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Integrated climate change assessment with climate classification

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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. some 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.

The Köppen-Trewartha classification is used on CMIP5 family of GCM simulations and global CRU data for comparison. This evaluation provides first insight on the GCM performance and errors. Furthermore, the analysis of the full CMIP5 ensemble for RCP 4.5 and 8.5 is performed to assess the climate change for future. There are significant changes for some types in most models, when analysing the area fraction we can point out e.g. increase of savana and decrease of tundra for the future. For some types significant shift of them in latitude can be seen when studying their geografical loction in selected continental areas, e.g. toward higher latitudes for boreal climate.