

Schedule

Autumn School on Theory and Applications of port-Hamiltonian Systems

11 – 13 October 2023

Karlsruhe Institute of Technology (KIT), Campus South, Building 02.95
(Schlossplatz 19, 76131 Karlsruhe, Germany)

Tuesday, 10 October

Information on the arrival

Information:

- One of the local coordinators will wait directly at the fountain of Schlossplatz on Wednesday morning to guide you to the workshop location.
Departure: 8:45 am
 - Public transport: Karlsruhe is well known for its good tram network. We will use it occasionally. Thus, please inform yourself and plan additional time if you need to buy a tram ticket at the station or using the [KVV.regiomove](#) app. A single ride costs 3,10 euros and a daily ticket is 6,20 euros.
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Wednesday, 11 October

Opening Chairs: Peter Betsch, Sören Hohmann

09:00 - 10:00 **Sören Hohmann, Felix Strehle** (IRS, KIT):
Port-Hamiltonian Systems as a Tool for Future Energy Systems !?

10:00 - 10:30 Coffee Break

Morning session Chair: Birgit Jacob

10:30 - 10:50 **Najmeh Javanmardi** (U Groningen):
Contraction-based Tracking Control of Electromechanical Systems

10:50 - 11:10 **Wasif Haider Syed** (BTU Cottbus):
Power Management System for Hybrid-Electric Aircraft

11:10 - 11:30 **Dorothea Hinsin** (TU Berlin):
Discrete time scattering passive port-Hamiltonian systems

11:30 - 11:50 **Antoine Bendimerad-Hohl** (ISAE):
Structure-preserving discretization of the Cahn-Hilliard equations re-cast as a port-Hamiltonian system

12:00 - 13:30 Lunch

Afternoon session Chair: Paul Kotyczka

13:30 - 14:30 **Marcus Popplow** (KIT):
Competition or cooperation? Technology as a factor of European integration in historical perspective

14:30 - 15:30 Interactive Session

15:30 - 16:00 Photo session + Coffee break

16:00 - 16:15 Information on the Doctoral College and Mobility

16:15 - 16:35 **Mario Spirito** (U Lyon):
Singular Perturbation for Implicit port-Hamiltonian systems

16:35 - 17:20 **Volker Mehrmann** (TU Berlin):
Robust representation of port-Hamiltonian systems

19:30 - 22:00 Social Activity: Bowling

- Location: Gablonzer Straße 13, 76185 Karlsruhe (tram station: Neureuter Straße or Mühlburg West) [More info](#).
 - We advise you to have dinner independently after the last talk.
 - We will meet in front of the Bowling alley at 19:30 or you can join the joint travel by tram (incl. 10 min walking) at 18:50 in front of the fountain on Schlossplatz.
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Thursday, 12 October

Morning session

Chair: Bernhard Maschke

09:00 - 10:00 **Peter Betsch** (IFM, KIT):
GENERIC and port-Hamiltonian formulation of coupled thermomechanical systems

10:00 - 10:30 Coffee Break

10:30 - 12:00 Interactive Session

12:00 - 13:30 Lunch

Afternoon session

Chair: Sören Hohmann

13:30 - 15:30 Lab tour through the laboratory of the Institute of Control Systems

15:30 - 16:00 Coffee break

Early evening session

Chair: Peter Betsch

16:00 - 16:30 **Cristobal Ponce** (FEMTO-ST):
Port-Hamiltonian modeling of flexible multidimensional mechanical systems defined by linear elastic relations

16:30 - 17:00 **Markus Lohmayer** (FAU):
Exergetic Port-Hamiltonian Systems for Multibody Dynamics

19:00 Dinner @ Kulturküche

- Location: Kaiserstraße 47, 76131 Karlsruhe (tram station: Kronenplatz or Durlacher Tor/KIT Campus Süd), [More info](#).
 - It is a 10-min walk from Schlossplatz or you can take the tram from Marktplatz.
 - The non-profit association welcomes us in the oldest multi-storey building in Karlsruhe. After a short welcome reception and a brief introduction of their project, we will have dinner including salads, dips, a main dish and dessert.
 - As an inclusive space the Kulturküche will not serve us alcoholic drinks but instead we will have regional juices, selfmade lemonades, hot beverages as well as alcohol-free beer.
 - For those who wish to, we can recommend the local student pub [Oxford](#) later on.
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Friday, 13 October

Morning session

Chair: Hans Zwart

09:00 - 10:00 **Muhammad Zakwan** (EPFL):
Towards dependable machine learning : A port Hamiltonian approach

10:00 - 10:30 Coffee Break

10:30 - 11:00 **Nelson Cisnero** (FEMTO-ST):
Model identification, control and fabrication of a HASEL actuator

11:00 - 11:30 **Jonas Kirchhoff** (TU Ilmenau):
A behavioural approach to nonlinear port-Hamiltonian systems

11:30 - 12:00 **Merlin Schmitz** (U Wuppertal):
A System Node Approach to Port-Hamiltonian Systems

12:00 - 13:30 Lunch

13:30 - 14:30 Closing
