

UE Linear dynamical system

 **ECTS**
3 credits

 **Component**
UFR PhITEM
(physique,
ingénierie, terre,
environnement,
mécanique)

 **Semester**
Automne

- > **Teaching language(s):** English
- > **Open to exchange students:** Yes
- > **Code d'export Apogée:** PAX7ECAC

Presentation

Description

In this module, we will lay the foundations for the control of linear systems in the continuous-time as well as in the discrete-time. In the continuous-time case, we will consider the time domain as well as the frequency domain. After a brief introduction, the following concepts will be addressed: transfer function, state-space representation of linear and nonlinear systems, linearization, Linear Time invariant (LTI) and Linear Time variant (LTV) systems, Input-Output stability.

Objectives

Objectives:

The purpose of this module is to lay off the bases of control for linear systems in continuous-time as well as in discrete-time case. At the end of this class the students will be familiar with the concepts of: state-space representation, linearization, time invariance, input response, transfer function of state-space systems, input-output stability. C. Prieur and M. Fiacchini will later use these concepts in their advanced control classes.

Course parts

UE Linear dynamical systems - CM/TD

Lectures (CM) & Teaching Unit (UE)

25h

Recommended prerequisites

Laplace Transform, Bode plot, block diagram representation, Vector and matrix operations, P/PI/PID control.

Useful info

Campus

› Grenoble - Scientific Polygon