World Academy of Science, Engineering and Technology
International Journal of Environmental and Ecological Engineering
Vol:9, No:12, 2015

A Statistical Analysis on Relationship between Temperature Variations with Latitude and Altitude regarding Total Amount of Atmospheric Carbon Dioxide in Iran

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Abstract : Nowadays, carbon dioxide which is produced by human activities is considered as the main effective factor in the global warming occurrence. Regarding to the role of CO2 and its ability in trapping the heat, the main objective of this research is study the effect of atmospheric CO2 (which is recorded in Manaloa) on variations of temperature parameters (daily mean temperature, minimum temperature and maximum temperature) in 5 meteorological stations in Iran which were selected according to the latitude and altitude in 40 years statistical period. Firstly, the trend of temperature parameters was studied by Regression and none-graphical Man-Kendal methods. Then, relation between temperature variations and CO2 were studied by Correlation technique. Also, the impact of CO2 amount on temperature in different atmospheric levels (850 and 500 hpa) was analyzed. The results illustrated that correlation coefficient between temperature variations and CO2 in low latitudes and high altitudes is more significant rather than other regions. it is important to note that altitude as the one of the main geographic factor has limitation in affecting the temperature variations, so that correlation coefficient between these two parameters in 850 hpa (r=0.86) is more significant than 500 hpa (r = 0.62).

Keywords : altitude, atmospheric carbon dioxide, latitude, temperature variations
Conference Title : ICCCGW 2015 : International Conference on Climate Change and Global Warming
Conference Location : Melbourne, Australia
Conference Dates : December 13-14, 2015