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ACS > Vol.2 No.3, July 2012



Extreme Temperature Trends on the West Coast of Saudi Arabia

PDF (Size: 2036KB) PP. 351-361 DOI: 10.4236/acs.2012.23031

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ABSTRACT

The extreme temperature trends are analyzed for a meteorological data collection station in Jeddah, Saudi Arabia over approximately last four decades stretching between years 1970 and 2006. The long-term change in temperature has been assessed by Mann-Kendell rank statistics and linear trend analysis. The study also includes the estimation of hot and cold days and nights frequencies and finally the temperature anomalies on yearly basis. The ratio between the seasonal mean temperatures (Tmmean) of the daily mean of hottest (July) and coldest (January) months was 1.032. Similarly the ratios between the seasonal mean temperature of daily maximum (Tmmax) of hottest and coldest months was 1.033 while for seasonal mean temperature of daily minimum (Tmmin) was 1.030. Significant increase was observed in hot days per year and relatively smaller decrease in hot nights. Significant increase in summer time temperatures was confirmed by both linear regression analysis and M-K rank statistics. The monthly and annual mean maximum temperatures have increased more than the mean and mean minimum temperatures.

KEYWORDS

Global Warming; Extreme Temperatures; Temperature Trends

Cite this paper

 S. Rehman and L. Al-Hadhrami, "Extreme Temperature Trends on the West Coast of Saudi Arabia," *Atmospheric and Climate Sciences*, Vol. 2 No. 3, 2012, pp. 351-361. doi: 10.4236/acs.2012.23031.

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