Modelling compressible two-phase flows with surface tension

Hélène MATHIS

Université de Montpellier

`helene.mathis@umontpellier.fr`

The modelling and the simulation of two-phase flows are investigated for several decades, notably for their applications in nuclear industry.

In some safety issues, the fluids are very heterogeneous fluids, for instance water flows with many bubbles.

Then an appropriate modelling is to consider averaged models, since the description of each phase and the interfaces is out of reach.

However the knowledge of interface properties, such that surface area and surface tension evolution, is of major interest.

The goal of this talk is to present possible ways to model two-phase flows with surface tension, namely an homogenisation approach and a variational one by means of the Stationary Action Principle.