

PARALLEL SESSION C: IMPACTS AND APPLICATIONS
C1: REPRESENTING & PROJECTING EXTREMES

Changes in heavy precipitation events over Mediterranean Basin

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Extreme weather events represent serious risks for human activities and infrastructures. In particular hazards such as floods and droughts are one of the main challenges of the 21st century with significant societal and economic implications. The aim of this work is to assess potential changes in precipitation extremes that would have serious impacts over Mediterranean with focus over Italy.

For this analysis, daily precipitation fields provided by Med-CORDEX (MED-11 simulations under the RCP8.5 scenario) and by E-OBS and EURO4M archives (as reference data) have been used.

Two 30 -year long records have been analyzed: the reference period 1971-2000 and the future period 2021-2050.

An investigation of the upper tail of the precipitation distribution has been done. The 90th (90p) and the 99th (99p) percentile have been computed by aggregating daily precipitation values in the two investigated periods for each single grid point. Then by inspecting the metric 99p-90p, the changes in the right tail of the distribution of precipitation events have been investigated.

Moreover changes in heavy precipitations have been investigated by computing the number of days with precipitation higher than 10 mm, with the assumption that significant changes in extremes is mostly based on exceedance numbers of moderate thresholds.

The results highlight an increase of heavy precipitation in regions where average precipitations are likely to decrease.

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