**Project CLMcom - PoolData**

The Climate Limited-area Modelling Community (CLM-Community, www.clm-community.eu) is an open international network of scientists working in the area of regional climate modelling and climate change. The members of the CLM-Community develop the regional climate models COSMO-CLM and ICON-CLM (community models) together, apply the models for a wide range of applications and collaborate in scientific projects.

The community models are used on many different HPC systems all over the world, but the HPC systems at DKRZ have always been the most important place for common activities of the community members (e.g. test and evaluation of new model versions and setups, climate simulations for CORDEX, data exchange).

Therefore, members of the CLM-Community have established several projects at DKRZ over time for their work. These projects are:

- Project 1149: CCLM2ESGF (COSMO-CLM to be published on ESGF)
- Project 1161: Regionale Klimasimulationen mit ICON-CLM
- Project 1280: COSMO-CLM initial and boundary conditions
- Project 1281: CCLM-LUCAS
- Project 1282: COSMO-CLM regional climate model evaluation
- Project 1283: COSMO-CLM WG CRCS (Convection peRmitting Climate Simulations)

A short explanation of the purpose of each of these projects is given below. This project (CLMcom - PoolData) gathers all the activities and resources in one overarching project for the CLM-Community. This will simplify the search for and access to the data, optimize the storage requirements and considerably reduce the administrative overhead.

**Project 1149: CCLM2ESGF (COSMO-CLM to be published on ESGF)**

This project facilitates the publication of COSMO-CLM and ICON-CLM simulations by the CLM-Community on the DKRZ ESGF-node. The model results are transferred into international standard format through a CMOR-tool (https://github.com/C2SM-RCM/CCLM2CMOR/), which allows the model results to be easily used for model comparison and in research projects by different groups worldwide. Before the data can be published, it must pass a Quality Assessment (QA) checker, which is a tool that systematically checks the meta data in the CMORized data, and this needs to be done by staff at DKRZ.

**Project 1161: Regionale Klimasimulationen mit ICON-CLM**

This project enables sustainable access to initial and boundary data needed for standard ICON-CLM experiments. The data is used directly at DKRZ by the runtime environment of ICON-CLM, but can also be copied to other HPC systems in case ICON-CLM input data is needed there. The data is needed by anybody who wants to perform evaluation runs (or climate simulations) with ICON-CLM. It also provides results of standardized reference simulations which serve as reference for further model developments and future model versions.

The datasets were/are created by members of the CLM-Community to be specifically used by ICON-CLM. Furthermore, the project will be used for ICON-CLM set up and configuration tests and the evaluation of the output. The tests and analysis are done by several members of the CLM-Community and therefore it is necessary to have central disc space to share and compare the data.

### Project 1280: COSMO-CLM initial and boundary conditions

This project enables sustainable access to initial and boundary data needed for standard COSMO-CLM experiments. The data is used directly at DKRZ by the runtime environment of COSMO-CLM, but can also be copied to other HPC systems in case COSMO-CLM input data is needed there.

The data is needed by anybody who wants to perform evaluation runs (or climate simulations) with COSMO-CLM. The datasets were/are created by members of the CLM-Community to be specifically used by COSMO-CLM.

### Project 1281: CCLM-LUCAS

This project will sustainably provide access to the CORDEX FPS LUCAS data. Anybody who wants to contribute to the CORDEX FPS LUCAS, rerun the simulations or compare own results with the LUCAS experiments needs access to these datasets. The different datasets were/are specifically created by members of the CLM-Community to enable COSMO-CLM simulations and are thus only compatible with that model.

### Project 1282: COSMO-CLM regional climate model evaluation

This project supports the collaboration in regional atmospheric modelling. The applied disk space works as a permanent address for long-term collaboration in parameter testing and evaluation of new model versions of COSMO-CLM and ICON-CLM. Therefore, all scientific community members using one of these two regional climate models on DKRZ resources will substantially benefit from this project.

The test and evaluation strategy are oriented on the COPAT (COordinated PArameter Testing) initiative by the CLM-Community and is applied to new main development steps of the two models. The participation in this continuous evaluation process is open for all community members. The COPAT organization scheme provides fixed set up conditions for all contributors: on the given disc space the complete simulation environment including external parameters, forcing data, namelist-configurations, postprocessing routines is stored. In return all contributors can deliver postprocessed data of their test simulations and compare them via commonly used tools (e.g. HZG-EVAsuite) with observations, other test-simulations, the reference simulation of the model version to be tested, and reference simulations of earlier recommend versions.

Decisions of optimal parameter settings provided by the WG EVAL of the CLM-Community depend on the location of the domain, domain size, resolution of forcing data and resolution and time step of the regional simulation. Therefore, the transparent evaluation process and the easy access to the evaluation and reference data and the commonly used tools considerably promotes regional atmospheric modelling.

### Project 1283: COSMO-CLM WG CRCS (Convection peRmitting Climate Simulations)

This project enables the collaboration in regional atmospheric modelling especially in high resolution in the order of currently 3 km. The members of the CLM-Community have the greatest benefit as the working space works as a permanent address for long-term collaboration in parameter testing of new model versions of COSMO-CLM and ICON-CLM. The focus here is currently on model grid spacings of 3 km.

The test strategy is oriented on the COPAT (COordinated PArameter Testing) initiative by the CLM-Community and takes place with new main development steps of the models with focus on the convection permitting scales.

Decisions of optimal parameter settings provided by the WG CRCS are dependent on the area

of the domain, domain size, resolution of forcing data and resolution and time step of the regional simulation. Therefore, the transparent evaluation process and the easy access to the evaluation data and tools is a prerequisite for regional atmospheric modelling at high resolutions in the CLM-Community.

The disk space is also used for sharing within other initiatives inside the CRCS working group, such as currently the contributions to the FPS-Convection CORDEX project.