The KITClimate and Environment Center

The KIT Climate and Environment Center conducts finding-oriented research on a high level and develops innovative and sustainable technical solutions to meet the challenges of climate and environmental change. It pools fundamental knowledge, technologies, and systems analyses to derive practically viable solutions for handling natural and environmental risks. Work is based on internationally acknowledged competences in the research of the atmosphere, terrestric hydrosphere, biosphere, lithosphere, and pedosphere as well as in the field of technological and socioeconomic systems. A focus lies on the regional level.

More than 500 employees and about 30 institutes are involved in the center. An international scientific advisory board gives advice on strategic planning.

Activities of the KIT center are based on well-established KIT facilities and institutes as well as the Helmholtz program on Atmosphere and Climate, the Excellence Center CEDIM (Center for Disaster Management and Risk Reduction Technology, in cooperation with GeoForschungsZentrum Potsdam) and cedim AG, several large-scale projects on integrated water resources management (IWRM), the Competence Center for Soil Moisture (CMM), the KIT graduate school for climate and environment (KIT-GRACE) and many significant research projects.

A board the European environmental satellite Envisat, the infrared spectrometer MIPAS developed at KIT measures a large number of atmospheric trace elements.

KIT Climate and Environment Center

Head: Dr.-Ing. Peter Fritz

Scientific Speaker:
Prof. Dr. Johannes Orphal

Contact

Karlsruhe Institute for Technology (KIT)
KIT-Zentrum Klima und Umwelt

Dr. Kirsten Hennrich
Leiterin der Geschäftsstelle

Hermann-von-Helmholtz-Platz 1
76344 Eggenstein-Leopoldshafen

Germany

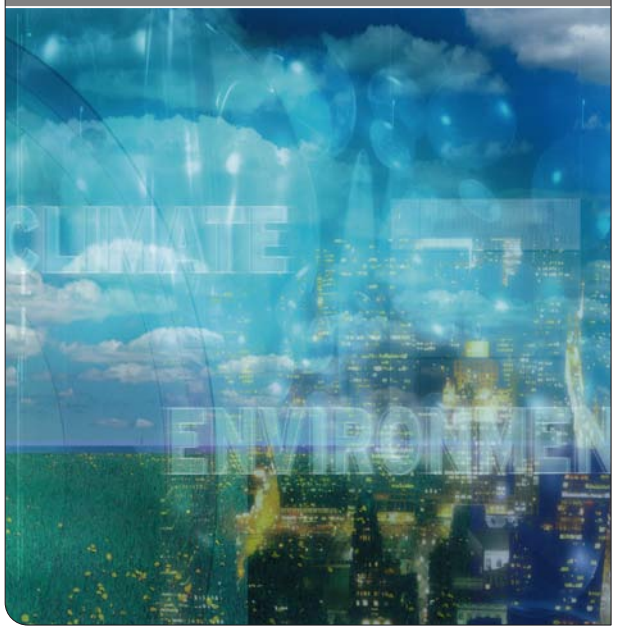
Phone: 0721 608 2 8592
Fax: 0721 608 2 3949
E-Mail: kirsten.hennrich@kit.edu

www.klima-umwelt.kit.edu

Karlsruher Institut für Technologie

For an environment worth living

KIT Climate and Environment Center



KIT – Universität des Landes Baden-Württemberg und
nationales Forschungszentrum in der Helmholtz-Gemeinschaft

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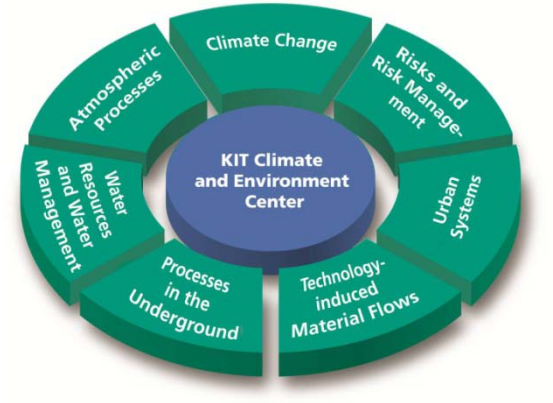
Climate and Environmental research at KIT

Climate and environmental change, as well as demographic, economic, and technical developments are changing living conditions on Earth in the 21st century as never before. Availability and quality of the essential resources of water, air, and food depend on these changes. Hence, climate and environmental research is facing significant new challenges.

- Adaption to changing environmental conditions
- Usage of the knowledge triangle of Research – Teaching - Innovation
- Usage of existing broad competences

The KIT Climate and Enviroment Center comprises seven topics:



TOPIC 1: Atmospheric processes

Speaker: Prof. Dr. Thomas Leisner

Chemical and physical atmospheric processes being responsible for the development of clouds and precipitation are investigated. Laboratory measurements, Field experiment and computer simulations are used for this. AIDA, the aerosol and could simulation chamber plays a special role.

TOPIC 2: Water resources and water management

Speaker: Dr. Peter Oberle

Water is a rare but essential good for live on Earth. Therefore, the focuses are processes of water and matter fluxes as well as technologies for water treatment. Researchers at KIT are operating worldwide and are developing regional concepts and technologies for the sustainable use of water.

TOPIC 3: Processes in the underground

Speaker: Prof. Dr. Thomas Neumann

The development of knowledge and technologies for a responsible use of the underground being a limited natural resource. Specific tasks include process studies on Co2 sequestration in deep rock layers, on final disposal of radioactive waste, as well as on the efficient use of subsurface energy sources and heat sources.

TOPIC 4: Technolgy-induced material flows

Speaker: Dr. Rainer Schuhmann

The use of resources like energy or soils generates matter and energy fluxes influencing our environment. These fluxes can be controlled by human action. Scientists at KIT determine detailed knowledge about these fluxes and their interaction with the environment, e.g. to cope with increasing scarcity of natural resources.

TOPIC 5: Urban systems

Speaker: PD Dr. Stefan Norra

Today, half of the world's population lives in cities. The sustainability of urban systems depends very much on the efficient management of matter and energy fluxes. Research in this topic also involves environmental change, infrastructure and social vulnerability.

TOPIC 6: Risks and risk management

Speaker: Prof. Dr. Friedemann Wenzel

Future risk research will be influenced by climate change and urbanization. Risk management research develops real time information systems, simulation systems for the course of catastrophic events and tool for decision support.

TOPIC 7: Climate change

Speaker: Prof. Dr. Hans-Peter Schmid

Global climate change and its regional effects leads to serious problems like scarcity of resources, migration pressure and social conflicts as well as enormous economic and sanitary consequences. Therefore the interaction between climate, water and atmospheric trace gases and aerosols is being investigated intensively. Global climate scenarios are being refined and regional adaption strategies to climate change and mitigation of consequences are developed.