

MoRePaS 2015 - Model Reduction of Parametrized Systems III

MoRePaS 2015

Report of Contributions

Contribution ID: 3

Type: **Contributed talk**

MOR-based Uncertainty Quantification in Transcranial Magnetic Stimulation

Thursday, October 15, 2015 3:20 PM (20 minutes)

Primary author: Prof. DI RIENZO, Luca (Politecnico di Milano)

Co-authors: Prof. HAUEISEN, Jens (TU Ilmenau); Mr WEISE, Konstantin (TU Ilmenau); Prof. CODECASA, Lorenzo (Politecnico di Milano)

Presenter: Prof. DI RIENZO, Luca (Politecnico di Milano)

Session Classification: CT6

Track Classification: Contributed talks

Contribution ID: 4

Type: **Poster**

The Versatile Cross Gramian

Wednesday, October 14, 2015 5:55 PM (5 minutes)

Primary author: Mr HIMPE, Christian (University of Muenster)

Co-author: Prof. OHLBERGER, Mario (University of Muenster)

Presenter: Mr HIMPE, Christian (University of Muenster)

Session Classification: CP1 Poster Blitz

Track Classification: Posters

Contribution ID: 5

Type: **Contributed talk**

Reduced Basis Landweber method for nonlinear ill-posed inverse problems

Tuesday, October 13, 2015 4:50 PM (20 minutes)

Primary author: Mr GARMATTER, Dominik (University of Stuttgart)

Co-authors: Prof. HARRACH, Bastian (University of Stuttgart); Prof. HAASDONK, Bernard (University of Stuttgart)

Presenter: Mr GARMATTER, Dominik (University of Stuttgart)

Session Classification: CT1

Track Classification: Contributed talks

Contribution ID: 6

Type: **Poster**

Model order reduction of dynamic skeletal muscle models

Thursday, October 15, 2015 5:40 PM (5 minutes)

Primary authors: Dr WIRTZ, Daniel (University of Stuttgart); MORDHORST, Mylena (University of Stuttgart); Prof. RÖHRLE, Oliver (University of Stuttgart)

Presenter: MORDHORST, Mylena (University of Stuttgart)

Session Classification: CP2 Poster blitz

Track Classification: Posters

Contribution ID: 7

Type: **Poster**

Model Order Reduction for Pattern Formation in FitzHugh-Nagumo Equation

Thursday, October 15, 2015 5:35 PM (5 minutes)

Primary author: Prof. KARASOZEN, Bulent (Middle East Technical University)

Co-authors: Mrs TUGBA, Küçükseyhan (Middle East Technical University); Dr UZUNCA, Murat (Middle East Technical University)

Presenter: Prof. KARASOZEN, Bulent (Middle East Technical University)

Session Classification: CP2 Poster blitz

Track Classification: Posters

Contribution ID: 8

Type: **Contributed talk**

Element-based model reduction for parameter dependent parabolic PDE's on networks

Friday, October 16, 2015 2:40 PM (20 minutes)

Primary author: Mr WALTHER, Maximilian (Friedrich-Alexander Universität Erlangen-Nürnberg)

Co-author: Prof. LEUGERING, Günter (Friedrich-Alexander Universität Erlangen-Nürnberg)

Presenter: Mr WALTHER, Maximilian (Friedrich-Alexander Universität Erlangen-Nürnberg)

Session Classification: CT9

Track Classification: Contributed talks

Contribution ID: 9

Type: **Contributed talk**

Optimal local approximation spaces for component-based static condensation procedures

Friday, October 16, 2015 12:20 PM (20 minutes)

Primary author: Dr SMETANA, Kathrin (University of Muenster)

Co-author: Prof. PATERA, Anthony T. (Department of Mechanical Engineering, M.I.T.)

Presenter: Dr SMETANA, Kathrin (University of Muenster)

Session Classification: CT8

Track Classification: Contributed talks

Contribution ID: **10**

Type: **Poster**

Model Order Reduction of Nonlinear Magnetodynamics with Manifold Interpolation

Thursday, October 15, 2015 4:55 PM (5 minutes)

Primary author: Mr PAQUAY, Yannick (University of Liège)

Co-authors: Prof. GEUZAINÉ, Christophe (University of Liège); Prof. BRÜLS, Olivier (University of Liège)

Presenter: Mr PAQUAY, Yannick (University of Liège)

Session Classification: CP2 Poster blitz

Track Classification: Posters

Contribution ID: 11

Type: **Contributed talk**

Balanced Truncation Model Reduction for Quadratic-Linear Systems

Tuesday, October 13, 2015 5:10 PM (20 minutes)

Primary author: Mr GOYAL, Pawan Kumar (Max Planck Institute for Dynamics of Complex Technical Systems)

Co-author: Prof. BENNER, Peter (Max Planck Institute for Dynamics of Complex Technical Systems)

Presenter: Mr GOYAL, Pawan Kumar (Max Planck Institute for Dynamics of Complex Technical Systems)

