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## Classifying weather types in Europe by Self-Organizing-Maps (SOM) with regard to GCM-based future projections

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The interdisciplinary research project "BayTreeNet" investigates the reactions of forest ecosystems to current climate dynamics. In the mid-latitudes, local climatic phenomena often show a strong dependence on the large-scale climate dynamics, the weather types (WT), which significantly determine the climate of a region through frequency and intensity. In the topographically diverse region of Bavaria, different WT show various weather conditions at different locations.

The meaning of every WT is explained for the different forest regions in Bavaria and the results of the climate dynamics sub-project provide the physical basis for the "BayTreeNet" project. Subsequently, climate-growth relationships are established in the dendroecology sub-project to investigate the response of forests to individual WT at different forest sites. Complementary steps allow interpretation of results for the past (20th century) and projection into the future (21st century). One hypothesis to be investigated is that forest sites in Bavaria are affected by a significant influence of climate change in the 21st century and the associated change in WT.

The automated classification of large-scale weather patterns is presented by Self-Organizing-Maps (SOM) developed by Kohonen, which enables visualization and reduction of high-dimensional data. The poster presents the evaluation and selection of an appropriate SOM-setting and its first results. Besides, it is planned to show first analyses of the environmental conditions of the different WT and how these are represented in global climate models (GCMs) in the past and future.