High Performance Computing

Component
École Nationale Supérieure d'Électrotechnique d'Électronique

In brief

- **Ametys Code:** N9EE33A
- **Open to exchange students:** Yes

Presentation

Objectives

To supplement the knowledge of linear algebra covered in S8 and introduce more recent numerical calculation methods for solving large-scale problems.

Description

· Iterative methods for solving linear systems:

o Richardson

o Krylov spaces: conjugate gradient, GMRES

· Low-rank methods for dense matrices

o Multipole methods, Adaptive Cross Approximation

o Hierarchical matrices

· Tensors

o Definitions and basic concepts

o Storage format: CP, Tucker, Tensor-Train

Pre-requisites

Linear Algebra Course S8-EEEA