



Introduction to modelling of heat transport with COMSOL MULTIPHYSICS

July 28-August 1, 2008

COURSE OVERVIEW

The course is designed to introduce the participants to the simulation of water problems related to elevated temperatures and salinities.

Taking this short course will help groundwater practitioners to:

- Understand the basics of flow- and transport modelling
- Understand the basics of heat transport modelling
- Apply the theoretical framework with hands-on experience in the computer lab
- Use the modelling tool COMSOL MULTIPHYSICS.

Approximately half the time of the course is devoted to computer lab work.

Course sessions are from 9:00 a.m. to 5:00 p.m. every day, with a one-hour lunch break at noon.

COURSE DESCRIPTION

- Basics of advective and dispersive solute transport
- Basics of heat transport
- Basics of density driven flow
- Development of conceptual models
- Numerical solution schemes
- Constructing Comsol Multiphysics flow and solute transport models
- Modelling heatflow with Comsol Multiphysics
- Modelling typical scenarios of deep and shallow heat extraction

PREREQUISITES

Participants will benefit the most from this course if they have a working knowledge of groundwater models (flow/transport).

INSTRUCTORS

The course will be presented by the international expert **Dr. Ekkehard Holzbecher**, Senior Research Scientist at WIAS and developer of the program FAST, and by **Dr. Claus Kohfahl**, Assistant Professor at Freie Universität Berlin.

ENROLMENT & REGISTRATION

The fee for the short course is €300 (students are free of charge). Enrolment for the course requires a deposit of €50. You will be invoiced for the tuition balance. The fee covers instruction, course notes, refreshments, and a certificate of participation. Lodging and meals are not covered. Payment in full must be received prior to the beginning of the course. The registration fee and the course fee may be paid by bank transfer. In case of cancellation, the tuition fee will be refunded, less the €50 deposit; the right to course materials is forfeited. Substitutions are permitted at any time. Organizers retain the right to cancel the course. In the event of organizer cancellation, the registered participants will be informed before June 20, 2008, and the fee will be refunded. Participation will be limited to 20 persons.

COURSE LOCATION

The course will be held in Berlin, at Freie Universitaet Berlin, Malteserstraße 74-100, 12249 Berlin (GeoCampus Lankwitz), which is 1 hour away from the 2 international airports and can be reached by taxi or public transport. Lodging is available in Forum Hotel Berlin Steglitz, 15 mins away from the campus by bus. Information regarding transportation, parking, and lodging will be sent upon registration. A campus map is available at http://www.fu-berlin.de/service/media/lageplan_lankwitz.pdf.

Inexpensive lodging for €10/day is also possible in the campus guesthouse, which offers a more basic standard.

For registration and information contact:

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Hydrogeology Group

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