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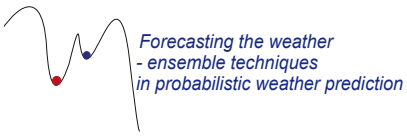

Improve probabilistic wind power forecasts through previously transforming the input data

J. Messner (1), J. Broecker (2), and G.J. Mayr (1)

(1) Institute of Meteorology and Geophysics, University of Innsbruck, Innrain 52, 6020 Innsbruck, Austria, (2) Max Planck Institute for the Physics of Complex Systems, Noethnitzer Str. 38, 01187 Dresden, Germany

In the past few years probabilistic forecasts of wind power production have received increasing attention. For this purpose many statistical methods that postprocess numerical weather forecast data have been proposed. Many of these are complex nonlinear methods to account for the highly nonlinear relationship between wind and power. In this study we test if with a previous transformation of the input data, linear methods can keep up with the more sophisticated nonlinear ones. Four different forecast methods are tested. These are a linear and an additive Gaussian model and linear and additive quantile regression. As transformation we use the manufacturer's power curve, a logistic transformation, a Box Cox transformation and a separation of the dataset. Data from three wind turbines and high-res and EPS forecasts from ECMWF from 2006 to 2009 are used.
Although after the transformation the nonlinear methods show slightly better results than the linear ones it could be shown that the differences are statistically not significant.