Upcoming Short Course:
Porous Media Free Flow Coupling

Lecturer: Prof. Dr.-Ing. Rainer Helmig
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Duration: 15 hours
Location: Online
Time: 15-18:00 CET
Dates:
- Monday, November 14, 2022
- Monday, November 21, 2022
- Monday, November 28, 2022
- Monday, December 05, 2022
- Monday, December 12, 2022

Short Course Summary:

Coupled systems of free flow adjacent to a porous medium appear ubiquitously in nature and in technical applications. Examples for interface-driven transport and exchange processes include soil evaporation, fuel cell water management or food drying. Understanding the complexity of pore-scale mechanisms is paramount to build efficient and reliable mathematical and numerical models.

Typically, averaged models based on the concept of a representative elementary volume (REV) approach are chosen to overcome the enormous computational demand of solving these types of systems on the pore scale. This leads, however, to a loss of detail sub-scale processes which might critically affect the global system behaviour.

The aim of the short course is to give an insight into the physical-mathematical and numerical modelling of coupled free flow and porous-media flow systems. The special challenges of the physical-mathematical modelling will be discussed. Selected models will be used to illustrate how promising approaches can lead to incorrect results.

Registration fee:

InterPore Student Member: 110€   *InterPore Student Non – Member*: 140€

InterPore Academic Member: 170€   *InterPore Academic Non – Member*: 230€

InterPore Industry Member: 260€   *InterPore Industry Non – Member:* 360€

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