Session Classification: CT1

Track Classification: Contributed talks

Contribution ID: 12

Type: **Contributed talk**

Large Eddy Simulation Reduced Order Models

Friday, October 16, 2015 10:10 AM (20 minutes)

Primary author: Prof. ILIESCU, Traian (Virginia Tech)

Presenter: Prof. ILIESCU, Traian (Virginia Tech)

Session Classification: CT7

Track Classification: Contributed talks

Contribution ID: 13

Type: **Contributed talk**

An adaptive sampling approach for nonlinear dimensionality reduction based on manifold learning

Wednesday, October 14, 2015 12:20 PM (20 minutes)

Primary author: FRANZ, Thomas (Institute of Aerodynamics and Flow Technology, German Aerospace Center (DLR), Braunschweig)

Co-author: Dr ZIMMERMANN, Ralf (TU Braunschweig)

Presenter: Dr ZIMMERMANN, Ralf (TU Braunschweig)

Session Classification: CT2

Track Classification: Contributed talks

Contribution ID: 14

Type: **Contributed talk**

Nonlinear Model Reduction for Complex Systems using Sparse Sensor Locations from Learned Nonlinear Libraries

Thursday, October 15, 2015 11:40 AM (20 minutes)

Primary author: Prof. KUTZ, J. Nathan (University of Washington)

Co-authors: Prof. BRUNTON, Steven L. (University of Washington); Ms SARGSYAN, Syuzanna (University of Washington)

Presenter: Prof. KUTZ, J. Nathan (University of Washington)

Session Classification: CT5

Track Classification: Contributed talks

Contribution ID: 15

Type: **Poster**

Physical and constraint DOF reduction of redundant multibody systems using the Proper Orthogonal Decomposition

Thursday, October 15, 2015 5:00 PM (5 minutes)

Primary author: Mr STADLMAYR, Daniel (University of Applied Sciences Upper Austria)

Co-authors: Dr STEINER, Wolfgang (University of Applied Sciences Upper Austria); Dr WITTEVEEN, Wolfgang (University of Applied Sciences Upper Austria)

Presenter: Mr STADLMAYR, Daniel (University of Applied Sciences Upper Austria)

Session Classification: CP2 Poster blitz

Track Classification: Posters

Contribution ID: 16

Type: **Contributed talk**

Time-dependent Parametric Model Order Reduction for Material-Removal Simulations

Thursday, October 15, 2015 11:00 AM (20 minutes)

Primary author: BAUMANN, Michael (University of Stuttgart)

Co-authors: HAMANN, Dominik (University of Stuttgart); EBERHARD, Peter (University of Stuttgart)

Presenter: BAUMANN, Michael (University of Stuttgart)

Session Classification: CT5

Track Classification: Contributed talks

Contribution ID: **18**

Type: **Contributed talk**

Localization and adaptivity in Reduced Basis methods

Friday, October 16, 2015 11:40 AM (20 minutes)

Primary author: Mr SCHINDLER, Felix (University of Muenster)

Co-author: Prof. OHLBERGER, mario (University of Muenster)

Presenter: Mr SCHINDLER, Felix (University of Muenster)

Session Classification: CT8

Track Classification: Contributed talks

Contribution ID: 19

Type: **Contributed talk**

Multifidelity methods for uncertainty quantification

Thursday, October 15, 2015 3:00 PM (20 minutes)

Primary author: Dr PEHERSTORFER, Benjamin (MIT)

Co-author: WILLCOX, Karen (MIT)

Presenter: Dr PEHERSTORFER, Benjamin (MIT)

Session Classification: CT6

Track Classification: Contributed talks

Contribution ID: 21

Type: **Poster**

Model Reduction of a Nonlinear Crash Model of a Racing Kart

Wednesday, October 14, 2015 5:10PM (5 minutes)

Primary author: Prof. FEHR, Joerg (University of Stuttgart)

Co-authors: Mr GRUNERT, Dennis (University of Stuttgart); Prof. EBERHARD, Peter (University of Stuttgart); Mr HOLZWARTH, Philip (University of Stuttgart)

Presenter: Prof. FEHR, Joerg (University of Stuttgart)

Session Classification: CP1 Poster Blitz

Track Classification: Posters

Contribution ID: 23

Type: **Contributed talk**

Reduced Basis Approximation of Large Scale Parametric Algebraic Riccati Equations

Friday, October 16, 2015 12:00 PM (20 minutes)

Primary author: Mr SCHMIDT, Andreas (University of Stuttgart)

Co-author: Prof. HAASDONK, Bernard (University of Stuttgart)

Presenter: Mr SCHMIDT, Andreas (University of Stuttgart)

Session Classification: CT8

Track Classification: Contributed talks

Contribution ID: 24

Type: **Poster**

Error Estimation in Frequency Domain and its Use for Model Reduction of Quadratic Bilinear Systems

