Registration and Contact

This workshop is addressed to people who are dealing with numerical geothermal simulation and prognosis especially in the context of geothermal energy for practical issues or research topics.

Registration:
Please register **only** with the registration form on:
http://www.theacademybydhi.com/courses-and-events-calendar

Registration Fee:		**(Students Fee):**
two days	225,- €	(110,- €)
one day	120,-€	(60,- €)

Konto: DANSKE Bank –
IBAN: DE48 2032 0500 4989 1796 67

Deadline for Registration:
Please register until: 15.03.2015

Contact:

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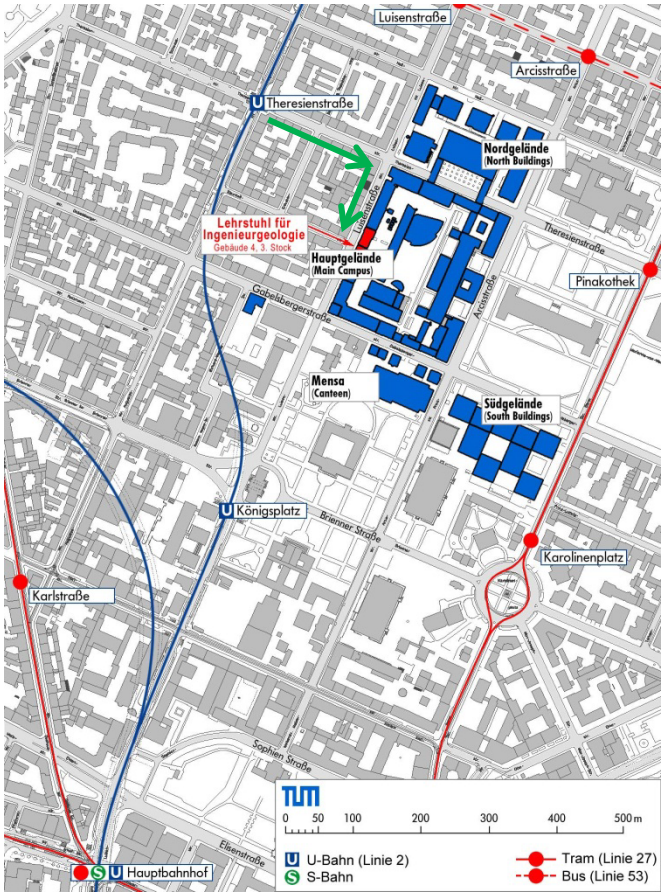
Venue

TU München Arcisstr. 21 80333 München

House 4, Entrance VIII or IX, 2. floor, room 2408
(Entrance via Luisenstraße)



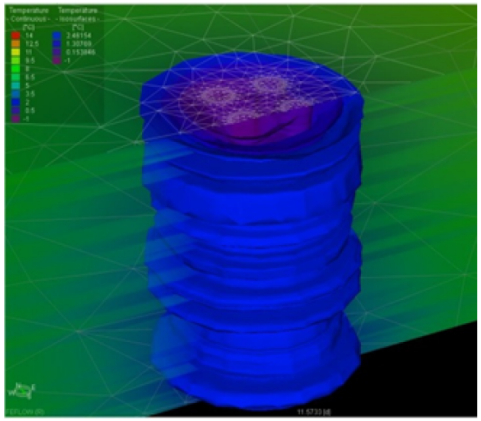
Approach:

By public traffic: From central railway station take the U2 in the direction to Feldmoching.
Exit at Theresienstraße. From there 10 min footwalk.

The parking space situation for private cars is critical. We recommend to approach by public traffic.

Chair of Hydrogeology
AG Geothermal Energy

1st Workshop on Numerical Geothermal Simulation



at the Technische Universität München

8./9. April 2015

THIRD CIRCULAR AND PROGRAM

THE ACADEMY by DHI

Program: 8. April 2015

8:30 Introduction by Dr. Kai Zoßeder, TU Munich

Keynote by Mr. Peter Schätzl, DHI-WASY GmbH

Session 1 - Near surface systems: Urban Structures

9:30	Evaluation of Coaxial Borehole Heat Exchanger. *H. Kaiser, GWE Pumpenböse GmbH*
10:00	A simple tool for designing and assessing thermal groundwater utilization. *R. Schwarz, AF-Consult Switzerland Ltd*
10:30	ThermoMap – An open-source web mapping application for illustrating the very shallow geothermal potential in Europe and selected case study areas. *D. Bertermann, GeoZentrum Nordbayern, University Erlangen-Nuremberg*
11:00	coffee break
11:30	Development of a simple method for practical use to estimate typical heat current length in a gravel aquifer. *F. Böttcher, TU Munich*
12:00	Thermal utilization of groundwater in urban agglomeration: simulation of the current situation and of predictions to manage the resources. *J. Poppei, AF-Consult Switzerland Ltd*
12:30	Numerical simulations at the Geological Survey of Austria as a tool for urban district planning and dimensioning shallow geothermal energy facilities in Vienna. *A. K. Brüstle, Geological Survey of Austria*
13:00	lunch break

