Non Linear Systems

Component
École Nationale Supérieure d'Électrotechnique d'Électronique d'Informatique d'Hydraulique et des Télécommunications

Semester
Printemps

In brief

> **Ametys Code:** N8AE05C

> **Open to exchange students:** No

Presentation

Objectives

Master the approaches to modeling and analyzing nonlinear dynamic systems

Description

- Review of linear systems and the state equation formalism, definition of a nonlinear system, specific nonlinearities and combination of nonlinearities
- Methods for solving nonlinear systems: linearization around an operating point, first harmonic method, phase plane method
- Illustrative examples: position control with a nonlinearity, predator-prey model, simple pendulum (with and without friction), level regulation

Pre-requisites

modeling and analysis of linear systems