9th REACTIVE TRANSPORT PhD WORKSHOP
& Short OpenGeoSys-6 Training Course

The Helmholtz Centre for Environmental Research - UFZ Department of Environmental Informatics

March 16-17, 2020

Leipziger KUBUS, Helmholtz Centre for Environmental Research - UFZ,
Permoserstraße 15, 04318 Leipzig, Germany

Since its inception in 2012, the intention of the 9th Reactive Transport PhD workshop is to serve as a platform for PhD students working in the field of reactive transport modeling and related experiments to present their work, exchange their knowledge and share their experiences. In this context, all PhD students are invited to present their work on the first day (16th of March) in a friendly and open atmosphere.

In addition, the workshop is organized in conjunction with a short OpenGeoSys-6 (OGS-6) training course on reactive transport modelling. The course is also open to scientists new to the topic, although registration priority will be given to PhD students.

- 16 March 2020: Presentation / discussion of PhD projects
- 17 March 2020: Short OGS-6 training course

The present workshop + training course are organized in conjunction with the iCross project.

Venue and Contact
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GEFÖRDERT VOM
Bundesministerium für Bildung und Forschung
HELMHOLTZ
RESEARCH FOR GRAND CHALLENGES
HELMHOLTZ CENTRE FOR ENVIRONMENTAL RESEARCH – UFZ

PhD workshop

Background

The first PhD workshop was organized in 2012 by HZDR (Leipzig, Germany), while the following workshops were hosted by UFZ (Leipzig, Germany), PSI (Villigen, Switzerland), KIT (Karlsruhe, Germany), EKUT (Tübingen, Germany), Forschungs-zentrum Jülich (Jülich, Germany) and in 2018 PSI (Villigen, Switzerland). After a short respite, the workshop series will resume in 2020.

First day – Topics (16th March)

The first day is reserved for PhD presentations (~ 20 min. each). Past topics have included the following:

- Pore-scale reactive transport modelling
- Imaging techniques for the analysis of reactive transport processes
- Radionuclides migration
- New modelling approaches and experimental techniques for analysis of reactive transport processes
- Molecular dynamics
- Other coupled processes (Chemo-mechanical)
- Electromigration
- Computational methods and data science

OGS-6 Training course

This time, the workshop is organized in conjunction with a short OpenGeoSys-6 (OGS-6) training course on reactive transport modelling (open to PhD students and scientists new to the topic).

Second day – Topics (17th March)

The second day is a short course in OGS-6.

- Introduction to reactive transport modeling, governing equations and benchmarking
- Modelling with OGS-6 (installation, preprocessing, inputs, visualization and post processing)
- Hands-on training with simple example problems

Audience

PhD students and scientists new to the topic of reactive transport modelling.
Note: Participants should have a general background in hydrogeology, geochemistry and finite element methods, although introduction to theoretical aspects of solute transport, fluid flow, geochemistry and heat transport in the subsurface will be given.

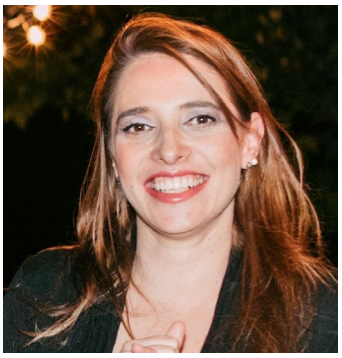
Registration

>>>>>>>> Workshop and Training Course are **free** of charge <<<<<<<<<

For registration and additional information, please visit www.ufz.de/rtw2020.

OpenGeoSys

OpenGeoSys is a scientific, open-source project for the development of numerical methods for the simulation of thermo-hydro-mechanical-chemical (THMC) processes in porous and fractured media. Current version is OGS-6.2 released in March 2019. OGS has been successfully applied in the fields of contaminant hydrology, water resources, waste management, geotechnical engineering, nuclear waste disposal, geothermal energy and energy storage. www.opengeosys.org

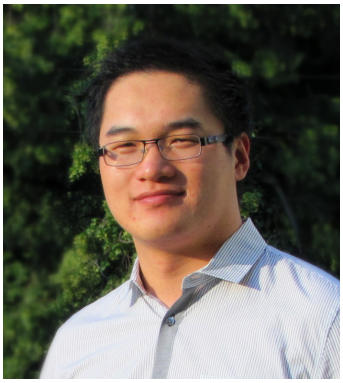


Dr. Vanessa Montoya

Vanessa joined the Department of Environmental Informatics (ENVINF) at the UFZ in April 2019 working in the development of OGS-6. She obtained her PhD in Chemistry at the UAB, Barcelona, in 2006. Afterward, she worked at the environmental consulting company Amphos 21 in Barcelona as a scientific consultant/project manager. From 2012 to April 2019, she worked as a scientist at KIT-INE, Karlsruhe. Her work is focused in geochemical / reactive transport simulations with applications in nuclear waste disposal. Development of thermodynamic databases has also been part of her activities.

Renchao Lu, M.Sc.

Renchao joined ENVINF in 2014, engaging in the development of the geochemical module on the OGS-6 platform. He is also enrolled as a PhD student at the Department of Geosciences at TU Dresden. He received his Bachelor's and Master's degrees from Tongji University, China. His research interest is reactive transport modeling in fractured porous media with application to early diagenesis and radioactive waste repository.



J. Prof. Dr. Haibing Shao

Haibing joined ENVINF in 2007. Since 2014, he has also been Junior Professor of Geothermal Systems Analysis at the TU Freiberg. He performed his Master and PhD studies at Uni Tübingen (2007) and TU Dresden (2010), respectively. The dissertation of his PhD was modelling reactive transport processes in porous media. He also worked as a visiting researcher at LBNL (6 months) in the U.S. His research focuses on the numerical modeling of coupled THMC processes in fractured and porous media with application in nuclear waste and geothermal energy.

Prof. Dr. Olaf Kolditz

Olaf has been the head of the Department ENVINF at UFZ since its launch in 2007. He is also Professor of Applied Environmental Systems Analysis at TU Dresden. He got a PhD in natural sciences from the Academy of Science of the GDR in 1990 and earned his habilitation in engineering sciences from Hanover University in 1996, where he became group leader at the Institute of Fluid Mechanics. He was named full professor for geohydrology/hydroinformatics at Uni Tübingen. His research interests are fluid mechanics, numerical methods and software engineering with applications in geotechnics, hydrology and energy storage.