Workshop DECOD 2

Delays and Constraints in Distributed Parameter Systems

November 21-23, 2018, Toulouse, France

Program

Foreword

Welcome to the 2nd DECOD workshop on " Delays and Constraints in Distributed Parameter Systems ".

The aim of the workshop is to gather leading researchers working from different perspectives including:

- Systems subject to limited information;
- Stability and control of delays and infinite-dimensional systems;
- Development of numerical methods and algorithms to study the above problems.

The workshop is co-organized by a member of an ANR project : SCIDIS (Stability and Control of Infinite-Dimensional Systems) and members from the SPa-DisCo International Research Network.

Organizers:
Dimos Dimarogonas (KTH, Sweden)
Swann Marx (LAAS-CNRS, France)
Alexandre Seuret (LAAS-CNRS, France)
Sophie Tarbouriech (LAAS-CNRS, France)
Giorgio Valmorbida (L2S-CNRS, France)

Sponsors:

Program

Wednesday 21/11/2018

13h15: Welcome

13h30-16h10: Session We.1 – Delays (Chair: Alexandre Seuret)
- 13h30-14h10: Wim Michiels - *Computing delay-Lyapunov matrices for large-scale systems*
- 14h10-14h50: Delphine Bresch-Pietri - *Slow gas flow passing a solid is a convection/diffusion equation*
- 14h50-15h30: Tomas Vyhlidal - *Time delay compensators for flexible systems*
- 15h30-16h10: Davide Liessi – Stability of periodic solutions of delay equations: from Floquet theory to pseudospectral collocation

16h10-16h40: Coffee break

16h40-18h00: Session We.2 – Hybrid systems (Chair: Sophie Tarbouriech)
- 16h40-17h20: Aneel Tanwani - *ISS Lyapunov Functions for Cascade Switched Systems with Applications*
- 17h20-18h00: Francesco Ferrante - *Stabilization of Linear Systems in the Presence of Intermittent Measurements: A Hybrid Systems Approach*

Thursday 22/11/2018

8h30-10h30: Session Th.1 – Constraint systems (Chair: Francesco Ferrante)
- 8h30-9h10: Matthew Turner - *Analysis of systems with slope-restricted nonlinearities using externally positive Zames-Falb multipliers*
- 9h10-9h50: Vahid Mamduhi - *Delay-dependent design and analysis of networked control systems*
- 9h50-10h30: Bayu Jayawardhana - *Butterfly and multiple loops hysteresis behavior via Preisach Operator*

10h30-11h15: Coffee break

11h00-12h20: Session Th.2 – Multi-agents and applications (Chair: Bayu Jayawardhana)
- 11h00-11h40: Dimos Dimarogonas - *Distributed hybrid control of multi-robot systems under spatiotemporal specifications*
- 11h40-12h20: Luca Zaccarian - *Hybrid models of opinion dynamics with opinion-dependent connectivity*

12h45-14h: Lunch

14h-16h00: Session Th.3 – Analysis and control of PDEs (Chair: Yann Le Gorrec)
- 14h-14h40: Julie Valein – *Stabilization of nonlinear KdV equation with time-delay feedback*
- 14h40-15h20: Sylvain Ervedoza - *Open loop stabilization of incompressible Navier–Stokes equations in a 2d channel using power series expansion*
- 15h20-16h00: Rafael Vasquez - *A PDE Control Approach to Stabilization and Estimation of Thermoacoustic Instabilities in a Rijke Tube*

16h30-16h40: Coffee break

16h40-18h40: Session Th.4– Analysis and control of PDEs (Chair: Giorgio Valmorbida)
- 16h40-17h20: Matthieu Barreau - *Stability Analysis of Infinity Dimensional Systems - Application to a Drilling Mechanism*
- 17h20-18h00: Yann Le Gorrec - *A short overview on stability and stabilization of boundary-controlled port Hamiltonian systems*
- 18h00-18h40: Emilia Fridman - *Robust delayed and sampled-data control of parabolic PDEs*

18h50: Cocktail

Friday 23/11/2018

8h30-10h30: Session Fr.1 – Nonlinear systems (Chair: Matthew Turner)
- 8h30-9h10: Giorgio Valmorbida - *Stability and Robustness Analysis of Piece-Wise Affine Discrete-Time Systems*
- 9h10-9h50: Swann Marx - *A moment approach to entropy solutions to nonlinear hyperbolic PDEs*
- 9h50-10h30: Daniele Astolfi - *The challenges of nonlinear robust regulation systems*

10h30-11h00: Coffee break

11h00-12h20: Session Fr.2 – Delays (Chair: Delphine Bresch-Pietri)
- 11h00-11h40: Vladimir Rasvan - *Two power control models described by conservation laws*
- 11h40-12h20: Fatihcan Atay - *Calculating the Consensus Value in Multi-Agent Systems with Time Delays*

12h30: Lunch