

Analysis of the effect of CO₂ Concentration on temperature and weather patterns

Abstract

Carbon dioxide (CO₂) is one of the three most important greenhouse gases on Earth, along with methane and water vapor. We will monitor the data from Mauna Loa Observatory. As it is an atmospheric baseline station in Hawaii having the oldest continuous record of atmospheric carbon dioxide measurements. We analyze and compare the carbon concentration observed over time and how will they affect water and food supply. Extracting the data from an independent organization (NOAA) National Oceanic and Atmospheric Administration to quantify the trends. By applying the linear regression model to our dataset, we get to understand that there is a linear relationship with the rise of CO₂ concentration with time. This result gives the R-squared value of 0.9824 which explains that there is a 98% of change with CO₂ concentration concerning time. The six warmest years in the NOAA record all occur in the past six years, and the 10 warmest years are all in the 21st century. Growth rates of the greenhouse gases driving global warming are increasing, and not declining. Therefore, Monitoring the concentration of these gases in the atmosphere is an extremely important matter in the 21st century.