



Evaluating effects of tropospheric dynamics in extreme precipitation climate events in the Mediterranean region

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Investigation of physical mechanisms responsible for establishing the Extreme Precipitation Climate Events (EPCE) conditions in the Mediterranean region (MR) was performed. The analysis was based on daily data on precipitation for 1960-2000 from gridded multiyear dataset National Centers for Environmental Prediction–National Center for Atmospheric Research NCAR–NCEP Reanalysis Project (NNRP). In addition, at each grid point with the data from the NNRP set dynamic tropopause pressure values have been calculated from the standard gridded NNRP data. Carril et al. (2008) approach for determination of frequencies of extreme events was adopted to calculate frequencies of extreme events in respect to several characteristics of the tropospheric dynamics. The data created are adopted for evaluation of the roles of several teleconnection modes - North Atlantic Oscillation (NAO); East Atlantic / Western Russia Pattern (EAWR); Scandinavia Pattern (SCAND); El Niño Southern Oscillation (ENSO); Indian Ocean Dipole (IOD); and East Asian Winter Monsoon (EAWM) in controlling the variation in the frequency of the EPCE over the MR. Statistically significant roles of the NAO, SCAND, EAWR, and ENSO effects are revealed. The work was supported from the EU EP6 CIRCE Project (WP5.2).

References

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