Two phase flows

Component
École Nationale Supérieure d'Électrotechnique d'Électronique

In brief

- **Ametys Code:** N9EM07B
- **Open to exchange students:** No

Presentation

Objectives

Introduce students to the complex dynamics of two-phase flows. The physics of these flows is introduced by writing and analyzing balances (mass, momentum and energy) at the interface between two fluids. These balances are then used to write the general equations for two-phase media. The physical mechanisms present in such flows are then introduced by describing the transfers (forces, mass, heat, phase change, rupture, coalescence) encountered in flows made up of particles (bubbles, drops or solid particles).

Description

- Mass, momentum and energy balances at interfaces.
- General equations of two-phase media.

- Introduction to 1-Fluid and 2-Fluid approaches

- Simple solutions: evaporation of a film or drop, two-phase Couette flow.
- Forces exerted on a particle (drag, lift, added mass, etc.).