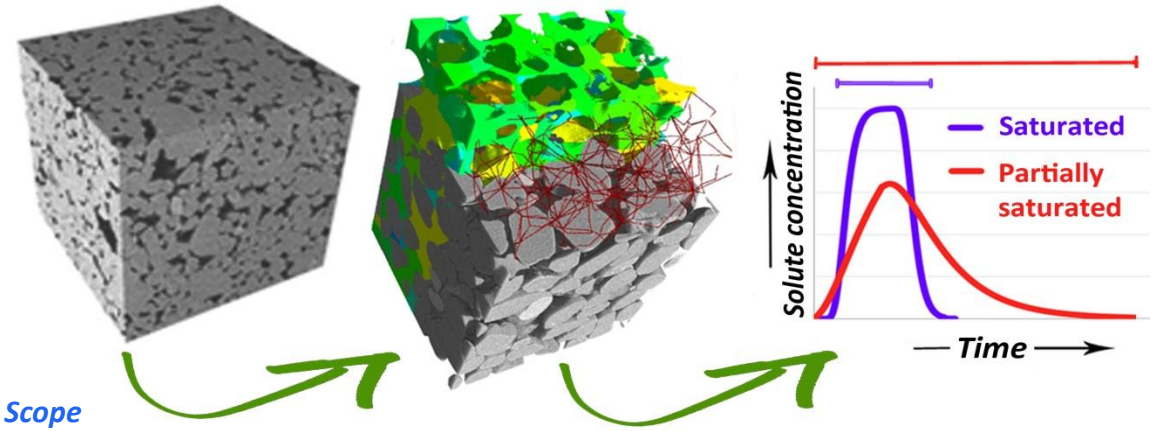
Utrecht University

summerschool UTRECHT

Pore-Scale Modelling and Upscaling of Reactive Transport in Partially-Saturated Porous Media

13–17 July 2015, Department of Earth Sciences, Faculty of Geosciences, Utrecht University, The Netherlands



Scope

This summer school consists of a set of three separate, but highly interlinked and integrated research topics.
Participants will be familiarized with the principles of different non-destructive imaging techniques, such as high-resolution X-ray computed tomography and XRF-CT scanning to identify 3D pore structures and soil/rock chemical properties. Then, pore space representation, using pore network modeling (PoreFlow), will be introduced. Pore-scale reactive modelling under saturated and partially-saturated conditions provides values for flow and transport parameters. At the next step, these parameters will be utilized within analytical solutions (STANMOD) as well as numerical models (HYDRUS-1D) to simulate flow and transport at the large scale.

Topics Covered

- Theory of partially-saturated flow
- Non-destructive imaging
- Pore space representation and pore scale (reactive) modelling
- Continuum scale solute/contaminant transport modeling

Lecturers

Prof. Veerle Cnudde: Department of Geology and Soil Science, Ghent University, Belgium.
UGCT Centre for X-ray Tomography

Lecture: Non-destructive imaging and image analysis

Dr. Amir Raoof: Faculty of Geosciences, Utrecht University, Utrecht, Netherlands.

Lecture: Pore-scale modeling

Prof. Martinus Th. van Genuchten: Department of Mechanical Engineering, Federal University of Rio de Janeiro, Brazil.
Lecture: Analytical and numerical solutions under partially saturated condition

Prof. S. Majid Hassanizadeh: Faculty of Geosciences, Utrecht University, Utrecht, Netherlands.

Lecture: Theory of partially saturated flow

Registration and day to day program

Registration and day to day program:
http://www.geo.uu.nl/hydrogeology/activities.html
Registration deadline: till 1st June
Registration fee: € 800 (housing + material + course)

For all inquiries, contact Dr. Mojtaba G. Mahmoodlu
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Organized by

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