



## **Temperature variations on the short (day to month) time scale over Europe: results from EURO-CORDEX scenarios**

Enrico Scoccimarro and Silvio Gualdi

CMCC FOUNDATION, Lecce, Italy (enrico.scoccimarro@cmcc.it)

Surface air Temperature variations (DT) on the short time scale (from 1 to 7/15/30 days), defined as the difference of daily temperature between one day and a next one, can have strong impacts on human health and plant development. This analysis investigates EURO-CORDEX Regional Climate Model simulations data, at the highest horizontal resolution available (EUR-11 domain: about 11 km) collected within the EU H2020 project COACCH. The Mediterranean regions appears as the most prone to DT increase, in a warmer climate, within the European domain. Based on a multi-model multi-scenario approach we aim to quantify such changes and the related uncertainty within the current century. Changes in the length of the seasons are also inspected to verify potential linkages to the DT changes. The model validation is based on JRA-55 reanalysis covering the 1985-2015 period. Future tendencies of the aforementioned parameter are inspected following three Representative Concentration Pathways (RCPs) taking part to the fifth Coupled Model Intercomparison Project (CMIP5): RCP2.6, RCP4.5 and RCP8.5. A comparison of the results obtained based on bias corrected and raw temperature data is provided and discussed.

The Keywords: Temperature, Europe, Future Scenarios, CORDEX