Two-phase flows

ECTS credits
1 credits

Semester
Fall

In brief

Course langage: French

Presentation

Learning objectives

This course covers the fundamental principles of multiphase flow description. The skills and knowledge covered correspond to the minimum level required, either to interact with specialists in these fields or to deal with common classical problems on one's own, or to deepen this knowledge by reading specialized books or by participating in complementary specialized training.

Description of the programme

The course on multiphase flows presents the theoretical developments specific to these flows, starting with the most general equations, and then focusing on two specific situations, the liquid/vapor equilibrium flows encountered, in particular, in the nuclear industry, as well as the problems related to aerosols that can be encountered both in industry and in the environment (air pollution and associated health risks).

Generic central skills and knowledge targeted in the discipline

- Know how to model and analyze an aerodynamic problem or multiphase flows, by choosing the most relevant level of modeling
- Master the modeling/numerical simulation methods associated with these types of situations
- Interpret experimental results

How knowledge is tested

Project: writing of a report, 50%.

DS: proctored exam, 50%.

Bibliography

1. Borghi, R., & Anselmet, F. (2014). *Modélisation des écoulements multiphasiques turbulents hors d'équilibre*. HERMES SCIENCE.
2. Mailliat, A. (2010). *Les milieux aérosols et leurs représentations*. EDP SCIENCES.
3. Paraschivoiu, I. (1999). *Aerodynamique subsonique (French Edition)* (ECOLE POLYTECHNIQUE DE MONTREAL).

Teaching team

Fabien Anselmet (ECM)

Malek Abid (AMU)

Intervenants extérieurs du milieu industriel (CEA/IRSN)

Sustainable Development Goal



Sustainable cities and communities



Climate action

Total des heures		**24h**
CM	Master class	18h
TD	Directed work	6h

Useful info

Name responsible for EU

Lead Instructor
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