp2(-) == 0 -365.932     60.384  -6.060  < 0.001 ***
Comp3(-) - Comp2(-) == 0  -36.500    112.588  -0.324  0.99997
Comp3(+) - Comp2(-) == 0 -528.472     62.658  -8.434  < 0.001 ***
Comp4(-) - Comp2(-) == 0 -156.921    124.471  -1.261  0.89170
Comp4(+) - Comp2(-) == 0 -285.674     65.089  -4.389  < 0.001 ***
Comp3(-) - Comp2(+) == 0  329.432    103.385   3.186  0.02498 *
Comp3(+) - Comp2(+) == 0 -162.540     44.028  -3.692  0.00418 **
Comp4(-) - Comp2(+) == 0  209.011    116.213   1.799  0.57035
Comp4(+) - Comp2(+) == 0   80.258     47.424   1.692  0.64422
Comp3(+) - Comp3(-) == 0 -491.972    104.730  -4.698  < 0.001 ***
Comp4(-) - Comp3(-) == 0 -120.421    150.117  -0.802  0.99064
Comp4(+) - Comp3(-) == 0 -249.174    106.202  -2.346  0.22901
Comp4(-) - Comp3(+) == 0  371.551    117.411   3.165  0.02741 *
Comp4(+) - Comp3(+) == 0  242.798     50.288   4.828  < 0.001 ***
Comp4(+) - Comp4(-) == 0 -128.753    118.726  -1.084  0.94870
```

Spring mean temperature

```
                          Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0 -210.7281    83.7376  -2.517  0.15724
Comp2(-) - Comp1(-) == 0 -187.6947    98.1146  -1.913  0.48889
Comp2(+) - Comp1(-) == 0  140.1229    87.4194   1.603  0.70496
Comp3(-) - Comp1(-) == 0  -17.0043   129.0622  -0.132  1.00000
Comp3(+) - Comp1(-) == 0  -75.7466    89.0032  -0.851  0.98669
Comp4(-) - Comp1(-) == 0 -123.8297   139.5324  -0.887  0.98303
Comp4(+) - Comp1(-) == 0  -75.3034    90.7282  -0.830  0.98855
Comp2(-) - Comp1(+) == 0   23.0334    54.8632   0.420  0.99985
Comp2(+) - Comp1(+) == 0  350.8510    32.0255  10.955  < 0.001 ***
Comp3(-) - Comp1(+) == 0  193.7238   100.2025   1.933  0.47506
Comp3(+) - Comp1(+) == 0  134.9815    36.1255   3.736  0.00369 **
```

```
Comp4(-) - Comp1(+) == 0   86.8984   113.3701   0.767  0.99289
Comp4(+) - Comp1(+) == 0  135.4247    40.1883   3.370  0.01349 *
Comp2(+) - Comp2(-) == 0  327.8177    60.3335   5.433  < 0.001 ***
Comp3(-) - Comp2(-) == 0  170.6905   112.4946   1.517  0.75957
Comp3(+) - Comp2(-) == 0  111.9481    62.6063   1.788  0.57735
Comp4(-) - Comp2(-) == 0   63.8651   124.3675   0.514  0.99944
Comp4(+) - Comp2(-) == 0  112.3914    65.0353   1.728  0.61947
Comp3(-) - Comp2(+) == 0 -157.1272   103.2991  -1.521  0.75736
Comp3(+) - Comp2(+) == 0 -215.8696    43.9911  -4.907  < 0.001 ***
Comp4(-) - Comp2(+) == 0 -263.9526   116.1161  -2.273  0.26537
Comp4(+) - Comp2(+) == 0 -215.4263    47.3842  -4.546  < 0.001 ***
Comp3(+) - Comp3(-) == 0  -58.7424   104.6428  -0.561  0.99900
Comp4(-) - Comp3(-) == 0 -106.8254   149.9928  -0.712  0.99547
Comp4(+) - Comp3(-) == 0  -58.2991   106.1140  -0.549  0.99913
Comp4(-) - Comp3(+) == 0  -48.0830   117.3131  -0.410  0.99988
Comp4(+) - Comp3(+) == 0    0.4433    50.2462   0.009  1.00000
Comp4(+) - Comp4(-) == 0   48.5263   118.6272   0.409  0.99988
```

Summer mean temperature

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  293.589     78.041   3.762  0.00354 **
Comp2(-) - Comp1(-) == 0  642.628     91.440   7.028  < 0.001 ***
Comp2(+) - Comp1(-) == 0 -180.092     81.473  -2.210  0.29889
Comp3(-) - Comp1(-) == 0   94.786    120.283   0.788  0.99159
Comp3(+) - Comp1(-) == 0  199.906     82.949   2.410  0.19951
Comp4(-) - Comp1(-) == 0  433.016    130.040   3.330  0.01605 *
Comp4(+) - Comp1(-) == 0   -3.577     84.556  -0.042  1.00000
Comp2(-) - Comp1(+) == 0  349.039     51.131   6.826  < 0.001 ***
Comp2(+) - Comp1(+) == 0 -473.681     29.847 -15.870  < 0.001 ***
Comp3(-) - Comp1(+) == 0 -198.803     93.386  -2.129  0.34688
Comp3(+) - Comp1(+) == 0  -93.683     33.668  -2.783  0.08062 .
Comp4(-) - Comp1(+) == 0  139.427    105.658   1.320  0.86626
Comp4(+) - Comp1(+) == 0 -297.166     37.454  -7.934  < 0.001 ***
Comp2(+) - Comp2(-) == 0 -822.719     56.229 -14.632  < 0.001 ***
Comp3(-) - Comp2(-) == 0 -547.841    104.842  -5.225  < 0.001 ***
Comp3(+) - Comp2(-) == 0 -442.722     58.347  -7.588  < 0.001 ***
Comp4(-) - Comp2(-) == 0 -209.611    115.907  -1.808  0.56297
Comp4(+) - Comp2(-) == 0 -646.205     60.611 -10.661  < 0.001 ***
Comp3(-) - Comp2(+) == 0  274.878     96.272   2.855  0.06651 .
Comp3(+) - Comp2(+) == 0  379.997     40.999   9.269  < 0.001 ***
Comp4(-) - Comp2(+) == 0  613.108    108.217   5.666  < 0.001 ***
Comp4(+) - Comp2(+) == 0  176.514     44.161   3.997  0.00129 **
Comp3(+) - Comp3(-) == 0  105.119     97.524   1.078  0.95035
Comp4(-) - Comp3(-) == 0  338.230    139.789   2.420  0.19575
Comp4(+) - Comp3(-) == 0  -98.364     98.895  -0.995  0.96772
Comp4(-) - Comp3(+) == 0  233.111    109.333   2.132  0.34519
Comp4(+) - Comp3(+) == 0 -203.483     46.828  -4.345  < 0.001 ***
Comp4(+) - Comp4(-) == 0 -436.594    110.557  -3.949  0.00168 **
```

Autumn mean temperature

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  -287.61      82.69  -3.478  0.00944 **
Comp2(-) - Comp1(-) == 0   -22.43      96.89  -0.232  1.00000
Comp2(+) - Comp1(-) == 0   -10.55      86.33  -0.122  1.00000
Comp3(-) - Comp1(-) == 0   149.69     127.45   1.174  0.92306
Comp3(+) - Comp1(-) == 0  -468.93      87.89  -5.335  < 0.001 ***
Comp4(-) - Comp1(-) == 0  -105.02     137.79  -0.762  0.99312
Comp4(+) - Comp1(-) == 0  -166.36      89.60  -1.857  0.52904
```

```
Comp2(-) - Comp1(+) == 0   265.18      54.18   4.894  < 0.001 ***
Comp2(+) - Comp1(+) == 0   277.07      31.63   8.761  < 0.001 ***
Comp3(-) - Comp1(+) == 0   437.30      98.95   4.419  < 0.001 ***
Comp3(+) - Comp1(+) == 0  -181.32      35.68  -5.082  < 0.001 ***
Comp4(-) - Comp1(+) == 0   182.59     111.96   1.631  0.68670
Comp4(+) - Comp1(+) == 0   121.26      39.69   3.055  0.03729 *
Comp2(+) - Comp2(-) == 0    11.89      59.58   0.200  1.00000
Comp3(-) - Comp2(-) == 0   172.13     111.09   1.549  0.73970
Comp3(+) - Comp2(-) == 0  -446.49      61.83  -7.222  < 0.001 ***
Comp4(-) - Comp2(-) == 0   -82.59     122.82  -0.672  0.99683
Comp4(+) - Comp2(-) == 0  -143.92      64.23  -2.241  0.28270
Comp3(-) - Comp2(+) == 0   160.24     102.01   1.571  0.72616
Comp3(+) - Comp2(+) == 0  -458.38      43.44 -10.551  < 0.001 ***
Comp4(-) - Comp2(+) == 0   -94.48     114.67  -0.824  0.98900
Comp4(+) - Comp2(+) == 0  -155.81      46.79  -3.330  0.01603 *
Comp3(+) - Comp3(-) == 0  -618.62     103.34  -5.986  < 0.001 ***
Comp4(-) - Comp3(-) == 0  -254.71     148.12  -1.720  0.62565
Comp4(+) - Comp3(-) == 0  -316.05     104.79  -3.016  0.04242 *
Comp4(-) - Comp3(+) == 0   363.90     115.85   3.141  0.02889 *
Comp4(+) - Comp3(+) == 0   302.57      49.62   6.098  < 0.001 ***
Comp4(+) - Comp4(-) == 0   -61.33     117.15  -0.524  0.99936
```

Annual ETo

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  -140.25      80.99  -1.732  0.61739
Comp2(-) - Comp1(-) == 0    90.65      94.89   0.955  0.97424
Comp2(+) - Comp1(-) == 0   237.16      84.55   2.805  0.07672 .
Comp3(-) - Comp1(-) == 0   212.82     124.82   1.705  0.63582
Comp3(+) - Comp1(-) == 0  -323.03      86.08  -3.753  0.00339 **
Comp4(-) - Comp1(-) == 0   -85.63     134.95  -0.635  0.99780
Comp4(+) - Comp1(-) == 0    68.59      87.75   0.782  0.99198
Comp2(-) - Comp1(+) == 0   230.89      53.06   4.352  < 0.001 ***
Comp2(+) - Comp1(+) == 0   377.41      30.97  12.185  < 0.001 ***
Comp3(-) - Comp1(+) == 0   353.07      96.91   3.643  0.00519 **
Comp3(+) - Comp1(+) == 0  -182.79      34.94  -5.232  < 0.001 ***
Comp4(-) - Comp1(+) == 0    54.61     109.64   0.498  0.99954
Comp4(+) - Comp1(+) == 0   208.84      38.87   5.373  < 0.001 ***
Comp2(+) - Comp2(-) == 0   146.52      58.35   2.511  0.15982
Comp3(-) - Comp2(-) == 0   122.17     108.80   1.123  0.93857
Comp3(+) - Comp2(-) == 0  -413.68      60.55  -6.832  < 0.001 ***
Comp4(-) - Comp2(-) == 0  -176.28     120.28  -1.466  0.79034
Comp4(+) - Comp2(-) == 0   -22.05      62.90  -0.351  0.99996
Comp3(-) - Comp2(+) == 0   -24.34      99.90  -0.244  1.00000
Comp3(+) - Comp2(+) == 0  -560.20      42.55 -13.167  < 0.001 ***
Comp4(-) - Comp2(+) == 0  -322.80     112.30  -2.874  0.06304 .
Comp4(+) - Comp2(+) == 0  -168.57      45.83  -3.678  0.00475 **
Comp3(+) - Comp3(-) == 0  -535.85     101.20  -5.295  < 0.001 ***
Comp4(-) - Comp3(-) == 0  -298.45     145.06  -2.057  0.39177
Comp4(+) - Comp3(-) == 0  -144.23     102.63  -1.405  0.82384
Comp4(-) - Comp3(+) == 0   237.40     113.46   2.092  0.36978
Comp4(+) - Comp3(+) == 0   391.63      48.59   8.059  < 0.001 ***
Comp4(+) - Comp4(-) == 0   154.23     114.73   1.344  0.85483
```

Winter ETo

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   65.233     84.518   0.772  0.99258
Comp2(-) - Comp1(-) == 0  -58.190     99.029  -0.588  0.99865
Comp2(+) - Comp1(-) == 0   -9.860     88.234  -0.112  1.00000
```

```
Comp3(-) - Comp1(-) == 0 -259.667    130.265  -1.993  0.43436
Comp3(+) - Comp1(-) == 0  336.406     89.833   3.745  0.00363 **
Comp4(-) - Comp1(-) == 0  -41.929    140.833  -0.298  0.99999
Comp4(+) - Comp1(-) == 0  -64.024     91.574  -0.699  0.99595
Comp2(-) - Comp1(+) == 0 -123.424     55.374  -2.229  0.28925
Comp2(+) - Comp1(+) == 0  -75.093     32.324  -2.323  0.24006
Comp3(-) - Comp1(+) == 0 -324.900    101.136  -3.212  0.02359 *
Comp3(+) - Comp1(+) == 0  271.173     36.462   7.437  < 0.001 ***
Comp4(-) - Comp1(+) == 0 -107.162    114.426  -0.937  0.97695
Comp4(+) - Comp1(+) == 0 -129.257     40.563  -3.187  0.02493 *
Comp2(+) - Comp2(-) == 0   48.331     60.896   0.794  0.99122
Comp3(-) - Comp2(-) == 0 -201.476    113.543  -1.774  0.58658
Comp3(+) - Comp2(-) == 0  394.597     63.190   6.245  < 0.001 ***
Comp4(-) - Comp2(-) == 0   16.262    125.526   0.130  1.00000
Comp4(+) - Comp2(-) == 0   -5.834     65.641  -0.089  1.00000
Comp3(-) - Comp2(+) == 0 -249.807    104.262  -2.396  0.20553
Comp3(+) - Comp2(+) == 0  346.266     44.401   7.799  < 0.001 ***
Comp4(-) - Comp2(+) == 0  -32.069    117.198  -0.274  0.99999
Comp4(+) - Comp2(+) == 0  -54.164     47.826  -1.133  0.93586
Comp3(+) - Comp3(-) == 0  596.073    105.618   5.644  < 0.001 ***
Comp4(-) - Comp3(-) == 0  217.738    151.390   1.438  0.80584
Comp4(+) - Comp3(-) == 0  195.643    107.103   1.827  0.54989
Comp4(-) - Comp3(+) == 0 -378.335    118.406  -3.195  0.02452 *
Comp4(+) - Comp3(+) == 0 -400.430     50.714  -7.896  < 0.001 ***
Comp4(+) - Comp4(-) == 0  -22.095    119.733  -0.185  1.00000
```

Spring ETo

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   190.29      77.33   2.461  0.17850
Comp2(-) - Comp1(-) == 0   508.19      90.61   5.609  < 0.001 ***
Comp2(+) - Comp1(-) == 0  -329.52      80.73  -4.082  0.00102 **
Comp3(-) - Comp1(-) == 0    27.13     119.19   0.228  1.00000
Comp3(+) - Comp1(-) == 0    54.86      82.19   0.667  0.99697
Comp4(-) - Comp1(-) == 0   318.72     128.86   2.473  0.17359
Comp4(+) - Comp1(-) == 0   -79.44      83.79  -0.948  0.97526
Comp2(-) - Comp1(+) == 0   317.90      50.67   6.274  < 0.001 ***
Comp2(+) - Comp1(+) == 0  -519.81      29.58 -17.576  < 0.001 ***
Comp3(-) - Comp1(+) == 0  -163.16      92.54  -1.763  0.59495
Comp3(+) - Comp1(+) == 0  -135.43      33.36  -4.060  0.00121 **
Comp4(-) - Comp1(+) == 0   128.43     104.70   1.227  0.90478
Comp4(+) - Comp1(+) == 0  -269.73      37.11  -7.268  < 0.001 ***
Comp2(+) - Comp2(-) == 0  -837.71      55.72 -15.035  < 0.001 ***
Comp3(-) - Comp2(-) == 0  -481.06     103.89  -4.631  < 0.001 ***
Comp3(+) - Comp2(-) == 0  -453.33      57.82  -7.841  < 0.001 ***
Comp4(-) - Comp2(-) == 0  -189.47     114.85  -1.650  0.67418
Comp4(+) - Comp2(-) == 0  -587.62      60.06  -9.784  < 0.001 ***
Comp3(-) - Comp2(+) == 0   356.65      95.40   3.739  0.00352 **
Comp3(+) - Comp2(+) == 0   384.38      40.63   9.462  < 0.001 ***
Comp4(-) - Comp2(+) == 0   648.24     107.23   6.045  < 0.001 ***
Comp4(+) - Comp2(+) == 0   250.09      43.76   5.715  < 0.001 ***
Comp3(+) - Comp3(-) == 0    27.73      96.64   0.287  0.99999
Comp4(-) - Comp3(-) == 0   291.59     138.52   2.105  0.36144
Comp4(+) - Comp3(-) == 0  -106.57      97.99  -1.087  0.94795
Comp4(-) - Comp3(+) == 0   263.86     108.34   2.436  0.18875
Comp4(+) - Comp3(+) == 0  -134.29      46.40  -2.894  0.05947 .
Comp4(+) - Comp4(-) == 0  -398.15     109.55  -3.634  0.00546 **
```

Summer ETo

	Estimate	Std. Error	t value	Pr(>|t|)	
Comp1(+) - Comp1(-) == 0	-45.25	78.25	-0.578	0.99879	
Comp2(-) - Comp1(-) == 0	313.97	91.69	3.424	0.01164	*
Comp2(+) - Comp1(-) == 0	-453.98	81.69	-5.557	< 0.001	***
Comp3(-) - Comp1(-) == 0	-391.50	120.61	-3.246	0.02077	*
Comp3(+) - Comp1(-) == 0	178.26	83.17	2.143	0.33824	
Comp4(-) - Comp1(-) == 0	213.88	130.39	1.640	0.68030	
Comp4(+) - Comp1(-) == 0	-209.71	84.79	-2.473	0.17422	
Comp2(-) - Comp1(+) == 0	359.23	51.27	7.007	< 0.001	***
Comp2(+) - Comp1(+) == 0	-408.73	29.93	-13.657	< 0.001	***
Comp3(-) - Comp1(+) == 0	-346.25	93.64	-3.698	0.00449	**
Comp3(+) - Comp1(+) == 0	223.51	33.76	6.621	< 0.001	***
Comp4(-) - Comp1(+) == 0	259.14	105.94	2.446	0.18407	
Comp4(+) - Comp1(+) == 0	-164.46	37.56	-4.379	< 0.001	***
Comp2(+) - Comp2(-) == 0	-767.95	56.38	-13.621	< 0.001	***
Comp3(-) - Comp2(-) == 0	-705.48	105.13	-6.711	< 0.001	***
Comp3(+) - Comp2(-) == 0	-135.71	58.51	-2.320	0.24134	
Comp4(-) - Comp2(-) == 0	-100.09	116.22	-0.861	0.98576	
Comp4(+) - Comp2(-) == 0	-523.68	60.78	-8.617	< 0.001	***
Comp3(-) - Comp2(+) == 0	62.48	96.53	0.647	0.99751	
Comp3(+) - Comp2(+) == 0	632.24	41.11	15.379	< 0.001	***
Comp4(-) - Comp2(+) == 0	667.86	108.51	6.155	< 0.001	***
Comp4(+) - Comp2(+) == 0	244.27	44.28	5.516	< 0.001	***
Comp3(+) - Comp3(-) == 0	569.76	97.79	5.826	< 0.001	***
Comp4(-) - Comp3(-) == 0	605.39	140.17	4.319	< 0.001	***
Comp4(+) - Comp3(-) == 0	181.79	99.16	1.833	0.54548	
Comp4(-) - Comp3(+) == 0	35.62	109.63	0.325	0.99997	
Comp4(+) - Comp3(+) == 0	-387.97	46.96	-8.263	< 0.001	***
Comp4(+) - Comp4(-) == 0	-423.60	110.86	-3.821	0.00260	**

