

**Stabilization of Infinite
Dimensional Systems: ASCC
2017**

**Rapport sur les
contributions**

ID de Contribution: 0

Type: **Non spécifié**

Stability and stabilizability concepts for linear infinite dimensional dynamical systems

dimanche 17 décembre 2017 13:00 (1 heure)

This lecture begins by describing in an introductory manner various concepts of stability of infinite dimensional systems with emphasis that, unlike in classical infinite dimensional linear systems, a variety of non equivalent stability types can be encountered in relatively simple PDEs systems. The

second part of this presentation is devoted to some by now classical tools to establish stability properties, namely in the frequency domain. Finally, a particular attention will be devoted to examples described by hyperbolic PDEs, where stabilization is achieved using collocated actuators and sensors.

Auteur principal: M. TUCSNAK, Marius (Institut de Mathématiques de Bordeaux)

Orateur: M. TUCSNAK, Marius (Institut de Mathématiques de Bordeaux)

ID de Contribution: 1

Type: **Non spécifié**

Backstepping methods

dimanche 17 décembre 2017 14:00 (30 minutes)

The use of linear Volterra operators in constructing backstepping transformations and feedback laws for stabilization of PDE systems by boundary control will be reviewed. Basic PDEs of both parabolic and hyperbolic types will be covered. With time permitting, an example of backstepping in observer design with boundary sensing will be covered.

Auteur principal: M. KRSTIC, Miroslav (Department of Mechanical & Aero. Eng. University of California)

Orateur: M. KRSTIC, Miroslav (Department of Mechanical & Aero. Eng. University of California)

ID de Contribution: 2

Type: **Non spécifié**

From finite to infinite dimensional systems: approximation and interconnection issues

dimanche 17 décembre 2017 14:30 (30 minutes)

In practical problems the control laws of infinite dimensional systems are computed using projections on finite dimensional systems. Moreover, some applications are naturally described by couplings of infinite dimensional systems with finite dimensional ones. This presentation to describe the interconnections of these systems and the properties of the control laws computed on projected systems when inserted in the original infinite dimensional ones.

Auteur principal: Mme TAN, Ying (Department of Electrical and Electronic Engineering, Melbourne School of Engineering)

Orateur: Mme TAN, Ying (Department of Electrical and Electronic Engineering, Melbourne School of Engineering)