



The System Earth

Research Focus Earth and Environmental Systems



The Earth is exposed to constant changes: sudden ones, as when earthquakes create ridges or heavy rainfall leads to massive flooding and landslides; and very slow ones, as when mountains rise or glaciers pile up boulders into huge moraines. Detailed aspects of these processes are usually analyzed and understood quite well, but their influence on the overall system is often insufficiently known. These are the topics that are being studied at the University's research focus Earth and Environmental Systems.

The Department of Earth Sciences as well as the Department of Environmental Sciences and Geography focus on questions concerning the interaction of processes in the geosphere – deep in the earth, in the earth's crust, and on the earth's surface – as well as in the atmosphere, hydrosphere, and biosphere. Their aim is to enable a profound interpretation of the interferences and interactions between the different parts of the Earth system, especially taking into account human influences. For this purpose, the researchers use and develop new technologies and methodologies, such as the combined use of satellites, airplanes, and drones, the quantification of dynamic processes with lidar as well as innovative methodological steps, such as data clustering, machine learning, and complex simulation models. In

addition, methods of the empirical social sciences and communication research are increasingly being used to promote the transfer of research results into political decision-making.

Following up on the holistic approach to the Earth System greatly shaped by Alexander von Humboldt over 200 years ago and the 150-year tradition of geoscientific cutting-edge research in Potsdam, the research focus has developed into a European center of earth and environmental research in close cooperation with leading research institutions of the region. These synergies make the University of Potsdam a place with a unique range of programs, innovative research topics, and excellent opportunities for the promotion of young researchers.

In this environment, scientists, who are part of the research focus, are involved in international research and innovative teaching projects. Two research training groups funded by the German Research Foundation (DFG), international exchange programs for Bachelor and Master students and PhD students as well as an international master's program on remote sensing offer the best opportunities for modern, internationally oriented studies and the transfer of knowledge into practice.