# Probabilistic wind speed forecasting in Hungary

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**Abstract.** The aim of this work is to present a method of probabilistic weather forecasting, namely the Bayesian Model Averaging (BMA) and its application to wind speed data of the Hungarian Meteorological Service (HMS). BMA was introduced by Raftery *et al.* (2005) as short range (0-72 hours range) statistical prediction method which produces forecasts from post-processing ensembles obtained from different runs of a numerical weather prediction model. With the help of forecasts and validating observations of a preceding period (training period) and actual forecasts the BMA method estimates the probability density function of the weather quantity to be predicted.

In Raftery *et al.* (2005) the BMA method was applied to weather quantities having normal distribution (temperature, pressure). Later Sloughter *et al.* (2007) extended the BMA model for precipitation forecasting, while Sloughter *et al.* (2010) for wind speed forecasting.

We applied the BMA model of Sloughter *et al.* (2010) for post-processing the 11 member ensemble produced by the ALADIN-HUNEPS system of the HMS (Horányi *et al.*, 2011). We found that the appropriate length of training period for wind speed data is 28 calendar days and showed that BMA post-processing significantly improves the calibration and precision of forecasts.

# References

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