Climate classification in climate change assessment

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The analysis of climate patterns can be performed for each climate variable separately or the data can be aggregated using e.g. a kind of climate classification. These classifications usually correspond to vegetation distribution in the sense that each climate type is dominated by one vegetation zone or eco-region. This way climate classifications also represent a convenient tool for the assessment and validation of climate models and for the analysis of simulated future climate changes.

Basic concepts are presented on global CRU data and the analysis is shown on CMIP5 family of GCM simulations. Different performance of individual GCMs can be seen for some climate types, but with clear indication of the similarities given by the model dependencies. This evaluation can provide first insight on the GCM performance as well as the informations for decision support of choice of GCM in individual region for downscaling. Furthermore, the analysis of the full CMIP5 ensemble can contribute to the climate change assessment for future. There are significant changes for some types in most models, using the area fraction we can point out e.g. increase of savana and decrease of tundra for the future.

Furthemore, the preliminary analysis of Euro-CORDEX simulations in terms of climate types will be presented. The results of ERA-Interim driven experiment are compared to the classification based on E-OBS data, the validation for both 0.11 and 0.44 resolutions are presented.