Wednesday, October 14, 2015 4:55 PM (5 minutes)

Primary author: Dr AHMAD, Mian Ilyas (Max Planck Institute for Dynamics of Complex Technical Systems)

Co-authors: Dr FENG, Lihong (Max Planck Institute for Dynamics of Complex Technical Systems); Prof. BENNER, Peter (Max Planck Institute for Dynamics of Complex Technical System)

Presenter: Dr AHMAD, Mian Ilyas (Max Planck Institute for Dynamics of Complex Technical Systems)

Session Classification: CP1 Poster Blitz

Track Classification: Posters

Contribution ID: 25

Type: **Poster**

Adaptive Preconditioning of Fast Frequency Sweeps by ROMs

Wednesday, October 14, 2015 5:00 PM (5 minutes)

Primary author: Mr FLOCH, Oliver (Saarland University)

Co-authors: Mr SOMMER, Alexander (Saarland University); Mr KLIS, Daniel (Saarland University); Prof. DYCZIJ-EDLINGER, Romanus (Saarland University)

Presenter: Prof. DYCZIJ-EDLINGER, Romanus (Saarland University)

Session Classification: CP1 Poster Blitz

Track Classification: Posters

Contribution ID: 26

Type: **Poster**

Simulating rigid body motion occurring in eddy current problems by parametric model-order reduction

Wednesday, October 14, 2015 5:05 PM (5 minutes)

Primary author: Mr KLIS, Daniel (Saarland University)

Co-authors: Dr FARLE, Ortwin (CST AG); Prof. DYCZIJ-EDLINGER, Romanus (Saarland University)

Presenter: Prof. DYCZIJ-EDLINGER, Romanus (Saarland University)

Session Classification: CP1 Poster Blitz

Track Classification: Posters

Contribution ID: 27

Type: **Contributed talk**

Certified Reduced Basis Approximation for the Coupling of Viscous and Inviscid Parametrized Flow Models

Friday, October 16, 2015 11:00 AM (20 minutes)

Primary author: Mr MARTINI, Immanuel (University of Stuttgart)

Co-authors: Prof. HAASDONK, Bernard (University of Stuttgart); Prof. ROZZA, Gianluigi (SISSA, International School for Advanced Studies)

Presenter: Mr MARTINI, Immanuel (University of Stuttgart)

Session Classification: CT8

Track Classification: Contributed talks

Contribution ID: 29

Type: **Poster**

Stochastic optimal control problem for Markov jump process: asymptotic analysis and algorithms

Thursday, October 15, 2015 5:15 PM (5 minutes)

Primary authors: Prof. HARTMANN, Carsten (Freie Universität Berlin); Dr ZHANG, Wei (Freie Universität Berlin)

Presenter: Dr ZHANG, Wei (Freie Universität Berlin)

Session Classification: CP2 Poster blitz

Track Classification: Posters

Contribution ID: 30

Type: **Contributed talk**

Using sensitivity analysis in the framework of proper orthogonal decomposition with application to cake filtration

Tuesday, October 13, 2015 5:50 PM (20 minutes)

Primary author: Mr OSTERROTH, Sebastian (Fraunhofer ITWM)

Co-authors: Prof. ILIEV, Oleg (Fraunhofer ITWM); Prof. PINNAU, René (Technical University Kaiserslautern)

Presenter: Mr OSTERROTH, Sebastian (Fraunhofer ITWM)

Session Classification: CT1

Track Classification: Contributed talks

Contribution ID: 31

Type: **Poster**

Stability Preserving, Adaptive Model Reduction of DAEs by Krylov Subspace Methods

Wednesday, October 14, 2015 5:45 PM (5 minutes)

Primary author: CASTAGNOTTO, Alessandro (Technische Universität München)

Co-authors: Prof. LOHMANN, Boris (Technische Universität München); PANZER, Heiko (Technische Universität München)

Presenter: CASTAGNOTTO, Alessandro (Technische Universität München)

Session Classification: CP1 Poster Blitz

Track Classification: Posters

Contribution ID: 33

Type: **Contributed talk**

POD-Galerkin for finite elements with dynamic mesh adaptivity

Thursday, October 15, 2015 10:10 AM (20 minutes)

Primary author: Dr ULLMANN, Sebastian (TU Darmstadt)

Co-authors: Prof. LANG, Jens (TU Darmstadt); Mr ROTKVIC, Marko (TU Darmstadt)

Presenter: Dr ULLMANN, Sebastian (TU Darmstadt)

Session Classification: CT4

Track Classification: Contributed talks

Contribution ID: 34

Type: **Contributed talk**

A Model Reduction Approach to Structural Health Monitoring

Friday, October 16, 2015 2:00 PM (20 minutes)

Primary authors: Prof. PATERA, Anthony T. (MIT); Dr PENN, James D. (MIT); Prof. YANO, Masayuki (University of Toronto); Mr TADDEI, Tommaso (MIT); Prof. MADAY, Yvonne (UPMC)

