Project: bb0931

Project title: ReKliEs-De

Project lead: Heike Hübener

Report period: 1.07.2015 - 31.12.2015

Node hours
Granted: 173334 Node hours
Accounted: 557 Node hours
Remaining: 172777 Node hours

The WLA approved on 8 REMO simulations for the project partner HZG/GERICS. The REMO simulations are on the EURO-CORDEX grid for two different horizontal resolutions: four simulations with a horizontal resolution of 0.44 ° with a grid size of 129x121x27 and the other four with a horizontal resolution of 0.11° with a grid size of 433x433x27.
Four different GCMs (HadGEM2-ES, EC-EARTH run 12, CNRM-CM5 run 1, MIROC5 run 1) for the historical and scenario RCP8.5 time period from 1950 till 2100 will be used as forcing for the REMO simulations on 0.44 ° horizontal resolution.

Each global model dataset comes in its own format. Therefor adjustment of the converter is needed providing the GCM forcing fields in the format the REMO pre-processor needs. Unforeseen problems occurred during the execution of REMO forced with the global data from HADGEM2 after the runtime of 3 years. Also unexpected mistake occurred in REMO when reading the global forcing data of MIROC5. The converter program providing the GCM forcing fields for the REMO preprocessor is getting adjusted at the moment and very soon, the simulations for REMO using the global model forcing from MIROC and CNRM-CM5 can be executed.

The REMO simulation at 0.44 horizontal resolution using the global model forcing from EC-EARTH is executed. The first results look reasonable (Figure 1). For the mean annual cycle from 1949-1997 averaged over the area (5 E to 16 E and 47 N to 56 N) REMO (red line) shows 1 K colder temperatures in summer compared to the CRU data set (blue line) and 1 K warmer temperatures in January and February. The comparison of the precipitation shows an overestimation of about 0.5 mm/day in winter.

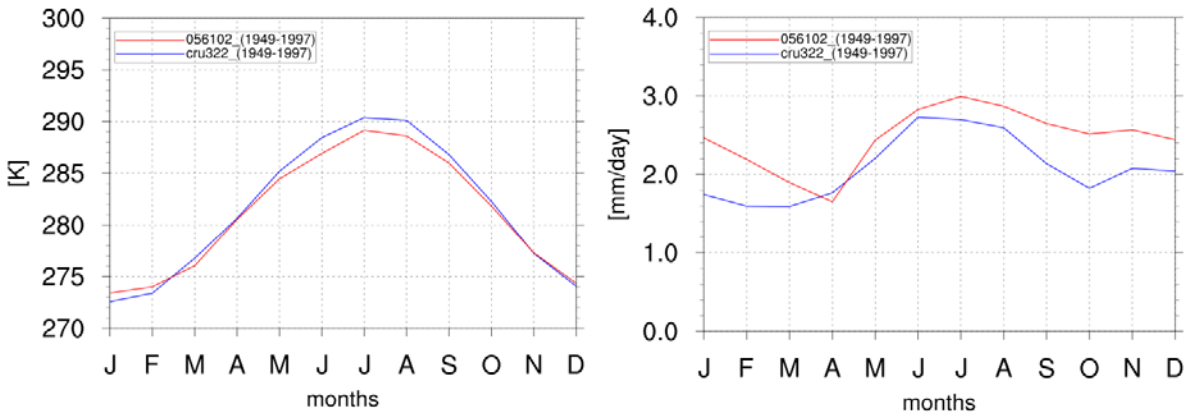

Figure 1: The average of the area 5 E till 16 E and 47 N till 56 N is compared between the REMO results (red) to cru data (blue). Presented is on the left the monthly mean temperature (K) and on the right: month mean precipitation (mm/day).

The execution of the four simulations will be continued till the end of the year.