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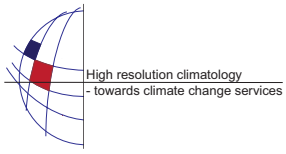

A study of some climate change scenarios in northeastern region of Brazil

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The main objective of this study is to assess the current climate conditions in northeastern region of Brazil and to obtain same climatic scenarios for the 2050 and 2100 years. It was used time series of mean air temperature and rainfall to the 1961 and 2007 period of 89 stations in study region. Also, the annual time series of data observed at surface of global solar radiation and class A pan evaporation for two stations located in the semi-arid area of studied region were analyzed. The non-parametric test of Mann-Kendall was used to assess the statistical significance level of the analyzed time series. Also, the software SEVAP was performed to determine potential evapotranspiration, humidity index, aridity index and hydric index. Results showed an increasing trend in the time series of air temperature which were statistically significant by Mann-Kendall test for the current period and for the 2050 and 2100 scenarios. Mean air temperature has highest rate for current period and for the 2050 scenario and a reduction between from 2050 to 2100 scenarios. The aridity and hydric indexes indicated an increased trend, but the humidity index showed a reduction for two analyzed scenarios in northeastern region of Brazil, principally on the semi-arid area. Results also indicate that observed data in global solar radiation and class A pan evaporation at Petrolina, PE, and Juazeiro, BA, presented an accentuate decrease though study period statistically significant at 1 and 5% significance levels by Mann-Kendall test.