



HPC Status Conference: DKRZ showcases developments from chatbots to exascale



The Gauß Alliance's HPC Status Conference – a central platform for interdisciplinary exchange on current developments in high-performance computing (HPC) in Germany – took place in Göttingen from September 24 to 26, 2025. Several contributions of the DKRZ highlighted the importance of climate modeling within the HPC community. In his keynote, Dr. Christopher Kadow illustrated the potential of artificial intelligence in climate research, while Julius Plehn and Dr. Panagiotis Adamidis presented how the performance and scalability of the ICON climate model can be further improved with a view to future exascale systems. There is also growing interest in the HPC community in benchmarks that are more closely aligned with real-world applications, such as the High Performance Climate & Weather Benchmarks for the field of climate modeling. Further information: www.dkrz.de/en/hpc-status-conference2025/

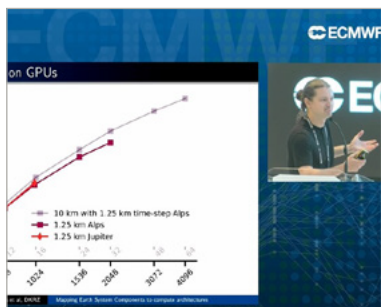
DKRZ employee receives NASA Award

Our colleague Bridget Thrasher was recently honored with the NASA Exceptional Public Achievement Medal for her outstanding work on the NASA Earth eXchange Global Daily Downscaled Projections. Within this project, global climate projections of the Coupled Model Intercomparison Project Phase 6 (CMIP6) were statistically downscaled to provide a high resolution version of the data.

In February 2025, Bridget Thrasher has joined the Datamanagement department in preparing the German contribution to CMIP7 as part of the CAP7 project. The entire DKRZ team warmly congratulates Bridget on this special award. We are proud to have such a dedicated and outstanding colleague on our team! Further information: www.dkrz.de/en/nasa-award/



21. ECMWF Workshop on HPC in Meteorology



From September 15 to 19, 2025, scientists, industry experts, and policymakers met at the 21st ECMWF Workshop on High Performance Computing (HPC) in Meteorology in Bologna, Italy, and discussed the developments and future prospects of HPC in meteorology. This year's biennial workshop was held under the motto „Exploring the Past, Present, and Future of HPC in Meteorology.“ Topics included exascale computing, data-driven modeling, and sustainability aspects. DKRZ was represented with a talk by Dr. Jan Frederik Engels, who presented innovative approaches for efficiently mapping various components of the Earth system onto modern computing architectures. The goal is to

maximize computing power and hardware utilization while simultaneously increasing energy efficiency. Further information: www.dkrz.de/en/21ecmwf-workshop/

natESM Focus Workshop about Ocean Biogeochemistry

Around 30 scientists from various institutions met on September 24, 2025, at DKRZ in Hamburg for the natESM Focus Workshop on Ocean Biogeochemistry (OBGC). The goal of the meeting was to make the diversity of models, modules, and methodological approaches developed in Germany visible and to jointly consider more coordinated further development. Together with experts from the natESM community, they discussed paths toward a sustainable and open development strategy, and subsequently decided to establish a new natESM working group on Ocean Biogeochemistry. Dr. Judith Hauck (AWI), Dr. Carsten Lemmen (Hereon),



and the natESM process coordinator Dr. Iris Ehlert will jointly drive its establishment. The working group will serve as a platform for exchange, interface development, and strategic cooperation. Another focus workshop is already planned for next year to continue and deepen the ongoing exchange. Further information: www.dkrz.de/en/natesm-focus-ws_sept2025/

Heat, drought, and heavy rainfall in focus at the ExtremeWeatherCongress

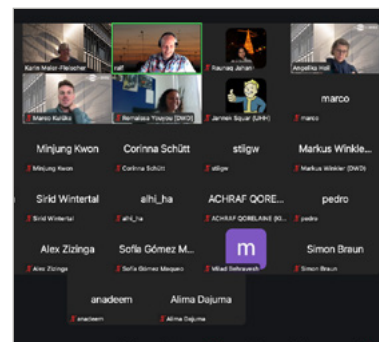


From September 24 to 26, 2025, around 700 experts from meteorology, science, urban planning, politics, and the media met for the 15th Extreme Weather Congress (EWK) and the Climate Management Conference (KMT) at HafenCity University Hamburg. The focus was on the tangible consequences of climate change in Germany: increasing heat waves, persistent droughts, and increasingly frequent heavy rainfall events. Presentations, panel discussions, and workshops discussed how scientific findings can be translated into concrete adaptation measures. The program was accompanied by an exhibition. The DKRZ presented the latest climate model visualizations on its climate globe and touch table. Not only congress participants but also many pupils from the educational program Wetter.Wasser.Waterkant, which took place simultaneously, took the opportunity to ask questions and received answers from the DKRZ outreach team. Further information and video recordings of the conference: www.dkrz.de/en/ewk2025/

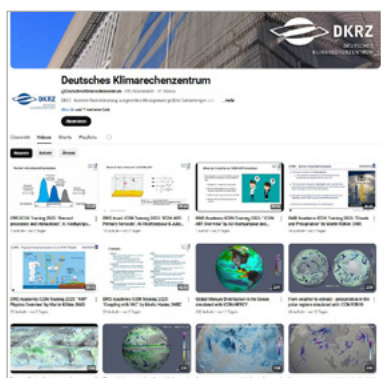
Python for beginners: DKRZ offers practical online training for climate scientists

From September 15 to 19, 2025, the DKRZ team held its ninth annual one-week online introductory course in the Python programming language for climate researchers. Over 60 participants received an introduction to Linux, JupyterHub, and basic Python concepts, as well as training in NumPy, Xarray, Matplotlib, and Cartopy. Thanks to interactive Jupyter notebooks, participants were able to directly apply the content. The course format, which allowed plenty of opportunity for questions and individual support from the team leaders, was particularly highlighted as good. Further information and course materials: www.dkrz.de/en/pythonkurs_fall2025/

Save-the-Date: The next Python course at DKRZ will take place in spring 2026.



New on the DKRZ YouTube Channel



We have published new videos on our YouTube channel (www.youtube.com/@DeutschesKlimarechenzentrum/), including visualizations of ICON simulations with a 2.5 km resolution. Looking at the 3-hour global precipitation mean simulation, even extreme precipitation events can be tracked in several videos or different representations. The cumulative annual precipitation, which is also visualized over the course of a year, illustrates how the climate develops from the multitude of weather events. Also new is a visualization of the global distribution of dissolved mercury in the ocean for the period 2020 to 2030, simulated by Hereon. In addition, recordings of lectures from the "Academic ICON Training 2025," which was held in July 2025 at the DKRZ by the German Meteorological Service (DWD), the Karlsruhe Institute of Technology (KIT), and natESM, are now available.

Also new on the channel are the recordings of the last two DKRZ TechTalks: On May 6, 2025, Daniel Heydebreck spoke about "Retrievals from StrongLink: New workflow and outlook," while on July 22, 2025, Tobias Kölling, Fabian Wachsmann, and Andrej Fast presented the topic "Gridlook – Webbrowser-Based Interactive Climate Data Visualization on a Globe."

Upcoming Events

DKRZ at the Second Workshop on Correctness and Reproducibility for Earth System Software taking place from November, 5 to 7, 2025 at NCAR in Boulder/US: <https://ncar.github.io/correctness-workshop/>

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