IFAC TC 2.6
Distributed Parameter Systems
https://tc.ifac-control.org/2/6

TC Meeting – December 16
Yann Le Gorrec, Prof. UBFC FEMTO-ST

Outline

- ## TC 2.6 Distributed Parameter Systems
  - Scope
  - Aim
  - Tools

- ## Website
  - Structure
  - How to use it ?

- ## Workshops - events
  - Virtual seminars
  - TC Workshop
  - Supported events
  - Invited sessions/workshops/mini courses

- ## Actions

femto-st
SCIENCES &
TECHNOLOGIES

IFAC TC 2.6 Distributed Parameter Systems

TC 2.6 Distributed Parameter Systems

› A new team (2020-2023)

Yann Le Gorrec (c), Ralph C. Smith (vc), Hans Zwart (education), Thomas Meurer (publications), Delphine Bresch-Pietri (industry) and Hector Ramirez (social medias).

› Members

- 118 members (proposed by NMOs or nominated by the TC Chair)
- Student section

femto-st
SCIENCES & TECHNOLOGIES

TC 2.6 Distributed Parameter Systems

› Scope

The Technical Committee focusses on developing and fostering efforts and methods for modeling, analysis, simulation and control/observer design for distributed parameter systems described by linear and nonlinear partial differential equations.

This includes (but is not limited to) methods such as
- differential geometry and algebraic approaches;
- semigroup and operator theory;
- Lyapunov-based and backstepping techniques;
- passivity and dissipativity based techniques;
- controllability and observability analysis;
- model reduction;
- actuator and sensor placement;
- experimental design; etc.

TC 2.6 Distributed Parameter Systems

› Scope

In addition, applications are considered covering, e.g.,

- Energy generation, distribution and storage;
- Material science, mechatronics;
- Process intensification and chemical engineering;
- Flexibles strcutures, Compliant Mechanics;
- Adaptive optics;
- Quantum systems;
- Distributed cooperative systems;
- Modern embedded actuators and sensors;
- Traffic and network congestion;
- Fluids, fluid-structure interactions; etc.

TC 2.6 Distributed Parameter Systems

› Aim

- To foster developments of both theoretical approaches and emerging applications in the field of **Distributed Parameter Systems** (DPS) i.e. infinite dimensional systems described by partial differential equations (PDEs) or delays.

- To provide an informational forum of exchange of ideas and experiences in this field of research.

- To promote identification and integration of approaches.

The positioning of this Technical Committee is clearly at a **control system theory level** and aims at addressing various topics such as: modelling, analysis, estimation, simulation, observation, and control, taking all the specificities of the infinite dimension into account.

femto-st
SCIENCES &
TECHNOLOGIES

TC 2.6 Distributed Parameter Systems

› How

- By sharing information among the community:

  - Through a diffusion list.

  - Through the Website : it should **serve as a ressource** for junior and senior researchers and engineers working in areas related to DPS, providing an informational forum of exchange of ideas, contacts and experiences, and **promoting** the identification and integration of new approaches.

- By organizing invited sessions, tutorials and minicourses.
- By organizing special issues.
- By contributing to the review processes in journals and conferences.
- By participating to scientific networks and societies (IEEE and IFAC Fellows, TCs etc …).
- By promoting researchers from ou community (awards, etc …)

femto-st
SCIENCES &
TECHNOLOGIES

Website

TC Website

› **Structure**

- Scope

- Members
- Useful Links
- Workshops
- Forthcoming events
- Job Offers
- Reports

- Please add it in your bookmarks and use it for sharing the information you need to share among the communitee

Forthcoming Workshops - Events

Forthcoming workshops and events

› **Virtual seminars**

- DPS Online Seminar (J. Auriol, F. Bribiesca-Argomedo, R. Vazquez)
  http://aero.us.es/DPSOnlineSeminar/Seminar.html

- Control in Times of Crisis (L. de Teresa, S. Ervedoza, E. Fernandez Cara, A. Mercado Saucedo) http://ctcseminar.mat.utfsm.cl/

- CCA seminars (FAU Department of Mathematics)
  https://en.www.math.fau.de/events/

femto-st
SCIENCES &
TECHNOLOGIES

Forthcoming workshops and events

› TC Workshop
  - IFAC/IEEE CSS CPDE 2022, Kiel, Germany, September 4-9, 2022
  - 1st TC Award (Ruth Curtain Award) (H. Zwart will setup a Committee)

› Supported events
  - CDPS Warwick, UK, August 16-20, 2021
  - MTNS Cambridge, UK, August 23-27, 2021
  - MICNON Tokyo, Japan, September 15-17, 2021
  - LHMNLC Berlin, Germany, October 16-18, 2021

› Invited sessions/workshops/mini courses
  - ACC New Orleans, USA, May 26-28, 2021
  - SIAM Conference on Control and Its Applications, Spokane, Washington USA, June 19-212021
  - IEEE CDC Austin, USA, December 13-15, 2021
  - MTNS Cambridge UK, August 23-27, 2021
  - ECC 21 Rotterdam NL 2021?

femto-st
SCIENCES &
TECHNOLOGIES

Actions

Actions

› **General**
- Extend the TC members list.
- Identify companies interested in DPS (please contact the Vc on Industry).
- Identify the submitted issues, interested journals (Vc onPublication).
- Refresh the reference list, internet courses, teaching courses, lecture notes etc … (Vc on Education).

› **Website**
- Add a « Research projects » section to advertise your projects.
- Add a section on « Industrial applications ».

› **Newsletter**
- We have set-up a newsletter that will be sent to the TC members every 3 months.
- Please send the information you want to share to the TC Chair and VC on Social Media.

› **Social Media**
- Facebook, Instagram.

Thanks for your attention !
Do you have questions ?

Take care of you !