Presenter: Mr TADDEI, Tommaso (MIT)

Session Classification: CT9

Track Classification: Contributed talks

Contribution ID: 35

Type: **Poster**

Reduced Basis method applied to large scale non linear multiphysics problems

Wednesday, October 14, 2015 5:30 PM (5 minutes)

Primary author: Mrs DAVERSIN, Cécile (Université de Strasbourg)

Co-authors: Mr PRUD'HOMME, Christophe (Université de Strasbourg); Mr TROPHIME, Christophe (CNRS Grenoble)

Presenter: Mrs DAVERSIN, Cécile (Université de Strasbourg)

Session Classification: CP1 Poster Blitz

Track Classification: Posters

Contribution ID: 36

Type: **Contributed talk**

Simultaneous Empirical Interpolation and Reduced Basis method for non-linear problems

Thursday, October 15, 2015 11:20 AM (20 minutes)

Primary author: Mrs DAVERSIN, Cécile (Université de Strasbourg)

Co-author: Mr PRUD'HOMME, Christophe (Université de Strasbourg)

Presenter: Mrs DAVERSIN, Cécile (Université de Strasbourg)

Session Classification: CT5

Track Classification: Contributed talks

Contribution ID: 37

Type: **Contributed talk**

A Reduced Basis Kalman Filter for Certified and Rapid State Estimation of Parametrized PDEs

Friday, October 16, 2015 3:00 PM (20 minutes)

Primary author: Prof. HAASDONK, Bernard (University of Stuttgart)

Co-author: Dr DIHLMANN, Markus (University of Stuttgart)

Presenter: Prof. HAASDONK, Bernard (University of Stuttgart)

Session Classification: CT9

Track Classification: Contributed talks

Contribution ID: 38

Type: **Contributed talk**

Space-Time RBM for parabolic PDEs with Parameter Functions

Thursday, October 15, 2015 12:00 PM (20 minutes)

Primary authors: Ms MAYERHOFER, Antonia (Ulm University); Prof. URBAN, Karsten (Ulm University)

Presenter: Ms MAYERHOFER, Antonia (Ulm University)

Session Classification: CT5

Track Classification: Contributed talks

Contribution ID: 39

Type: **Contributed talk**

Reduced basis method for noncoercive variational inequalities

Wednesday, October 14, 2015 12:40 PM (20 minutes)

Primary author: Ms GLAS, Silke (University of Ulm)

Co-author: Mr URBAN, Karsten (University of Ulm)

Presenter: Ms GLAS, Silke (University of Ulm)

Session Classification: CT2

Track Classification: Contributed talks

Contribution ID: 40

Type: **Poster**

A Certified Model Reduction Approach for robust optimal control with PDE constraints.

Wednesday, October 14, 2015 5:40 PM (5 minutes)

Primary author: Dr ALLA, Alessandro (University of Hamburg)

Co-authors: Prof. HINZE, Michael (University of Hamburg); Dr LASS, Oliver (TU Darmstadt); Prof. ULBRICH, Stefan (TU Darmstadt)

Presenter: Dr ALLA, Alessandro (University of Hamburg)

Session Classification: CP1 Poster Blitz

Track Classification: Posters

Contribution ID: 41

Type: **Poster**

Parametric Option Pricing with Fourier Methods

Wednesday, October 14, 2015 5:35 PM (5 minutes)

Primary author: Prof. GLAU, Kathrin (Technische Universität München)

Co-authors: Mr GASS, Maximilian (Technische Universität München); Mr MAIR, Maximilian (Technische Universität München und Unicredit)

Presenter: Prof. GLAU, Kathrin (Technische Universität München)

Session Classification: CP1 Poster Blitz

Track Classification: Posters

Contribution ID: 42

Type: **Contributed talk**

Simultaneous Reduced Basis Approximation of Parameterized Eigenvalue Problems

Thursday, October 15, 2015 9:50 AM (20 minutes)

Primary author: Mr HORGER, Thomas (Technische Universität München)

Co-authors: Prof. WOHLMUTH, Barbara (Technische Universität München); Prof. DICKOPF, Thomas (Technische Universität München)

Presenter: Mr HORGER, Thomas (Technische Universität München)

Session Classification: CT4

Track Classification: Contributed talks

Contribution ID: 43

Type: **Contributed talk**

Detection of parameter-dependent regimes in complex flows via compressed sensing and dynamic mode decomposition

Friday, October 16, 2015 9:50 AM (20 minutes)

Primary author: Mr KRAMER, Boris (MIT)

Co-authors: Dr BENOSMAN, Mouhacine (Mitsubishi Electric Research Laboratories); Dr BOUFOUNOS, Petros (Mitsubishi Electric Research Laboratories); Dr GROVER, Piyush (Mitsubishi Electric Research Laboratories); Dr NABI, Saleh (Mitsubishi Electric Research Laboratories)

