

EXPECT-Hackathon: Climate data analysis in Hamburg

From 29 September to 1 October 2026, researchers gathered in Hamburg for the EXPECT Hackathon on Advanced Data Processing for Climate Research. Organized by the Barcelona Supercomputing Center as part of the EXPECT project and hosted by the DKRZ, the event brought together around 35 PhD students, postdocs, and experienced professionals from approximately 30 institutions across Europe, Africa, Asia, North America, and Oceania, participating both in person and virtually. The focus was on how to efficiently analyze large, distributed climate datasets. Following an introduction to the new EXPECT data infrastructure, participants worked in small groups on specific topics: from atmospheric circulation patterns and extreme heat events to deep learning, downscaling, and explainable AI. The participants ran their data-intensive tasks on the DKRZ supercomputer Levante. Further information: www.dkrz.de/en/expect-hackathon/



New projects for climate modelling and data



Several new projects involving the DKRZ have launched, including CLAIMA, SEND Earth Data, FUTURA, and ENES-RISe. They address various aspects of future climate research infrastructure – ranging from AI-based climate models and the processing of large datasets to the long-term preservation of Earth system data, the provision of climate projections, and the further development of European data and modeling infrastructures. CLAIMA is developing a European platform for AI-based climate models and climate emulators, aiming to enable their use on European HPC and AI infrastructures. SEND Earth Data is developing strategies and technical solutions to safeguard potentially at-risk Earth system research datasets for the long term and ensure their availability even as infrastructures change. FUTURA connects European

activities related to climate projections and their data supply, while developing new services for cataloging, providing, and analyzing large climate data collections. ENES-RISe supports the European ENES Research Infrastructure in further developing and coordinating its services for Earth system models, modeling software, and climate simulation data. Further information: www.dkrz.de/en/kickoff_futura+enesrise/, www.dkrz.de/en/claima-kick-off/ und www.dkrz.de/en/SEND-project/

DKRZ offers Deep Learning Workshop again

Following strong interest in its Deep Learning Workshop for Climate Scientists, DKRZ is offering the workshop again for the second time this year. From 22-24 September 2026, 24 researchers from more than 15 German institutions received training in the practical application of deep learning methods in climate research. In addition to covering theoretical fundamentals, participants developed and evaluated their own models for applications such as classification, gap-filling, and statistical downscaling. The program was complemented by advanced approaches, including probabilistic and transformer-based models. Further information: www.dkrz.de/en/deep-learning-september2026/



S2S2D Conference 2026 brings together the international prediction community

From September 7 to 11, 2026, the international research community gathered in Reading, UK, for the third International Conference on Subseasonal to Seasonal to Decadal Prediction (S2S2D). The conference was organized by the international project office of ESMO – a core project of the World Climate Research Program, which is hosted at DKRZ. The focus was on climate and Earth system predictions spanning

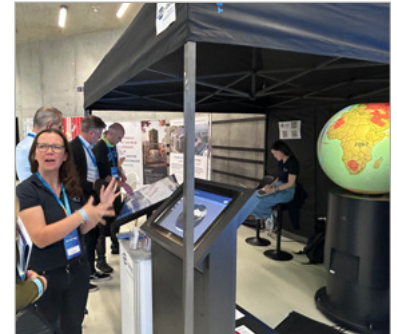


timescales from weeks to decades. Researchers, scientists from operational forecasting centers, and users discussed topics such as predictability, physics-based prediction systems, climate services, and the application of machine learning. The conference underscored the importance of translating advances in prediction research into information that benefits society. Further information: www.dkrz.de/en/communication/news-archive/s2s2d-2026/

DKRZ@EWK & WWW & kk2026

From 23-25 September 2026 the Extreme Weather Congress (EWK) and the German Climate Management Conference – leading events addressing extreme weather in the context of climate change and its consequences for Germany – brought together representatives from academia, industry, society and media. In the exhibition area, the DKRZ presented the latest results from high-resolution climate simulations. The educational program “Wetter.Wasser.Waterkant” (WWW) is part of the congress. As a result, many students visited the DKRZ booth with its climate globe and touch table. In addition, the DKRZ offered two talks and guided tours through its computing hall for two school classes.

On 24 September 2026 the DKRZ also once again participated in the School Climate Congress (kk2026) which this year focused on the topic “Clouds & Computing” and that is organized by the University of Hamburg. During one of the kk2026 excursions, 30 students visited the DKRZ to learn about the use of AI and machine learning in climate research and to take a tour of the computer rooms.



Hands-on Earth system modelling at the first natESM Summer School



From September 13 to 19, 2026, 23 researchers at various career stages gathered in Kiel for the first natESM summer school, „Earth System Modelling in a Changing Climate.“ The program featured hands-on work with a coupled ICON-XPP configuration on the DKRZ supercomputer Levante. Participants independently compiled and ran the model, developed their own research questions, and analyzed 30-year climate simulations in seven groups. Additionally, they were introduced to key components and tools of the natESM infrastructure and had the opportunity to exchange ideas and network with one another. Further information:

www.dkrz.de/en/natesm-summer-school/

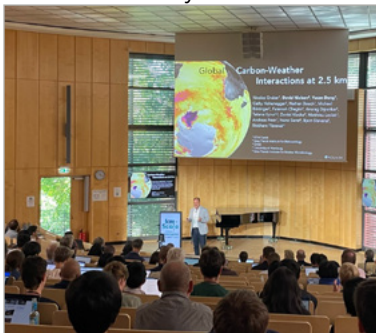
A unified archiving infrastructure for Hamburg and Garching

Following Hamburg, the DKRZ's remote data archive in Garching is now also using the Varsity ScoutAM Software. This provides both locations with a unified technical foundation for archiving climate data. Additionally, a new Spectra Cube tape library with a storage capacity of approximately 21 Petabytes took up its operation in Garching. Data previously stored in an older Oracle library is being gradually migrated to the new system. Replication between Hamburg and Garching further enhances the resilience of the archive. Further information: www.dkrz.de/en/remotehsm/



Kilometer by kilometer toward the next generation of climate models

From 20-24 July 2026 more than 350 researchers from the fields of climate science, high-performance computing, and AI gathered in Hamburg for the km-scale Global Modelling Summit to discuss the further development of kilometer-scale global Earth system models and their efficient use on future exascale computers. The event was funded by several projects – including WarmWorld, EERIE, and EXCLAIM.



The DKRZ team participated with numerous talks, poster presentations and chaired several sessions. Highlights included the presentation of new extended ICON simulations including the

Hamburg Ocean Carbon Cycle Model – which was visualized by DKRZ. This marks the first time the carbon cycle has been simulated at a global resolution of 2.5 kilometers. Further information: www.dkrz.de/en/km-scale-summit/

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