



Extreme rainfall in South East France: added value of a convection-permitting regional climate model

Antoinette Alias, Michel Déqué, and Samuel Somot
Météo-France, CNRM,CNRS/GAME, Toulouse, France

EURO-CORDEX simulations are based on 12 km numerical model. They represent with some accuracy, compared to global coupled models used in CMIP, the surface elevation in mountainous regions. As a consequence, the geographical distribution of precipitation is better at regional scale, and the frequency of high precipitation is more realistic. However these models do not explicitly resolve the convective phenomena which are responsible for the heavy accumulated rainfall. Arome model is derived from Aladin model (used in EURO-CORDEX) but uses non-hydrostatic equations, 2.5 km horizontal resolution, and a dedicated set of physical parameterizations. Its domain covers South-East France, a region which undergoes severe rainfall events in autumn. We present ERA-interim driven simulations with Aladin (12 km) driving Arome (2.5 km). The analysis is focussed on daily and hourly precipitation in extended autumn (ASOND) in the central part of the domain. We compare Aladin (i.e. EURO-CORDEX) and Arome simulations in their ability to simulate observed data.