Dates and Deadlines

November 8, 2019  Deadline for abstract submission
December 31, 2019 Notification of abstract acceptance
January 31, 2020  Registration deadline
February 5 - 7, 2020 Workshop

To submit an abstract please go to the online submission form at the website www.hzdr.de/smartkd.

Registration Fee and Accommodation

The participation fee of the workshop will be 200 € and includes bus service between Dresden city and HZDR, lunches, coffee breaks & joint dinner. Please be aware that accommodation and travel expenses are not included.

Contact

Helmholtz-Zentrum Dresden-Rossendorf e.V.
Institute of Resource Ecology
Bautzner Landstraße 400, D-01328 Dresden

Dr. Madlen Stockmann  +49 351 260 4675
Prof. Vinzenz Brendler  +49 351 260 2430
smartkd@hzdr.de

For more information please visit: www.hzdr.de/smartkd or write an email.

Cover Picture: 2D model for groundwater flow and radionuclide transport (example U-238) through a typical sedimentary rock system covering potential repository host rocks, namely salt and clay formations in Northern Germany.

Location

Helmholtz-Zentrum Dresden-Rossendorf (HZDR)
Institute of Resource Ecology
Bautzner Landstraße 400
01328 Dresden, Germany

The main campus of the Helmholtz-Zentrum Dresden-Rossendorf is a 10-kilometers drive to the Northeastern outskirts of Dresden (details can be found under www.hzdr.de).

Supported by:

Federal Ministry for Economic Affairs and Energy

on the basis of a decision by the German Bundestag

The workshop is partially supported by the German Federal Ministry for Economic Affairs and Energy (BMWi) under Contract Nos. 02E11668A-C.
OBJECTIVES AND GOALS

Understanding and appropriate modelling of geochemical processes is essential for predicting contaminant transport in groundwater systems.

Typical application areas are nuclear waste disposal, environmental remediation, mining and milling, carbon capture & storage, or geothermal energy production.

Experts from these fields shall be brought together to discuss large-scale reactive transport modelling because:

- The scales covered by such predictions are up to one million years and dozens of kilometers.
- Full-fledged incorporation of sorption, precipitation, or redox reactions (to name just a few important basic processes) will thus create unacceptable long computing times.

Geochemical approaches to overcome these difficulties are discussed. One example is the smart-$K_d$ concept, a mechanistic approach mainly based on surface complexation modelling.

For more information please visit: www.smartkd-concept.de

The focus of the workshop will be:

- To provide and discuss existing geochemical concepts in reactive transport modelling to describe sorption and related retardation processes of contaminants on a variety of sediments and rocks.
- To explicitly set focus on large-scale natural systems as experienced, e.g., in nuclear waste disposal, carbon capture & storage, environmental remediation, or geothermal applications.
- To explore how the discussed approaches can be integrated at affordable costs into current paradigms in THMC models and long-term safety assessments in general.
- To promote the exchange of scientific knowledge and practical experience between the workshop participants in an efficient way.

For attendance an abstract is mandatory (oral presentation or poster). The capacity of the workshop is limited, thus participants will be selected according to the abstracts submitted.

INVITED SPEAKERS

Allan Leal ETH Zurich Switzerland
Haibing Shao UFZ Leipzig Germany
Carl Steefel LBNL USA
Paolo Trinchero Amphos21 Spain

SCIENTIFIC ADVISORY COMMITTEE

Madlen Stockmann HZDR Germany
Vinzenz Brendler HZDR Germany
Ulrich Noseck Gesellschaft für Anlagen- und Reaktorsicherheit Germany
Michael Kühn GFZ German Research Centre for Geosciences Potsdam Germany
Jorge Molinero Amphos21 Spain
Wilfried Pfingsten PSI Switzerland
Sabine Attinger Helmholtz Centre for Environmental Research - UFZ Leipzig Germany

Reactive transport simulation of the potential spatial distribution of mineralised CO$_2$ in the anticline of the Ketzin pilot site after 10,000 years.

Multidimensional lookup table for distribution coefficients ($K_d$ values) for uranium(VI) sorption in a sandy aquifer as a function of pH, calcium (Ca) and dissolved inorganic carbon (DIC) ($K_d$ in m$^3$ kg$^{-1}$, logarithmic scale).