Center for Environmental & Applied Fluid Mechanics

"Exploring Multiphase Flow Processes via Particle-Resolving Simulations"

Prof. Eckart Meiburg
University of California, Santa Barbara

Abstract: We review grain-resolving Navier-Stokes simulations for a variety of multiphase flow processes. These simulations are based on an Immersed Boundary approach, which accurately captures the flow around each particle and in each pore space. We will discuss several different applications, among them particle sedimentation, particle-turbulence interaction and submerged granular collapse processes. One focus will be on the influence of cohesive forces in such flows, especially the formation and break-up of aggregates consisting of several individual particles.

Bio: Eckart Meiburg received his PhD from the University of Karlsruhe in Germany. He conducted postdoctoral research at Stanford, and after holding faculty positions at Brown University and the University of Southern California, he moved to UCSB in 2000.

His research interests fall into the area of fluid dynamics and transport phenomena, with an emphasis on computational investigations of environmental and multiphase flows. He is a fellow of the APS and ASME, and he is a recipient of the Presidential Young Investigator and Humboldt Senior Research Awards. He was the Ronald Probstein Lecturer at MIT, and he has held visiting positions in Switzerland, France, Germany, Australia, Israel and New Zealand.

Fall 2023 CEAFM Seminar Series

December 8, 2023 ✖ 3:00 PM ✖ Hodson Hall 210

JOHNS HOPKINS
WHITING SCHOOL of ENGINEERING