

IGSH-Courses in 2010

Heterogeneity in Hydrogeology and Groundwater Transport Modelling

International German Summer School (IGSH) was organized already for the fourth time at the Ruhr-University Bochum from August 30th, 2010 till September 10th, 2010. Since 2007, IGSH annually organizes summer courses for Hydrologists, Hydrogeologists and Natural Scientists with interest in hydrogeological processes and problems. In order to cover as many hydrological aspects as possible, the thematic priority of the courses changes each year.

IGSH 2010 focused on modeling groundwater flow and transport in heterogenous media. The lecturers – hydrogeologists from Ruhr-University Bochum and University Stuttgart – encountered a total number of sixteen participants, mostly hydrologists and hydro-geologists, from ten countries.

The course program was divided into three sections and started with an introduction into groundwater hydraulics given by Prof. Dr. Stefan Wohnlich from Ruhr-University Bochum. Both field- and laboratory methods to determine aquifers properties were presented and the basic flow and transport equations were described. The second part of the summer school included the application of geostatistics to estimate hydraulic parameters. The participants learned from Jun.-Prof. Dr. Andreas Englert (Ruhr-University Bochum) how to use geostatistical methods for upscaling hydraulic parameters from point data with special regard to heterogenous distribution of aquifer properties. According to the course program, each section of the summer school involved the solution of exercises by the participants in collaboration with the lecturers. The third part of the course program focused on the handling of numerical modeling software to simulate flow and transport in groundwater. Currently modeling program packages (ASMWIN, PMWIN, FEFLOW) were introduced by Prof. Dr. Riegger from University Stuttgart and afterwards applied by the participants for solving hydrogeological problems from their home countries. The results were presented by the participants and discussed in a group.

This year's summer school included a field trip to the open pit lignite mine Garzweiler, the modeling department of RWE Power AG and a visit of test site Krauthausen (Forschungszentrum Jülich GmbH). This way the participants got an impression of aquifer's heterogeneities and the practical application of numerical groundwater modelling.

As in the years before, the International German Summer School was accompanied by a cultural programme and occurred in pleasant atmosphere. This time lecturers and participants visited events of the "European Cultural Capital Ruhrgebiet 2010". All participants were highly satisfied with the programme of IGSH and the collegial atmosphere during the course.