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Long Term Variability of Temperature in Armenia in the Context of Climate Change

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Abstract : The purpose of this study is to analyze the temporal and spatial variability of thermal conditions in the Republic of Armenia. The paper describes annual fluctuations in air temperature. Research has been focused on case study region of Armenia and surrounding areas, where long–term measurements and observations of weather conditions have been performed within the National Meteorological Service of Armenia and its surrounding areas. The study contains yearly air temperature data recorded between 1961-2012. Mann-Kendal test and the autocorrelation function were applied to detect the change trend of annual mean temperature, as well as other parametric and non-parametric tests searching to find the presence of some breaks in the long term evolution of temperature. The analysis of all records reveals a tendency mostly towards warmer years, with increased temperatures especially in valleys and inner basins. The maximum temperature increase is up to 1,5 °C. Negative results have not been observed in Armenia. The patterns of temperature change have been observed since the 1990's over much of the Armenian territory. The climate in Armenia was influenced by global change in the last 2 decades, as results from the methods employed within the study.

Keywords : air temperature, long-term variability, trend, climate change
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