



Announcement of lecture in summer semester 2024

# Modeling Hydro- and Environmental Systems

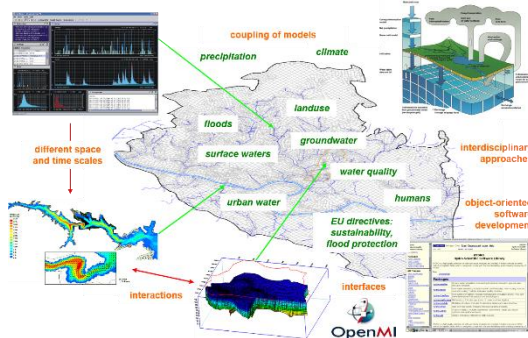
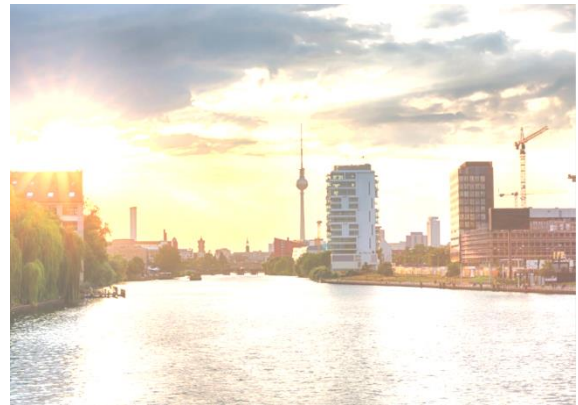
Tuesdays from 12:00 am – 03:15 pm starting April 16th, 2024 in TIB20+21 004

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

Registration: e-mail to Can Ölmez or directly via ISIS:

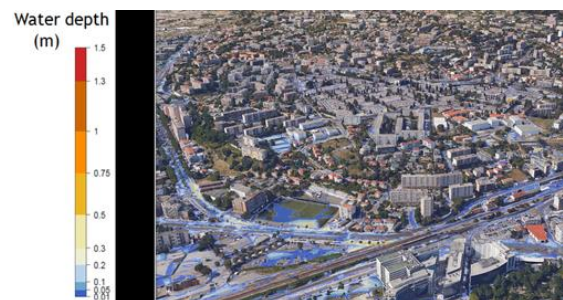
<https://isis.tu-berlin.de/course/view.php?id=3827>

In recent years *numerical modeling* has strongly gained importance in hydro- and environmental sciences. It is chosen as *prediction tool* to investigate impacts of climate change and adaptation measures, flood protection and water scarcity, river restoration and engineering measures, spreading of contaminants and water quality. Overall, such models together with using new possibilities of *digitalization* have become an important basis for *sustainable water management* and *smart water solutions*.



The lecture deals with modeling of flow and transport processes in *groundwater* and *surface water systems*. It addresses advanced hydro-mechanics, model concepts, *numerical methods* (Finite-Difference, Finite-Element and Finite-Volume Methods), pre- and post-processing, modeling systems and computer exercises with engineering applications. Basic knowledge in hydromechanics and mathematics is desirable, however not mandatory.

The course (6 ECTS, 4 SWH) belongs to the competence field Hydrosiences in the Master's program Civil Engineering (*Bauingenieurwesen*). It can be chosen as a compulsory elective course in the Master's program in Civil Systems Engineering, as a complementary lecture (Ergänzungsfach) in the Master's program in Environmental Technologies (*Technischer Umweltschutz*), and as an elective course in other programs.



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