Autumn ETo

	Estimate	Std. Error	t value	Pr(>|t|)	
Comp1(+) - Comp1(-) == 0	170.78	76.96	2.219	0.29528	
Comp2(-) - Comp1(-) == 0	521.49	90.18	5.783	< 0.001	***
Comp2(+) - Comp1(-) == 0	-344.12	80.35	-4.283	< 0.001	***
Comp3(-) - Comp1(-) == 0	-21.69	118.62	-0.183	1.00000	
Comp3(+) - Comp1(-) == 0	16.22	81.80	0.198	1.00000	
Comp4(-) - Comp1(-) == 0	304.42	128.25	2.374	0.21561	
Comp4(+) - Comp1(-) == 0	-119.74	83.39	-1.436	0.80734	
Comp2(-) - Comp1(+) == 0	350.72	50.43	6.955	< 0.001	***
Comp2(+) - Comp1(+) == 0	-514.90	29.43	-17.493	< 0.001	***
Comp3(-) - Comp1(+) == 0	-192.47	92.10	-2.090	0.37085	
Comp3(+) - Comp1(+) == 0	-154.55	33.20	-4.655	< 0.001	***
Comp4(-) - Comp1(+) == 0	133.65	104.20	1.283	0.88268	
Comp4(+) - Comp1(+) == 0	-290.52	36.94	-7.865	< 0.001	***
Comp2(+) - Comp2(-) == 0	-865.61	55.45	-15.610	< 0.001	***
Comp3(-) - Comp2(-) == 0	-543.18	103.39	-5.253	< 0.001	***
Comp3(+) - Comp2(-) == 0	-505.27	57.54	-8.781	< 0.001	***
Comp4(-) - Comp2(-) == 0	-217.07	114.31	-1.899	0.49912	
Comp4(+) - Comp2(-) == 0	-641.24	59.77	-10.728	< 0.001	***
Comp3(-) - Comp2(+) == 0	322.43	94.94	3.396	0.01251	*
Comp3(+) - Comp2(+) == 0	360.34	40.43	8.912	< 0.001	***
Comp4(-) - Comp2(+) == 0	648.54	106.72	6.077	< 0.001	***
Comp4(+) - Comp2(+) == 0	224.38	43.55	5.152	< 0.001	***
Comp3(+) - Comp3(-) == 0	37.91	96.18	0.394	0.99990	
Comp4(-) - Comp3(-) == 0	326.11	137.86	2.366	0.21953	
Comp4(+) - Comp3(-) == 0	-98.05	97.53	-1.005	0.96581	
Comp4(-) - Comp3(+) == 0	288.20	107.82	2.673	0.10682	
Comp4(+) - Comp3(+) == 0	-135.96	46.18	-2.944	0.05159	.

```
Comp4(+) - Comp4(-) == 0  -424.16     109.03  -3.890  0.00197 **
```

Annual climate balance

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  -70.375     85.994  -0.818   0.9894
Comp2(-) - Comp1(-) == 0   60.625    100.758   0.602   0.9984
Comp2(+) - Comp1(-) == 0 -237.370     89.775  -2.644   0.1160
Comp3(-) - Comp1(-) == 0  -13.415    132.540  -0.101   1.0000
Comp3(+) - Comp1(-) == 0 -168.374     91.401  -1.842   0.5393
Comp4(-) - Comp1(-) == 0 -226.478    143.292  -1.581   0.7199
Comp4(+) - Comp1(-) == 0  -19.276     93.173  -0.207   1.0000
Comp2(-) - Comp1(+) == 0  131.000     56.342   2.325   0.2392
Comp2(+) - Comp1(+) == 0 -166.995     32.889  -5.078   <0.001 ***
Comp3(-) - Comp1(+) == 0   56.961    102.903   0.554   0.9991
Comp3(+) - Comp1(+) == 0  -97.998     37.099  -2.642   0.1164
Comp4(-) - Comp1(+) == 0 -156.103    116.425  -1.341   0.8563
Comp4(+) - Comp1(+) == 0   51.099     41.271   1.238   0.9005
Comp2(+) - Comp2(-) == 0 -297.995     61.959  -4.810   <0.001 ***
Comp3(-) - Comp2(-) == 0  -74.040    115.526  -0.641   0.9977
Comp3(+) - Comp2(-) == 0 -228.999     64.293  -3.562   0.0070 **
Comp4(-) - Comp2(-) == 0 -287.103    127.719  -2.248   0.2788
Comp4(+) - Comp2(-) == 0  -79.901     66.788  -1.196   0.9157
Comp3(-) - Comp2(+) == 0  223.955    106.083   2.111   0.3579
Comp3(+) - Comp2(+) == 0   68.996     45.176   1.527   0.7535
Comp4(-) - Comp2(+) == 0   10.892    119.245   0.091   1.0000
Comp4(+) - Comp2(+) == 0  218.094     48.661   4.482   <0.001 ***
Comp3(+) - Comp3(-) == 0 -154.959    107.463  -1.442   0.8039
Comp4(-) - Comp3(-) == 0 -213.063    154.035  -1.383   0.8356
Comp4(+) - Comp3(-) == 0   -5.862    108.973  -0.054   1.0000
Comp4(-) - Comp3(+) == 0  -58.104    120.474  -0.482   0.9996
Comp4(+) - Comp3(+) == 0  149.097     51.600   2.889   0.0613 .
Comp4(+) - Comp4(-) == 0  207.202    121.824   1.701   0.6386
```

Winter climate balance

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  272.866     80.567   3.387   0.0129 *
Comp2(-) - Comp1(-) == 0   -8.349     94.400  -0.088   1.0000
Comp2(+) - Comp1(-) == 0  419.184     84.110   4.984    <0.01 ***
Comp3(-) - Comp1(-) == 0  459.953    124.176   3.704    <0.01 **
Comp3(+) - Comp1(-) == 0 -184.232     85.634  -2.151   0.3328
Comp4(-) - Comp1(-) == 0  126.945    134.250   0.946   0.9757
Comp4(+) - Comp1(-) == 0  181.243     87.293   2.076   0.3804
Comp2(-) - Comp1(+) == 0 -281.214     52.786  -5.327    <0.01 ***
Comp2(+) - Comp1(+) == 0  146.318     30.813   4.749    <0.01 ***
Comp3(-) - Comp1(+) == 0  187.087     96.409   1.941   0.4701
Comp3(+) - Comp1(+) == 0 -457.098     34.758 -13.151    <0.01 ***
Comp4(-) - Comp1(+) == 0 -145.921    109.078  -1.338   0.8578
Comp4(+) - Comp1(+) == 0  -91.623     38.667  -2.370   0.2176
Comp2(+) - Comp2(-) == 0  427.533     58.049   7.365    <0.01 ***
Comp3(-) - Comp2(-) == 0  468.302    108.236   4.327    <0.01 ***
Comp3(+) - Comp2(-) == 0 -175.883     60.236  -2.920   0.0550 .
Comp4(-) - Comp2(-) == 0  135.294    119.659   1.131   0.9365
Comp4(+) - Comp2(-) == 0  189.591     62.573   3.030   0.0402 *
Comp3(-) - Comp2(+) == 0   40.769     99.388   0.410   0.9999
Comp3(+) - Comp2(+) == 0 -603.416     42.326 -14.257    <0.01 ***
Comp4(-) - Comp2(+) == 0 -292.239    111.720  -2.616   0.1242
Comp4(+) - Comp2(+) == 0 -237.941     45.590  -5.219    <0.01 ***
Comp3(+) - Comp3(-) == 0 -644.185    100.681  -6.398    <0.01 ***
```

```
Comp4(-) - Comp3(-) == 0 -333.008    144.314  -2.308   0.2478
Comp4(+) - Comp3(-) == 0 -278.710    102.097  -2.730   0.0928 .
Comp4(-) - Comp3(+) == 0  311.177    112.872   2.757   0.0865 .
Comp4(+) - Comp3(+) == 0  365.475     48.344   7.560    <0.01 ***
Comp4(+) - Comp4(-) == 0   54.298    114.136   0.476   0.9997
```

Spring climate balance

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  194.008     85.168   2.278   0.2621
Comp2(-) - Comp1(-) == 0 -194.650     99.791  -1.951   0.4632
Comp2(+) - Comp1(-) == 0  162.807     88.913   1.831   0.5471
Comp3(-) - Comp1(-) == 0  107.406    131.267   0.818   0.9895
Comp3(+) - Comp1(-) == 0   49.930     90.524   0.552   0.9991
Comp4(-) - Comp1(-) == 0    7.819    141.916   0.055   1.0000
Comp4(+) - Comp1(-) == 0    9.542     92.278   0.103   1.0000
Comp2(-) - Comp1(+) == 0 -388.658     55.801  -6.965    <0.01 ***
Comp2(+) - Comp1(+) == 0  -31.201     32.573  -0.958   0.9738
Comp3(-) - Comp1(+) == 0  -86.602    101.915  -0.850   0.9868
Comp3(+) - Comp1(+) == 0 -144.078     36.743  -3.921    <0.01 **
Comp4(-) - Comp1(+) == 0 -186.190    115.307  -1.615   0.6975
Comp4(+) - Comp1(+) == 0 -184.467     40.875  -4.513    <0.01 ***
Comp2(+) - Comp2(-) == 0  357.457     61.364   5.825    <0.01 ***
Comp3(-) - Comp2(-) == 0  302.056    114.417   2.640   0.1172
Comp3(+) - Comp2(-) == 0  244.580     63.676   3.841    <0.01 **
Comp4(-) - Comp2(-) == 0  202.468    126.492   1.601   0.7065
Comp4(+) - Comp2(-) == 0  204.191     66.147   3.087   0.0345 *
Comp3(-) - Comp2(+) == 0  -55.401    105.064  -0.527   0.9993
Comp3(+) - Comp2(+) == 0 -112.877     44.743  -2.523   0.1552
Comp4(-) - Comp2(+) == 0 -154.989    118.100  -1.312   0.8696
Comp4(+) - Comp2(+) == 0 -153.266     48.194  -3.180   0.0254 *
Comp3(+) - Comp3(-) == 0  -57.476    106.431  -0.540   0.9992
Comp4(-) - Comp3(-) == 0  -99.587    152.556  -0.653   0.9974
Comp4(+) - Comp3(-) == 0  -97.864    107.927  -0.907   0.9808
Comp4(-) - Comp3(+) == 0  -42.112    119.318  -0.353   1.0000
Comp4(+) - Comp3(+) == 0  -40.389     51.105  -0.790   0.9914
Comp4(+) - Comp4(-) == 0    1.723    120.654   0.014   1.0000
```

Summer climate balance

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  -317.32      81.38  -3.899  0.00232 **
Comp2(-) - Comp1(-) == 0    81.97      95.35   0.860  0.98588
Comp2(+) - Comp1(-) == 0  -512.14      84.96  -6.028  < 0.001 ***
Comp3(-) - Comp1(-) == 0  -404.77     125.43  -3.227  0.02183 *
Comp3(+) - Comp1(-) == 0    20.58      86.50   0.238  1.00000
Comp4(-) - Comp1(-) == 0  -267.53     135.61  -1.973  0.44790
Comp4(+) - Comp1(-) == 0  -240.73      88.17  -2.730  0.09313 .
Comp2(-) - Comp1(+) == 0   399.29      53.32   7.489  < 0.001 ***
Comp2(+) - Comp1(+) == 0  -194.82      31.12  -6.259  < 0.001 ***
Comp3(-) - Comp1(+) == 0   -87.46      97.38  -0.898  0.98186
Comp3(+) - Comp1(+) == 0   337.89      35.11   9.624  < 0.001 ***
Comp4(-) - Comp1(+) == 0    49.79     110.18   0.452  0.99976
Comp4(+) - Comp1(+) == 0    76.58      39.06   1.961  0.45612
Comp2(+) - Comp2(-) == 0  -594.11      58.64 -10.132  < 0.001 ***
Comp3(-) - Comp2(-) == 0  -486.75     109.33  -4.452  < 0.001 ***
Comp3(+) - Comp2(-) == 0   -61.39      60.84  -1.009  0.96512
Comp4(-) - Comp2(-) == 0  -349.50     120.87  -2.892  0.06068 .
Comp4(+) - Comp2(-) == 0  -322.71      63.20  -5.106  < 0.001 ***
Comp3(-) - Comp2(+) == 0   107.36     100.39   1.069  0.95229
```

```
Comp3(+) - Comp2(+) == 0   532.71      42.75  12.460  < 0.001 ***
Comp4(-) - Comp2(+) == 0   244.61     112.85   2.168  0.32399
Comp4(+) - Comp2(+) == 0   271.40      46.05   5.894  < 0.001 ***
Comp3(+) - Comp3(-) == 0   425.35     101.70   4.183  < 0.001 ***
Comp4(-) - Comp3(-) == 0   137.25     145.77   0.942  0.97623
Comp4(+) - Comp3(-) == 0   164.04     103.13   1.591  0.71321
Comp4(-) - Comp3(+) == 0  -288.11     114.01  -2.527  0.15334
Comp4(+) - Comp3(+) == 0  -261.31      48.83  -5.351  < 0.001 ***
Comp4(+) - Comp4(-) == 0    26.79     115.29   0.232  1.00000
```

Autumn climate balance

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   386.10      79.88   4.834  < 0.001 ***
Comp2(-) - Comp1(-) == 0   -18.82      93.59  -0.201  1.00000
Comp2(+) - Comp1(-) == 0   183.59      83.39   2.202  0.30345
Comp3(-) - Comp1(-) == 0   507.34     123.11   4.121  < 0.001 ***
Comp3(+) - Comp1(-) == 0  -119.94      84.90  -1.413  0.82003
Comp4(-) - Comp1(-) == 0    72.23     133.10   0.543  0.99920
Comp4(+) - Comp1(-) == 0   338.03      86.54   3.906  0.00208 **
Comp2(-) - Comp1(+) == 0  -404.92      52.33  -7.737  < 0.001 ***
Comp2(+) - Comp1(+) == 0  -202.51      30.55  -6.629  < 0.001 ***
Comp3(-) - Comp1(+) == 0   121.25      95.58   1.269  0.88851
Comp3(+) - Comp1(+) == 0  -506.03      34.46 -14.685  < 0.001 ***
Comp4(-) - Comp1(+) == 0  -313.86     108.14  -2.902  0.05840 .
Comp4(+) - Comp1(+) == 0   -48.07      38.33  -1.254  0.89429
Comp2(+) - Comp2(-) == 0   202.41      57.55   3.517  0.00827 **
Comp3(-) - Comp2(-) == 0   526.17     107.31   4.903  < 0.001 ***
Comp3(+) - Comp2(-) == 0  -101.11      59.72  -1.693  0.64353
Comp4(-) - Comp2(-) == 0    91.06     118.63   0.768  0.99283
Comp4(+) - Comp2(-) == 0   356.85      62.04   5.752  < 0.001 ***
Comp3(-) - Comp2(+) == 0   323.76      98.53   3.286  0.01869 *
Comp3(+) - Comp2(+) == 0  -303.52      41.96  -7.233  < 0.001 ***
Comp4(-) - Comp2(+) == 0  -111.36     110.76  -1.005  0.96580
Comp4(+) - Comp2(+) == 0   154.44      45.20   3.417  0.01151 *
Comp3(+) - Comp3(-) == 0  -627.28      99.82  -6.284  < 0.001 ***
Comp4(-) - Comp3(-) == 0  -435.11     143.07  -3.041  0.03908 *
Comp4(+) - Comp3(-) == 0  -169.32     101.22  -1.673  0.65827
Comp4(-) - Comp3(+) == 0   192.17     111.90   1.717  0.62745
Comp4(+) - Comp3(+) == 0   457.96      47.93   9.555  < 0.001 ***
Comp4(+) - Comp4(-) == 0   265.80     113.16   2.349  0.22746
```

Winter NDVI

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  299.607     81.918   3.657    <0.01 **
Comp2(-) - Comp1(-) == 0    9.009     95.983   0.094   1.0000
Comp2(+) - Comp1(-) == 0  105.633     85.520   1.235   0.9016
Comp3(-) - Comp1(-) == 0  383.675    126.258   3.039   0.0395 *
Comp3(+) - Comp1(-) == 0 -145.032     87.069  -1.666   0.6629
Comp4(-) - Comp1(-) == 0   36.159    136.500   0.265   1.0000
Comp4(+) - Comp1(-) == 0  264.223     88.757   2.977   0.0471 *
Comp2(-) - Comp1(+) == 0 -290.598     53.671  -5.414    <0.01 ***
Comp2(+) - Comp1(+) == 0 -193.974     31.330  -6.191    <0.01 ***
Comp3(-) - Comp1(+) == 0   84.068     98.025   0.858   0.9861
Comp3(+) - Comp1(+) == 0 -444.639     35.340 -12.582    <0.01 ***
Comp4(-) - Comp1(+) == 0 -263.448    110.906  -2.375   0.2152
Comp4(+) - Comp1(+) == 0  -35.384     39.315  -0.900   0.9816
Comp2(+) - Comp2(-) == 0   96.624     59.022   1.637   0.6823
Comp3(-) - Comp2(-) == 0  374.667    110.050   3.405   0.0120 *
```

```
Comp3(+) - Comp2(-) == 0 -154.040     61.246  -2.515   0.1575
Comp4(-) - Comp2(-) == 0   27.151    121.665   0.223   1.0000
Comp4(+) - Comp2(-) == 0  255.214     63.622   4.011    <0.01 **
Comp3(-) - Comp2(+) == 0  278.043    101.054   2.751   0.0884 .
Comp3(+) - Comp2(+) == 0 -250.664     43.035  -5.825    <0.01 ***
Comp4(-) - Comp2(+) == 0  -69.473    113.593  -0.612   0.9983
Comp4(+) - Comp2(+) == 0  158.590     46.355   3.421   0.0115 *
Comp3(+) - Comp3(-) == 0 -528.707    102.369  -5.165    <0.01 ***
Comp4(-) - Comp3(-) == 0 -347.516    146.733  -2.368   0.2182
Comp4(+) - Comp3(-) == 0 -119.452    103.808  -1.151   0.9305
Comp4(-) - Comp3(+) == 0  181.191    114.764   1.579   0.7211
Comp4(+) - Comp3(+) == 0  409.255     49.154   8.326    <0.01 ***
Comp4(+) - Comp4(-) == 0  228.063    116.049   1.965   0.4538
```

Spring NDVI

```
                    Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  284.563     83.327   3.415  0.01207 *
Comp2(-) - Comp1(-) == 0   83.613     97.634   0.856  0.98623
Comp2(+) - Comp1(-) == 0   47.851     86.991   0.550  0.99912
Comp3(-) - Comp1(-) == 0  401.415    128.430   3.126  0.03044 *
Comp3(+) - Comp1(-) == 0  -56.864     88.567  -0.642  0.99763
Comp4(-) - Comp1(-) == 0   12.978    138.849   0.093  1.00000
Comp4(+) - Comp1(-) == 0  277.652     90.284   3.075  0.03532 *
Comp2(-) - Comp1(+) == 0 -200.950     54.594  -3.681  0.00439 **
Comp2(+) - Comp1(+) == 0 -236.712     31.869  -7.428  < 0.001 ***
Comp3(-) - Comp1(+) == 0  116.852     99.712   1.172  0.92390
Comp3(+) - Comp1(+) == 0 -341.427     35.948  -9.498  < 0.001 ***
Comp4(-) - Comp1(+) == 0 -271.585    112.815  -2.407  0.20061
Comp4(+) - Comp1(+) == 0   -6.911     39.991  -0.173  1.00000
Comp2(+) - Comp2(-) == 0  -35.762     60.038  -0.596  0.99853
Comp3(-) - Comp2(-) == 0  317.802    111.943   2.839  0.06946 .
Comp3(+) - Comp2(-) == 0 -140.477     62.300  -2.255  0.27529
Comp4(-) - Comp2(-) == 0  -70.635    123.758  -0.571  0.99889
Comp4(+) - Comp2(-) == 0  194.039     64.717   2.998  0.04366 *
Comp3(-) - Comp2(+) == 0  353.563    102.793   3.440  0.01067 *
Comp3(+) - Comp2(+) == 0 -104.715     43.776  -2.392  0.20737
Comp4(-) - Comp2(+) == 0  -34.873    115.547  -0.302  0.99998
Comp4(+) - Comp2(+) == 0  229.801     47.152   4.874  < 0.001 ***
Comp3(+) - Comp3(-) == 0 -458.278    104.130  -4.401  < 0.001 ***
Comp4(-) - Comp3(-) == 0 -388.437    149.258  -2.602  0.12813
Comp4(+) - Comp3(-) == 0 -123.762    105.594  -1.172  0.92388
Comp4(-) - Comp3(+) == 0   69.842    116.738   0.598  0.99849
Comp4(+) - Comp3(+) == 0  334.516     50.000   6.690  < 0.001 ***
Comp4(+) - Comp4(-) == 0  264.674    118.046   2.242  0.28180
```

