



Analysis of climate change effects on extreme precipitation for the area of Sicily (Italy)

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In this study possible effects of the climate change on the extreme precipitation events have been analyzed by means of the CORDEX (Coordinated Regional climate Downscaling Experiment) data, a WCRP-sponsored program for the study of climate change effects at regional scales. In particular, some models runs from the EURO-CORDEX and the MED-CORDEX, i.e. two branch of the main project, have been exploited for the analysis of possible effects on extreme rainfall for the area of Sicily (Italy).

In order to improve the reliability of reference data retrieved from the CORDEX datasets, a bias correction procedure based on hystorical measurements has been designed. Moreover, a simple cascade temporal downscaling procedure, has been applied for the derivation of sub-daily data.

Results highlight that mean annual precipitation for the period 2006-2050 shows a reduction of the average total precipitation for both scenarios, rcp8.5 more than rcp4.5.

The precipitation for the shorter durations has shown an increase respect to higher durations. This behaviour is confirmed by many works of the scientific community, which underline this trend.

Therefore, results report the indications that in this area the up to date climate predictions are congruent with future scenarios characterized by a decrease of the total amount of precipitation with an increase of the extreme rainfall events.