



Technische Universität Berlin

Chair of Water Resources Management and Modeling of Hydrosystems

Prof. Dr.-Ing. Reinhard Hinkelmann



Announcement of a lecture in SS 2015

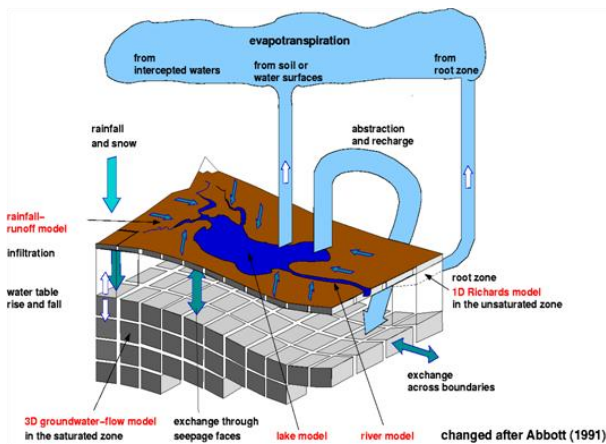
Modeling Hydro- and Environmental Systems I

Tuesday from 10:00 am – 2:15 pm starting April 14, 2014

in TIB21-004 (TIB area, Wedding), Gustav-Meyer-Allee 25, 13355 Berlin

In recent years *numerical simulation methods* have strongly gained importance in hydro- and environmental sciences. They are used as *prediction tools* for purposes dealing, for example, with groundwater management, detailed flood propagation or the spreading of contaminants in surface or subsurface waters.

The lecture presents an introduction into modern modeling methods and qualifies for a later employment in the modeling field.



The lecture deals with modeling flow and transport processes in *groundwater* and in *surface waters*. After short introductions to the hydromechanics, model concepts and modeling techniques are explained with an emphasis on *discretization methods* based on Finite-Difference, Finite-Element and Finite-Volume Methods. Aspects of data processing are addressed and different *modeling systems* are introduced focusing on application ranges as well as on limitations. Basic knowledge in fluid mechanics and mathematics is desirable, however not mandatory.

The lecture (6 ECTS, 4 SWH) belongs to the competence field *Hydro sciences* in the master program *Bauingenieurwesen (Civil Engineering)*. In the master program *Technischer Umweltschutz (Technical Environmental Protection)*, it can be chosen as a complementary lecture (Ergänzungsfach) and in the master program *Geotechnologie (Geotechnology)* as an elective course.

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