*Forecasting the weather
- ensemble techniques
in probabilistic weather prediction*

The use of measure-correlate-predict (MCP) methods in wind energy applications

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The knowledge of local wind conditions is essential in the process of developing a wind energy project. However, the high quality long-term wind measurement is rarely available in the vicinity of the site and the accuracy of numerical models is not satisfactory to meet the needs of responsible economical decision. Therefore the on-site wind mast measurement is necessary in most cases. For practical reasons, the length of such a wind measurement is typically one year, which makes the results biased from the long-term conditions due to year-to-year variations of average wind speed. As a result, it is essential to expand the wind series to longer period of typically 10 years or more. A variety of methods, usually called as "measure-correlate-predict" or "MCP", has been developed, including various types of regression, matrix methods, the neural networks or complex systems incorporating diverse sources of input data. The simple, most commonly used approach, is to use one reference long-term wind data series (or more of them, each separately) that is overlapping with the short-term measurement. The most important factors that determine the accuracy of results are: i) the level of correlation between the short-term and reference data set, ii) the homogeneity of reference data set, iii) the length of overlapping period. Because of homogeneity issues, the reanalysis data are most often used as a reference, even in the case any meteorological station with wind measurements is not too far from the measuring site. In the presentation, the key issues concerning MCP approach will be discussed, as well as the performance of the common MCP methods practically used.