Summer NDVI

```
                    Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   148.84      84.98   1.752  0.60321
Comp2(-) - Comp1(-) == 0    -1.18      99.57  -0.012  1.00000
Comp2(+) - Comp1(-) == 0  -103.36      88.72  -1.165  0.92604
Comp3(-) - Comp1(-) == 0   291.09     130.97   2.222  0.29190
Comp3(+) - Comp1(-) == 0   -30.78      90.32  -0.341  0.99996
Comp4(-) - Comp1(-) == 0   -89.00     141.60  -0.629  0.99793
Comp4(+) - Comp1(-) == 0    87.42      92.07   0.949  0.97507
Comp2(-) - Comp1(+) == 0  -150.02      55.68  -2.695  0.10174
Comp2(+) - Comp1(+) == 0  -252.20      32.50  -7.760  < 0.001 ***
Comp3(-) - Comp1(+) == 0   142.25     101.69   1.399  0.82731
Comp3(+) - Comp1(+) == 0  -179.62      36.66  -4.900  < 0.001 ***
```

```
Comp4(-) - Comp1(+) == 0  -237.85     115.05  -2.067  0.38535
Comp4(+) - Comp1(+) == 0   -61.42      40.78  -1.506  0.76693
Comp2(+) - Comp2(-) == 0  -102.18      61.23  -1.669  0.66042
Comp3(-) - Comp2(-) == 0   292.27     114.16   2.560  0.14176
Comp3(+) - Comp2(-) == 0   -29.60      63.53  -0.466  0.99971
Comp4(-) - Comp2(-) == 0   -87.83     126.21  -0.696  0.99607
Comp4(+) - Comp2(-) == 0    88.60      66.00   1.342  0.85565
Comp3(-) - Comp2(+) == 0   394.45     104.83   3.763  0.00338 **
Comp3(+) - Comp2(+) == 0    72.58      44.64   1.626  0.68990
Comp4(-) - Comp2(+) == 0    14.36     117.84   0.122  1.00000
Comp4(+) - Comp2(+) == 0   190.78      48.09   3.968  0.00154 **
Comp3(+) - Comp3(-) == 0  -321.87     106.19  -3.031  0.03983 *
Comp4(-) - Comp3(-) == 0  -380.10     152.22  -2.497  0.16482
Comp4(+) - Comp3(-) == 0  -203.67     107.69  -1.891  0.50429
Comp4(-) - Comp3(+) == 0   -58.22     119.05  -0.489  0.99960
Comp4(+) - Comp3(+) == 0   118.21      50.99   2.318  0.24263
Comp4(+) - Comp4(-) == 0   176.43     120.39   1.466  0.79046
```

Autumn NDVI

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  289.630     82.254   3.521  0.00842 **
Comp2(-) - Comp1(-) == 0   10.412     96.376   0.108  1.00000
Comp2(+) - Comp1(-) == 0   20.124     85.870   0.234  1.00000
Comp3(-) - Comp1(-) == 0  373.158    126.775   2.943  0.05190 .
Comp3(+) - Comp1(-) == 0  -96.943     87.426  -1.109  0.94244
Comp4(-) - Comp1(-) == 0  -44.374    137.060  -0.324  0.99997
Comp4(+) - Comp1(-) == 0  200.437     89.120   2.249  0.27842
Comp2(-) - Comp1(+) == 0 -279.218     53.891  -5.181  < 0.001 ***
Comp2(+) - Comp1(+) == 0 -269.505     31.458  -8.567  < 0.001 ***
Comp3(-) - Comp1(+) == 0   83.528     98.427   0.849  0.98694
Comp3(+) - Comp1(+) == 0 -386.573     35.485 -10.894  < 0.001 ***
Comp4(-) - Comp1(+) == 0 -334.003    111.361  -2.999  0.04371 *
Comp4(+) - Comp1(+) == 0  -89.192     39.476  -2.259  0.27237
Comp2(+) - Comp2(-) == 0    9.712     59.264   0.164  1.00000
Comp3(-) - Comp2(-) == 0  362.746    110.501   3.283  0.01905 *
Comp3(+) - Comp2(-) == 0 -107.355     61.497  -1.746  0.60703
Comp4(-) - Comp2(-) == 0  -54.786    122.163  -0.448  0.99977
Comp4(+) - Comp2(-) == 0  190.025     63.883   2.975  0.04676 *
Comp3(-) - Comp2(+) == 0  353.034    101.468   3.479  0.00965 **
Comp3(+) - Comp2(+) == 0 -117.068     43.211  -2.709  0.09813 .
Comp4(-) - Comp2(+) == 0  -64.498    114.058  -0.565  0.99895
Comp4(+) - Comp2(+) == 0  180.313     46.544   3.874  0.00233 **
Comp3(+) - Comp3(-) == 0 -470.101    102.788  -4.573  < 0.001 ***
Comp4(-) - Comp3(-) == 0 -417.532    147.335  -2.834  0.07057 .
Comp4(+) - Comp3(-) == 0 -172.721    104.233  -1.657  0.66862
Comp4(-) - Comp3(+) == 0   52.570    115.234   0.456  0.99974
Comp4(+) - Comp3(+) == 0  297.381     49.356   6.025  < 0.001 ***
Comp4(+) - Comp4(-) == 0  244.811    116.525   2.101  0.36426
```

Average day of the year recording the maximum NDVI

```
                          Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  0.224330   0.841587   0.267  0.99999
Comp2(-) - Comp1(-) == 0 -0.063492   0.986080  -0.064  1.00000
Comp2(+) - Comp1(-) == 0 -0.598131   0.878590  -0.681  0.99658
Comp3(-) - Comp1(-) == 0  0.222222   1.297113   0.171  1.00000
Comp3(+) - Comp1(-) == 0 -1.162500   0.894508  -1.300  0.87524
Comp4(-) - Comp1(-) == 0  0.785714   1.402341   0.560  0.99901
Comp4(+) - Comp1(-) == 0  0.416000   0.911845   0.456  0.99974
```

```
Comp2(-) - Comp1(+) == 0 -0.287822   0.551391  -0.522  0.99938
Comp2(+) - Comp1(+) == 0 -0.822461   0.321866  -2.555  0.14356
Comp3(-) - Comp1(+) == 0 -0.002108   1.007064  -0.002  1.00000
Comp3(+) - Comp1(+) == 0 -1.386830   0.363072  -3.820  0.00275 **
Comp4(-) - Comp1(+) == 0  0.561384   1.139402   0.493  0.99957
Comp4(+) - Comp1(+) == 0  0.191670   0.403904   0.475  0.99967
Comp2(+) - Comp2(-) == 0 -0.534639   0.606369  -0.882  0.98366
Comp3(-) - Comp2(-) == 0  0.285714   1.130603   0.253  1.00000
Comp3(+) - Comp2(-) == 0 -1.099008   0.629211  -1.747  0.60653
Comp4(-) - Comp2(-) == 0  0.849206   1.249929   0.679  0.99662
Comp4(+) - Comp2(-) == 0  0.479492   0.653624   0.734  0.99456
Comp3(-) - Comp2(+) == 0  0.820353   1.038186   0.790  0.99146
Comp3(+) - Comp2(+) == 0 -0.564369   0.442123  -1.276  0.88515
Comp4(-) - Comp2(+) == 0  1.383845   1.167000   1.186  0.91931
Comp4(+) - Comp2(+) == 0  1.014131   0.476225   2.130  0.34607
Comp3(+) - Comp3(-) == 0 -1.384722   1.051691  -1.317  0.86772
Comp4(-) - Comp3(-) == 0  0.563492   1.507471   0.374  0.99993
Comp4(+) - Comp3(-) == 0  0.193778   1.066476   0.182  1.00000
Comp4(-) - Comp3(+) == 0  1.948214   1.179030   1.652  0.67207
Comp4(+) - Comp3(+) == 0  1.578500   0.504989   3.126  0.02981 *
Comp4(+) - Comp4(-) == 0 -0.369714   1.192237  -0.310  0.99998
```

Average day of the year recording the green up

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  -3.4176     4.4996  -0.760  0.99328
Comp2(-) - Comp1(-) == 0  -5.9176     5.2721  -1.122  0.93887
Comp2(+) - Comp1(-) == 0  -1.4209     4.6974  -0.302  0.99998
Comp3(-) - Comp1(-) == 0  -4.6795     6.9351  -0.675  0.99677
Comp3(+) - Comp1(-) == 0  -9.7212     4.7825  -2.033  0.40815
Comp4(-) - Comp1(-) == 0   7.6538     7.4977   1.021  0.96282
Comp4(+) - Comp1(-) == 0  -1.0022     4.8752  -0.206  1.00000
Comp2(-) - Comp1(+) == 0  -2.5000     2.9480  -0.848  0.98700
Comp2(+) - Comp1(+) == 0   1.9967     1.7209   1.160  0.92750
Comp3(-) - Comp1(+) == 0  -1.2619     5.3843  -0.234  1.00000
Comp3(+) - Comp1(+) == 0  -6.3036     1.9412  -3.247  0.02071 *
Comp4(-) - Comp1(+) == 0  11.0714     6.0918   1.817  0.55640
Comp4(+) - Comp1(+) == 0   2.4154     2.1595   1.119  0.93984
Comp2(+) - Comp2(-) == 0   4.4967     3.2420   1.387  0.83357
Comp3(-) - Comp2(-) == 0   1.2381     6.0448   0.205  1.00000
Comp3(+) - Comp2(-) == 0  -3.8036     3.3641  -1.131  0.93642
Comp4(-) - Comp2(-) == 0  13.5714     6.6828   2.031  0.40957
Comp4(+) - Comp2(-) == 0   4.9154     3.4946   1.407  0.82341
Comp3(-) - Comp2(+) == 0  -3.2586     5.5507  -0.587  0.99867
Comp3(+) - Comp2(+) == 0  -8.3002     2.3638  -3.511  0.00838 **
Comp4(-) - Comp2(+) == 0   9.0748     6.2394   1.454  0.79702
Comp4(+) - Comp2(+) == 0   0.4188     2.5462   0.164  1.00000
Comp3(+) - Comp3(-) == 0  -5.0417     5.6229  -0.897  0.98199
Comp4(-) - Comp3(-) == 0  12.3333     8.0597   1.530  0.75195
Comp4(+) - Comp3(-) == 0   3.6773     5.7019   0.645  0.99756
Comp4(-) - Comp3(+) == 0  17.3750     6.3037   2.756  0.08742 .
Comp4(+) - Comp3(+) == 0   8.7190     2.6999   3.229  0.02220 *
Comp4(+) - Comp4(-) == 0  -8.6560     6.3743  -1.358  0.84799
```

Soil water capacity

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  269.5638    84.1712   3.203   0.0239 *
Comp2(-) - Comp1(-) == 0   32.5922    98.6227   0.330   1.0000
Comp2(+) - Comp1(-) == 0  -25.8081    87.8721  -0.294   1.0000
```

```
Comp3(-) - Comp1(-) == 0  131.5684   129.7305   1.014   0.9642
Comp3(+) - Comp1(-) == 0   91.9399    89.4641   1.028   0.9615
Comp4(-) - Comp1(-) == 0   18.6319   140.2549   0.133   1.0000
Comp4(+) - Comp1(-) == 0  131.9182    91.1981   1.447   0.8012
Comp2(-) - Comp1(+) == 0 -236.9716    55.1472  -4.297   <0.001 ***
Comp2(+) - Comp1(+) == 0 -295.3718    32.1914  -9.175   <0.001 ***
Comp3(-) - Comp1(+) == 0 -137.9954   100.7214  -1.370   0.8421
Comp3(+) - Comp1(+) == 0 -177.6239    36.3125  -4.892   <0.001 ***
Comp4(-) - Comp1(+) == 0 -250.9319   113.9571  -2.202   0.3041
Comp4(+) - Comp1(+) == 0 -137.6456    40.3964  -3.407   0.0119 *
Comp2(+) - Comp2(-) == 0  -58.4002    60.6459  -0.963   0.9730
Comp3(-) - Comp2(-) == 0   98.9762   113.0771   0.875   0.9843
Comp3(+) - Comp2(-) == 0   59.3477    62.9305   0.943   0.9760
Comp4(-) - Comp2(-) == 0  -13.9603   125.0115  -0.112   1.0000
Comp4(+) - Comp2(-) == 0   99.3260    65.3721   1.519   0.7585
Comp3(-) - Comp2(+) == 0  157.3764   103.8340   1.516   0.7608
Comp3(+) - Comp2(+) == 0  117.7480    44.2189   2.663   0.1114
Comp4(-) - Comp2(+) == 0   44.4399   116.7173   0.381   0.9999
Comp4(+) - Comp2(+) == 0  157.7262    47.6296   3.312   0.0166 *
Comp3(+) - Comp3(-) == 0  -39.6285   105.1847  -0.377   0.9999
Comp4(-) - Comp3(-) == 0 -112.9365   150.7695  -0.749   0.9938
Comp4(+) - Comp3(-) == 0    0.3498   106.6634   0.003   1.0000
Comp4(-) - Comp3(+) == 0  -73.3080   117.9205  -0.622   0.9981
Comp4(+) - Comp3(+) == 0   39.9782    50.5064   0.792   0.9914
Comp4(+) - Comp4(-) == 0  113.2863   119.2414   0.950   0.9750
```

5. COTTON

Annual precipitation

```
                          Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  -12.069     18.755  -0.643   0.9997
Comp2(-) - Comp1(-) == 0    5.688     34.745   0.164   1.0000
Comp2(+) - Comp1(-) == 0   44.893     18.380   2.443   0.2718
Comp3(-) - Comp1(-) == 0    8.988     32.310   0.278   1.0000
Comp3(+) - Comp1(-) == 0   15.381     20.067   0.767   0.9987
Comp4(-) - Comp1(-) == 0   60.943     33.439   1.823   0.6874
Comp4(+) - Comp1(-) == 0  -13.012     24.586  -0.529   0.9999
Comp5(-) - Comp1(-) == 0  -72.512     46.761  -1.551   0.8496
Comp5(+) - Comp1(-) == 0  -41.607     26.347  -1.579   0.8351
Comp2(-) - Comp1(+) == 0   17.757     33.217   0.535   0.9999
Comp2(+) - Comp1(+) == 0   56.962     15.298   3.723    <0.01 **
Comp3(-) - Comp1(+) == 0   21.057     30.662   0.687   0.9995
Comp3(+) - Comp1(+) == 0   27.450     17.288   1.588   0.8309
Comp4(-) - Comp1(+) == 0   73.011     31.849   2.292   0.3611
Comp4(+) - Comp1(+) == 0   -0.943     22.376  -0.042   1.0000
Comp5(-) - Comp1(+) == 0  -60.443     45.638  -1.324   0.9373
Comp5(+) - Comp1(+) == 0  -29.538     24.297  -1.216   0.9631
Comp2(+) - Comp2(-) == 0   39.205     33.007   1.188   0.9682
Comp3(-) - Comp2(-) == 0    3.300     42.374   0.078   1.0000
Comp3(+) - Comp2(-) == 0    9.693     33.975   0.285   1.0000
Comp4(-) - Comp2(-) == 0   55.255     43.241   1.278   0.9494
Comp4(+) - Comp2(-) == 0  -18.700     36.825  -0.508   1.0000
Comp5(-) - Comp2(-) == 0  -78.200     54.206  -1.443   0.8974
Comp5(+) - Comp2(-) == 0  -47.295     38.024  -1.244   0.9573
Comp3(-) - Comp2(+) == 0  -35.904     30.434  -1.180   0.9695
Comp3(+) - Comp2(+) == 0  -29.512     16.880  -1.748   0.7365
Comp4(-) - Comp2(+) == 0   16.050     31.630   0.507   1.0000
Comp4(+) - Comp2(+) == 0  -57.904     22.062  -2.625   0.1849
Comp5(-) - Comp2(+) == 0 -117.404     45.485  -2.581   0.2036
Comp5(+) - Comp2(+) == 0  -86.500     24.009  -3.603   0.0107 *
Comp3(+) - Comp3(-) == 0    6.393     31.481   0.203   1.0000
Comp4(-) - Comp3(-) == 0   51.955     41.311   1.258   0.9541
Comp4(+) - Comp3(-) == 0  -22.000     34.538  -0.637   0.9997
Comp5(-) - Comp3(-) == 0  -81.500     52.678  -1.547   0.8514
Comp5(+) - Comp3(-) == 0  -50.595     35.813  -1.413   0.9087
Comp4(-) - Comp3(+) == 0   45.562     32.639   1.396   0.9146
Comp4(+) - Comp3(+) == 0  -28.393     23.486  -1.209   0.9643
Comp5(-) - Comp3(+) == 0  -87.893     46.192  -1.903   0.6316
Comp5(+) - Comp3(+) == 0  -56.988     25.324  -2.250   0.3874
Comp4(+) - Comp4(-) == 0  -73.954     35.596  -2.078   0.5060
Comp5(-) - Comp4(-) == 0 -133.454     53.378  -2.500   0.2420
Comp5(+) - Comp4(-) == 0 -102.550     36.834  -2.784   0.1269
Comp5(-) - Comp4(+) == 0  -59.500     48.327  -1.231   0.9598
Comp5(+) - Comp4(+) == 0  -28.595     29.036  -0.985   0.9912
Comp5(+) - Comp5(-) == 0   30.905     49.247   0.628   0.9997
```

Winter precipitation

