

Upcoming Short Course: Porous Media Free Flow Coupling



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Location: Online

Dates: Mondays, November 14—December 12, 2022

Time: 15-18:00 CET

Duration: 15 hours

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:

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