Presenter: Mr KRAMER, Boris (MIT)

Session Classification: CT7

Track Classification: Contributed talks

Contribution ID: 44

Type: **Poster**

PMOR for Nanoelectronic Coupled Problems

Wednesday, October 14, 2015 5:15 PM (5 minutes)

Primary author: Dr BANAGAAYA, Nicodemus (Max Planck Institute Dynamics of Complex Technical Systems)

Co-authors: Dr FENG, Lihong (Max Planck Institute Dynamics of Complex Technical Systems); Prof. BENNER, Peter (Max Planck Institute Dynamics of Complex Technical Systems)

Presenter: Dr BANAGAAYA, Nicodemus (Max Planck Institute Dynamics of Complex Technical Systems)

Session Classification: CP1 Poster Blitz

Track Classification: Posters

Contribution ID: 45

Type: **Contributed talk**

Time-Varying Parametric Model Order Reduction by Matrix Interpolation

Tuesday, October 13, 2015 4:30 PM (20 minutes)

Primary author: Ms CRUZ VARONA, Maria (Technische Universität München)

Co-authors: Prof. LOHMANN, Boris (Technische Universität München); Mr GEUSS, Matthias (Technische Universität München)

Presenter: Ms CRUZ VARONA, Maria (Technische Universität München)

Session Classification: CT1

Track Classification: Contributed talks

Contribution ID: 46

Type: **Contributed talk**

Model Order Reduction for Magneto-Quasistatic Equations

Tuesday, October 13, 2015 5:30 PM (20 minutes)

Primary authors: Ms KERLER-BACK, Johanna (Universität Augsburg); Prof. STYKEL, Tatjana (Universität Augsburg)

Presenter: Ms KERLER-BACK, Johanna (Universität Augsburg)

Session Classification: CT1

Track Classification: Contributed talks

Contribution ID: 47

Type: **Contributed talk**

Goal-oriented error estimation for the reduced basis method. Application to sensitivity analysis

Wednesday, October 14, 2015 11:00 AM (20 minutes)

Primary author: Dr NODET, Maelle (Univ. Grenoble Alpes)

Co-authors: Dr JANON, Alexandre (Univ. Paris Sud Orsay); Prof. PRIEUR, Clementine (Univ. Grenoble Alpes)

Presenter: Dr NODET, Maelle (Univ. Grenoble Alpes)

Session Classification: CT2

Track Classification: Contributed talks

Contribution ID: 48

Type: **Contributed talk**

POD model reduction for constrained optimal control problems

Friday, October 16, 2015 11:20 AM (20 minutes)

Primary author: Mr GUBISCH, Martin (Universitaet Konstanz)

Co-author: VOLKWEIN, Stefan (Universitaet Konstanz)

Presenter: Mr GUBISCH, Martin (Universitaet Konstanz)

Session Classification: CT8

Track Classification: Contributed talks

Contribution ID: 49

Type: **Contributed talk**

Data-driven interpolation of dynamical systems with after-effect

Tuesday, October 13, 2015 6:10 PM (20 minutes)

Primary authors: UNGER, Benjamin (TU Berlin); SCHULZE, Philipp (TU Berlin)

Presenter: SCHULZE, Philipp (TU Berlin)

Session Classification: CT1

Track Classification: Contributed talks

Contribution ID: 50

Type: **Poster**

Chebyshev Interpolation for Parametric Option Pricing

Wednesday, October 14, 2015 5:25 PM (5 minutes)

Primary author: GLAU, Kathrin (Technische Universität München)

Co-authors: Mr GASS, Maximilian (TU München); Mr MAIR, Maximilian (TU München, Uni-credit); Mr MAHLSTEDT, Mirco (TU München)

Presenter: Mr GASS, Maximilian (TU München)

Session Classification: CP1 Poster Blitz

Track Classification: Posters

Contribution ID: 51

Type: **Poster**

Reduced Basis Approximation of Coupled Problems

Thursday, October 15, 2015 5:10 PM (5 minutes)

Primary author: Mr RADIC, Mladjan (University of Ulm)

Presenter: Mr RADIC, Mladjan (University of Ulm)

Session Classification: CP2 Poster blitz

Track Classification: Posters

Contribution ID: 52

Type: **Contributed talk**

ArbiLoMod: Communication Avoiding Localized Reduced Basis Methods for Problems with Arbitrary Local Modifications

Wednesday, October 14, 2015 11:40 AM (20 minutes)

Primary authors: Mr BUHR, Andreas (University of Münster); Prof. OHLBERGER, Mario (University of Münster); Dr RAVE, Stephan (University of Münster)

Presenter: Mr BUHR, Andreas (University of Münster)

Session Classification: CT2

Track Classification: Contributed talks

Contribution ID: 53

Type: **Contributed talk**

A New Selection Operator for the Discrete Empirical Interpolation Method

Wednesday, October 14, 2015 3:00 PM (20 minutes)

Primary authors: Prof. GUGERCIN, Serkan (Virginia Tech.); Prof. DRMAC, Zlatko (University of Zagreb)

Presenter: Prof. GUGERCIN, Serkan (Virginia Tech.)