```
                          Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  -10.542     18.774  -0.562   0.9999
Comp2(-) - Comp1(-) == 0   20.616     34.779   0.593   0.9998
Comp2(+) - Comp1(-) == 0   36.285     18.398   1.972   0.5817
Comp3(-) - Comp1(-) == 0  -26.300     32.342  -0.813   0.9979
Comp3(+) - Comp1(-) == 0   49.581     20.086   2.468   0.2585
Comp4(-) - Comp1(-) == 0   47.207     33.472   1.410   0.9094
```

Comp4(+) - Comp1(-) == 0	-32.038	24.610	-1.302	0.9434	
Comp5(-) - Comp1(-) == 0	10.916	46.808	0.233	1.0000	
Comp5(+) - Comp1(-) == 0	-17.312	26.373	-0.656	0.9996	
Comp2(-) - Comp1(+) == 0	31.158	33.250	0.937	0.9939	
Comp2(+) - Comp1(+) == 0	46.827	15.313	3.058	0.0615	.
Comp3(-) - Comp1(+) == 0	-15.758	30.692	-0.513	1.0000	
Comp3(+) - Comp1(+) == 0	60.123	17.305	3.474	0.0170	*
Comp4(-) - Comp1(+) == 0	57.749	31.881	1.811	0.6948	
Comp4(+) - Comp1(+) == 0	-21.496	22.398	-0.960	0.9927	
Comp5(-) - Comp1(+) == 0	21.458	45.683	0.470	1.0000	
Comp5(+) - Comp1(+) == 0	-6.770	24.322	-0.278	1.0000	
Comp2(+) - Comp2(-) == 0	15.669	33.040	0.474	1.0000	
Comp3(-) - Comp2(-) == 0	-46.917	42.417	-1.106	0.9802	
Comp3(+) - Comp2(-) == 0	28.964	34.009	0.852	0.9970	
Comp4(-) - Comp2(-) == 0	26.591	43.284	0.614	0.9998	
Comp4(+) - Comp2(-) == 0	-52.654	36.862	-1.428	0.9029	
Comp5(-) - Comp2(-) == 0	-9.700	54.259	-0.179	1.0000	
Comp5(+) - Comp2(-) == 0	-37.929	38.061	-0.997	0.9904	
Comp3(-) - Comp2(+) == 0	-62.585	30.464	-2.054	0.5226	
Comp3(+) - Comp2(+) == 0	13.296	16.897	0.787	0.9984	
Comp4(-) - Comp2(+) == 0	10.922	31.661	0.345	1.0000	
Comp4(+) - Comp2(+) == 0	-68.322	22.084	-3.094	0.0553	.
Comp5(-) - Comp2(+) == 0	-25.369	45.530	-0.557	0.9999	
Comp5(+) - Comp2(+) == 0	-53.597	24.033	-2.230	0.4008	
Comp3(+) - Comp3(-) == 0	75.881	31.513	2.408	0.2901	
Comp4(-) - Comp3(-) == 0	73.508	41.352	1.778	0.7177	
Comp4(+) - Comp3(-) == 0	-5.737	34.572	-0.166	1.0000	
Comp5(-) - Comp3(-) == 0	37.217	52.731	0.706	0.9993	
Comp5(+) - Comp3(-) == 0	8.988	35.849	0.251	1.0000	
Comp4(-) - Comp3(+) == 0	-2.373	32.671	-0.073	1.0000	
Comp4(+) - Comp3(+) == 0	-81.618	23.509	-3.472	0.0168	*
Comp5(-) - Comp3(+) == 0	-38.664	46.238	-0.836	0.9974	
Comp5(+) - Comp3(+) == 0	-66.893	25.349	-2.639	0.1788	
Comp4(+) - Comp4(-) == 0	-79.245	35.631	-2.224	0.4042	
Comp5(-) - Comp4(-) == 0	-36.291	53.431	-0.679	0.9995	
Comp5(+) - Comp4(-) == 0	-64.519	36.871	-1.750	0.7351	
Comp5(-) - Comp4(+) == 0	42.954	48.375	0.888	0.9959	
Comp5(+) - Comp4(+) == 0	14.725	29.065	0.507	1.0000	
Comp5(+) - Comp5(-) == 0	-28.229	49.295	-0.573	0.9999	

Spring precipitation

	Estimate	Std. Error	t value	Pr(>|t|)	
Comp1(+) - Comp1(-) == 0	8.562	17.483	0.490	1.000	
Comp2(-) - Comp1(-) == 0	36.672	32.388	1.132	0.977	
Comp2(+) - Comp1(-) == 0	-48.336	17.133	-2.821	0.115	
Comp3(-) - Comp1(-) == 0	-20.961	30.119	-0.696	0.999	
Comp3(+) - Comp1(-) == 0	92.961	18.705	4.970	<0.01	***
Comp4(-) - Comp1(-) == 0	-29.628	31.171	-0.951	0.993	
Comp4(+) - Comp1(-) == 0	5.487	22.918	0.239	1.000	
Comp5(-) - Comp1(-) == 0	-17.028	43.589	-0.391	1.000	
Comp5(+) - Comp1(-) == 0	13.705	24.560	0.558	1.000	
Comp2(-) - Comp1(+) == 0	28.110	30.964	0.908	0.995	
Comp2(+) - Comp1(+) == 0	-56.898	14.260	-3.990	<0.01	**
Comp3(-) - Comp1(+) == 0	-29.523	28.582	-1.033	0.988	
Comp3(+) - Comp1(+) == 0	84.399	16.115	5.237	<0.01	***
Comp4(-) - Comp1(+) == 0	-38.190	29.689	-1.286	0.947	
Comp4(+) - Comp1(+) == 0	-3.074	20.858	-0.147	1.000	
Comp5(-) - Comp1(+) == 0	-25.590	42.542	-0.602	1.000	
Comp5(+) - Comp1(+) == 0	5.143	22.649	0.227	1.000	

Comp2(+) - Comp2(-) == 0	-85.008	30.768	-2.763	0.133
Comp3(-) - Comp2(-) == 0	-57.633	39.500	-1.459	0.891
Comp3(+) - Comp2(-) == 0	56.289	31.671	1.777	0.718
Comp4(-) - Comp2(-) == 0	-66.300	40.308	-1.645	0.799
Comp4(+) - Comp2(-) == 0	-31.185	34.328	-0.908	0.995
Comp5(-) - Comp2(-) == 0	-53.700	50.529	-1.063	0.985
Comp5(+) - Comp2(-) == 0	-22.967	35.445	-0.648	1.000
Comp3(-) - Comp2(+) == 0	27.375	28.370	0.965	0.992
Comp3(+) - Comp2(+) == 0	141.297	15.735	8.980	<0.01 ***
Comp4(-) - Comp2(+) == 0	18.708	29.484	0.635	1.000
Comp4(+) - Comp2(+) == 0	53.823	20.566	2.617	0.187
Comp5(-) - Comp2(+) == 0	31.308	42.400	0.738	0.999
Comp5(+) - Comp2(+) == 0	62.041	22.381	2.772	0.130
Comp3(+) - Comp3(-) == 0	113.923	29.346	3.882	<0.01 **
Comp4(-) - Comp3(-) == 0	-8.667	38.509	-0.225	1.000
Comp4(+) - Comp3(-) == 0	26.449	32.195	0.822	0.998
Comp5(-) - Comp3(-) == 0	3.933	49.105	0.080	1.000
Comp5(+) - Comp3(-) == 0	34.667	33.384	1.038	0.987
Comp4(-) - Comp3(+) == 0	-122.589	30.425	-4.029	<0.01 **
Comp4(+) - Comp3(+) == 0	-87.474	21.893	-3.996	<0.01 **
Comp5(-) - Comp3(+) == 0	-109.989	43.059	-2.554	0.216
Comp5(+) - Comp3(+) == 0	-79.256	23.606	-3.357	0.025 *
Comp4(+) - Comp4(-) == 0	35.115	33.182	1.058	0.985
Comp5(-) - Comp4(-) == 0	12.600	49.757	0.253	1.000
Comp5(+) - Comp4(-) == 0	43.333	34.336	1.262	0.953
Comp5(-) - Comp4(+) == 0	-22.515	45.049	-0.500	1.000
Comp5(+) - Comp4(+) == 0	8.218	27.067	0.304	1.000
Comp5(+) - Comp5(-) == 0	30.733	45.906	0.669	1.000

Summer precipitation

	Estimate	Std. Error	t value	Pr(>|t|)
Comp1(+) - Comp1(-) == 0	-35.534	18.097	-1.963	0.5879
Comp2(-) - Comp1(-) == 0	-63.177	33.527	-1.884	0.6444
Comp2(+) - Comp1(-) == 0	-83.348	17.735	-4.699	<0.01 ***
Comp3(-) - Comp1(-) == 0	-15.060	31.178	-0.483	1.0000
Comp3(+) - Comp1(-) == 0	-67.387	19.363	-3.480	0.0166 *
Comp4(-) - Comp1(-) == 0	-119.613	32.267	-3.707	<0.01 **
Comp4(+) - Comp1(-) == 0	8.562	23.724	0.361	1.0000
Comp5(-) - Comp1(-) == 0	-65.977	45.122	-1.462	0.8895
Comp5(+) - Comp1(-) == 0	27.547	25.423	1.084	0.9828
Comp2(-) - Comp1(+) == 0	-27.643	32.053	-0.862	0.9967
Comp2(+) - Comp1(+) == 0	-47.814	14.762	-3.239	0.0359 *
Comp3(-) - Comp1(+) == 0	20.474	29.587	0.692	0.9994
Comp3(+) - Comp1(+) == 0	-31.854	16.682	-1.909	0.6268
Comp4(-) - Comp1(+) == 0	-84.079	30.732	-2.736	0.1428
Comp4(+) - Comp1(+) == 0	44.095	21.591	2.042	0.5319
Comp5(-) - Comp1(+) == 0	-30.443	44.038	-0.691	0.9994
Comp5(+) - Comp1(+) == 0	63.081	23.446	2.691	0.1580
Comp2(+) - Comp2(-) == 0	-20.171	31.850	-0.633	0.9997
Comp3(-) - Comp2(-) == 0	48.117	40.889	1.177	0.9700
Comp3(+) - Comp2(-) == 0	-4.211	32.784	-0.128	1.0000
Comp4(-) - Comp2(-) == 0	-56.436	41.725	-1.353	0.9290
Comp4(+) - Comp2(-) == 0	71.738	35.535	2.019	0.5482
Comp5(-) - Comp2(-) == 0	-2.800	52.305	-0.054	1.0000
Comp5(+) - Comp2(-) == 0	90.724	36.691	2.473	0.2570
Comp3(-) - Comp2(+) == 0	68.287	29.367	2.325	0.3406
Comp3(+) - Comp2(+) == 0	15.960	16.288	0.980	0.9915
Comp4(-) - Comp2(+) == 0	-36.266	30.521	-1.188	0.9681
Comp4(+) - Comp2(+) == 0	91.909	21.289	4.317	<0.01 ***

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Comp5(-) - Comp2(+) == 0   17.371     43.890   0.396   1.0000
Comp5(+) - Comp2(+) == 0  110.895     23.167   4.787    <0.01 ***
Comp3(+) - Comp3(-) == 0  -52.327     30.378  -1.723   0.7526
Comp4(-) - Comp3(-) == 0 -104.553     39.862  -2.623   0.1860
Comp4(+) - Comp3(-) == 0   23.622     33.327   0.709   0.9993
Comp5(-) - Comp3(-) == 0  -50.917     50.832  -1.002   0.9901
Comp5(+) - Comp3(-) == 0   42.607     34.558   1.233   0.9596
Comp4(-) - Comp3(+) == 0  -52.226     31.494  -1.658   0.7917
Comp4(+) - Comp3(+) == 0   75.949     22.663   3.351   0.0253 *
Comp5(-) - Comp3(+) == 0    1.411     44.573   0.032   1.0000
Comp5(+) - Comp3(+) == 0   94.935     24.436   3.885    <0.01 **
Comp4(+) - Comp4(-) == 0  128.175     34.348   3.732    <0.01 **
Comp5(-) - Comp4(-) == 0   53.636     51.507   1.041   0.9869
Comp5(+) - Comp4(-) == 0  147.160     35.543   4.140    <0.01 **
Comp5(-) - Comp4(+) == 0  -74.538     46.633  -1.598   0.8252
Comp5(+) - Comp4(+) == 0   18.985     28.018   0.678   0.9995
Comp5(+) - Comp5(-) == 0   93.524     47.520   1.968   0.5847
```

Autumn precipitation

```
                          Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  -46.0492    16.8197  -2.738   0.1422
Comp2(-) - Comp1(-) == 0   44.5977    31.1594   1.431   0.9018
Comp2(+) - Comp1(-) == 0 -105.8304    16.4832  -6.420    <0.01 ***
Comp3(-) - Comp1(-) == 0   -0.6357    28.9762  -0.022   1.0000
Comp3(+) - Comp1(-) == 0   32.7334    17.9959   1.819   0.6895
Comp4(-) - Comp1(-) == 0  -85.8478    29.9883  -2.863   0.1037
Comp4(+) - Comp1(-) == 0   -3.4177    22.0490  -0.155   1.0000
Comp5(-) - Comp1(-) == 0   49.0977    41.9359   1.171   0.9710
Comp5(+) - Comp1(-) == 0  -15.4928    23.6282  -0.656   0.9996
Comp2(-) - Comp1(+) == 0   90.6468    29.7897   3.043   0.0639 .
Comp2(+) - Comp1(+) == 0  -59.7813    13.7193  -4.357    <0.01 ***
Comp3(-) - Comp1(+) == 0   45.4135    27.4980   1.652   0.7958
Comp3(+) - Comp1(+) == 0   78.7825    15.5040   5.081    <0.01 ***
Comp4(-) - Comp1(+) == 0  -39.7986    28.5625  -1.393   0.9154
Comp4(+) - Comp1(+) == 0   42.6315    20.0669   2.124   0.4723
Comp5(-) - Comp1(+) == 0   95.1468    40.9285   2.325   0.3396
Comp5(+) - Comp1(+) == 0   30.5564    21.7902   1.402   0.9124
Comp2(+) - Comp2(-) == 0 -150.4281    29.6011  -5.082    <0.01 ***
Comp3(-) - Comp2(-) == 0  -45.2333    38.0019  -1.190   0.9678
Comp3(+) - Comp2(-) == 0  -11.8643    30.4693  -0.389   1.0000
Comp4(-) - Comp2(-) == 0 -130.4455    38.7792  -3.364   0.0249 *
Comp4(+) - Comp2(-) == 0  -48.0154    33.0255  -1.454   0.8930
Comp5(-) - Comp2(-) == 0    4.5000    48.6122   0.093   1.0000
Comp5(+) - Comp2(-) == 0  -60.0905    34.1001  -1.762   0.7277
Comp3(-) - Comp2(+) == 0  105.1948    27.2936   3.854    <0.01 **
Comp3(+) - Comp2(+) == 0  138.5638    15.1384   9.153    <0.01 ***
Comp4(-) - Comp2(+) == 0   19.9826    28.3657   0.704   0.9993
Comp4(+) - Comp2(+) == 0  102.4127    19.7857   5.176    <0.01 ***
Comp5(-) - Comp2(+) == 0  154.9281    40.7914   3.798    <0.01 **
Comp5(+) - Comp2(+) == 0   90.3376    21.5316   4.196    <0.01 **
Comp3(+) - Comp3(-) == 0   33.3690    28.2329   1.182   0.9691
Comp4(-) - Comp3(-) == 0  -85.2121    37.0478  -2.300   0.3551
Comp4(+) - Comp3(-) == 0   -2.7821    30.9742  -0.090   1.0000
Comp5(-) - Comp3(-) == 0   49.7333    47.2426   1.053   0.9860
Comp5(+) - Comp3(-) == 0  -14.8571    32.1175  -0.463   1.0000
Comp4(-) - Comp3(+) == 0 -118.5812    29.2706  -4.051    <0.01 **
Comp4(+) - Comp3(+) == 0  -36.1511    21.0626  -1.716   0.7568
Comp5(-) - Comp3(+) == 0   16.3643    41.4258   0.395   1.0000
Comp5(+) - Comp3(+) == 0  -48.2262    22.7105  -2.124   0.4736
```

```
Comp4(+) - Comp4(-) == 0   82.4301    31.9229   2.582   0.2037
Comp5(-) - Comp4(-) == 0  134.9455    47.8700   2.819   0.1167
Comp5(+) - Comp4(-) == 0   70.3550    33.0335   2.130   0.4690
Comp5(-) - Comp4(+) == 0   52.5154    43.3405   1.212   0.9637
Comp5(+) - Comp4(+) == 0  -12.0751    26.0398  -0.464   1.0000
Comp5(+) - Comp5(-) == 0  -64.5905    44.1649  -1.462   0.8892
```

Annual mean temperature

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0    9.4036    18.1472   0.518   0.9999
Comp2(-) - Comp1(-) == 0   20.5023    33.6187   0.610   0.9998
Comp2(+) - Comp1(-) == 0   -9.2482    17.7842  -0.520   0.9999
Comp3(-) - Comp1(-) == 0   64.2190    31.2632   2.054   0.5226
Comp3(+) - Comp1(-) == 0  -71.5727    19.4163  -3.686    <0.01 **
Comp4(-) - Comp1(-) == 0  -86.1522    32.3551  -2.663   0.1693
Comp4(+) - Comp1(-) == 0   10.1869    23.7892   0.428   1.0000
Comp5(-) - Comp1(-) == 0   99.3023    45.2458   2.195   0.4249
Comp5(+) - Comp1(-) == 0   36.4452    25.4931   1.430   0.9025
Comp2(-) - Comp1(+) == 0   11.0987    32.1409   0.345   1.0000
Comp2(+) - Comp1(+) == 0  -18.6518    14.8021  -1.260   0.9536
Comp3(-) - Comp1(+) == 0   54.8154    29.6683   1.848   0.6701
Comp3(+) - Comp1(+) == 0  -80.9763    16.7277  -4.841    <0.01 ***
Comp4(-) - Comp1(+) == 0  -95.5558    30.8168  -3.101   0.0538 .
Comp4(+) - Comp1(+) == 0    0.7833    21.6507   0.036   1.0000
Comp5(-) - Comp1(+) == 0   89.8987    44.1589   2.036   0.5361
Comp5(+) - Comp1(+) == 0   27.0416    23.5100   1.150   0.9742
Comp2(+) - Comp2(-) == 0  -29.7506    31.9374  -0.932   0.9942
Comp3(-) - Comp2(-) == 0   43.7167    41.0013   1.066   0.9846
Comp3(+) - Comp2(-) == 0  -92.0750    32.8742  -2.801   0.1213
Comp4(-) - Comp2(-) == 0 -106.6545    41.8398  -2.549   0.2183
Comp4(+) - Comp2(-) == 0  -10.3154    35.6321  -0.289   1.0000
Comp5(-) - Comp2(-) == 0   78.8000    52.4490   1.502   0.8724
Comp5(+) - Comp2(-) == 0   15.9429    36.7915   0.433   1.0000
Comp3(-) - Comp2(+) == 0   73.4672    29.4477   2.495   0.2449
Comp3(+) - Comp2(+) == 0  -62.3244    16.3332  -3.816    <0.01 **
Comp4(-) - Comp2(+) == 0  -76.9040    30.6045  -2.513   0.2363
Comp4(+) - Comp2(+) == 0   19.4352    21.3473   0.910   0.9951
Comp5(-) - Comp2(+) == 0  108.5506    44.0109   2.466   0.2584
Comp5(+) - Comp2(+) == 0   45.6934    23.2310   1.967   0.5857
Comp3(+) - Comp3(-) == 0 -135.7917    30.4612  -4.458    <0.01 ***
Comp4(-) - Comp3(-) == 0 -150.3712    39.9718  -3.762    <0.01 **
Comp4(+) - Comp3(-) == 0  -54.0321    33.4188  -1.617   0.8151
Comp5(-) - Comp3(-) == 0   35.0833    50.9713   0.688   0.9994
Comp5(+) - Comp3(-) == 0  -27.7738    34.6524  -0.801   0.9981
Comp4(-) - Comp3(+) == 0  -14.5795    31.5808  -0.462   1.0000
Comp4(+) - Comp3(+) == 0   81.7596    22.7249   3.598   0.0112 *
Comp5(-) - Comp3(+) == 0  170.8750    44.6954   3.823    <0.01 **
Comp5(+) - Comp3(+) == 0  108.0179    24.5030   4.408    <0.01 ***
Comp4(+) - Comp4(-) == 0   96.3392    34.4425   2.797   0.1221
Comp5(-) - Comp4(-) == 0  185.4545    51.6482   3.591   0.0117 *
Comp5(+) - Comp4(-) == 0  122.5974    35.6407   3.440   0.0193 *
Comp5(-) - Comp4(+) == 0   89.1154    46.7612   1.906   0.6296
Comp5(+) - Comp4(+) == 0   26.2582    28.0950   0.935   0.9940
Comp5(+) - Comp5(-) == 0  -62.8571    47.6506  -1.319   0.9385
```

Winter mean temperature

```
                        Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   58.663     18.672   3.142   0.0477 *
```

Comp2(-) - Comp1(-) == 0	-14.067	34.591	-0.407	1.0000	
Comp2(+) - Comp1(-) == 0	35.727	18.298	1.952	0.5954	
Comp3(-) - Comp1(-) == 0	-23.767	32.167	-0.739	0.9990	
Comp3(+) - Comp1(-) == 0	20.322	19.978	1.017	0.9889	
Comp4(-) - Comp1(-) == 0	18.414	33.291	0.553	0.9999	
Comp4(+) - Comp1(-) == 0	-21.306	24.477	-0.870	0.9965	
Comp5(-) - Comp1(-) == 0	-10.567	46.554	-0.227	1.0000	
Comp5(+) - Comp1(-) == 0	-39.244	26.230	-1.496	0.8750	
Comp2(-) - Comp1(+) == 0	-72.730	33.070	-2.199	0.4214	
Comp2(+) - Comp1(+) == 0	-22.936	15.230	-1.506	0.8711	
Comp3(-) - Comp1(+) == 0	-82.430	30.526	-2.700	0.1545	
Comp3(+) - Comp1(+) == 0	-38.341	17.211	-2.228	0.4024	
Comp4(-) - Comp1(+) == 0	-40.249	31.708	-1.269	0.9515	
Comp4(+) - Comp1(+) == 0	-79.969	22.277	-3.590	0.0112	*
Comp5(-) - Comp1(+) == 0	-69.230	45.436	-1.524	0.8624	
Comp5(+) - Comp1(+) == 0	-97.907	24.190	-4.047	<0.01	**
Comp2(+) - Comp2(-) == 0	49.794	32.861	1.515	0.8667	
Comp3(-) - Comp2(-) == 0	-9.700	42.187	-0.230	1.0000	
Comp3(+) - Comp2(-) == 0	34.389	33.825	1.017	0.9890	
Comp4(-) - Comp2(-) == 0	32.482	43.050	0.755	0.9988	
Comp4(+) - Comp2(-) == 0	-7.238	36.662	-0.197	1.0000	
Comp5(-) - Comp2(-) == 0	3.500	53.966	0.065	1.0000	
Comp5(+) - Comp2(-) == 0	-25.176	37.855	-0.665	0.9996	
Comp3(-) - Comp2(+) == 0	-59.494	30.299	-1.964	0.5879	
Comp3(+) - Comp2(+) == 0	-15.405	16.806	-0.917	0.9948	
Comp4(-) - Comp2(+) == 0	-17.313	31.489	-0.550	0.9999	
Comp4(+) - Comp2(+) == 0	-57.033	21.965	-2.597	0.1967	
Comp5(-) - Comp2(+) == 0	-46.294	45.284	-1.022	0.9885	
Comp5(+) - Comp2(+) == 0	-74.971	23.903	-3.136	0.0480	*
Comp3(+) - Comp3(-) == 0	44.089	31.342	1.407	0.9110	
Comp4(-) - Comp3(-) == 0	42.182	41.128	1.026	0.9883	
Comp4(+) - Comp3(-) == 0	2.462	34.385	0.072	1.0000	
Comp5(-) - Comp3(-) == 0	13.200	52.445	0.252	1.0000	
Comp5(+) - Comp3(-) == 0	-15.476	35.654	-0.434	1.0000	
Comp4(-) - Comp3(+) == 0	-1.907	32.494	-0.059	1.0000	
Comp4(+) - Comp3(+) == 0	-41.628	23.382	-1.780	0.7155	
Comp5(-) - Comp3(+) == 0	-30.889	45.988	-0.672	0.9995	
Comp5(+) - Comp3(+) == 0	-59.565	25.211	-2.363	0.3177	
Comp4(+) - Comp4(-) == 0	-39.720	35.438	-1.121	0.9783	
Comp5(-) - Comp4(-) == 0	-28.982	53.142	-0.545	0.9999	
Comp5(+) - Comp4(-) == 0	-57.658	36.671	-1.572	0.8388	
Comp5(-) - Comp4(+) == 0	10.738	48.113	0.223	1.0000	
Comp5(+) - Comp4(+) == 0	-17.938	28.907	-0.621	0.9998	
Comp5(+) - Comp5(-) == 0	-28.676	49.028	-0.585	0.9999	

Spring mean temperature

	Estimate	Std. Error	t value	Pr(>|t|)	
Comp1(+) - Comp1(-) == 0	13.167	18.395	0.716	0.9992	
Comp2(-) - Comp1(-) == 0	24.356	34.077	0.715	0.9992	
Comp2(+) - Comp1(-) == 0	-2.306	18.027	-0.128	1.0000	
Comp3(-) - Comp1(-) == 0	61.589	31.689	1.944	0.6027	
Comp3(+) - Comp1(-) == 0	-60.333	19.681	-3.066	0.0600	.
Comp4(-) - Comp1(-) == 0	-80.017	32.796	-2.440	0.2733	
Comp4(+) - Comp1(-) == 0	14.640	24.114	0.607	0.9998	
Comp5(-) - Comp1(-) == 0	81.456	45.863	1.776	0.7183	
Comp5(+) - Comp1(-) == 0	41.113	25.841	1.591	0.8289	
Comp2(-) - Comp1(+) == 0	11.189	32.579	0.343	1.0000	
Comp2(+) - Comp1(+) == 0	-15.473	15.004	-1.031	0.9878	
Comp3(-) - Comp1(+) == 0	48.422	30.073	1.610	0.8186	

