Project:	**bb1224**
Project title:	**Applied Atmospheric Modelling Course at University Leipzig**
Project lead:	**Ina Tegen (TROPOS), administrated by Fabian Senf (TROPOS)**
Allocation period:	**1.1.2026 - 31.12.2026**

Overview

This project is dedicated to educate students from the University of Leipzig in the field of applied atmospheric modelling held during summer terms. The conducted activities are part of the Master education in Meteorology at the Leipzig Institute for Meteorology, which are hold as seminars - called **ComputerLab** - with active hands-on training by TROPOS as a partner institute. The course is part of the master module 'Atmospheric Modeling - Scales and Parameterizations', and took place in the previous summer semesters on one day a week over the course of six weeks from May to July.

A variety of learning objectives have been taught. Students were familiarized with HPC platforms in general, and the HLRE computing resources in particular. Further learning objectives were:

(i) to explore the content of netcdf data,

(ii) to use post-processing platforms like jupyterhub for exploratory data analysis,

(iii) to perform numerical experiments with state-of-the-art atmospheric models like ICON, and

(iv) to get an conceptual understanding of computational workflows in atmospheric modelling.

Project Management

The project is composed of a set of permanent users that prepare and test tasks in advance of the seminars. The other component are temporary accounts for the student for which the application is done year by year considering the actual number of subscribed students.

The ComputerLab course can be done either purely online or in an on-site seminar format. The course material is reached via a prepared website [1] which holds the up-to-date instructions. The main component of student work is the DKRZ jupyterhub service. The course material was also published under `https://zenodo.org/doi/10.5281/zenodo.5533793`.

So far, we were able to carry out every single course instance without problems, e.g. no interruption of the HLRE infra-structures happened.

[1] `https://tropos.gitlab-pages.dkrz.de/uni-master-module-t2/`

ComputerLab 2026

The ComputerLab course in 2026 could be realized as in-person seminar hosted at TROPOS. The preparatory phase for the 2026 course was carried out efficiently and proceeded without any significant complications or unforeseen obstacles. We were able to run all tasks with the latest ICON open-source release version `icon-2026.04-public`. The open-source nature of the project allowed students to acquire knowledge that will serve them well in the future.

In the 2026 course, 14 master students were attending which were guided by an alternating number of in total 3 supervising persons. All students could gather in one seminar room and solved the tasks for themselves, but of course with the support of the other fellow students and the supervisors. Finally, all students were able to successfully complete the course and provided positive feedback.