Session Classification: CT3

Track Classification: Contributed talks

Contribution ID: 54

Type: **Poster**

Efficient model reduction of nonlinear parametrized systems by matrix discrete empirical interpolation

Thursday, October 15, 2015 5:05 PM (5 minutes)

Primary author: Dr MANZONI, Andrea (EPFL)

Co-authors: Dr AMSALLEM, David (Stanford University); Mr NEGRI, Federico (EPFL)

Presenter: Dr MANZONI, Andrea (EPFL)

Session Classification: CP2 Poster blitz

Track Classification: Posters

Contribution ID: 55

Type: **Contributed talk**

Control of an elastic structure based on Galerkin approximations

Friday, October 16, 2015 3:20 PM (20 minutes)

Primary author: Prof. ZUYEV, Alexander (Max Planck Institute for Dynamics of Complex Technical Systems)

Presenter: Prof. ZUYEV, Alexander (Max Planck Institute for Dynamics of Complex Technical Systems)

Session Classification: CT9

Track Classification: Contributed talks

Contribution ID: 56

Type: **Poster**

Reduced Basis Approximations for Maxwell's Equations in Dispersive Media

Wednesday, October 14, 2015 5:20 PM (5 minutes)

Primary author: Mr HESS, Martin (Max-Planck-Institute for Dynamics of Complex Technical Systems)

Co-author: Prof. BENNER, Peter (Max-Planck-Institute for Dynamics of Complex Technical Systems)

Presenter: Mr HESS, Martin (Max-Planck-Institute for Dynamics of Complex Technical Systems)

Session Classification: CP1 Poster Blitz

Track Classification: Posters

Contribution ID: 57

Type: **Poster**

Rank-optimal approximations of higher-order tensors for low-dimensional space-time Galerkin approximations of parameter dependent dynamical systems

Wednesday, October 14, 2015 5:50 PM (5 minutes)

Primary author: Dr HEILAND, Jan (Max Planck Institute Magdeburg)

Co-authors: Mr BAUMANN, Manuel (TU Delft); Prof. BENNER, Peter (Max Planck Institute Magdeburg)

Presenter: Dr HEILAND, Jan (Max Planck Institute Magdeburg)

Session Classification: CP1 Poster Blitz

Track Classification: Posters

Contribution ID: 58

Type: **Contributed talk**

Offline Error Bounds for the Reduced Basis Method

Thursday, October 15, 2015 12:20 PM (20 minutes)

Primary author: Mr O'CONNOR, Robert (RWTH Aachen)

Co-author: Dr GREPL, Martin (RWTH Aachen)

Presenter: Mr O'CONNOR, Robert (RWTH Aachen)

Session Classification: CT5

Track Classification: Contributed talks

Contribution ID: 59

Type: **Contributed talk**

A subspace projection-based method for stabilization and enhancement of projection-based ROMs of the Navier-Stokes equations

Wednesday, October 14, 2015 11:20 AM (20 minutes)

Primary author: Dr BALAJEWICZ, Maciej (University of Illinois at Urbana-Champaign)

Co-author: Dr TEZAU, Irina (Sandia National Laboratories)

Presenter: Dr BALAJEWICZ, Maciej (University of Illinois at Urbana-Champaign)

Session Classification: CT2

Track Classification: Contributed talks

Contribution ID: 60

Type: **Contributed talk**

A Modularized Modelling, Discretization and Model Order Reduction Workflow for the Simulation of Li-ion Batteries

Thursday, October 15, 2015 12:40 PM (20 minutes)

Primary authors: OHLBERGER, Mario (University of Münster); SCHMIDT, Sebastian (Fraunhofer Institute for Industrial Mathematics ITWM); RAVE, Stephan (University of Münster)

Presenter: RAVE, Stephan (University of Münster)

Session Classification: CT5

Track Classification: Contributed talks

Contribution ID: 61

Type: **Poster**

Reduced Order Models for Distributed Adaptive Monitoring of Atmospheric Dispersion Processes

Thursday, October 15, 2015 5:25 PM (5 minutes)

Primary author: Mr RITTER, Tobias (TU Darmstadt)

Co-authors: Prof. VON STRYK, Oskar (TU Darmstadt); Prof. ULBRICH, Stefan (TU Darmstadt)

Presenter: Mr RITTER, Tobias (TU Darmstadt)

Session Classification: CP2 Poster blitz

Track Classification: Posters

Contribution ID: 63

Type: **Contributed talk**

A Certified Reduced Basis Method for Variational Inequalities and Optimal Control Problems

Friday, October 16, 2015 12:40 PM (20 minutes)

Primary author: Prof. VEROY, Karen (RWTH Aachen University)

