



Trends in indices of daily precipitation extremes in Greece, 1956-2002

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Widespread changes in precipitation regimes such as the increased frequency of heavy precipitation events over many areas consistent with warming and observed increases of atmospheric water vapour or on the other hand more intense and longer droughts observed over wider areas since the 1970s, particularly in the tropics and subtropics, are the consequences of the observed climate change, especially during the last decades. These observed extreme conditions influence mainly the biosphere of the Earth.

In this research, the trends in the indices of daily precipitation extremes in Greece, for the period 1956-2002 are examined. The meteorological data were obtained from 25 meteorological stations of the Hellenic Meteorological Service, which are uniformly distributed over the country. The indices used can be divided in three categories: percentile, absolute and duration indices. The percentile indices concern: very wet days (the number of days with daily precipitation amount above the 95th percentile from the 1961-1990 reference period) and extremely wet days (the number of days with daily precipitation amount above the 99th percentile from the 1961-1990 reference period). The absolute threshold indices concern: number of heavy precipitation days (number of days with daily precipitation amount above 10mm), number of very heavy precipitation days (number of days with daily precipitation amount above 20mm) and simple daily intensity index (daily precipitation amount on wet days in a period per number of wet days in the period). The duration indices concern consecutive dry days (the largest number of consecutive days with daily precipitation amount below 1 mm) and consecutive wet days (the largest number of consecutive days with daily precipitation

amount above 1 mm).

The analysis showed that significant positive trends for the consecutive dry days appear all over the country, while extreme precipitation events appear in the eastern and southeastern sub regions of the country.