



Bayesian Model Averaging of INM-SREPS

D.Santos-Muñoz , A.Callado, J.A. García-Moya, C.Santos and J. Simarro.
Instituto Nacional de Meteorología (INM). 28040 Madrid. Spain (dsantos@inm.es)

A statistical method for post-processing ensembles based on Bayesian Model Averaging (BMA), which is a standard method for combining predictive distributions from different sources, can improve ensemble performance.

The BMA predictive probability density function (PDF) of any quantity of interest is a weighted average of PDFs centered on the individual bias-corrected forecasts, where the weights are equal to posterior probabilities of the models generating the forecasts and reflect the models' relative contributions to predictive skill over a training period.

Verification against observations of INM Short-Range Ensemble Prediction System (INM-SREPS) has been performed from January the 1st to June the 30th period. This verification has checked ensemble calibration using synoptic variables: Z500, T500 and Pmsl, and also, the ensemble response to binary events by means of the reliability and resolution indicators of surface variables: 10m surface wind, 6h and 24h accumulated precipitation

The BMA calibration of Pmsl, S10, Z500 and T500 using 3, 5, 10 and 25 training days are showed in this work. The results point out a clear improvement in ensemble spread-skill relationship, a reduction of the number of outliers in rank histograms and better results of reliability and resolution indicators.