

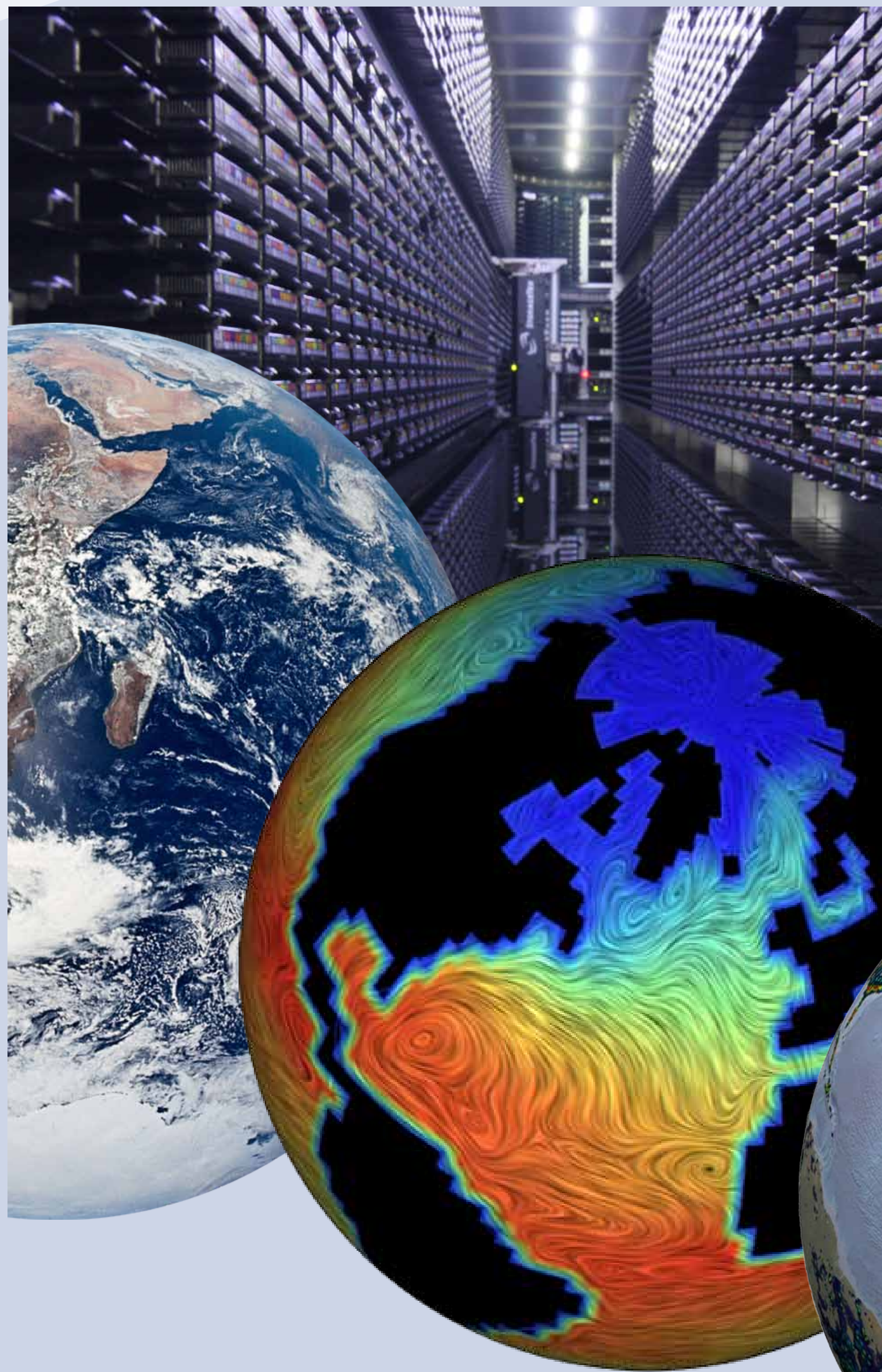
HPC for Climate Science

DKRZ - German Climate Computing Centre

The German Climate Computing Centre (DKRZ) is a unique national centre for premium climate science: it provides high-performance computing platforms, sophisticated and high-capacity data management and related services. Today, the complexity of the earth system is one of the great scientific challenges. The earth as a whole cannot be the object of experiments. Therefore, the computer systems of the DKRZ are the laboratory for climate research.

DKRZ is a non-profit limited liability company with four shareholders: the Max Planck Society, the City of Hamburg, being represented by the University of Hamburg, the Alfred-Wegener-Institute for Polar and Marine Research and the GKSS Geesthacht. The operation costs of the centre are carried by the shareholders. Investment costs are provided by BMBF. Half of the DKRZ resources and services are at the disposal of its shareholders. The other half is allocated by a scientific steering committee to research groups based on the scientific quality of proposals which depend on high computing facilities.

The scientific and technical director of DKRZ, Thomas Ludwig, also holds a professorship for computer science at the University of Hamburg.



Max Planck Society

The Max Planck Society for the Advancement of Science (MPG) facilitates 80 research institutes and performs basic research mostly in natural and social sciences. It is the major shareholder of DKRZ.

The DKRZ resources are mainly used by the Max Planck Institute for Meteorology (MPI-M) in Hamburg - an internationally renowned institute for climate research. MPI-M develops sophisticated earth system models as well as scientific measurement methods to investigate the processes within atmosphere, land and ocean. Within the Earth System Research Partnership, a central project financed by the MPG, the MPI for Chemistry in Mainz and the MPI for Biogeochemistry in Jena also use the resources of DKRZ.

University of Hamburg

The University of Hamburg is the largest North German university. One of its research focuses is "Climate, earth, environment", for which the Cluster of Excellence CliSAP was created.

CliSAP investigates the climate system, its variability, and the impacts of human activity. Using numerical models the scientists depend on access to high performance computers such as "Blizzard" at DKRZ.

In recent years, scientists of the University of Hamburg, the MPI-M, the GKSS and the DKRZ have concentrated their climate expertise into the KlimaCampus, where they cooperate closely in diverse fields of natural sciences and the humanities.

GKSS Research Centre Geesthacht

GKSS uses the resources at DKRZ for its coastal and climate research. It investigates the long-term change of the marine storm, swell,

current and storm surges climate. The evaluation of recent as well as possible future changes in the wind, storm tide and swell climate allow scientists for example to provide reliable knowledge for risk management in coastal protection. Modeling of the palaeoclimate is an additional important aspect for the understanding of the coasts and their changes.

GKSS operates the North German Climate Office and the national Climate Service Center (CSC) as information and consultancy platforms for policy makers, regional authorities and investors.

Alfred Wegener Institute for Polar- and Marine Research

The Alfred Wegener Institute for Polar- and Marine Research (AWI) is part of the Helmholtz Association of German Research Centres and carries out research in the Arctic, Antarctic and in the high and mid latitude oceans. With its widespread international networking and a broad interdisciplinary basis AWI offers an excellent infrastructure for national and international research.

AWI supports DKRZ as a longtime shareholder. The data service at DKRZ and the optimal design of the computing system, which guarantees an optimal performance and efficiency for simulations with coupled climate models, put forward good reasons to even increase AWI's commitment to DKRZ in future.