

LadHyX Seminar – June 3, 14:00

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Dissipation and stability in liquid foams

A liquid foam is a dense assembly of gas bubbles in a surfactant solution. It is a light and cheap material, with a large specific area and with many insulating properties (thermal, mechanical and acoustic insulations). It is then encountered in many industrial applications, in everyday life and in nature. But a liquid foam is an out-of-equilibrium material, that will eventually collapse. One of the main current fundamental and industrial challenges is to be able to control its stability. It has been shown for example to depend a lot on the type of surfactants used to make the foam.

In this talk, I will discuss the dynamics of neighbor bubble switching within a liquid foam, which can be at the origin at the collapse. In particular, by running model experiments and numerical simulations, the role of surfactant physical properties on this dynamic will be identified. Open questions on the mechanisms of rupture and rupture propagation will then be considered.

Collaborators; Y. Mezache, P. Petit, A. Titta, F. Detchevery, M. Le Merrer, P. Spelt.