```
Comp3(+) - Comp1(+) == 0  -73.501     16.956  -4.335    <0.01 ***
Comp4(-) - Comp1(+) == 0  -93.184     31.237  -2.983   0.0752 .
Comp4(+) - Comp1(+) == 0    1.473     21.946   0.067   1.0000
Comp5(-) - Comp1(+) == 0   68.289     44.761   1.526   0.8618
Comp5(+) - Comp1(+) == 0   27.946     23.831   1.173   0.9707
Comp2(+) - Comp2(-) == 0  -26.662     32.373  -0.824   0.9977
Comp3(-) - Comp2(-) == 0   37.233     41.560   0.896   0.9956
Comp3(+) - Comp2(-) == 0  -84.689     33.322  -2.542   0.2210
Comp4(-) - Comp2(-) == 0 -104.373     42.410  -2.461   0.2622
Comp4(+) - Comp2(-) == 0   -9.715     36.118  -0.269   1.0000
Comp5(-) - Comp2(-) == 0   57.100     53.164   1.074   0.9838
Comp5(+) - Comp2(-) == 0   16.757     37.293   0.449   1.0000
Comp3(-) - Comp2(+) == 0   63.895     29.849   2.141   0.4616
Comp3(+) - Comp2(+) == 0  -58.027     16.556  -3.505   0.0155 *
Comp4(-) - Comp2(+) == 0  -77.711     31.022  -2.505   0.2395
Comp4(+) - Comp2(+) == 0   16.946     21.638   0.783   0.9984
Comp5(-) - Comp2(+) == 0   83.762     44.611   1.878   0.6486
Comp5(+) - Comp2(+) == 0   43.419     23.548   1.844   0.6725
Comp3(+) - Comp3(-) == 0 -121.923     30.876  -3.949    <0.01 **
Comp4(-) - Comp3(-) == 0 -141.606     40.517  -3.495   0.0153 *
Comp4(+) - Comp3(-) == 0  -46.949     33.874  -1.386   0.9180
Comp5(-) - Comp3(-) == 0   19.867     51.666   0.385   1.0000
Comp5(+) - Comp3(-) == 0  -20.476     35.125  -0.583   0.9999
Comp4(-) - Comp3(+) == 0  -19.683     32.011  -0.615   0.9998
Comp4(+) - Comp3(+) == 0   74.974     23.035   3.255   0.0350 *
Comp5(-) - Comp3(+) == 0  141.789     45.305   3.130   0.0495 *
Comp5(+) - Comp3(+) == 0  101.446     24.837   4.084    <0.01 **
Comp4(+) - Comp4(-) == 0   94.657     34.912   2.711   0.1509
Comp5(-) - Comp4(-) == 0  161.473     52.352   3.084   0.0566 .
Comp5(+) - Comp4(-) == 0  121.130     36.127   3.353   0.0249 *
Comp5(-) - Comp4(+) == 0   66.815     47.399   1.410   0.9097
Comp5(+) - Comp4(+) == 0   26.473     28.478   0.930   0.9942
Comp5(+) - Comp5(-) == 0  -40.343     48.300  -0.835   0.9974
```

Summer mean temperature

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   14.315     18.960   0.755   0.9988
Comp2(-) - Comp1(-) == 0   35.863     35.125   1.021   0.9887
Comp2(+) - Comp1(-) == 0   17.365     18.581   0.935   0.9940
Comp3(-) - Comp1(-) == 0   35.163     32.664   1.077   0.9836
Comp3(+) - Comp1(-) == 0  -31.641     20.286  -1.560   0.8451
Comp4(-) - Comp1(-) == 0  -50.110     33.804  -1.482   0.8812
Comp4(+) - Comp1(-) == 0  -13.645     24.855  -0.549   0.9999
Comp5(-) - Comp1(-) == 0  103.963     47.273   2.199   0.4218
Comp5(+) - Comp1(-) == 0   16.306     26.635   0.612   0.9998
Comp2(-) - Comp1(+) == 0   21.548     33.581   0.642   0.9997
Comp2(+) - Comp1(+) == 0    3.050     15.465   0.197   1.0000
Comp3(-) - Comp1(+) == 0   20.848     30.997   0.673   0.9995
Comp3(+) - Comp1(+) == 0  -45.956     17.477  -2.629   0.1822
Comp4(-) - Comp1(+) == 0  -64.425     32.197  -2.001   0.5618
Comp4(+) - Comp1(+) == 0  -27.960     22.620  -1.236   0.9590
Comp5(-) - Comp1(+) == 0   89.648     46.137   1.943   0.6032
Comp5(+) - Comp1(+) == 0    1.991     24.563   0.081   1.0000
Comp2(+) - Comp2(-) == 0  -18.498     33.368  -0.554   0.9999
Comp3(-) - Comp2(-) == 0   -0.700     42.838  -0.016   1.0000
Comp3(+) - Comp2(-) == 0  -67.504     34.347  -1.965   0.5860
Comp4(-) - Comp2(-) == 0  -85.973     43.714  -1.967   0.5861
Comp4(+) - Comp2(-) == 0  -49.508     37.228  -1.330   0.9357
Comp5(-) - Comp2(-) == 0   68.100     54.798   1.243   0.9575
```

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Comp5(+) - Comp2(-) == 0  -19.557     38.440  -0.509   1.0000
Comp3(-) - Comp2(+) == 0   17.798     30.767   0.578   0.9999
Comp3(+) - Comp2(+) == 0  -49.006     17.065  -2.872   0.1017
Comp4(-) - Comp2(+) == 0  -67.475     31.975  -2.110   0.4834
Comp4(+) - Comp2(+) == 0  -31.010     22.304  -1.390   0.9165
Comp5(-) - Comp2(+) == 0   86.598     45.982   1.883   0.6450
Comp5(+) - Comp2(+) == 0   -1.059     24.272  -0.044   1.0000
Comp3(+) - Comp3(-) == 0  -66.804     31.826  -2.099   0.4911
Comp4(-) - Comp3(-) == 0  -85.273     41.762  -2.042   0.5319
Comp4(+) - Comp3(-) == 0  -48.808     34.916  -1.398   0.9139
Comp5(-) - Comp3(-) == 0   68.800     53.255   1.292   0.9459
Comp5(+) - Comp3(-) == 0  -18.857     36.205  -0.521   0.9999
Comp4(-) - Comp3(+) == 0  -18.469     32.995  -0.560   0.9999
Comp4(+) - Comp3(+) == 0   17.996     23.743   0.758   0.9988
Comp5(-) - Comp3(+) == 0  135.604     46.697   2.904   0.0932 .
Comp5(+) - Comp3(+) == 0   47.946     25.601   1.873   0.6526
Comp4(+) - Comp4(-) == 0   36.465     35.985   1.013   0.9892
Comp5(-) - Comp4(-) == 0  154.073     53.962   2.855   0.1060
Comp5(+) - Comp4(-) == 0   66.416     37.237   1.784   0.7135
Comp5(-) - Comp4(+) == 0  117.608     48.856   2.407   0.2912
Comp5(+) - Comp4(+) == 0   29.951     29.354   1.020   0.9887
Comp5(+) - Comp5(-) == 0  -87.657     49.785  -1.761   0.7284
```

Autumn mean temperature

```
                          Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0    4.8493    18.0576   0.269   1.0000
Comp2(-) - Comp1(-) == 0   16.9581    33.4527   0.507   1.0000
Comp2(+) - Comp1(-) == 0  -20.1722    17.6964  -1.140   0.9757
Comp3(-) - Comp1(-) == 0   62.7248    31.1088   2.016   0.5498
Comp3(+) - Comp1(-) == 0  -75.6026    19.3204  -3.913    <0.01 **
Comp4(-) - Comp1(-) == 0 -100.8964    32.1954  -3.134   0.0489 *
Comp4(+) - Comp1(-) == 0    4.1351    23.6718   0.175   1.0000
Comp5(-) - Comp1(-) == 0   94.1581    45.0224   2.091   0.4957
Comp5(+) - Comp1(-) == 0   33.3200    25.3672   1.314   0.9403
Comp2(-) - Comp1(+) == 0   12.1089    31.9822   0.379   1.0000
Comp2(+) - Comp1(+) == 0  -25.0215    14.7290  -1.699   0.7673
Comp3(-) - Comp1(+) == 0   57.8755    29.5218   1.960   0.5902
Comp3(+) - Comp1(+) == 0  -80.4519    16.6451  -4.833    <0.01 ***
Comp4(-) - Comp1(+) == 0 -105.7457    30.6647  -3.448   0.0185 *
Comp4(+) - Comp1(+) == 0   -0.7142    21.5438  -0.033   1.0000
Comp5(-) - Comp1(+) == 0   89.3089    43.9408   2.032   0.5387
Comp5(+) - Comp1(+) == 0   28.4708    23.3940   1.217   0.9628
Comp2(+) - Comp2(-) == 0  -37.1303    31.7797  -1.168   0.9713
Comp3(-) - Comp2(-) == 0   45.7667    40.7988   1.122   0.9782
Comp3(+) - Comp2(-) == 0  -92.5607    32.7118  -2.830   0.1131
Comp4(-) - Comp2(-) == 0 -117.8545    41.6332  -2.831   0.1121
Comp4(+) - Comp2(-) == 0  -12.8231    35.4561  -0.362   1.0000
Comp5(-) - Comp2(-) == 0   77.2000    52.1900   1.479   0.8826
Comp5(+) - Comp2(-) == 0   16.3619    36.6099   0.447   1.0000
Comp3(-) - Comp2(+) == 0   82.8970    29.3023   2.829   0.1130
Comp3(+) - Comp2(+) == 0  -55.4304    16.2526  -3.411   0.0211 *
Comp4(-) - Comp2(+) == 0  -80.7242    30.4534  -2.651   0.1753
Comp4(+) - Comp2(+) == 0   24.3073    21.2419   1.144   0.9752
Comp5(-) - Comp2(+) == 0  114.3303    43.7936   2.611   0.1904
Comp5(+) - Comp2(+) == 0   53.4922    23.1163   2.314   0.3463
Comp3(+) - Comp3(-) == 0 -138.3274    30.3108  -4.564    <0.01 ***
Comp4(-) - Comp3(-) == 0 -163.6212    39.7744  -4.114    <0.01 **
Comp4(+) - Comp3(-) == 0  -58.5897    33.2538  -1.762   0.7279
Comp5(-) - Comp3(-) == 0   31.4333    50.7196   0.620   0.9998
```

Comp5(+) - Comp3(-) == 0	-29.4048	34.4813	-0.853	0.9970	
Comp4(-) - Comp3(+) == 0	-25.2938	31.4249	-0.805	0.9981	
Comp4(+) - Comp3(+) == 0	79.7376	22.6127	3.526	0.0144	*
Comp5(-) - Comp3(+) == 0	169.7607	44.4747	3.817	<0.01	**
Comp5(+) - Comp3(+) == 0	108.9226	24.3820	4.467	<0.01	***
Comp4(+) - Comp4(-) == 0	105.0315	34.2724	3.065	0.0596	.
Comp5(-) - Comp4(-) == 0	195.0545	51.3932	3.795	<0.01	**
Comp5(+) - Comp4(-) == 0	134.2165	35.4647	3.785	<0.01	**
Comp5(-) - Comp4(+) == 0	90.0231	46.5303	1.935	0.6088	
Comp5(+) - Comp4(+) == 0	29.1850	27.9563	1.044	0.9867	
Comp5(+) - Comp5(-) == 0	-60.8381	47.4154	-1.283	0.9481	

Annual ETo

	Estimate	Std. Error	t value	Pr(>|t|)	
Comp1(+) - Comp1(-) == 0	35.232	17.578	2.004	0.5582	
Comp2(-) - Comp1(-) == 0	41.593	32.564	1.277	0.9496	
Comp2(+) - Comp1(-) == 0	81.846	17.226	4.751	<0.01	***
Comp3(-) - Comp1(-) == 0	77.510	30.282	2.560	0.2140	
Comp3(+) - Comp1(-) == 0	-46.675	18.807	-2.482	0.2514	
Comp4(-) - Comp1(-) == 0	50.457	31.340	1.610	0.8187	
Comp4(+) - Comp1(-) == 0	22.016	23.043	0.955	0.9930	
Comp5(-) - Comp1(-) == 0	128.693	43.826	2.936	0.0855	.
Comp5(+) - Comp1(-) == 0	26.188	24.693	1.061	0.9851	
Comp2(-) - Comp1(+) == 0	6.361	31.133	0.204	1.0000	
Comp2(+) - Comp1(+) == 0	46.614	14.338	3.251	0.0351	*
Comp3(-) - Comp1(+) == 0	42.277	28.738	1.471	0.8858	
Comp3(+) - Comp1(+) == 0	-81.907	16.203	-5.055	<0.01	***
Comp4(-) - Comp1(+) == 0	15.224	29.850	0.510	1.0000	
Comp4(+) - Comp1(+) == 0	-13.216	20.972	-0.630	0.9997	
Comp5(-) - Comp1(+) == 0	93.461	42.774	2.185	0.4308	
Comp5(+) - Comp1(+) == 0	-9.044	22.773	-0.397	1.0000	
Comp2(+) - Comp2(-) == 0	40.253	30.936	1.301	0.9436	
Comp3(-) - Comp2(-) == 0	35.917	39.715	0.904	0.9953	
Comp3(+) - Comp2(-) == 0	-88.268	31.843	-2.772	0.1301	
Comp4(-) - Comp2(-) == 0	8.864	40.527	0.219	1.0000	
Comp4(+) - Comp2(-) == 0	-19.577	34.514	-0.567	0.9999	
Comp5(-) - Comp2(-) == 0	87.100	50.804	1.714	0.7579	
Comp5(+) - Comp2(-) == 0	-15.405	35.637	-0.432	1.0000	
Comp3(-) - Comp2(+) == 0	-4.336	28.524	-0.152	1.0000	
Comp3(+) - Comp2(+) == 0	-128.521	15.821	-8.123	<0.01	***
Comp4(-) - Comp2(+) == 0	-31.389	29.644	-1.059	0.9854	
Comp4(+) - Comp2(+) == 0	-59.830	20.678	-2.893	0.0957	.
Comp5(-) - Comp2(+) == 0	46.847	42.630	1.099	0.9810	
Comp5(+) - Comp2(+) == 0	-55.658	22.502	-2.473	0.2556	
Comp3(+) - Comp3(-) == 0	-124.185	29.506	-4.209	<0.01	**
Comp4(-) - Comp3(-) == 0	-27.053	38.718	-0.699	0.9994	
Comp4(+) - Comp3(-) == 0	-55.494	32.371	-1.714	0.7576	
Comp5(-) - Comp3(-) == 0	51.183	49.372	1.037	0.9873	
Comp5(+) - Comp3(-) == 0	-51.321	33.565	-1.529	0.8601	
Comp4(-) - Comp3(+) == 0	97.131	30.590	3.175	0.0433	*
Comp4(+) - Comp3(+) == 0	68.691	22.012	3.121	0.0509	.
Comp5(-) - Comp3(+) == 0	175.368	43.293	4.051	<0.01	**
Comp5(+) - Comp3(+) == 0	72.863	23.734	3.070	0.0586	.
Comp4(+) - Comp4(-) == 0	-28.441	33.362	-0.852	0.9970	
Comp5(-) - Comp4(-) == 0	78.236	50.028	1.564	0.8431	
Comp5(+) - Comp4(-) == 0	-24.268	34.523	-0.703	0.9993	
Comp5(-) - Comp4(+) == 0	106.677	45.294	2.355	0.3217	
Comp5(+) - Comp4(+) == 0	4.172	27.214	0.153	1.0000	
Comp5(+) - Comp5(-) == 0	-102.505	46.156	-2.221	0.4067	

Winter ETo

```
                        Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   21.895     17.676   1.239    0.958
Comp2(-) - Comp1(-) == 0   64.447     32.746   1.968    0.585
Comp2(+) - Comp1(-) == 0   30.271     17.323   1.748    0.737
Comp3(-) - Comp1(-) == 0   66.213     30.452   2.174    0.439
Comp3(+) - Comp1(-) == 0  -80.757     18.912  -4.270    <0.01 ***
Comp4(-) - Comp1(-) == 0  -14.226     31.515  -0.451    1.000
Comp4(+) - Comp1(-) == 0   32.316     23.172   1.395    0.915
Comp5(-) - Comp1(-) == 0   99.647     44.071   2.261    0.380
Comp5(+) - Comp1(-) == 0   39.904     24.831   1.607    0.821
Comp2(-) - Comp1(+) == 0   42.552     31.307   1.359    0.927
Comp2(+) - Comp1(+) == 0    8.377     14.418   0.581    1.000
Comp3(-) - Comp1(+) == 0   44.319     28.898   1.534    0.858
Comp3(+) - Comp1(+) == 0 -102.652     16.293  -6.300    <0.01 ***
Comp4(-) - Comp1(+) == 0  -36.121     30.017  -1.203    0.965
Comp4(+) - Comp1(+) == 0   10.421     21.089   0.494    1.000
Comp5(-) - Comp1(+) == 0   77.752     43.013   1.808    0.697
Comp5(+) - Comp1(+) == 0   18.009     22.900   0.786    0.998
Comp2(+) - Comp2(-) == 0  -34.175     31.108  -1.099    0.981
Comp3(-) - Comp2(-) == 0    1.767     39.937   0.044    1.000
Comp3(+) - Comp2(-) == 0 -145.204     32.021  -4.535    <0.01 ***
Comp4(-) - Comp2(-) == 0  -78.673     40.754  -1.930    0.612
Comp4(+) - Comp2(-) == 0  -32.131     34.707  -0.926    0.994
Comp5(-) - Comp2(-) == 0   35.200     51.087   0.689    0.999
Comp5(+) - Comp2(-) == 0  -24.543     35.836  -0.685    0.999
Comp3(-) - Comp2(+) == 0   35.942     28.683   1.253    0.955
Comp3(+) - Comp2(+) == 0 -111.028     15.909  -6.979    <0.01 ***
Comp4(-) - Comp2(+) == 0  -44.497     29.810  -1.493    0.876
Comp4(+) - Comp2(+) == 0    2.045     20.793   0.098    1.000
Comp5(-) - Comp2(+) == 0   69.375     42.868   1.618    0.814
Comp5(+) - Comp2(+) == 0    9.632     22.628   0.426    1.000
Comp3(+) - Comp3(-) == 0 -146.970     29.670  -4.953    <0.01 ***
Comp4(-) - Comp3(-) == 0  -80.439     38.934  -2.066    0.514
Comp4(+) - Comp3(-) == 0  -33.897     32.551  -1.041    0.987
Comp5(-) - Comp3(-) == 0   33.433     49.648   0.673    1.000
Comp5(+) - Comp3(-) == 0  -26.310     33.753  -0.779    0.998
Comp4(-) - Comp3(+) == 0   66.531     30.761   2.163    0.446
Comp4(+) - Comp3(+) == 0  113.073     22.135   5.108    <0.01 ***
Comp5(-) - Comp3(+) == 0  180.404     43.535   4.144    <0.01 **
Comp5(+) - Comp3(+) == 0  120.661     23.867   5.056    <0.01 ***
Comp4(+) - Comp4(-) == 0   46.542     33.548   1.387    0.918
Comp5(-) - Comp4(-) == 0  113.873     50.307   2.264    0.378
Comp5(+) - Comp4(-) == 0   54.130     34.715   1.559    0.845
Comp5(-) - Comp4(+) == 0   67.331     45.547   1.478    0.883
Comp5(+) - Comp4(+) == 0    7.588     27.366   0.277    1.000
Comp5(+) - Comp5(-) == 0  -59.743     46.414  -1.287    0.947
```

Spring ETo

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   40.0954    17.4753   2.294   0.3588
Comp2(-) - Comp1(-) == 0   29.0093    32.3739   0.896   0.9956
Comp2(+) - Comp1(-) == 0   81.6026    17.1258   4.765    <0.01 ***
Comp3(-) - Comp1(-) == 0   60.8760    30.1057   2.022   0.5447
Comp3(+) - Comp1(-) == 0  -52.3443    18.6974  -2.800   0.1218
Comp4(-) - Comp1(-) == 0   61.6638    31.1572   1.979   0.5771
Comp4(+) - Comp1(-) == 0   23.5170    22.9084   1.027   0.9882
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Comp5(-) - Comp1(-) == 0  119.0093    43.5706   2.731   0.1442
Comp5(+) - Comp1(-) == 0   36.0664    24.5492   1.469   0.8868
Comp2(-) - Comp1(+) == 0  -11.0861    30.9509  -0.358   1.0000
Comp2(+) - Comp1(+) == 0   41.5072    14.2540   2.912   0.0912 .
Comp3(-) - Comp1(+) == 0   20.7806    28.5699   0.727   0.9991
Comp3(+) - Comp1(+) == 0  -92.4396    16.1084  -5.739    <0.01 ***
Comp4(-) - Comp1(+) == 0   21.5685    29.6759   0.727   0.9991
Comp4(+) - Comp1(+) == 0  -16.5784    20.8491  -0.795   0.9982
Comp5(-) - Comp1(+) == 0   78.9139    42.5239   1.856   0.6640
Comp5(+) - Comp1(+) == 0   -4.0289    22.6396  -0.178   1.0000
Comp2(+) - Comp2(-) == 0   52.5933    30.7549   1.710   0.7604
Comp3(-) - Comp2(-) == 0   31.8667    39.4832   0.807   0.9980
Comp3(+) - Comp2(-) == 0  -81.3536    31.6570  -2.570   0.2086
Comp4(-) - Comp2(-) == 0   32.6545    40.2907   0.810   0.9980
Comp4(+) - Comp2(-) == 0   -5.4923    34.3128  -0.160   1.0000
Comp5(-) - Comp2(-) == 0   90.0000    50.5071   1.782   0.7145
Comp5(+) - Comp2(-) == 0    7.0571    35.4293   0.199   1.0000
Comp3(-) - Comp2(+) == 0  -20.7266    28.3574  -0.731   0.9991
Comp3(+) - Comp2(+) == 0 -133.9468    15.7285  -8.516    <0.01 ***
Comp4(-) - Comp2(+) == 0  -19.9387    29.4714  -0.677   0.9995
Comp4(+) - Comp2(+) == 0  -58.0856    20.5570  -2.826   0.1131
Comp5(-) - Comp2(+) == 0   37.4067    42.3815   0.883   0.9961
Comp5(+) - Comp2(+) == 0  -45.5361    22.3709  -2.036   0.5369
Comp3(+) - Comp3(-) == 0 -113.2202    29.3334  -3.860    <0.01 **
Comp4(-) - Comp3(-) == 0    0.7879    38.4919   0.020   1.0000
Comp4(+) - Comp3(-) == 0  -37.3590    32.1815  -1.161   0.9726
Comp5(-) - Comp3(-) == 0   58.1333    49.0841   1.184   0.9688
Comp5(+) - Comp3(-) == 0  -24.8095    33.3694  -0.743   0.9990
Comp4(-) - Comp3(+) == 0  114.0081    30.4116   3.749    <0.01 **
Comp4(+) - Comp3(+) == 0   75.8613    21.8836   3.467   0.0179 *
Comp5(-) - Comp3(+) == 0  171.3536    43.0406   3.981    <0.01 **
Comp5(+) - Comp3(+) == 0   88.4107    23.5957   3.747    <0.01 **
Comp4(+) - Comp4(-) == 0  -38.1469    33.1673  -1.150   0.9742
Comp5(-) - Comp4(-) == 0   57.3455    49.7360   1.153   0.9738
Comp5(+) - Comp4(-) == 0  -25.5974    34.3211  -0.746   0.9989
Comp5(-) - Comp4(+) == 0   95.4923    45.0299   2.121   0.4759
Comp5(+) - Comp4(+) == 0   12.5495    27.0548   0.464   1.0000
Comp5(+) - Comp5(-) == 0  -82.9429    45.8864  -1.808   0.6975
```

