

# High resolution WRF climatic simulations in the Iberian Peninsula: Model validation

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A high resolution atmospheric modelling study has been done in order to estimate climate change projections for two future time periods in the Iberian Peninsula. The dynamic downscaling approach adopted used the Max Planck Institute Earth System Model (MPI-ESM) to drive the WRF running in climate mode. Three domains, online nested, were used covering part of the North Atlantic and Europe, with a resolution 81 km, and reaching 9 km in the innermost domain which covers the Iberian Peninsula. Three periods were studied: (i) historical (1986 to 2005); (ii) medium term future (2046 to 2065); and (iii) long term fu-

ture (2081 to 2100). For the future simulations, the IPCC greenhouse gas concentration scenario RCP8.5 has been adopted. For validation purposes, an additional configuration, forced by ERA-INTERIM data was ran. This work describes the downscaling parametrizations, and compares climatologically the two historical simulations in terms of extreme values of surface temperature and precipitation in the Iberian Peninsula.

## **Keywords**

Iberian Peninsula, WRF, Extremes

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