



FEFLOW modelling course



The basics of groundwater modelling and advanced applications

Dates: 25.-29- October, 2021, 9h00-17h00

Instructors: Robin Dufour & Carlos Rivera (DHI)

Location: Université de Neuchâtel, Rue Emile Argand 11, Room D019-D023

Summary

This five-day, hands-on course provides you with comprehensive training in groundwater modelling using FEFLOW. It consists of an introductory and an advanced part. The introductory part provides a comprehensive overview over the most important parts of groundwater modelling with FEFLOW, from mesh generation to transient and variably saturated flow simulations, while the advanced part focuses on more complex modelling topics such as geothermal energy applications and modelling of the transport of reactive solutes. There will be ample opportunity to discuss groundwater topics with some of DHI's most experienced groundwater modelers, and plenty of time to ask questions.

FEFLOW is widely recognised as a comprehensive software package for subsurface flow and transport simulation. FEFLOW's unique meshing capabilities (structured and unstructured) allows for the highest degree of flexibility to account in detail for the simplest all the way to the most complex geometrical configurations. The software is used by leading research institutes, universities, consulting firms and government organisations all over the world. FEFLOW's scope of application ranges from simple local-scale to complex large-scale modelling. Applications include water resources management, mine dewatering, saltwater intrusion, and geothermal energy.

Target audience

PhD school members, academics and professionals from a wide range of backgrounds will benefit from this course, whether new to groundwater modelling or already experienced modelers.

Administrative information

It's possible to follow just the basic, 3-day course or the full 5-day course.

Costs are CHF 800 for the basic course, and CHF 1400 for the full course. Participation for members of the Water-Earth Systems PhD school is free.

Currently, places are limited to 20 participants. To facilitate planning and ensure a place for everyone, please register quickly.

Due to the current regulations, a valid COVID certificate is mandatory for participation in the course.

To participate actively in the course, participants have to bring their own Windows 10 laptop.

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Course outline

Introductory Part (Days 1-3)

- Introduction to FEFLOW and its graphical user interface
- Creating 2D and 3D mesh geometries (structured and unstructured)
- FEFLOW's interface with geological software
- Setting up flow models with confined and unconfined aquifers
- Setting up mass transport models and groundwater age models
- Setting up steady-state and transient models
- Results evaluation, visualisation and animation
- Unsaturated flow modelling (seepage from a dam)

Advanced Part (Days 4-5)

- Density- and heat-dependent flow modelling
- Geothermal energy systems modelling (closed/open-loop)
- Fractures and discrete features
- Multispecies reactive mass transport modelling
- Introduction to the FEFLOW programming interface and Python scripting
- Hands-on exercises

People wishing to participate please register online via the registration form:

<https://www.unine.ch/phdschool-wes/home/programme.html>

Contact: school.earth-water@unine.ch