

Project: **1237**

Project title: **Composing a joint D-A-CH climate scenario ensemble**

Principal investigator: **Nora Leps**

Report period: **2023-11-01 to 2024-10-31**

In the first two years of the project only a part of the requested node hours and storage space were used. Nevertheless, all project tasks are proceeding, albeit more slowly than planned due to scarce personnel resources.

This year's activities, that are related to the main project tasks can be summarized as:

- Further testing and implementation(s) for a stable version of the empirical statistical downscaling method EPISODES: 1) Processing of a cross validation in order to define an optimal selection of predictor variables for EPISODES, 2) Preparation of reference observation data sets, 3) Preparation of input data from GCMs (Experiment No.2).
- Bias-correction and statistical downscaling of CMIP5-based EURO-CORDEX ensemble for a Central European (D-A-CH) domain using "scaled-distribution-mapping" (Switanek et al., 2017) via the "pycat" python package. Processed parameters: tas, tasmax, tasmin, pr (Experiment No. 2). Reference: CERRA reanalysis.
- Tests for finding an appropriate method for defining global and regional warming levels from GCMs (CMIP5 and CMIP6) and RCMs (EURO-CORDEX). Test and provision of all required data with a data-tree structure. The findings (i.e. pros and cons) of methods have been compiled and discussed in a report (Experiment No.3)

Activities (especially) for Experiment No. 2 are currently making good progress and are planned to be intensified during the next months. Activities for Experiment No. 1 are planned to be intensified by a joint contribution to a EURO-CORDEX validation initiative (focus of 1237 will be on the Alpine space). The topic of snow will be addressed in a new Experiment No. 3.