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# Mini-Symposium

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## Abstract

Wetted or fully immersed granular materials are ubiquitous in natural flows and technical applications such as sediment transport, erosion processes, submarine avalanches, granulation processes, fluidized beds and flow through particle based materials in heterogeneous catalysis. Recent advances in numerical methods have made it possible to simulate large assemblies of individual grains interacting with one or several fluid phases at scales ranging from nano to larger scales.

The goal of mini-symposium is to bring together researchers working on various aspects of numerical modeling and validation of fluid-grains interactions and their applications to industrial or natural processes. It covers but is not limited to the following topics:

- Rheology of inertial and viscous dense suspensions
- Flow through granular porous materials
- Condensation and phase change of water in pores
- Wetting, granulation processes and evolution of granular fabric with capillary interactions
- Erosion processes
- Water in nano-structures such as cement and clays

**Keywords:** Fluid, grain coupling, Wetting, Erosion processes, Agglomeration, Suspensions

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