Co-authors: Mr BADER, Eduard (RWTH Aachen University); Mr KAERCHER, Mark (RWTH Aachen University); Mr GREPL, Martin (RWTH Aachen University); Ms ZHANG, Zhenying (RWTH Aachen University)

Presenter: Prof. VEROY, Karen (RWTH Aachen University)

Session Classification: CT8

Track Classification: Contributed talks

Contribution ID: 65

Type: **Contributed talk**

Time-parallel reduced-order models via forecasting

Wednesday, October 14, 2015 12:00 PM (20 minutes)

Primary author: Dr CARLBERG, Kevin (Sandia National Laboratories)

Co-authors: Prof. BARTH, Andrea (University of Stuttgart); Prof. HAASDONK, Bernard (University of Stuttgart, Institute for Applied Analysis and Numerical Simulation); Mr BRENCHER, Lukas (University of Stuttgart)

Presenter: Dr CARLBERG, Kevin (Sandia National Laboratories)

Session Classification: CT2

Track Classification: Contributed talks

Contribution ID: **66**

Type: **Plenary talk**

Structure-preserving Model Reduction

Friday, October 16, 2015 9:05 AM (45 minutes)

Primary author: Prof. BEATTIE, Christopher (Virginia Tech)

Presenter: Prof. BEATTIE, Christopher (Virginia Tech)

Session Classification: IP10

Track Classification: Plenary talks

Contribution ID: 67

Type: **Plenary talk**

Sparse-Grid, Reduced-Basis Bayesian Inversion

Thursday, October 15, 2015 2:15 PM (45 minutes)

Primary author: Prof. SCHWAB, Christoph (ETH Zurich)

Presenter: Prof. SCHWAB, Christoph (ETH Zurich)

Session Classification: IP8

Track Classification: Plenary talks

Contribution ID: **68**

Type: **Poster**

Model Order Reduction via a Balanced Truncation-Interpolation Approach for Gas Networks

Thursday, October 15, 2015 5:45 PM (5 minutes)

Primary author: Mr LU, Yi (FAU Erlangen-Nuernberg)

Co-authors: Mr LILJEGREN-SAILER, Björn (FAU Erlangen-Nuernberg); Dr MOHRING, Jan (Fraunhofer-Institut fuer Techno- und Wirtschaftsmathematik); Prof. MARHEINEKE, Nicole (FAU Erlangen-Nuernberg)

Presenter: Mr LU, Yi (FAU Erlangen-Nuernberg)

Session Classification: CP2 Poster blitz

Track Classification: Posters

Contribution ID: 69

Type: **Plenary talk**

Model reduction for integro-differential equations

Wednesday, October 14, 2015 9:45 AM (45 minutes)

Primary author: Dr BREITEN, Tobias (University of Graz)

Presenter: Dr BREITEN, Tobias (University of Graz)

Session Classification: IP4

Track Classification: Plenary talks

Contribution ID: 70

Type: **Plenary talk**

Reduced Order Models in the context of System Level Simulation

Thursday, October 15, 2015 9:05 AM (45 minutes)

Primary author: Mr KHER, Sameer (ANSYS, Inc)

Presenter: Mr KHER, Sameer (ANSYS, Inc)

Session Classification: IP7

Track Classification: Plenary talks

Contribution ID: 71

Type: **Plenary talk**

Towards automated model reduction: exact error bounds and simultaneous finite-element reduced-basis refinement

Wednesday, October 14, 2015 2:15 PM (45 minutes)

Primary author: Prof. YANO, Masayuki (University of Toronto)

Presenter: Prof. YANO, Masayuki (University of Toronto)

Session Classification: IP5

Track Classification: Plenary talks

Contribution ID: 72

Type: **Contributed talk**

Model reduction for a coupled nearwell and reservoir models using multiple space-time discretizations

Friday, October 16, 2015 2:20 PM (20 minutes)

Primary author: Dr KHERIJI, Walid (Texas A&M Qatar)

Presenter: Dr KHERIJI, Walid (Texas A&M Qatar)

Session Classification: CT9

Track Classification: Contributed talks

Contribution ID: 73

Type: **Contributed talk**

POD-Galerkin methods for parametrized problems in flow control and fluid-structure interaction

Wednesday, October 14, 2015 3:20 PM (20 minutes)

Primary authors: Dr BALLARIN, Francesco (SISSA, International School for Advanced Studies); Prof. ROZZA, Gianluigi (SISSA, International School for Advanced Studies)

Presenter: Dr BALLARIN, Francesco (SISSA, International School for Advanced Studies)

Session Classification: CT3

Track Classification: Contributed talks

Contribution ID: 74

Type: **Plenary talk**

Adjoint-Based PDE-Constrained Robust Optimization of Aircraft Systems Using Reduced-Order Models

Wednesday, October 14, 2015 3:40 PM (45 minutes)

Primary author: Dr AMSALLEM, David (Stanford University)

