

Assignment: MODULARITY

Name: Anahi Quezada

Date: 10/14/2024

** Main code, functions, maps, histograms and pdfs are uploaded in my GitHub repository.

1. Can you see a warming trend with these data? Can you see a trend toward greater or lesser precipitation over the period (1950-2008)?

✓ Temperature

Speaking about the visual results coming from the maps and the histogram, I can see there are more positive slopes, this can reflect that there is a clear trend to warm values, specifically this shows the climate change has been developing in the 1950-2008 period.

About specific examples where the data shows these warmer slopes are the states" Montana, North Dakota, Minnesota and Arizona. This states as it's shown in the map contain some yellow points that reflect the 0.10 temperature slopes.

✓ Precipitation

The most repeated values here are in the range (0.00-0.1) precipitation slopes. To me, there is not a clear trend that can relate with climate change, but from between 0.15 until 0.4, there is a strong decrease in the presence of precipitation.

As is presented in the "Map of Precipitation Slopes", the states that have more than 40 measurements are Ohio, Tennessee, and Alabama. For these states and considering the colors I can conclude that Tennessee has more negative values of precipitation, this way this state would have experienced periods of drought. And Alabama has some points in purple reflecting the abundance of precipitation.

Interpretation:

I can conclude that both variables present a change in the normal dynamics, this led to the decision that in this period (1950-2008) we have witnessed climate change, with specific examples such as an increase in temperature and others with a lack of precipitation. At an environmental level, this can mean prolonged periods of drought, which alter the seasons and the ecosystems and behavior of animals.