Summer ETo

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   61.667     17.931   3.439   0.0193 *
Comp2(-) - Comp1(-) == 0   57.526     33.219   1.732   0.7470
Comp2(+) - Comp1(-) == 0   93.820     17.573   5.339    <0.01 ***
Comp3(-) - Comp1(-) == 0   52.826     30.892   1.710   0.7611
Comp3(+) - Comp1(-) == 0   24.218     19.185   1.262   0.9531
Comp4(-) - Comp1(-) == 0  116.689     31.971   3.650    <0.01 **
Comp4(+) - Comp1(-) == 0   -3.751     23.506  -0.160   1.0000
Comp5(-) - Comp1(-) == 0  149.326     44.708   3.340   0.0258 *
Comp5(+) - Comp1(-) == 0   -8.627     25.190  -0.342   1.0000
Comp2(-) - Comp1(+) == 0   -4.142     31.759  -0.130   1.0000
Comp2(+) - Comp1(+) == 0   32.153     14.626   2.198   0.4217
Comp3(-) - Comp1(+) == 0   -8.842     29.316  -0.302   1.0000
Comp3(+) - Comp1(+) == 0  -37.449     16.529  -2.266   0.3773
Comp4(-) - Comp1(+) == 0   55.022     30.451   1.807   0.6978
Comp4(+) - Comp1(+) == 0  -65.419     21.393  -3.058   0.0610 .
Comp5(-) - Comp1(+) == 0   87.658     43.634   2.009   0.5553
Comp5(+) - Comp1(+) == 0  -70.294     23.231  -3.026   0.0669 .
Comp2(+) - Comp2(-) == 0   36.294     31.558   1.150   0.9742
```

```
Comp3(-) - Comp2(-) == 0   -4.700     40.514  -0.116   1.0000
Comp3(+) - Comp2(-) == 0  -33.307     32.483  -1.025   0.9883
Comp4(-) - Comp2(-) == 0   59.164     41.343   1.431   0.9021
Comp4(+) - Comp2(-) == 0  -61.277     35.209  -1.740   0.7417
Comp5(-) - Comp2(-) == 0   91.800     51.826   1.771   0.7219
Comp5(+) - Comp2(-) == 0  -66.152     36.354  -1.820   0.6894
Comp3(-) - Comp2(+) == 0  -40.994     29.098  -1.409   0.9099
Comp3(+) - Comp2(+) == 0  -69.602     16.139  -4.313    <0.01 ***
Comp4(-) - Comp2(+) == 0   22.869     30.241   0.756   0.9988
Comp4(+) - Comp2(+) == 0  -97.571     21.094  -4.626    <0.01 ***
Comp5(-) - Comp2(+) == 0   55.506     43.488   1.276   0.9498
Comp5(+) - Comp2(+) == 0 -102.447     22.955  -4.463    <0.01 ***
Comp3(+) - Comp3(-) == 0  -28.607     30.099  -0.950   0.9932
Comp4(-) - Comp3(-) == 0   63.864     39.497   1.617   0.8153
Comp4(+) - Comp3(-) == 0  -56.577     33.022  -1.713   0.7589
Comp5(-) - Comp3(-) == 0   96.500     50.365   1.916   0.6220
Comp5(+) - Comp3(-) == 0  -61.452     34.241  -1.795   0.7059
Comp4(-) - Comp3(+) == 0   92.471     31.205   2.963   0.0797 .
Comp4(+) - Comp3(+) == 0  -27.970     22.455  -1.246   0.9569
Comp5(-) - Comp3(+) == 0  125.107     44.164   2.833   0.1121
Comp5(+) - Comp3(+) == 0  -32.845     24.212  -1.357   0.9275
Comp4(+) - Comp4(-) == 0 -120.441     34.033  -3.539   0.0135 *
Comp5(-) - Comp4(-) == 0   32.636     51.034   0.639   0.9997
Comp5(+) - Comp4(-) == 0 -125.316     35.217  -3.558   0.0127 *
Comp5(-) - Comp4(+) == 0  153.077     46.205   3.313   0.0282 *
Comp5(+) - Comp4(+) == 0   -4.875     27.761  -0.176   1.0000
Comp5(+) - Comp5(-) == 0 -157.952     47.084  -3.355   0.0250 *
```

Autumn ETo

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   26.6903    18.3876   1.452   0.8938
Comp2(-) - Comp1(-) == 0   56.1093    34.0640   1.647   0.7983
Comp2(+) - Comp1(-) == 0   42.6026    18.0198   2.364   0.3165
Comp3(-) - Comp1(-) == 0   77.2093    31.6773   2.437   0.2744
Comp3(+) - Comp1(-) == 0  -45.8086    19.6735  -2.328   0.3376
Comp4(-) - Comp1(-) == 0    8.0275    32.7837   0.245   1.0000
Comp4(+) - Comp1(-) == 0   27.3631    24.1044   1.135   0.9763
Comp5(-) - Comp1(-) == 0  116.0093    45.8452   2.530   0.2268
Comp5(+) - Comp1(-) == 0   35.0188    25.8308   1.356   0.9278
Comp2(-) - Comp1(+) == 0   29.4190    32.5667   0.903   0.9953
Comp2(+) - Comp1(+) == 0   15.9122    14.9982   1.061   0.9851
Comp3(-) - Comp1(+) == 0   50.5190    30.0614   1.681   0.7790
Comp3(+) - Comp1(+) == 0  -72.4989    16.9493  -4.277    <0.01 ***
Comp4(-) - Comp1(+) == 0  -18.6628    31.2251  -0.598   0.9998
Comp4(+) - Comp1(+) == 0    0.6728    21.9375   0.031   1.0000
Comp5(-) - Comp1(+) == 0   89.3190    44.7439   1.996   0.5646
Comp5(+) - Comp1(+) == 0    8.3285    23.8215   0.350   1.0000
Comp2(+) - Comp2(-) == 0  -13.5067    32.3605  -0.417   1.0000
Comp3(-) - Comp2(-) == 0   21.1000    41.5444   0.508   1.0000
Comp3(+) - Comp2(-) == 0 -101.9179    33.3097  -3.060   0.0608 .
Comp4(-) - Comp2(-) == 0  -48.0818    42.3941  -1.134   0.9765
Comp4(+) - Comp2(-) == 0  -28.7462    36.1041  -0.796   0.9982
Comp5(-) - Comp2(-) == 0   59.9000    53.1438   1.127   0.9775
Comp5(+) - Comp2(-) == 0  -21.0905    37.2789  -0.566   0.9999
Comp3(-) - Comp2(+) == 0   34.6067    29.8378   1.160   0.9727
Comp3(+) - Comp2(+) == 0  -88.4111    16.5496  -5.342    <0.01 ***
Comp4(-) - Comp2(+) == 0  -34.5751    31.0099  -1.115   0.9791
Comp4(+) - Comp2(+) == 0  -15.2394    21.6302  -0.705   0.9993
Comp5(-) - Comp2(+) == 0   73.4067    44.5940   1.646   0.7983
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Comp5(+) - Comp2(+) == 0   -7.5837    23.5388  -0.322   1.0000
Comp3(+) - Comp3(-) == 0 -123.0179    30.8647  -3.986    <0.01 **
Comp4(-) - Comp3(-) == 0  -69.1818    40.5013  -1.708   0.7621
Comp4(+) - Comp3(-) == 0  -49.8462    33.8615  -1.472   0.8854
Comp5(-) - Comp3(-) == 0   38.8000    51.6465   0.751   0.9989
Comp5(+) - Comp3(-) == 0  -42.1905    35.1115  -1.202   0.9658
Comp4(-) - Comp3(+) == 0   53.8360    31.9992   1.682   0.7773
Comp4(+) - Comp3(+) == 0   73.1717    23.0260   3.178   0.0438 *
Comp5(-) - Comp3(+) == 0  161.8179    45.2875   3.573   0.0122 *
Comp5(+) - Comp3(+) == 0   80.8274    24.8276   3.256   0.0348 *
Comp4(+) - Comp4(-) == 0   19.3357    34.8988   0.554   0.9999
Comp5(-) - Comp4(-) == 0  107.9818    52.3324   2.063   0.5161
Comp5(+) - Comp4(-) == 0   26.9913    36.1128   0.747   0.9989
Comp5(-) - Comp4(+) == 0   88.6462    47.3807   1.871   0.6538
Comp5(+) - Comp4(+) == 0    7.6557    28.4672   0.269   1.0000
Comp5(+) - Comp5(-) == 0  -80.9905    48.2819  -1.677   0.7804
```

Annual climate balance

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  -55.4133    17.5807  -3.152   0.0462 *
Comp2(-) - Comp1(-) == 0  -58.1070    32.5693  -1.784   0.7131
Comp2(+) - Comp1(-) == 0  -67.1654    17.2291  -3.898    <0.01 **
Comp3(-) - Comp1(-) == 0  -60.8236    30.2873  -2.008   0.5559
Comp3(+) - Comp1(-) == 0   52.2359    18.8102   2.777   0.1291
Comp4(-) - Comp1(-) == 0  -70.0888    31.3452  -2.236   0.3967
Comp4(+) - Comp1(-) == 0  -55.8685    23.0467  -2.424   0.2832
Comp5(-) - Comp1(-) == 0 -121.7070    43.8335  -2.777   0.1289
Comp5(+) - Comp1(-) == 0  -59.1451    24.6974  -2.395   0.2992
Comp2(-) - Comp1(+) == 0   -2.6937    31.1377  -0.087   1.0000
Comp2(+) - Comp1(+) == 0  -11.7521    14.3400  -0.820   0.9978
Comp3(-) - Comp1(+) == 0   -5.4103    28.7423  -0.188   1.0000
Comp3(+) - Comp1(+) == 0  107.6492    16.2055   6.643    <0.01 ***
Comp4(-) - Comp1(+) == 0  -14.6755    29.8549  -0.492   1.0000
Comp4(+) - Comp1(+) == 0   -0.4552    20.9749  -0.022   1.0000
Comp5(-) - Comp1(+) == 0  -66.2937    42.7805  -1.550   0.8504
Comp5(+) - Comp1(+) == 0   -3.7318    22.7762  -0.164   1.0000
Comp2(+) - Comp2(-) == 0   -9.0584    30.9405  -0.293   1.0000
Comp3(-) - Comp2(-) == 0   -2.7167    39.7215  -0.068   1.0000
Comp3(+) - Comp2(-) == 0  110.3429    31.8480   3.465   0.0172 *
Comp4(-) - Comp2(-) == 0  -11.9818    40.5338  -0.296   1.0000
Comp4(+) - Comp2(-) == 0    2.2385    34.5199   0.065   1.0000
Comp5(-) - Comp2(-) == 0  -63.6000    50.8119  -1.252   0.9555
Comp5(+) - Comp2(-) == 0   -1.0381    35.6431  -0.029   1.0000
Comp3(-) - Comp2(+) == 0    6.3418    28.5285   0.222   1.0000
Comp3(+) - Comp2(+) == 0  119.4013    15.8234   7.546    <0.01 ***
Comp4(-) - Comp2(+) == 0   -2.9234    29.6492  -0.099   1.0000
Comp4(+) - Comp2(+) == 0   11.2969    20.6810   0.546   0.9999
Comp5(-) - Comp2(+) == 0  -54.5416    42.6372  -1.279   0.9491
Comp5(+) - Comp2(+) == 0    8.0203    22.5059   0.356   1.0000
Comp3(+) - Comp3(-) == 0  113.0595    29.5103   3.831    <0.01 **
Comp4(-) - Comp3(-) == 0   -9.2652    38.7241  -0.239   1.0000
Comp4(+) - Comp3(-) == 0    4.9551    32.3757   0.153   1.0000
Comp5(-) - Comp3(-) == 0  -60.8833    49.3802  -1.233   0.9596
Comp5(+) - Comp3(-) == 0    1.6786    33.5708   0.050   1.0000
Comp4(-) - Comp3(+) == 0 -122.3247    30.5951  -3.998    <0.01 **
Comp4(+) - Comp3(+) == 0 -108.1044    22.0156  -4.910    <0.01 ***
Comp5(-) - Comp3(+) == 0 -173.9429    43.3002  -4.017    <0.01 **
Comp5(+) - Comp3(+) == 0 -111.3810    23.7381  -4.692    <0.01 ***
Comp4(+) - Comp4(-) == 0   14.2203    33.3674   0.426   1.0000
```

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Comp5(-) - Comp4(-) == 0  -51.6182    50.0361  -1.032   0.9878
Comp5(+) - Comp4(-) == 0   10.9437    34.5282   0.317   1.0000
Comp5(-) - Comp4(+) == 0  -65.8385    45.3016  -1.453   0.8930
Comp5(+) - Comp4(+) == 0   -3.2766    27.2181  -0.120   1.0000
Comp5(+) - Comp5(-) == 0   62.5619    46.1633   1.355   0.9280
```

Winter climate balance

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   -9.711     16.575  -0.586  0.99985
Comp2(-) - Comp1(-) == 0    2.663     30.706   0.087  1.00000
Comp2(+) - Comp1(-) == 0  -96.084     16.243  -5.915  < 0.001 ***
Comp3(-) - Comp1(-) == 0   -4.421     28.555  -0.155  1.00000
Comp3(+) - Comp1(-) == 0   60.449     17.734   3.409  0.02131 *
Comp4(-) - Comp1(-) == 0 -111.474     29.552  -3.772  0.00616 **
Comp4(+) - Comp1(-) == 0   -1.530     21.728  -0.070  1.00000
Comp5(-) - Comp1(-) == 0  -59.437     41.326  -1.438  0.89898
Comp5(+) - Comp1(-) == 0  -16.171     23.284  -0.694  0.99940
Comp2(-) - Comp1(+) == 0   12.373     29.356   0.421  0.99999
Comp2(+) - Comp1(+) == 0  -86.374     13.520  -6.389  < 0.001 ***
Comp3(-) - Comp1(+) == 0    5.290     27.098   0.195  1.00000
Comp3(+) - Comp1(+) == 0   70.159     15.278   4.592  < 0.001 ***
Comp4(-) - Comp1(+) == 0 -101.763     28.147  -3.615  0.01059 *
Comp4(+) - Comp1(+) == 0    8.181     19.775   0.414  0.99999
Comp5(-) - Comp1(+) == 0  -49.727     40.333  -1.233  0.95955
Comp5(+) - Comp1(+) == 0   -6.460     21.473  -0.301  1.00000
Comp2(+) - Comp2(-) == 0  -98.747     29.170  -3.385  0.02312 *
Comp3(-) - Comp2(-) == 0   -7.083     37.449  -0.189  1.00000
Comp3(+) - Comp2(-) == 0   57.786     30.026   1.925  0.61608
Comp4(-) - Comp2(-) == 0 -114.136     38.215  -2.987  0.07527 .
Comp4(+) - Comp2(-) == 0   -4.192     32.545  -0.129  1.00000
Comp5(-) - Comp2(-) == 0  -62.100     47.905  -1.296  0.94481
Comp5(+) - Comp2(-) == 0  -18.833     33.604  -0.560  0.99990
Comp3(-) - Comp2(+) == 0   91.664     26.896   3.408  0.02114 *
Comp3(+) - Comp2(+) == 0  156.533     14.918  10.493  < 0.001 ***
Comp4(-) - Comp2(+) == 0  -15.389     27.953  -0.551  0.99991
Comp4(+) - Comp2(+) == 0   94.555     19.498   4.850  < 0.001 ***
Comp5(-) - Comp2(+) == 0   36.647     40.198   0.912  0.99502
Comp5(+) - Comp2(+) == 0   79.914     21.218   3.766  0.00602 **
Comp3(+) - Comp3(-) == 0   64.869     27.822   2.332  0.33539
Comp4(-) - Comp3(-) == 0 -107.053     36.509  -2.932  0.08625 .
Comp4(+) - Comp3(-) == 0    2.891     30.523   0.095  1.00000
Comp5(-) - Comp3(-) == 0  -55.017     46.555  -1.182  0.96916
Comp5(+) - Comp3(-) == 0  -11.750     31.650  -0.371  1.00000
Comp4(-) - Comp3(+) == 0 -171.922     28.845  -5.960  < 0.001 ***
Comp4(+) - Comp3(+) == 0  -61.978     20.756  -2.986  0.07465 .
Comp5(-) - Comp3(+) == 0 -119.886     40.823  -2.937  0.08520 .
Comp5(+) - Comp3(+) == 0  -76.619     22.380  -3.424  0.02015 *
Comp4(+) - Comp4(-) == 0  109.944     31.458   3.495  0.01575 *
Comp5(-) - Comp4(-) == 0   52.036     47.174   1.103  0.98049
Comp5(+) - Comp4(-) == 0   95.303     32.553   2.928  0.08711 .
Comp5(-) - Comp4(+) == 0  -57.908     42.710  -1.356  0.92760
Comp5(+) - Comp4(+) == 0  -14.641     25.661  -0.571  0.99988
Comp5(+) - Comp5(-) == 0   43.267     43.522   0.994  0.99060
```

Spring climate balance

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  -25.316     17.662  -1.433    0.901
Comp2(-) - Comp1(-) == 0   14.540     32.719   0.444    1.000
```

