

## Session Program

26-28 May 2025



# **EMOSC 25: Energy-based modeling, simulation, and control of dynamical systems - Workshop in honor of Volker Mehrmann's 70th birthday**

## **Talks**

Faculty of Mathematics  
TU Berlin

# Monday 26 May

13:30

## Talks

**Session** | **Location:** Faculty of Mathematics, TU Berlin

13:30–14:00

### Linear Systems with Symmetry Structures: Reciprocal, Relaxation, and Input-Output Hamiltonian systems

**Speaker**

Arjan van der Schaft

14:00–14:30

### Port-based modeling and discretization of thermo-visco-elasticity from various perspectives

**Speaker**

Paul Kotyczka

14:30–15:00

### Port-Hamiltonian Formulation of Cable Harnesses with Radiation Effects

**Speaker**

Timo Reis

15:00

15:30

## Talks

**Session** | **Location:** Faculty of Mathematics, TU Berlin

15:30–16:00

### Model reduction of bilinear port-Hamiltonian systems

**Speaker**

Serkan Gugercin

16:00–16:30

### Recent developments in multiterm matrix equations solvers

**Speaker**

Valeria Simoncini

16:30–17:00

### Adaptive Randomized DEIM

**Speaker**

Daniel Kressner

17:00

# Tuesday 27 May

09:00

## Talks

**Session** | **Location:** Faculty of Mathematics, TU Berlin

09:00–09:30

### Spectral approximation and generalized eigenvalue problem in operator preconditioning

**Speaker**

Zdeněk Strakoš

09:30–10:00

### Singular and regular operator port Hamiltonian pencils

**Speaker**

Michał Wojtylak

10:00–10:30

### $M=H+S$

**Speaker**

Jörg Liesen

10:30

11:00

## Talks

**Session** | **Location:** Faculty of Mathematics, TU Berlin

11:00–11:30

### Multi-Fidelity Robust Controller Design with Gradient Sampling

**Speaker**

Michael Overton

11:30–12:00

### Data driven dynamics in trees

**Speaker**

Christopher Beattie

12:00–12:30

### Zeros, poles and system equivalence of time-delay systems

**Speaker**

Rafikul Alam

12:30

14:00

## Talks

**Session** | **Location:**

14:00–14:30

### Optimal robustness of passive systems

**Speaker**

Paul Van Dooren

14:30–15:00

### Minimization of the Pseudospectral Abscissa of a Matrix Polynomial with Applications to Damping Optimization

**Speaker**

Emre Mengi

15:00–15:30

### Finding the nearest bounded-real port-Hamiltonian system

	<p><b>Speaker</b> Punit Sharma</p>
<p>16:00</p>	<p>15:30–16:00  <b>Characterizing and Computing the Stability Region of Singular Nonlinear Dynamical Systems</b>  <b>Speaker</b> Hoang Linh Vu</p>
<p>16:30</p>	<p><b>Talks</b>  <b>Session</b>   <b>Location:</b> Faculty of Mathematics, TU Berlin</p>
	<p>16:30–17:00  <b>Invariant subspace perturbations of Hamiltonian matrices with defective imaginary eigenvalues</b>  <b>Speaker</b> Hongguo Xu</p>
	<p>17:00–17:30  <b>Removing Critical Eigenvalues of Structured Matrix Pencils and Hamiltonian Matrices with Optimal Perturbations</b>  <b>Speaker</b> Shreemayee Bora</p>
<p>18:00</p>	<p>17:30–18:00 <b>New Results on Block Diagonalization of Matrix Pencils</b>  <b>Speaker</b> Vasile Sima</p>

# Wednesday 28 May

09:30

## Talks

**Session** | **Location:** Faculty of Mathematics, TU Berlin

09:30–10:00 **Discrete gradient methods for semi-explicit port-Hamiltonian DAEs**

**Speaker**

Riccardo Morandin

10:00–10:30

**Structure-preserving model reduction of linear time-varying port-Hamiltonian systems**

**Speaker**

Karim Cherifi

10:30–11:00

**A System Node Approach to Port-Hamiltonian Partial Differential Equations**

**Speaker**

Manuel Schaller

11:00

11:30

## Talks

**Session** | **Location:** Faculty of Mathematics, TU Berlin

11:30–12:00 **Bulge chasing is pole swapping**

**Speaker**

David Watkins

12:00–12:30

**Short- and long-time behavior in evolution equations: the role of the hypocoercivity index**

**Speaker**

Anton Arnold

12:30–13:00

**Polynomial and rational matrices with the invariant rational functions and the 4 sequences of minimal indices prescribed**

**Speaker**

Froilán Dopico

13:00