



# NUMERICAL MODELLING FOR GEOTHERMAL INSTALLATIONS

Application of FEFLOW in near-surface and deep geothermic

This two-day, hands-on course aims at providing you with the principles of geothermal modelling using FEFLOW for deep and shallow systems. Moreover, the course also deals with system optimisation (well positioning), pumping cycles, competition between adjacent installation, efficiency and operating life, enhance geothermal systems, etc. Depending on the particular needs of the group of participants, additional topics of interest may be covered.

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

## COURSE TOPICS

- Introduction to FEFLOW and its graphical user interface
- Introduction to transport modelling
- Setting up both open-loop and closed-loop (borehole heat exchanger) geothermal systems
- Usage of the OpenLoop Design plug-in for system design
- Result evaluation: heat-budget estimations
- Density- and viscosity-dependent flow modelling
- Hands-on exercises

## TARGET GROUP AND PREREQUISITES

Professionals working on geothermal system design in consulting companies, public authorities, university and research institutions. Participants are expected to have both a basic knowledge about groundwater systems as well as computer application. Prior experience with groundwater modelling is helpful, but not required.

## DATE AND TIME

14-15 October 2019.  
Course starts at 09:00 and finishes at 16:30.

## LOCATION AND VENUE

Budapest, Hungary

## FEES AND DISCOUNTS

Standard price: € 1400 + VAT

Discounts:

- 10% with valid Service Maintenance Agreement on MIKE Powered by DHI product

## THIS IS INCLUDED

- Training material
- Access to all software required
- Training Certificate

## NOT INCLUDED

Computers for hands-on exercises are not included. Participants must bring their own computers.

## LANGUAGE

Lectures and training material are in English.

## REGISTRATION AND CONTACT

Deadline for registration is 24 September 2019 (ie 3 weeks before course start). A minimum number of trainees is required for the course to proceed. DHI reserves the right to reschedule the training course up to 3 weeks prior to the published course date scheduled.

## CONTACT

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## RELATED COURSES

- FEFLOW - Introduction to groundwater modelling - 26-27 February 2019, Budapest
- FEFLOW - Advanced groundwater modelling - 17-18 October 2019, Budapest
- III. Hungarian FEFLOW user day (free event) - 16 October 2019, Budapest

## INSTRUCTOR

### CARLOS A. RIVERA VILLARREYES

Dr. Carlos Rivera works as the Director Sales Service and Support at DHI WASY, Germany. Within his activities, he leads the FEFLOW user support team. Dr. Rivera has trained professionals around the world in different groundwater modelling topics in English and Spanish. Dr. Rivera has profound knowledge of groundwater and unsaturated-zone modelling as well as parameter estimation (model calibration, e.g., with PEST).



Dipl.-Ing. (FH), Civil Engineering, University of Piura, Peru

MSc, Desert Studies - Water Resources Management, Ben-Gurion University, Israel

PhD, Hydrology, University of Potsdam, Germany



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## 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.

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