Comp2(+) - Comp1(-) == 0	-20.535	17.308	-1.186	0.968	
Comp3(-) - Comp1(-) == 0	-48.527	30.427	-1.595	0.827	
Comp3(+) - Comp1(-) == 0	94.640	18.897	5.008	<0.01	***
Comp4(-) - Comp1(-) == 0	10.049	31.490	0.319	1.000	
Comp4(+) - Comp1(-) == 0	-13.860	23.153	-0.599	1.000	
Comp5(-) - Comp1(-) == 0	-4.460	44.036	-0.101	1.000	
Comp5(+) - Comp1(-) == 0	-42.384	24.811	-1.708	0.762	
Comp2(-) - Comp1(+) == 0	39.856	31.281	1.274	0.950	
Comp2(+) - Comp1(+) == 0	4.782	14.406	0.332	1.000	
Comp3(-) - Comp1(+) == 0	-23.211	28.875	-0.804	0.998	
Comp3(+) - Comp1(+) == 0	119.956	16.280	7.368	<0.01	***
Comp4(-) - Comp1(+) == 0	35.365	29.993	1.179	0.970	
Comp4(+) - Comp1(+) == 0	11.456	21.072	0.544	1.000	
Comp5(-) - Comp1(+) == 0	20.856	42.978	0.485	1.000	
Comp5(+) - Comp1(+) == 0	-17.068	22.881	-0.746	0.999	
Comp2(+) - Comp2(-) == 0	-35.074	31.083	-1.128	0.977	
Comp3(-) - Comp2(-) == 0	-63.067	39.905	-1.580	0.835	
Comp3(+) - Comp2(-) == 0	80.100	31.995	2.504	0.240	
Comp4(-) - Comp2(-) == 0	-4.491	40.721	-0.110	1.000	
Comp4(+) - Comp2(-) == 0	-28.400	34.679	-0.819	0.998	
Comp5(-) - Comp2(-) == 0	-19.000	51.046	-0.372	1.000	
Comp5(+) - Comp2(-) == 0	-56.924	35.807	-1.590	0.830	
Comp3(-) - Comp2(+) == 0	-27.993	28.660	-0.977	0.992	
Comp3(+) - Comp2(+) == 0	115.174	15.896	7.245	<0.01	***
Comp4(-) - Comp2(+) == 0	30.583	29.786	1.027	0.988	
Comp4(+) - Comp2(+) == 0	6.674	20.776	0.321	1.000	
Comp5(-) - Comp2(+) == 0	16.074	42.834	0.375	1.000	
Comp5(+) - Comp2(+) == 0	-21.850	22.610	-0.966	0.992	
Comp3(+) - Comp3(-) == 0	143.167	29.646	4.829	<0.01	***
Comp4(-) - Comp3(-) == 0	58.576	38.903	1.506	0.871	
Comp4(+) - Comp3(-) == 0	34.667	32.525	1.066	0.985	
Comp5(-) - Comp3(-) == 0	44.067	49.608	0.888	0.996	
Comp5(+) - Comp3(-) == 0	6.143	33.725	0.182	1.000	
Comp4(-) - Comp3(+) == 0	-84.591	30.736	-2.752	0.136	
Comp4(+) - Comp3(+) == 0	-108.500	22.117	-4.906	<0.01	***
Comp5(-) - Comp3(+) == 0	-99.100	43.500	-2.278	0.369	
Comp5(+) - Comp3(+) == 0	-137.024	23.848	-5.746	<0.01	***
Comp4(+) - Comp4(-) == 0	-23.909	33.521	-0.713	0.999	
Comp5(-) - Comp4(-) == 0	-14.509	50.267	-0.289	1.000	
Comp5(+) - Comp4(-) == 0	-52.433	34.687	-1.512	0.868	
Comp5(-) - Comp4(+) == 0	9.400	45.510	0.207	1.000	
Comp5(+) - Comp4(+) == 0	-28.524	27.344	-1.043	0.987	
Comp5(+) - Comp5(-) == 0	-37.924	46.376	-0.818	0.998	

Summer climate balance

Estimate Std. Error t value Pr(>|t|)

Comp1(+) - Comp1(-) == 0	-22.994	18.929	-1.215	0.9632	
Comp2(-) - Comp1(-) == 0	17.351	35.067	0.495	1.0000	
Comp2(+) - Comp1(-) == 0	25.089	18.551	1.352	0.9289	
Comp3(-) - Comp1(-) == 0	27.318	32.610	0.838	0.9974	
Comp3(+) - Comp1(-) == 0	-1.956	20.253	-0.097	1.0000	
Comp4(-) - Comp1(-) == 0	80.015	33.749	2.371	0.3120	
Comp4(+) - Comp1(-) == 0	-32.772	24.814	-1.321	0.9384	
Comp5(-) - Comp1(-) == 0	46.851	47.196	0.993	0.9907	
Comp5(+) - Comp1(-) == 0	-14.920	26.592	-0.561	0.9999	
Comp2(-) - Comp1(+) == 0	40.346	33.526	1.203	0.9654	
Comp2(+) - Comp1(+) == 0	48.084	15.440	3.114	0.0524	.
Comp3(-) - Comp1(+) == 0	50.312	30.947	1.626	0.8102	
Comp3(+) - Comp1(+) == 0	21.038	17.449	1.206	0.9650	

```
Comp4(-) - Comp1(+) == 0  103.009     32.145   3.205   0.0388 *
Comp4(+) - Comp1(+) == 0   -9.778     22.584  -0.433   1.0000
Comp5(-) - Comp1(+) == 0   69.846     46.062   1.516   0.8659
Comp5(+) - Comp1(+) == 0    8.074     24.523   0.329   1.0000
Comp2(+) - Comp2(-) == 0    7.738     33.314   0.232   1.0000
Comp3(-) - Comp2(-) == 0    9.967     42.768   0.233   1.0000
Comp3(+) - Comp2(-) == 0  -19.307     34.291  -0.563   0.9999
Comp4(-) - Comp2(-) == 0   62.664     43.643   1.436   0.9000
Comp4(+) - Comp2(-) == 0  -50.123     37.168  -1.349   0.9301
Comp5(-) - Comp2(-) == 0   29.500     54.709   0.539   0.9999
Comp5(+) - Comp2(-) == 0  -32.271     38.377  -0.841   0.9973
Comp3(-) - Comp2(+) == 0    2.228     30.717   0.073   1.0000
Comp3(+) - Comp2(+) == 0  -27.045     17.037  -1.587   0.8310
Comp4(-) - Comp2(+) == 0   54.925     31.923   1.721   0.7537
Comp4(+) - Comp2(+) == 0  -57.861     22.267  -2.598   0.1963
Comp5(-) - Comp2(+) == 0   21.762     45.908   0.474   1.0000
Comp5(+) - Comp2(+) == 0  -40.010     24.232  -1.651   0.7963
Comp3(+) - Comp3(-) == 0  -29.274     31.774  -0.921   0.9946
Comp4(-) - Comp3(-) == 0   52.697     41.694   1.264   0.9528
Comp4(+) - Comp3(-) == 0  -60.090     34.859  -1.724   0.7519
Comp5(-) - Comp3(-) == 0   19.533     53.168   0.367   1.0000
Comp5(+) - Comp3(-) == 0  -42.238     36.146  -1.169   0.9714
Comp4(-) - Comp3(+) == 0   81.971     32.942   2.488   0.2466
Comp4(+) - Comp3(+) == 0  -30.816     23.704  -1.300   0.9436
Comp5(-) - Comp3(+) == 0   48.807     46.622   1.047   0.9864
Comp5(+) - Comp3(+) == 0  -12.964     25.559  -0.507   1.0000
Comp4(+) - Comp4(-) == 0 -112.787     35.927  -3.139   0.0486 *
Comp5(-) - Comp4(-) == 0  -33.164     53.874  -0.616   0.9998
Comp5(+) - Comp4(-) == 0  -94.935     37.177  -2.554   0.2168
Comp5(-) - Comp4(+) == 0   79.623     48.776   1.632   0.8067
Comp5(+) - Comp4(+) == 0   17.852     29.306   0.609   0.9998
Comp5(+) - Comp5(-) == 0  -61.771     49.704  -1.243   0.9574
```

Autumn climate balance

```
                          Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  -40.3441    17.2915  -2.333   0.3352
Comp2(-) - Comp1(-) == 0    7.9837    32.0335   0.249   1.0000
Comp2(+) - Comp1(-) == 0 -103.2736    16.9457  -6.094    <0.01 ***
Comp3(-) - Comp1(-) == 0  -48.7829    29.7891  -1.638   0.8035
Comp3(+) - Comp1(-) == 0   21.1694    18.5008   1.144   0.9751
Comp4(-) - Comp1(-) == 0 -129.2981    30.8296  -4.194    <0.01 **
Comp4(+) - Comp1(-) == 0  -31.6547    22.6675  -1.396   0.9145
Comp5(-) - Comp1(-) == 0  -71.9163    43.1124  -1.668   0.7860
Comp5(+) - Comp1(-) == 0    0.3123    24.2911   0.013   1.0000
Comp2(-) - Comp1(+) == 0   48.3278    30.6254   1.578   0.8359
Comp2(+) - Comp1(+) == 0  -62.9295    14.1042  -4.462    <0.01 ***
Comp3(-) - Comp1(+) == 0   -8.4388    28.2695  -0.299   1.0000
Comp3(+) - Comp1(+) == 0   61.5136    15.9390   3.859    <0.01 **
Comp4(-) - Comp1(+) == 0  -88.9540    29.3638  -3.029   0.0660 .
Comp4(+) - Comp1(+) == 0    8.6894    20.6298   0.421   1.0000
Comp5(-) - Comp1(+) == 0  -31.5722    42.0767  -0.750   0.9989
Comp5(+) - Comp1(+) == 0   40.6564    22.4015   1.815   0.6919
Comp2(+) - Comp2(-) == 0 -111.2573    30.4315  -3.656    <0.01 **
Comp3(-) - Comp2(-) == 0  -56.7667    39.0680  -1.453   0.8933
Comp3(+) - Comp2(-) == 0   13.1857    31.3241   0.421   1.0000
Comp4(-) - Comp2(-) == 0 -137.2818    39.8671  -3.443   0.0191 *
Comp4(+) - Comp2(-) == 0  -39.6385    33.9520  -1.167   0.9716
Comp5(-) - Comp2(-) == 0  -79.9000    49.9760  -1.599   0.8253
Comp5(+) - Comp2(-) == 0   -7.6714    35.0568  -0.219   1.0000
```

```
Comp3(-) - Comp2(+) == 0   54.4906    28.0592   1.942   0.6034
Comp3(+) - Comp2(+) == 0  124.4430    15.5631   7.996    <0.01 ***
Comp4(-) - Comp2(+) == 0  -26.0245    29.1615  -0.892   0.9957
Comp4(+) - Comp2(+) == 0   71.6188    20.3408   3.521   0.0146 *
Comp5(-) - Comp2(+) == 0   31.3573    41.9358   0.748   0.9989
Comp5(+) - Comp2(+) == 0  103.5859    22.1357   4.680    <0.01 ***
Comp3(+) - Comp3(-) == 0   69.9524    29.0249   2.410   0.2895
Comp4(-) - Comp3(-) == 0  -80.5152    38.0871  -2.114   0.4807
Comp4(+) - Comp3(-) == 0   17.1282    31.8431   0.538   0.9999
Comp5(-) - Comp3(-) == 0  -23.1333    48.5679  -0.476   1.0000
Comp5(+) - Comp3(-) == 0   49.0952    33.0185   1.487   0.8793
Comp4(-) - Comp3(+) == 0 -150.4675    30.0918  -5.000    <0.01 ***
Comp4(+) - Comp3(+) == 0  -52.8242    21.6535  -2.440   0.2738
Comp5(-) - Comp3(+) == 0  -93.0857    42.5880  -2.186   0.4310
Comp5(+) - Comp3(+) == 0  -20.8571    23.3476  -0.893   0.9957
Comp4(+) - Comp4(-) == 0   97.6434    32.8185   2.975   0.0772 .
Comp5(-) - Comp4(-) == 0   57.3818    49.2130   1.166   0.9718
Comp5(+) - Comp4(-) == 0  129.6104    33.9602   3.817    <0.01 **
Comp5(-) - Comp4(+) == 0  -40.2615    44.5564  -0.904   0.9953
Comp5(+) - Comp4(+) == 0   31.9670    26.7703   1.194   0.9670
Comp5(+) - Comp5(-) == 0   72.2286    45.4039   1.591   0.8289
```

Winter NDVI

```
                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0   -3.726     18.829  -0.198   1.0000
Comp2(-) - Comp1(-) == 0  -59.753     34.882  -1.713   0.7587
Comp2(+) - Comp1(-) == 0  -39.223     18.453  -2.126   0.4718
Comp3(-) - Comp1(-) == 0  -15.870     32.438  -0.489   1.0000
Comp3(+) - Comp1(-) == 0  -41.078     20.146  -2.039   0.5336
Comp4(-) - Comp1(-) == 0  -62.135     33.571  -1.851   0.6675
Comp4(+) - Comp1(-) == 0    6.354     24.683   0.257   1.0000
Comp5(-) - Comp1(-) == 0 -112.753     46.946  -2.402   0.2952
Comp5(+) - Comp1(-) == 0   35.999     26.451   1.361   0.9263
Comp2(-) - Comp1(+) == 0  -56.028     33.349  -1.680   0.7788
Comp2(+) - Comp1(+) == 0  -35.498     15.358  -2.311   0.3484
Comp3(-) - Comp1(+) == 0  -12.145     30.783  -0.395   1.0000
Comp3(+) - Comp1(+) == 0  -37.353     17.356  -2.152   0.4541
Comp4(-) - Comp1(+) == 0  -58.410     31.975  -1.827   0.6845
Comp4(+) - Comp1(+) == 0   10.080     22.464   0.449   1.0000
Comp5(-) - Comp1(+) == 0 -109.028     45.819  -2.380   0.3074
Comp5(+) - Comp1(+) == 0   39.725     24.394   1.628   0.8087
Comp2(+) - Comp2(-) == 0   20.530     33.138   0.620   0.9998
Comp3(-) - Comp2(-) == 0   43.883     42.542   1.032   0.9878
Comp3(+) - Comp2(-) == 0   18.675     34.110   0.547   0.9999
Comp4(-) - Comp2(-) == 0   -2.382     43.412  -0.055   1.0000
Comp4(+) - Comp2(-) == 0   66.108     36.971   1.788   0.7105
Comp5(-) - Comp2(-) == 0  -53.000     54.420  -0.974   0.9919
Comp5(+) - Comp2(-) == 0   95.752     38.174   2.508   0.2375
Comp3(-) - Comp2(+) == 0   23.353     30.555   0.764   0.9987
Comp3(+) - Comp2(+) == 0   -1.855     16.947  -0.109   1.0000
Comp4(-) - Comp2(+) == 0  -22.912     31.755  -0.722   0.9992
Comp4(+) - Comp2(+) == 0   45.577     22.150   2.058   0.5198
Comp5(-) - Comp2(+) == 0  -73.530     45.665  -1.610   0.8191
Comp5(+) - Comp2(+) == 0   75.222     24.104   3.121   0.0514 .
Comp3(+) - Comp3(-) == 0  -25.208     31.606  -0.798   0.9982
Comp4(-) - Comp3(-) == 0  -46.265     41.474  -1.116   0.9790
Comp4(+) - Comp3(-) == 0   22.224     34.675   0.641   0.9997
Comp5(-) - Comp3(-) == 0  -96.883     52.887  -1.832   0.6805
Comp5(+) - Comp3(-) == 0   51.869     35.955   1.443   0.8973
```

```
Comp4(-) - Comp3(+) == 0  -21.057     32.768  -0.643   0.9997
Comp4(+) - Comp3(+) == 0   47.433     23.579   2.012   0.5536
Comp5(-) - Comp3(+) == 0  -71.675     46.375  -1.546   0.8519
Comp5(+) - Comp3(+) == 0   77.077     25.424   3.032   0.0663 .
Comp4(+) - Comp4(-) == 0   68.490     35.737   1.916   0.6215
Comp5(-) - Comp4(-) == 0  -50.618     53.590  -0.945   0.9935
Comp5(+) - Comp4(-) == 0   98.134     36.980   2.654   0.1728
Comp5(-) - Comp4(+) == 0 -119.108     48.519  -2.455   0.2652
Comp5(+) - Comp4(+) == 0   29.645     29.151   1.017   0.9889
Comp5(+) - Comp5(-) == 0  148.752     49.442   3.009   0.0698 .
```

Spring NDVI

```
Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  1.638e+01  1.900e+01   0.862   0.9967
Comp2(-) - Comp1(-) == 0 -3.098e+01  3.520e+01  -0.880   0.9962
Comp2(+) - Comp1(-) == 0 -1.688e+01  1.862e+01  -0.907   0.9952
Comp3(-) - Comp1(-) == 0 -3.165e+00  3.274e+01  -0.097   1.0000
Comp3(+) - Comp1(-) == 0 -1.017e+01  2.033e+01  -0.500   1.0000
Comp4(-) - Comp1(-) == 0 -4.595e+01  3.388e+01  -1.356   0.9278
Comp4(+) - Comp1(-) == 0  1.638e+01  2.491e+01   0.658   0.9996
Comp5(-) - Comp1(-) == 0 -1.066e+02  4.738e+01  -2.250   0.3880
Comp5(+) - Comp1(-) == 0  4.789e+01  2.670e+01   1.794   0.7064
Comp2(-) - Comp1(+) == 0 -4.736e+01  3.366e+01  -1.407   0.9106
Comp2(+) - Comp1(+) == 0 -3.327e+01  1.550e+01  -2.146   0.4572
Comp3(-) - Comp1(+) == 0 -1.955e+01  3.107e+01  -0.629   0.9997
Comp3(+) - Comp1(+) == 0 -2.655e+01  1.752e+01  -1.516   0.8662
Comp4(-) - Comp1(+) == 0 -6.233e+01  3.227e+01  -1.931   0.6108
Comp4(+) - Comp1(+) == 0 -4.869e-04  2.267e+01   0.000   1.0000
Comp5(-) - Comp1(+) == 0 -1.230e+02  4.624e+01  -2.659   0.1708
Comp5(+) - Comp1(+) == 0  3.151e+01  2.462e+01   1.280   0.9488
Comp2(+) - Comp2(-) == 0  1.410e+01  3.344e+01   0.422   1.0000
Comp3(-) - Comp2(-) == 0  2.782e+01  4.293e+01   0.648   0.9997
Comp3(+) - Comp2(-) == 0  2.081e+01  3.442e+01   0.605   0.9998
Comp4(-) - Comp2(-) == 0 -1.496e+01  4.381e+01  -0.342   1.0000
Comp4(+) - Comp2(-) == 0  4.736e+01  3.731e+01   1.269   0.9514
Comp5(-) - Comp2(-) == 0 -7.560e+01  5.492e+01  -1.376   0.9212
Comp5(+) - Comp2(-) == 0  7.888e+01  3.853e+01   2.047   0.5289
Comp3(-) - Comp2(+) == 0  1.372e+01  3.084e+01   0.445   1.0000
Comp3(+) - Comp2(+) == 0  6.714e+00  1.710e+01   0.393   1.0000
Comp4(-) - Comp2(+) == 0 -2.906e+01  3.205e+01  -0.907   0.9952
Comp4(+) - Comp2(+) == 0  3.326e+01  2.235e+01   1.488   0.8786
Comp5(-) - Comp2(+) == 0 -8.970e+01  4.609e+01  -1.946   0.6003
Comp5(+) - Comp2(+) == 0  6.478e+01  2.433e+01   2.663   0.1700
Comp3(+) - Comp3(-) == 0 -7.006e+00  3.190e+01  -0.220   1.0000
Comp4(-) - Comp3(-) == 0 -4.278e+01  4.186e+01  -1.022   0.9885
Comp4(+) - Comp3(-) == 0  1.954e+01  3.499e+01   0.559   0.9999
Comp5(-) - Comp3(-) == 0 -1.034e+02  5.337e+01  -1.938   0.6067
Comp5(+) - Comp3(-) == 0  5.106e+01  3.629e+01   1.407   0.9106
Comp4(-) - Comp3(+) == 0 -3.577e+01  3.307e+01  -1.082   0.9829
Comp4(+) - Comp3(+) == 0  2.655e+01  2.380e+01   1.116   0.9789
Comp5(-) - Comp3(+) == 0 -9.641e+01  4.680e+01  -2.060   0.5188
Comp5(+) - Comp3(+) == 0  5.807e+01  2.566e+01   2.263   0.3796
Comp4(+) - Comp4(-) == 0  6.233e+01  3.607e+01   1.728   0.7494
Comp5(-) - Comp4(-) == 0 -6.064e+01  5.408e+01  -1.121   0.9783
Comp5(+) - Comp4(-) == 0  9.384e+01  3.732e+01   2.514   0.2346
Comp5(-) - Comp4(+) == 0 -1.230e+02  4.897e+01  -2.511   0.2356
Comp5(+) - Comp4(+) == 0  3.151e+01  2.942e+01   1.071   0.9840
Comp5(+) - Comp5(-) == 0  1.545e+02  4.990e+01   3.096   0.0546 .
```

