Reduced Basis Summer School 2016

at

Kloster Hedersleben

October 3-7, 2016

Program

Monday, October 3

After 17:00   rooms will be available

18:00 - 20:00   Dinner

Tuesday, October 4

08:00 - 09:00   **Breakfast**

09:00 – 09:10   Opening (**Lihong Feng**)

Chair   *Zoi Tokoutsi*

09:10 – 09:40   **Cleophas Kweyu**
                 Reduced Basis Method for Poisson-Boltzmann Equation

09:40 – 10:10   **Mladjan Radic**
                 Reduced Basis Application for Coupled Problems

10:10 - 10:40   **Niccolò Dal Santo**
                 Multi space reduced basis (MSRB) preconditioners for large-scale parametrized PDEs

10:40 – 11:00   **Coffee Break**

Chair   *Dennis Beermann*

11:00 - 11:30   **Janelle Hammond**
                 Non-intrusive reduced basis methods applied to outdoor air quality models

11:30 - 12:00   **Christopher Spannring**
                 Reduced Basis Method for Parabolic Problems with Random Data

12:00 - 12:30   **Tino Soll**
                 Parameterized model order reduction by superposition of locally reduced bases

12:30 - 13:30   **Lunch**

Chair   *Cleophas Kweyu*

13:30 - 14:00   **Zoi Tokoutsi**
                 Towards real time cancer treatment planning

14:00 - 14:30   **Julia Brunken**
                 Model reduction for (kinetic) transport equations

14:30 – 15:00 **Carmen Gräßle**
POD reduced order modeling for evolution equations utilizing arbitrary finite element discretizations

15:00 – 15:20 **Coffee Break**

Chair   *Janelle Hammond*

15:20 - 15:50 **Dennis Beermann**
POD-Based Bicriterial Optimal Control by the Reference Point Method

15:50 – 16:20 **Axel Ariaan Lukassen**
Parameter estimation in chemical systems with POD

16:20 – 16:50 **Dominik Wittwar**
Reduced Basis approximation of the time-discrete algebraic Riccati equation

18:30 - 20:00 **Dinner**

Wednesday, October 5

08:00 - 09:00 **Breakfast**

Chair   *Manuela Hund*

09:00 – 09:30 **Babak Maboudi**
Structure Preserving Model Reduction

09:30 – 10:00 **Pieter Lietaert**
Structured linearizations for model order reduction of systems with nonlinear frequency dependencies

~~10:00 – 10:30~~   ~~**Ubaid Bashir Qureshi**~~
~~Structured Model Reduction of Power Systems~~

10:30 – 11:00 **Xiaodong Cheng**
Model reduction of Linear network systems

Group photo

11:00 – 11:20 **Coffee Break**

Chair   *Petar Mlinarić*

11:20 - 11:50 **Mazen Ali**
Low-Rank Adaptive Tensor Methods for PDEs

11:50 - 12:20 **Denis Kolesnikov**
Tensor-based reduced order modelling in reservoir simulation

12:30 - 13:30   **Lunch**

14:30   Hike

19:00 – 20:00   **Dinner**

Thursday, October 6

08:00 - 09:00   **Breakfast**

Chair   *Babak Maboudi*

09:00 – 09:30   **Manuela Hund**
             A Connection between Time Domain Model Order Reduction and Moment Matching

09:30 – 10:00   **Petar Mlinarić**
             Model Order Reduction for Multi-Agent Systems

10:00 – 10:30   **Ion Victor Gosea**
             Model Order Reduction for linear and nonlinear systems in the Loewner framework

10:30 – 11:00   **Pawan Goyal**
             Balancing-Based Model Reduction for Nonlinear Control Systems

11:00 – 11:20   **Coffee Break**

Chair   *Pawan Goyal*

11:20 - 12:20   **Tutorial Serkan Gugercin**
             What to interpolate: Model reduction via interpolation

12:30 - 13:30   **Lunch**

13:30 - 15:00   *Software Session*

Chair   *Mazen Ali*

             Björn Baran: M-M.E.S.S.

             Maximilian Behr: C- and Py-M.E.S.S.

             Petar Mlinarić: pyMOR, sssMOR

15:00 – 15:20   **Coffee Break**

Chair   *Rajendra Yashwant Choudhary*

15:20 - 15:50   **Navneet Pratap Singh**
             Preconditioned Iterative Solves for Model Reduction of Second Order Linear Dynamical
             Systems

15:50 – 16:20 **Hadhiq Khan**
Model Order Reduction for Simulation Acceleration in Power Electronics

16:20 – 16:50 **Oleg Balabanov**
Preconditioning parameter-dependent operators by interpolation of inverse: application to Helmholtz equation

16:50 – 17:20 **Matea Puvača**
An efficient approximation for the optimal damping in mechanical systems

18:30 - 20:00 **Dinner**

Friday, October 7

08:00 - 09:30 **Breakfast**

Chair *Navneet Pratap Singh*

~~09:30 – 10:00~~ ~~Rebecca Daum~~
~~Parameter Optimization for Occupant Safety~~

10:00 – 10:30 **Sinem Kozpinar**
Model Order Reduction for Parametrized Option Pricing Models

10:30 – 11:00 **Anna Sauerbrei**
Multiple-output variable fidelity modeling of vehicle aerodynamics under geometric shape variations

11:00 – 11:20 **Coffee Break**

Chair *Maximilian Behr*

11:20 - 11:50 **Rajendra Yashwant Choudhary**
Backward Stability Analysis of Bilinear Iterative Rational Krylov Algorithm

11:50 - 12:20 **Christian Bertram**
Randomization in Model Reduction

12:20 – 12:30 Closing (**Peter Benner**)

12:30 - 13:30 **Lunch**

Departure