

Open invitation to the:

Dynamical Core Model Intercomparison Project (DCMIP-2025) and Summer School on Non-Hydrostatic Weather and Climate Models and Machine Learning Emulators



Location: NCAR, Mesa Lab, Boulder, CO, USA

Dates: June/2-6/2025 (with additional travel dates June/1/2025 and June/7/2025)

Learn more here: <https://sites.google.com/umich.edu/dcmip-2025>

Apply by March/28/2025: <https://forms.gle/3dy8XGfTTds3yHJu7>

Organizing Team:

Christiane Jablonowski, Timothy Andrews, Owen Hughes, and Garrett Limon (University of Michigan), Peter Lauritzen and Adam Herrington (NCAR), Mark Taylor and Peter Bosler (Sandia National Laboratories), Colin Zarzycki (Penn State University), Travis O'Brien and Joshua Elms (Indiana University)

The Dynamical Core Model Intercomparison Project (DCMIP-2025) and Summer School will highlight the newest modeling techniques for global climate and weather models. It will be held at the National Center for Atmospheric Research (NCAR) in Boulder, CO, from June/2-6/2025 and will emphasize high-resolution non-hydrostatic modeling approaches and Machine Learning (ML) emulators as overarching themes. The objectives of the DCMIP-2025 Summer School are (1) to teach a group of about 30 multi-disciplinary students and postdocs how today's and future atmospheric models and their dynamical core are or need to be built, (2) to shed light on the skill and realism of machine learning emulators for atmospheric fluid flows, and (3) to use idealized test cases to expose selected model design choices in simplified modeling frameworks. A particular focus of the idealized tests will explore the impact of topography on the circulation.



The summer school includes mornings lectures and hands-on modeling activities in the afternoon. The focus will lie on the three non-hydrostatic dynamical cores (Spectral Element, MPAS, FV3) that are available via NCAR's Community Earth System Model (CESM) with its Community Atmosphere Model (CAM). The exploration of the ML emulators for General Circulation Models includes Google's GraphCast and NVIDIA's FourCastNet. DCMIP-2025 thereby continues the DCMIP-2008, DCMIP-2012 and DCMIP-2016 model intercomparison and summer school series. The DCMIP-2025 event is supported by the National Science Foundation (NSF), NOAA, and NCAR. The available funding will support the travel, lodging, food, and local transportation expenses of the selected participants.

Interested in participating? Apply by March/28/2025: <https://forms.gle/3dy8XGfTTds3yHJu7>