NEAR-SURFACE GEOTHERMAL MODELLING

This online instructor-lead, hands-on course provides you with comprehensive training in geothermal modelling using FEFLOW.

The training course is focused on near-surface geothermal applications. The course covers the necessary information and examples to work with open-loop and closed-loop system, investigate the feasibility of a geothermal system and understand the impact of groundwater on the system.

FEFLOW is widely recognised as a comprehensive software package for subsurface flow and transport simulation. FEFLOW's unique meshing capabilities (structured and unstructured) allow for the highest degree of flexibility to account in detail for the most simple to 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. Application areas include geothermal energy, water management, mine water, saltwater intrusion, and variably saturated media.

COURSE TOPICS

- Introduction to FEFLOW and its graphical user interface
- Introduction to advective– and convective-dominant transport
- Boundary conditions for heat transport modelling
- Creating 2D and 3D mesh geometries (structured and layered meshes)
- Discretization around geothermal boreholes
- Modelling open-loop systems
- Modelling closed-loop systems (Borehole Heat Exchangers)
- Using the Well Manager for interconnection of boreholes
- Feasibility analysis of the geothermal system
- Evaluating the conflict between existing and new installations
- Results evaluation, visualisation and animation

LOGISTICS

The course is offered in an online format with a maximum duration of six hours. In total, the course participants will meet the instructor in three online meetings.

The course is offered three times a year:
- **Option 1:** 11, 13 and 15 March 2024
- **Option 2:** 13, 15 and 17 May 2024
- **Option 3:** 17, 19 and 21 June 2024

INVESTMENT

Standard price: 950 € (excl. VAT)

- for 3rd and subsequent participants from same company..... 750 €
- Discount to students can be offered, but it is limited to capacity.

WHAT'S INCLUDED

- Full access to FEFLOW software during course
- Training material (digital version)
- Training Certificate upon completion of course

IT REQUIREMENTS

- A quality webcam and headset with microphone capabilities
- Zoom desktop client. Download here.
- Preinstallation of FEFLOW for the use during the course

LANGUAGE

- Lectures and training material are in English.

REGISTERATION AND CONTACT

Registration is on a first-come-first-served basis. Closes two weeks before the beginning of the course. Registration is final and your seat is guaranteed upon receipt that payment has been made. DHI reserves the right to reschedule the course up to one week prior to the commencement of the course.

Irene Walbe, Course Coordinator
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WHAT IS FEFLOW?

Cover a broad variety of processes on the surface and in the subsurface

FEFLOW is the only tool you need for integrated modelling of all relevant flow, mass transport and heat transport processes. FEFLOW is the standard industry tool for solving hydrogeological challenges associated to mining application, geotechnical engineering, water resources management, nuclear waste decommissioning, brine-water management, seawater intrusion, shallow/deep geothermal among others.

USEFUL LINKS

- Highlights of FEFLOW here
- Learn from DHI's Zoom video tutorials
- "Getting started with groundwater modelling using FEFLOW" - Self-paced course
- "Getting started with groundwater quality modelling" - Self-paced course
- "Getting started with geothermal modelling: Open-Loop systems" - Self-paced course.
- "Advanced modelling of complex geologies" - Self-paced course.

REGISTRATION

Registration is on a first-come-first-served basis. Registration is final and your seat is guaranteed upon receipt that payment has been made. Deadline for registration is 2 weeks before course start. A minimum number of participants is required for the course to proceed.

DHI reserves the right to reschedule the course up to one week prior to commencement.

'Just come back from a FEFLOW course held at DHI Germany. Many interesting groundwater flow and mass transport modelling topics were presented (unsaturated flow, density-dependent flow, fracture flow, etc.) and discussed extensively. Many thanks to Dr Carlos A. Rivera Villarreyes and DHI, Carlos delivered a high-quality course and welcome participants warmly'.

Matteo Francesconi, Hydrogeologist | Groundwater modeller, AECOM, Italy

EXAMPLE OF INSTRUCTORS

DR. CARLOS A. RIVERA VILLARREYES

Dr. Carlos Rivera Villarreyes, DHI, works as Global Product Specialist for FEFLOW. Dr. Rivera has profound knowledge of groundwater and unsaturated-zone modelling as well as parameter estimation and uncertainty analysis (e.g., with PEST), all these in the context of geothermal, water resources, mining applications among others. He has carried several groundwater modelling projects and trained professionals in groundwater modelling around the globe.

Dipl.-Ing. (FH), Civil Engineering, University of Piura, Peru
MSc, Water Resources Management, Ben-Gurion University, Israel

SOPHIE GRUSCHKA

Ms. Sophie Gruschka is a water resources engineer and part of the team Sales Service and Support at DHI Germany. She specializes in the modelling of groundwater flow and quality. She supports customers with the development of groundwater modelling tools via Python. Beside her modelling portfolio, Sophie has experience in water sampling and chemical analyses.

MSc., Water Resources Engineering, Lund University

BSc., Environmental Sciences, TU Bergakademie Freiberg

DR.-ING FRANCESCA DE GASPARI

Dr.-Ing. Francesca De Gaspari , DHI Germany, works as FEFLOW Consultant and is Head of the Support team.

Dr.-Ing. De Gaspari has in-depth knowledge of groundwater and reactive transport modelling as well as calibration and programming in Python and C++. Geochemical and transport modelling is her speciality. She has trained professionals in groundwater and transport modelling in several countries.

PhD, Hydrogeology, Polytechnical University of Barcelona, Spain

Dipl.-Ing. and MSc Civil Engineering, Polytechnical University of Milan, Italy

THE ACADEMY BY DHI

THE ACADEMY offers a palette of courses and capacity building packages designed to fit your needs and challenges. We offer standard and/or tailored training - face-2-face as well as online.

MIKE Powered by DHI courses focus on practical skills, hands-on exercises and teaching you how to get the most out of your software. These courses also enable you to understand the power of the MIKE tools for building decision support systems.

Thematic courses allow you to apply concepts, applications and decision support principles to the entire business process within current areas: aquaculture and agriculture, energy, climate change, flooding, coast and marine, surface and groundwater, urban water, industry, environment and ecosystems, product safety and environmental risk, etc.

Our trainers are experienced professionals, many of whom are recognised international experts in their fields. The use of highly skilled trainers guarantees the quality of THE ACADEMY courses.

Learn more about THE ACADEMY on www.theacademybydhi.com

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