

Project: **893**

Project title: **Convection and Clouds in Earth System Modelling**

Principal investigator: **Holger Tost**

Report period: **2021-11-01 to 2022-10-31**

In the current allocation period, hardly any of the planned workpackages have been fulfilled utilising the resources of the DKRZ.

For WP I, a new scheme for aerosol optical properties for the EMAC modelling system is under development. However, this scheme is still in the testing phase. After having performed first box model simulations, the interface to the 3D model has been developed. Compilation on Levante was successful, but 3D tests are currently undergoing / pending. Health issues of the PI slowed down the progress in this workpackage in the past three months.

The WP II, using the MECO(n) modelling system also has been delayed, since a suitable candidate for the PhD position could only be hired in the second half of 2022. Furthermore, the first test simulations of the student have been performed on different resources than the DKRZ; the PI has only conducted very few short tests on Levante, whether the setup is suitable and able to fulfill the aims of the project as well as for comparison solving porting issues to the computing facilities at the JGU Mainz.

Additionally, some data analysis of already existing data (from Mistral) has been performed, and the results are contributing to a publication (in preparation) on multiphase chemistry of organic acids in clouds and liquid aerosol particles.

Even though only a very minor fraction of the requested computing hours have been used in the past allocation period, the access to the DKRZ computing facilities, which are used by a large group of the EMAC consortium are absolutely required to be able to do support and joint activities on atmospheric chemistry, aerosols, cloud and convective processes in the (inter)national efforts on atmospheric chemistry modelling.