Geophysical Research Abstracts
Vol. 14, EGU2012-13594-2, 2012
EGU General Assembly 2012

Evaluation of Regional climate models: how much can we trust in gridded observational data sets?

J.P. Montavez (1), J.J. Gomez-Navarro (1), S. Jerez (2), R. Baro (1), R. Lorente (1), J.A. Garcia-Valero (1,3), and P. Jimenez-Guerrero (1)

(1) Universidad de Murcia, Physics, Murcia, Spain (montavez@um.es), (2) Instituto Dom Luiz, Universidade de Lisboa, Lisboa, Portugal, (3) Aemet, Delegación territorial de Murcia, Spain

Gridded observational data sets have become an important element in the evaluation of Regional Climate Models of simulating the present climate. In fact, we can find several observational data sets for the same area. However the gridded observational data are an approach to the reality. The interpolation method, the number of stations, the quality of the data used among others can strongly affect the constructed observational gridded data base. In the case of the Iberian Peninsula it have been shown (Montavez et al, 2011) that different observational data sets present differences of the same order of magnitude that ensembles (physical and multimodel) of regional climate simulations. Therefore, the question arising is if the evaluation of the regional model can be dependent of the gridded observational data set used.

In this work we present the results of evaluating the skill of all the members of two ensembles of regional climate simulations in reproducing the observed monthly precipitation of the Iberian Peninsula as depicted by three different data sets. The three daily data sets were SPAIN02, AEMET and E-OBS, which have a similar spatial resolution around 25km. The first ensemble is a multi-physics ensemble (30km resolution) of eight members. The second one is the ESCENA multimodel ensemble of 5 members (25 km resolution). The results indicate that the skill of the ensemble members in reproducing the precipitation over SPAIN depends on the selected observational data set.

Some authors claim that the confidence in a regional model in future climate projections can be based on the capability of the model in reproducing the observed climate. Even,some authors propose a weighting of the ensemble members based on their skill in present simulations. Therefore, the results showed here can have some implications about the above mentioned statements. These results also emphasize the strong need of elaborating observational data set of higher quality.