

Abstract

Climate change is a pressing issue, and regional studies play an important part in understanding the impact of global climate change. This project explored the spatial and temporal patterns apparent in temperature records from 1935 to 2014 using homogenized station data from 66 stations in Southern California. Using Hurst Exponent, an index used to explore the persistence of trends in longitudinal data, the strength of the increasing temperature trend observed at every station was evaluated. Hurst Exponent values were calculated for the high, mean, and low temperature series for both the summer and winter 3-month period. The spatial distribution of each of the six Hurst values was examined with respect to location, elevation, aspect, land use, and population density of each station using Microsoft Excel and ArcGIS. Results show that there is persistence in the increase of temperature at all stations beginning around 1980, though the strength of this persistence varies. Winter High temperature persistence is strongest in coastal areas and weaker in the inland mountains as shown by the hot spot analysis.