Session 3 - Near surface systems: Detailed approaches

14:30	Numerical simulation of plane energy geostructures under the influence of groundwater flow. *D. Koppmann, Geotechnik im Bauwesen, RWTH Aachen University*
15:00	Geothermal use of foundation. *NN, BauerSpezialtiefbau GmbH*
15:30	Analysis of impact of heat extraction from soil with low thermal conductivity. *T. M. Madsen, Dep of Geoscience, Aarhus University, Denmark*
16:00	afternoon break
16:30	Hydrothermal Modeling of Pile Heat Exchangers in the Unsaturated Zone. *C. Maragna, Bureau de Recherches geologiques et minieres BRGM France*
17:00	Quantifying the influence of subsurface constructions on groundwater temperature - underground and suburban railway tunnel, subterranean garage and cellar. *G. Somogyi, TU Munich*
17:30	Thermal performance comparison of 2-U and coaxial borehole heat exchangers. *J. Rolker, Solites - Steinbeis Research Institute for Solar and Sustainable Thermal Energy Systems, Stuttgart*
18:00	Plenum: Closing of the 1st day: Resume (15 minutes)
20:00:	Come Together in a typical location in Munich: Löwenbräukeller, Stiglmaierplatz

Program: 8. April 2015

Session 2 - Technical questions / Model coupling

9:30	Coupled simulations of heat transport and geochemistry for in-situ iron removal in the context of geothermal energy production, *L. Wissmeier, AF-Consult Switzerland Ltd.*
10:00	Integration of different numerical simulation software for detailed modelling of ground source heat pump systems. *L. Merényi, Geological and Geophysical Institute of Hungary*
10:30	Dynamic coupling of Feflow and EnergyPlus - A holistic approach for modeling the entire system of building and geothermal heat storage, *D. Arndt, Gruner Böhringer AG, Switzerland*
11:00	coffee break
11:30	Contribution of simulation models to design, prognosis and monitoring of aquifer thermal energy storage (ATES) systems. *S. Diaz-Stawiszynski, GTN Geothermie Neubrandenburg GmbH*
12:00	Optimizing geothermal system performance through iterative coupling of reservoir and surface plant simulations. *Prof. M. Saar, Dep. of Earth Sciences, ETH-Zurich, Switzerland*
12:30	Numerical validation of laboratory tracer tests using rock sample with artificial fracture. *R. Sigut, GEOMEDIA Ltd.*
13:00	lunch break

Session 4 - Deep systems / Reservoir modelling

14:30	3D fault-induced thermal convection and its impact on hydrothermal fluid migration. *F. Magri, GFZ German Research Centre for Geosciences, Section 5.3 - Hydrogeology, Potsdam, Germany*
15:00	The effect of heterogeneous fault zones on the flow of geothermal water in the Jurassic groundwater reservoir located in the Southern German molasse basin – A sensitivity analysis on the basis of hydraulic simulation. *F. Konrad, TU Munich*
15:30	Thermal performance of a deep open-loop doublet scheme: insights from a synthetic and heterogeneous coupled heat and flow model. M. Le Lous, Ensegid Bordeaux
16:00	afternoon break
16:30	THERMTEC, Thermal – Tectonic Modeling of Orogenetic Processes in the Eastern Alps. *S. Hoyer, Geological Survey of Austria*
17:00	Coupled simulation of deep geothermal systems. G. *Blöcher, Helmholtz-Zentrum Potsdam - Deutsches GeoForschungsZentrum GFZ*

Program: 9. April 2015

2nd day - FEFLOW Workshop

Held by FEFLOW experts from DHI-WASY

THEORY

- Modeling of coupled fluid and heat transport
- FEFLOW variable heat density model
- Boussinesq approximation
- Extended state equation
- Rayleigh theories
- Boundary conditions and constraints

PRACTICE

- Geothermal energy systems: open / closed loop
- Advective boundaries - Injection / extraction
- Modelling approaches for BHEs
- Heat pumps
- Net energy withdrawal
- Fully discretized approaches

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