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Laboratoire PMMH
10 rue Vauquelin, 75231 Paris Cedex 05

Séminaire PMMH

Amphithéâtre Urbain (A1), Escalier N, RdC

Vendredi 16 décembre 2016, 11h00-12h00

Suzie Protière

Institut d'Alembert, UPMC

The instabilities of a granular raft

Small objects trapped at an interface are very common in Nature (waterstriders, ant rafts, bubbles or pollen, membranes...). They also find an application in industrial processes since they can act as stabilizing agents for emulsions or foams. Their study is therefore of practical as well as fundamental importance. Here we propose to study a monolayer of dense particles at an oil/water interface that we call a granular raft. In such system, the stability of the raft is governed by the interplay between gravitational and surface tension forces. Indeed when the number of particles in the raft is large enough the raft may become unstable and sink. Moreover wrinkles and folds can be observed when they are compressed under their own weight. I will first present the stability of such objects and then study their controlled compression to describe the buckling instability they undergo.

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Contact : Antonin Eddi, Sylvain Patinet, Étienne Reyssat, seminaires@pmmh.espci.fr