Scenarios for future changes in extremes for agricultural modelling
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For most areas of the world, there are now several publicly available datasets from the CORDEX project (http://www.cordex.org) comprising output from regional climate models in a spatial resolution between 12 and 50 km and with daily temporal resolution. In order to apply such data as input to agricultural yield models, these data will normally need to be bias corrected. Furthermore, for areas such as Europe and Africa, a rather large number of simulations are available, which necessitates a selection of models from the available multi-model ensemble.

In this talk we present the work within the MODEXTREME project related to model availability, bias correction and model selection. For Europe, bias correction has been performed on a lattice, since the E-OBS observation-based gridded dataset is available. For South America, South Africa and China, such data have not been compiled around all MODEXTREME sites. Therefore we have used station-based observations instead. The bias correction is a standard quantile-quantile algorithm for precipitation and temperature with a 31-day sliding calendar window.

Model selection for Europe and Africa has been performed with principal component analysis for an area surrounding the MODEXTREME sites. The goal has been to find one central model and 3 other models spanning the ensemble distribution of change in 8 precipitation-related extremes indices calculated after bias correction. For Europe this has been done separately for the Ukraine and for South-Western Europe.