



Regional Precipitation Index: ranking storms in Greece

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The METEO unit of the National Observatory of Athens has developed a methodology for ranking rain storms in Greece, following a similar procedure in the USA, where ranking of snow storms is routinely performed. The rain storm ranking in Greece is performed through the calculation of the Regional Precipitation Index (RPI) which takes into account:

- a) The daily accumulated precipitation and its exceedance of specific percentile thresholds.
- b) The total area where these exceedances occur.
- c) The population of the area that these exceedances occur.

First, RPI calculations were applied in ERA5-Land rainfall re-analysis, available at 0.1 deg resolution, for a 30-year period spanning from 1991 to 2020 and all major storms that occurred within this period were ranked and correlated to the reported societal impacts. The ranking of the storms is performed based on the percentiles of all non-zero RPI in the examined period. As major storms we define the top 2% of RPI. Then, a proposed methodology for the application of the methodology on daily forecast fields provided by high-resolution numerical weather prediction models is tested and discussed. This work, was funded by the European Climate Foundation.