Atelier
« Méthodes de calcul pour le transport optimal
18—22 juillet 2016

Workshop
"Computational Optimal Transportation"
July 18—22, 2016

A splitting method for kinetic models of granular media

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A granular material is an ensemble of a large number of discrete solid particles (such as grains) which interact by nearly instantaneous collisions that are inelatic, that is, characterized by a loss of kinetic energy.

In this talk, we first discuss the local existence of weak solutions to the kinetic granular media equation for general interaction potentials in any dimension, as well as the splitting algorithm leading to this result. Next, we show some conditional results on global existence for small initial data. Finally, restricted to the one-dimensional setting, we present some attempts to prove or disprove global existence depending on the interaction potential.

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