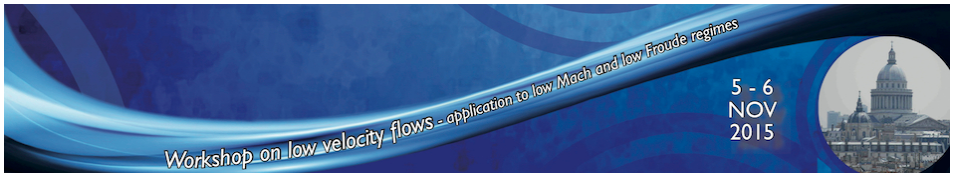

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Singular compressible Navier-Stokes equations leading to an incompressible system with pressure dependent viscosity

I will present a work dedicated to the singular limit passage between a model for suspension flows and an original incompressible model for granular media. The model for suspension flows consists of compressible Navier-Stokes equations with pressure, representing repulsion forces, and viscosities, representing resistance to deformations, singular close to the maximal close-packing volume fraction. Performing an appropriate limit passage, this model is shown to converge towards a fully incompressible system with pressure dependent viscosity and with an additional equation linking the Lagrange multiplier associated to the incompressible constraint with the evolution of new quantity, the adhesion potential, which keeps track of the history of the flow.

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