

Numerical methods for incompressible flows



Component
École Nationale
Supérieure
d'Électrotechnique
d'Électronique

In brief

- > **Ametys Code:** N9EM05A
- > **Open to exchange students:** No

Presentation

Objectives

Present the main algorithms used for the numerical simulation of incompressible flows, in particular those to be found in major industrial codes.

Description

After recalling the particularities of the incompressible Navier-Stokes equations, we will detail the 2 main families of algorithms used to solve these equations numerically by volume or finite difference approaches: projection methods and segregation methods. We will then present the most efficient techniques for solving large linear systems obtained after discretization of the equations.

Pre-requisites

1st year course on numerical methods