



Université
franco-allemande
Deutsch-Französische
Hochschule

UNIVERSITY
OF TWENTE.

Doctoral
College

Port-Hamiltonian Systems

Modeling, Numerics & Control

6th Doctoral Workshop on Theory and Applications of Port-Hamiltonian Systems

16 – 18 October 2024

University of Twente, Enschede, The Netherlands

Tuesday, 15 October

Information:

- The workshop will take place at the U Parkhotel located on the university campus (De Veldmaat 8, 7522 NM Enschede).
 - Public transport: If you have a debit card or credit card with the contactless functionality enabled, you can use it to check in and out in the buses and trains in Enschede. Remember to check out when leaving the bus or the platform, as otherwise you will have to pay a fine and your card will be blocked from further use on public transport in the Netherlands.
 - Note that the Deutschlandticket is valid up to Enschede Central Station if you are travelling there on train from Germany via Gronau (Westf).
-

Wednesday, 16 October

Morning session

Chair: Hans Zwart

- 09:00 - 10:00** **Yann Le Gorrec** (FEMTO-ST):
Modelling, interconnection and control of irreversible port Hamiltonian systems
- 10:00 - 10:30** Coffee Break
- 10:30 - 11:00** **Javier Caballeria** (FEMTO-ST):
First-results on energy balancing control of implicit port-Hamiltonian systems defined on Lagrangian subspaces
- 11:00 - 11:30** **Philipp Kinon** (KIT):
Discrete gradient methods for semi-explicit port-Hamiltonian DAEs
- 11:30 - 12:00** **Yannik Wotte** (U Twente):
Neural ODEs on Lie groups: Optimization of a controller for the port-Hamiltonian rigid body
- 12:30 - 13:30** Lunch

13:30 - 14:30 Tour of the Robotics lab

13:30 - 14:30 Art & Architecture campus tour

Afternoon session

Chair: Yann Le Gorrec

- 15:00 - 15:30** **Jonas Kirchoff** (TU Ilmenau):
Graded symplectic manifolds for port-Hamiltonian systems
- 15:30 - 16:00** **Filippo Testa** (U Twente):
Well-posedness of the Hodge wave system on compact manifolds
- 16:00 - 16:30** Coffee break
- 16:30 - 17:30** Interactive session

20:00 - 21:30 Social Activity: Bowling

Location: Colosseum 72 7521 PT Enschede [More info](#).

Thursday, 17 October

Morning session

Chair: Birgit Jacob

- 09:00 - 10:00** **Steffano Stramigioli** (U Twente):
The Geometry of Continua and Ports
- 10:00 - 10:30** Coffee Break
- 10:30 - 11:00** **Hongliang Mu** (U Twente):
Structure-Preserving Model Order Reduction for Port-Hamiltonian Systems on Manifolds
- 11:00 - 11:30** **Attila Karsai** (TU Berlin):
Nonlinear port-Hamiltonian systems and their connection to passivity
- 11:30 - 12:00** **Tobias Thoma** (TU Munich):
Optimal trajectory control of geometrically exact strings with space-time finite elements
- 12:00 - 12:30** **Lihua Zhou** (U Groningen):
On the Control-by-Interconnection interpretation of integral control for port-Hamiltonian systems
- 12:30 - 13:30** Lunch

13:30 - 14:30 Tour of the Robotics lab

13:30 - 14:30 Art & Architecture campus tour

Afternoon session

Chair: Bernhard Maschke

- 15:00 - 15:30** **Thomas Risse** (IRCAM):
Synthesis of voiced sound using a quasi 1D model of the vocal apparatus
- 15:30 - 16:00** **Markus Lohmayer** (FAU Erlangen-Nürnberg):
Towards a port-Hamiltonian software framework for electromechanical and thermodynamic systems
- 16:00 - 16:30** Coffee break
- 16:30 - 17:30** Interactive session

18:00 Dinner @ U Parkhotel

Friday, 18 October

Morning session

Chair: Paul Kotyczka

09:00 - 10:00 **Birgit Jacob** (U Wuppertal):
Infinite-dimensional linear port-Hamiltonian systems: An introduction

10:00 - 10:30 Coffee Break

10:30 - 11:00 **Bouchra Elghazi** (U Wuppertal):
Well-posedness of infinite-dimensional port-Hamiltonian systems with
boundary control

11:00 - 11:30 **Alexander Wierzb**a (U Twente):
Towards BIBO stability of port-Hamiltonian systems

11:30 - 11:45 Closing

12:30 - 13:30 Lunch
