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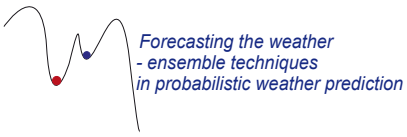

Circulation patterns – a comparison of strategies to derive them

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There is a variety of strategies to solve the problem of how atmospheric circulation patterns should be derived. One class of strategies consists of clustering approaches which explore the concept of "distance" in a multidimensional space and define measures of proximity/similarity in order to group objects, e.g., atmospheric fields at a point in time, into coherent structures. The clustering procedure itself can be carried out in a "free wheeling" way, meaning that the "initial cloud" is split into more and more structures. Alternatively, an initial set of "starting points" can be prescribed followed by the assigment of all objects to that starting point to which it has greatest prximity/similarity. The applicability of either strategy is checked by testing the ability of the methods to group local data in a meaningful way. The presentation will compare the effect of applying the results of different strategies and their variants to surface data of meteorological elements. It will be tested how coherent the individual clusters are with respect to identifying distinct regimes of the meteorological elements. This in turn will shed light on the ability of the methods to link large scale patterns with local climate.