

**PARALLEL SESSION B : FRONTIER DOWNSCALING TOOL  
B1: VERY HIGH RESOLUTION MODELLING**

**Extreme rainfall in South East France: convection resolving simulation versus EuroCordex approach**

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EuroCordex simulations at 12 km resolution provide some insight into extreme precipitations in a future climate. However they do not explicitly resolve the convective phenomena which are responsible for the heavy accumulated rainfall. Arome model is derived from Aladin model (used in EuroCordex) 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 here three families of simulations with Aladin (12 km) driving Arome (2.5 km): ERA-interim driven, CNRM-CM5 historical run driven, and CNRM-CM5 RCP8.5 scenario run driven. 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. EuroCordex) and Arome simulations in their ability to simulate observed data (ERA-interim driven simulations) and in the way they respond to RCP8.5 radiative forcing (CNRM-CM5 driven simulations). In addition, we examine the impact of restarting Arome each 1st June rather than performing a continuous multi-year simulation as in EuroCordex.

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