Development and analysis of a daily high resolution grid over Spain for 1950-2003 period

S. Herrera (1), M. Pons (1), J. M. Gutierrez (2) and A. S. Cofino (2)

(1)Institute of Meteorology of Spain (INM). Santander, (SPAIN) (2)Applied Meteorology Group. Department of Applied Mathematics and Computer Science, University of Cantabria. Santander ,(SPAIN)

In this work a new 0.2ž spatial resolution (˜20Kms) observational grid for precipitation and extreme temperature is described. This observational grid has been build-up using 3500 stations of Institute of Meteorology of Spain (INM) pluviometric network and 850 minimun and maximun temperature from INM termometric netwok. Both networks have a temporal coverage from 1950 to 2003 with daily measurement aggregation.

First at all, commonly used interpolation methods, has been compared, kriging, kernels method, angular distance weighting and thin plate splines, with differents times scales, daily, weekly and monthly. In this work is showed how the performance of the different methods depend on the aggregation time scale.

Second, to explore the utility of the grid an analysis of the climatology, trends and teleconnectios with El Nino-Southern Oscillation (ENSO) and North Atlantic Oscillation (NAO) of precipitation and extreme temperatures have been made.

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