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

Classification of circulation patterns and their applicability to predict local weather

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Circulation classifications aim at breaking down the morphological complexity of the atmospheric circulation into a manageable number of coherent classes. Within the frame of the COST Action 733, which concluded in 2010, not only an intercomparison of various classification strategies was carried out. One of the main deliverables for the scientific community is a tool to enable the production of literally hundreds of classification instances by way of running the main algorithms with various steering factors, e.g., different atmospheric fields, enforced numbers of classes, seasonality/non-seasonality or the employment of multi-day sequences.

All of this would be pointless if the classifications would not be subjected to distinct applications. One such study will be presented. It tests the capabilities to predict local weather using over 400 classifications. The gain (or the lack thereof) in predictive power is assessed by comparing the classifications against (i) a simple climate mean and (ii) predicting today's values for tomorrow (persistence). Is it favourable to use few or many classes? Is it favourable to use one or several atmospheric fields to generate the classification? Which weather elements stand a higher chance to be well predicted by these classifications? Is it favourable to distinguish between seasons when generating a classification? What is the predictive potential of the main classification strategies? These and more questions will be answered in the presentation.