Climate classification for Euro-CORDEX simulations assessment

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The analysis of climate patterns can be performed for each climatic 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, but with clear indication of some similarities given by the model dependencies. This evaluation can provide first insight on the driving GCM performance in individual region for downscaling. There are significant changes for some types in most models (e.g. increase of savana, decrease of tundra) for the future.

The results of CMIP5 models are compared for the same analysis over European domain with the similar analysis based on the ensemble of EuroCORDEX regional simulations. E-OBS data are used for the present climate assesssment, validation for both 0.11 and 0.44 degree resolution is presented. Climate change signal is analysed as well. Different combinations of the biases coming either from GCM or RCM appear. From the future simulations the shift of the boundary between the boreal zone and continental temperate zone to the north is clearly seen as well as eastern move the maritime and continental type of temperate zone.