Summer NDVI

```
Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  49.5602    19.1081   2.594    0.199
Comp2(-) - Comp1(-) == 0  55.7349    35.3989   1.574    0.838
Comp2(+) - Comp1(-) == 0  49.9506    18.7260   2.667    0.168
Comp3(-) - Comp1(-) == 0  16.2849    32.9187   0.495    1.000
Comp3(+) - Comp1(-) == 0  73.8385    20.4445   3.612    0.011 *
Comp4(-) - Comp1(-) == 0  53.4440    34.0685   1.569    0.840
Comp4(+) - Comp1(-) == 0  52.1118    25.0490   2.080    0.504
Comp5(-) - Comp1(-) == 0   6.9349    47.6417   0.146    1.000
Comp5(+) - Comp1(-) == 0  46.5825    26.8431   1.735    0.745
Comp2(-) - Comp1(+) == 0   6.1747    33.8429   0.182    1.000
Comp2(+) - Comp1(+) == 0   0.3904    15.5859   0.025    1.000
Comp3(-) - Comp1(+) == 0 -33.2753    31.2394  -1.065    0.985
Comp3(+) - Comp1(+) == 0  24.2783    17.6135   1.378    0.921
Comp4(-) - Comp1(+) == 0   3.8838    32.4487   0.120    1.000
Comp4(+) - Comp1(+) == 0   2.5516    22.7972   0.112    1.000
Comp5(-) - Comp1(+) == 0 -42.6253    46.4972  -0.917    0.995
Comp5(+) - Comp1(+) == 0  -2.9777    24.7550  -0.120    1.000
Comp2(+) - Comp2(-) == 0  -5.7843    33.6286  -0.172    1.000
Comp3(-) - Comp2(-) == 0 -39.4500    43.1725  -0.914    0.995
Comp3(+) - Comp2(-) == 0  18.1036    34.6150   0.523    1.000
Comp4(-) - Comp2(-) == 0  -2.2909    44.0554  -0.052    1.000
Comp4(+) - Comp2(-) == 0  -3.6231    37.5190  -0.097    1.000
Comp5(-) - Comp2(-) == 0 -48.8000    55.2264  -0.884    0.996
Comp5(+) - Comp2(-) == 0  -9.1524    38.7398  -0.236    1.000
Comp3(-) - Comp2(+) == 0 -33.6657    31.0071  -1.086    0.983
Comp3(+) - Comp2(+) == 0  23.8878    17.1981   1.389    0.917
Comp4(-) - Comp2(+) == 0   3.4934    32.2251   0.108    1.000
Comp4(+) - Comp2(+) == 0   2.1612    22.4778   0.096    1.000
Comp5(-) - Comp2(+) == 0 -43.0157    46.3415  -0.928    0.994
Comp5(+) - Comp2(+) == 0  -3.3681    24.4612  -0.138    1.000
Comp3(+) - Comp3(-) == 0  57.5536    32.0742   1.794    0.707
Comp4(-) - Comp3(-) == 0  37.1591    42.0885   0.883    0.996
Comp4(+) - Comp3(-) == 0  35.8269    35.1885   1.018    0.989
Comp5(-) - Comp3(-) == 0  -9.3500    53.6704  -0.174    1.000
Comp5(+) - Comp3(-) == 0  30.2976    36.4874   0.830    0.998
Comp4(-) - Comp3(+) == 0 -20.3945    33.2532  -0.613    1.000
Comp4(+) - Comp3(+) == 0 -21.7266    23.9283  -0.908    0.995
Comp5(-) - Comp3(+) == 0 -66.9036    47.0622  -1.422    0.906
Comp5(+) - Comp3(+) == 0 -27.2560    25.8005  -1.056    0.986
Comp4(+) - Comp4(-) == 0  -1.3322    36.2664  -0.037    1.000
Comp5(-) - Comp4(-) == 0 -46.5091    54.3832  -0.855    0.997
Comp5(+) - Comp4(-) == 0  -6.8615    37.5280  -0.183    1.000
Comp5(-) - Comp4(+) == 0 -45.1769    49.2374  -0.918    0.995
Comp5(+) - Comp4(+) == 0  -5.5293    29.5828  -0.187    1.000
Comp5(+) - Comp5(-) == 0  39.6476    50.1739   0.790    0.998
```

Autumn NDVI

```
                          Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  37.42685   19.12369   1.957    0.594
Comp2(-) - Comp1(-) == 0  10.12558   35.42772   0.286    1.000
Comp2(+) - Comp1(-) == 0  10.10086   18.74119   0.539    1.000
Comp3(-) - Comp1(-) == 0  11.32558   32.94549   0.344    1.000
Comp3(+) - Comp1(-) == 0  39.84344   20.46109   1.947    0.600
Comp4(-) - Comp1(-) == 0  -5.03805   34.09619  -0.148    1.000
Comp4(+) - Comp1(-) == 0  44.09481   25.06935   1.759    0.730
Comp5(-) - Comp1(-) == 0 -55.47442   47.68051  -1.163    0.972
```

Comp5(+) - Comp1(-) == 0	59.46844	26.86492	2.214	0.411
Comp2(-) - Comp1(+) == 0	-27.30127	33.87045	-0.806	0.998
Comp2(+) - Comp1(+) == 0	-27.32598	15.59860	-1.752	0.735
Comp3(-) - Comp1(+) == 0	-26.10127	31.26483	-0.835	0.997
Comp3(+) - Comp1(+) == 0	2.41659	17.62783	0.137	1.000
Comp4(-) - Comp1(+) == 0	-42.46490	32.47513	-1.308	0.942
Comp4(+) - Comp1(+) == 0	6.66796	22.81571	0.292	1.000
Comp5(-) - Comp1(+) == 0	-92.90127	46.53509	-1.996	0.564
Comp5(+) - Comp1(+) == 0	22.04159	24.77515	0.890	0.996
Comp2(+) - Comp2(-) == 0	-0.02472	33.65597	-0.001	1.000
Comp3(-) - Comp2(-) == 0	1.20000	43.20761	0.028	1.000
Comp3(+) - Comp2(-) == 0	29.71786	34.64316	0.858	0.997
Comp4(-) - Comp2(-) == 0	-15.16364	44.09129	-0.344	1.000
Comp4(+) - Comp2(-) == 0	33.96923	37.54949	0.905	0.995
Comp5(-) - Comp2(-) == 0	-65.60000	55.27136	-1.187	0.968
Comp5(+) - Comp2(-) == 0	49.34286	38.77133	1.273	0.951
Comp3(-) - Comp2(+) == 0	1.22472	31.03234	0.039	1.000
Comp3(+) - Comp2(+) == 0	29.74258	17.21213	1.728	0.750
Comp4(-) - Comp2(+) == 0	-15.13892	32.25137	-0.469	1.000
Comp4(+) - Comp2(+) == 0	33.99395	22.49608	1.511	0.868
Comp5(-) - Comp2(+) == 0	-65.57528	46.37922	-1.414	0.908
Comp5(+) - Comp2(+) == 0	49.36758	24.48112	2.017	0.549
Comp3(+) - Comp3(-) == 0	28.51786	32.10032	0.888	0.996
Comp4(-) - Comp3(-) == 0	-16.36364	42.12273	-0.388	1.000
Comp4(+) - Comp3(-) == 0	32.76923	35.21713	0.930	0.994
Comp5(-) - Comp3(-) == 0	-66.80000	53.71411	-1.244	0.957
Comp5(+) - Comp3(-) == 0	48.14286	36.51709	1.318	0.939
Comp4(-) - Comp3(+) == 0	-44.88149	33.28025	-1.349	0.930
Comp4(+) - Comp3(+) == 0	4.25137	23.94781	0.178	1.000
Comp5(-) - Comp3(+) == 0	-95.31786	47.10049	-2.024	0.544
Comp5(+) - Comp3(+) == 0	19.62500	25.82148	0.760	0.999
Comp4(+) - Comp4(-) == 0	49.13287	36.29588	1.354	0.929
Comp5(-) - Comp4(-) == 0	-50.43636	54.42747	-0.927	0.994
Comp5(+) - Comp4(-) == 0	64.50649	37.55852	1.717	0.756
Comp5(-) - Comp4(+) == 0	-99.56923	49.27750	-2.021	0.547
Comp5(+) - Comp4(+) == 0	15.37363	29.60684	0.519	1.000
Comp5(+) - Comp5(-) == 0	114.94286	50.21478	2.289	0.362

Average day of the year recording the maximum NDVI

	Estimate	Std. Error	t value	Pr(>|t|)
Comp1(+) - Comp1(-) == 0	-0.21666	0.46668	-0.464	1.0000
Comp2(-) - Comp1(-) == 0	-1.39767	0.86455	-1.617	0.8151
Comp2(+) - Comp1(-) == 0	-0.56284	0.45735	-1.231	0.9600
Comp3(-) - Comp1(-) == 0	-0.94767	0.80398	-1.179	0.9697
Comp3(+) - Comp1(-) == 0	-0.41196	0.49932	-0.825	0.9977
Comp4(-) - Comp1(-) == 0	-0.06131	0.83206	-0.074	1.0000
Comp4(+) - Comp1(-) == 0	-0.15921	0.61177	-0.260	1.0000
Comp5(-) - Comp1(-) == 0	-0.69767	1.16356	-0.600	0.9998
Comp5(+) - Comp1(-) == 0	1.30233	0.65559	1.986	0.5715
Comp2(-) - Comp1(+) == 0	-1.18101	0.82655	-1.429	0.9027
Comp2(+) - Comp1(+) == 0	-0.34618	0.38066	-0.909	0.9951
Comp3(-) - Comp1(+) == 0	-0.73101	0.76296	-0.958	0.9928
Comp3(+) - Comp1(+) == 0	-0.19530	0.43018	-0.454	1.0000
Comp4(-) - Comp1(+) == 0	0.15535	0.79250	0.196	1.0000
Comp4(+) - Comp1(+) == 0	0.05745	0.55678	0.103	1.0000
Comp5(-) - Comp1(+) == 0	-0.48101	1.13561	-0.424	1.0000
Comp5(+) - Comp1(+) == 0	1.51899	0.60459	2.512	0.2356
Comp2(+) - Comp2(-) == 0	0.83483	0.82131	1.016	0.9890
Comp3(-) - Comp2(-) == 0	0.45000	1.05441	0.427	1.0000

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Comp3(+) - Comp2(-) == 0  0.98571    0.84541   1.166   0.9717
Comp4(-) - Comp2(-) == 0  1.33636    1.07597   1.242   0.9576
Comp4(+) - Comp2(-) == 0  1.23846    0.91633   1.352   0.9292
Comp5(-) - Comp2(-) == 0  0.70000    1.34880   0.519   0.9999
Comp5(+) - Comp2(-) == 0  2.70000    0.94615   2.854   0.1060
Comp3(-) - Comp2(+) == 0 -0.38483    0.75729  -0.508   1.0000
Comp3(+) - Comp2(+) == 0  0.15088    0.42003   0.359   1.0000
Comp4(-) - Comp2(+) == 0  0.50153    0.78704   0.637   0.9997
Comp4(+) - Comp2(+) == 0  0.40363    0.54898   0.735   0.9991
Comp5(-) - Comp2(+) == 0 -0.13483    1.13180  -0.119   1.0000
Comp5(+) - Comp2(+) == 0  1.86517    0.59742   3.122   0.0506 .
Comp3(+) - Comp3(-) == 0  0.53571    0.78335   0.684   0.9995
Comp4(-) - Comp3(-) == 0  0.88636    1.02793   0.862   0.9967
Comp4(+) - Comp3(-) == 0  0.78846    0.85941   0.917   0.9948
Comp5(-) - Comp3(-) == 0  0.25000    1.31080   0.191   1.0000
Comp5(+) - Comp3(-) == 0  2.25000    0.89114   2.525   0.2292
Comp4(-) - Comp3(+) == 0  0.35065    0.81215   0.432   1.0000
Comp4(+) - Comp3(+) == 0  0.25275    0.58440   0.432   1.0000
Comp5(-) - Comp3(+) == 0 -0.28571    1.14940  -0.249   1.0000
Comp5(+) - Comp3(+) == 0  1.71429    0.63013   2.721   0.1476
Comp4(+) - Comp4(-) == 0 -0.09790    0.88574  -0.111   1.0000
Comp5(-) - Comp4(-) == 0 -0.63636    1.32821  -0.479   1.0000
Comp5(+) - Comp4(-) == 0  1.36364    0.91655   1.488   0.8788
Comp5(-) - Comp4(+) == 0 -0.53846    1.20253  -0.448   1.0000
Comp5(+) - Comp4(+) == 0  1.46154    0.72250   2.023   0.5455
Comp5(+) - Comp5(-) == 0  2.00000    1.22540   1.632   0.8064
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Average day of the year recording the green up

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                         Estimate Std. Error t value Pr(>|t|)
Comp1(+) - Comp1(-) == 0  -2.3156     2.9959  -0.773    0.999
Comp2(-) - Comp1(-) == 0  -5.8814     5.5502  -1.060    0.985
Comp2(+) - Comp1(-) == 0  -1.7275     2.9360  -0.588    1.000
Comp3(-) - Comp1(-) == 0   0.8353     5.1613   0.162    1.000
Comp3(+) - Comp1(-) == 0  -0.8850     3.2055  -0.276    1.000
Comp4(-) - Comp1(-) == 0   1.9641     5.3416   0.368    1.000
Comp4(+) - Comp1(-) == 0  -5.4660     3.9274  -1.392    0.916
Comp5(-) - Comp1(-) == 0  -0.1814     7.4697  -0.024    1.000
Comp5(+) - Comp1(-) == 0   0.5615     4.2087   0.133    1.000
Comp2(-) - Comp1(+) == 0  -3.5658     5.3062  -0.672    1.000
Comp2(+) - Comp1(+) == 0   0.5881     2.4437   0.241    1.000
Comp3(-) - Comp1(+) == 0   3.1508     4.8980   0.643    1.000
Comp3(+) - Comp1(+) == 0   1.4306     2.7616   0.518    1.000
Comp4(-) - Comp1(+) == 0   4.2796     5.0876   0.841    0.997
Comp4(+) - Comp1(+) == 0  -3.1504     3.5743  -0.881    0.996
Comp5(-) - Comp1(+) == 0   2.1342     7.2903   0.293    1.000
Comp5(+) - Comp1(+) == 0   2.8770     3.8813   0.741    0.999
Comp2(+) - Comp2(-) == 0   4.1539     5.2726   0.788    0.998
Comp3(-) - Comp2(-) == 0   6.7167     6.7690   0.992    0.991
Comp3(+) - Comp2(-) == 0   4.9964     5.4272   0.921    0.995
Comp4(-) - Comp2(-) == 0   7.8455     6.9074   1.136    0.976
Comp4(+) - Comp2(-) == 0   0.4154     5.8826   0.071    1.000
Comp5(-) - Comp2(-) == 0   5.7000     8.6589   0.658    1.000
Comp5(+) - Comp2(-) == 0   6.4429     6.0740   1.061    0.985
Comp3(-) - Comp2(+) == 0   2.5627     4.8616   0.527    1.000
Comp3(+) - Comp2(+) == 0   0.8425     2.6965   0.312    1.000
Comp4(-) - Comp2(+) == 0   3.6915     5.0525   0.731    0.999
Comp4(+) - Comp2(+) == 0  -3.7385     3.5243  -1.061    0.985
Comp5(-) - Comp2(+) == 0   1.5461     7.2658   0.213    1.000
Comp5(+) - Comp2(+) == 0   2.2889     3.8352   0.597    1.000
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Comp3(+) - Comp3(-) == 0	-1.7202	5.0289	-0.342	1.000
Comp4(-) - Comp3(-) == 0	1.1288	6.5990	0.171	1.000
Comp4(+) - Comp3(-) == 0	-6.3013	5.5172	-1.142	0.975
Comp5(-) - Comp3(-) == 0	-1.0167	8.4149	-0.121	1.000
Comp5(+) - Comp3(-) == 0	-0.2738	5.7208	-0.048	1.000
Comp4(-) - Comp3(+) == 0	2.8490	5.2137	0.546	1.000
Comp4(+) - Comp3(+) == 0	-4.5810	3.7517	-1.221	0.962
Comp5(-) - Comp3(+) == 0	0.7036	7.3788	0.095	1.000
Comp5(+) - Comp3(+) == 0	1.4464	4.0452	0.358	1.000
Comp4(+) - Comp4(-) == 0	-7.4301	5.6862	-1.307	0.942
Comp5(-) - Comp4(-) == 0	-2.1455	8.5267	-0.252	1.000
Comp5(+) - Comp4(-) == 0	-1.4026	5.8840	-0.238	1.000
Comp5(-) - Comp4(+) == 0	5.2846	7.7199	0.685	0.999
Comp5(+) - Comp4(+) == 0	6.0275	4.6382	1.300	0.944
Comp5(+) - Comp5(-) == 0	0.7429	7.8667	0.094	1.000

Soil water capacity

	Estimate	Std. Error	t value	Pr(>|t|)
Comp1(+) - Comp1(-) == 0	7.847	19.116	0.410	1.000
Comp2(-) - Comp1(-) == 0	-9.098	35.414	-0.257	1.000
Comp2(+) - Comp1(-) == 0	-13.316	18.734	-0.711	0.999
Comp3(-) - Comp1(-) == 0	-11.114	32.932	-0.337	1.000
Comp3(+) - Comp1(-) == 0	34.409	20.453	1.682	0.778
Comp4(-) - Comp1(-) == 0	-46.334	34.083	-1.359	0.927
Comp4(+) - Comp1(-) == 0	21.841	25.059	0.872	0.996
Comp5(-) - Comp1(-) == 0	62.102	47.661	1.303	0.943
Comp5(+) - Comp1(-) == 0	-24.745	26.854	-0.921	0.995
Comp2(-) - Comp1(+) == 0	-16.944	33.857	-0.500	1.000
Comp2(+) - Comp1(+) == 0	-21.162	15.592	-1.357	0.927
Comp3(-) - Comp1(+) == 0	-18.961	31.252	-0.607	1.000
Comp3(+) - Comp1(+) == 0	26.563	17.621	1.507	0.870
Comp4(-) - Comp1(+) == 0	-54.181	32.462	-1.669	0.785
Comp4(+) - Comp1(+) == 0	13.994	22.807	0.614	1.000
Comp5(-) - Comp1(+) == 0	54.256	46.517	1.166	0.972
Comp5(+) - Comp1(+) == 0	-32.592	24.765	-1.316	0.940
Comp2(+) - Comp2(-) == 0	-4.218	33.643	-0.125	1.000
Comp3(-) - Comp2(-) == 0	-2.017	43.190	-0.047	1.000
Comp3(+) - Comp2(-) == 0	43.507	34.629	1.256	0.954
Comp4(-) - Comp2(-) == 0	-37.236	44.074	-0.845	0.997
Comp4(+) - Comp2(-) == 0	30.938	37.535	0.824	0.998
Comp5(-) - Comp2(-) == 0	71.200	55.249	1.289	0.947
Comp5(+) - Comp2(-) == 0	-15.648	38.756	-0.404	1.000
Comp3(-) - Comp2(+) == 0	2.201	31.020	0.071	1.000
Comp3(+) - Comp2(+) == 0	47.725	17.205	2.774	0.130
Comp4(-) - Comp2(+) == 0	-33.018	32.238	-1.024	0.988
Comp4(+) - Comp2(+) == 0	35.156	22.487	1.563	0.843
Comp5(-) - Comp2(+) == 0	75.418	46.361	1.627	0.809
Comp5(+) - Comp2(+) == 0	-11.430	24.471	-0.467	1.000
Comp3(+) - Comp3(-) == 0	45.524	32.088	1.419	0.906
Comp4(-) - Comp3(-) == 0	-35.220	42.106	-0.836	0.997
Comp4(+) - Comp3(-) == 0	32.955	35.203	0.936	0.994
Comp5(-) - Comp3(-) == 0	73.217	53.693	1.364	0.925
Comp5(+) - Comp3(-) == 0	-13.631	36.503	-0.373	1.000
Comp4(-) - Comp3(+) == 0	-80.744	33.267	-2.427	0.280
Comp4(+) - Comp3(+) == 0	-12.569	23.938	-0.525	1.000
Comp5(-) - Comp3(+) == 0	27.693	47.082	0.588	1.000
Comp5(+) - Comp3(+) == 0	-59.155	25.811	-2.292	0.360
Comp4(+) - Comp4(-) == 0	68.175	36.281	1.879	0.648
Comp5(-) - Comp4(-) == 0	108.436	54.406	1.993	0.567

Comp5(+) - Comp4(-) == 0	21.589	37.544	0.575	1.000
Comp5(-) - Comp4(+) == 0	40.262	49.258	0.817	0.998
Comp5(+) - Comp4(+) == 0	-46.586	29.595	-1.574	0.838
Comp5(+) - Comp5(-) == 0	-86.848	50.195	-1.730	0.748