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High resolution probabilistic precipitation forecast over Spain combining the statistical downscaling tool PROMETEO and the AEMET short range EPS system (AEMET/SREPS)

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The Short-Range Ensemble Prediction System (SREPS) is a multi-LAM (UM, HIRLAM, MM5, LM and HRM) multi analysis/boundary conditions (ECMWF, UKMetOffice, DWD and GFS) run twice a day by AEMET (72 hours lead time) over a European domain, with a total of 5 (LAMs) x 4 (GCMs) = 20 members. One of the main goals of this project is analyzing the impact of models and boundary conditions in the short-range high-resolution forecasted precipitation. A previous validation of this method has been done considering a set of climate networks in Spain, France and Germany, by interpolating the prediction to the gauge locations (SREPS, 2008). In this work we compare these results with those obtained by using a statistical downscaling method to post-process the global predictions, obtaining an "advanced interpolation" for the local precipitation using climate network precipitation observations. In particular, we apply the PROMETEO downscaling system based on analogs and compare the SREPS ensemble of 20 members with the PROMETEO statistical ensemble of 5 (analog ensemble) x 4 (GCMs) = 20 members. Moreover, we will also compare the performance of a combined approach post-processing the SREPS outputs using the PROMETEO system.

References:
SREPS 2008. 2008 EWGLAM-SRNWP Meeting (http://www.aemet.es/documentos/va/divulgacion/conferencias/prediccion/Ewglar