Co-authors: Prof. BOU-MOSLEH, Charbel (Notre Dame University); Prof. FARHAT, Charbel (Stanford University); Dr AVERY, Phil (Stanford University); Dr CHOI, Youngsoo (Stanford University)

Presenter: Dr AMSALLEM, David (Stanford University)

Session Classification: IP6

Track Classification: Plenary talks

Contribution ID: 75

Type: **Poster**

RBniCS - reduced order modelling in FEniCS

Thursday, October 15, 2015 5:30 PM (5 minutes)

Primary authors: Dr SARTORI, Alberto (SISSA, International School for Advanced Studies); Dr BALLARIN, Francesco (SISSA, International School for Advanced Studies); Prof. ROZZA, Gianluigi (SISSA, International School for Advanced Studies)

Presenters: Dr SARTORI, Alberto (SISSA, International School for Advanced Studies); Dr BALLARIN, Francesco (SISSA, International School for Advanced Studies)

Session Classification: CP2 Poster blitz

Track Classification: Posters

Contribution ID: 76

Type: **Plenary talk**

Preconditioners for parameter-dependent equations and projection-based model reduction methods

Thursday, October 15, 2015 3:40 PM (45 minutes)

Primary author: Prof. NOUY, Anthony (Ecole Centrale Nantes)

Co-author: Mr ZAHM, Olivier (Ecole Centrale Nantes)

Presenter: Prof. NOUY, Anthony (Ecole Centrale Nantes)

Session Classification: IP9

Track Classification: Plenary talks

Contribution ID: 77

Type: **Poster**

Time-Galerkin integrators for the dynamic simulation of local reduced order models

Thursday, October 15, 2015 5:20 PM (5 minutes)

Primary author: Dr NAETS, Frank (KU Leuven)

Co-authors: Prof. FARHAT, Charbel (Stanford University); Dr AMSALLEM, David (Stanford University)

Presenter: Dr NAETS, Frank (KU Leuven)

Session Classification: CP2 Poster blitz

Track Classification: Posters

Contribution ID: 79

Type: **Plenary talk**

Hierarchical MODel (HI-MOD) reduction: towards haemodynamics applications

Wednesday, October 14, 2015 9:00 AM (45 minutes)

Primary author: Prof. PEROTTO, Simona (Politecnico di Milano)

Presenter: Prof. PEROTTO, Simona (Politecnico di Milano)

Session Classification: IP3

Track Classification: Plenary talks

Contribution ID: **80**

Type: **Plenary talk**

Model Reduction in PDE-Constrained Optimization

Tuesday, October 13, 2015 2:30 PM (45 minutes)

Primary author: Prof. HEINKENSCHLOSS, Matthias (Rice University)

Presenter: Prof. HEINKENSCHLOSS, Matthias (Rice University)

Session Classification: IP1

Track Classification: Plenary talks

Contribution ID: 81

Type: **Plenary talk**

Issues in the Loewner framework for the reduction of parametric and bilinear systems

Tuesday, October 13, 2015 3:15 PM (45 minutes)

Primary author: Prof. ANTOULAS, Thanos (Rice University and Jacobs University)

Presenter: Prof. ANTOULAS, Thanos (Rice University and Jacobs University)

Session Classification: IP2

Track Classification: Plenary talks

Contribution ID: 83

Type: **Poster**

Isogeometric analysis based reduced order modelling for incompressible viscous flows in parametrized shapes: applications to underwater shape design

Thursday, October 15, 2015 5:50 PM (5 minutes)

Primary author: SALMOIRAGHI, Filippo (SISSA, International School for Advanced Studies)

Co-authors: Dr BALLARIN, Francesco (SISSA, International School for Advanced Studies); Prof. ROZZA, Gianluigi (SISSA, International School for Advanced Studies); Prof. HELTAI, Luca (SISSA, International School for Advanced Studies)

Presenter: SALMOIRAGHI, Filippo (SISSA, International School for Advanced Studies)

Session Classification: CP2 Poster blitz

Track Classification: Posters

Contribution ID: 84

Type: **Poster**

Computational reduction strategies for bifurcations and stability analysis in fluid-dynamics: applications to Coanda effect in cardiac flows

Thursday, October 15, 2015 5:55 PM (5 minutes)

Primary author: PITTON, Giuseppe (SISSA, International School for Advanced Studies)

Co-authors: Dr QUAINI, Annalisa (University of Houston); Prof. ROZZA, Gianluigi (SISSA, International School for Advanced Studies)

Presenter: PITTON, Giuseppe (SISSA, International School for Advanced Studies)

Session Classification: CP2 Poster blitz

Track Classification: Posters

Contribution ID: 85

Type: **Poster**

Optimal snapshot location for POD model order reduction in optimal control

Thursday, October 15, 2015 6:00 PM (5 minutes)

Primary author: Mrs GRÄSSLE, Carmen (University of Hamburg)

Co-authors: Dr ALLA, Alessandro (University of Hamburg); Prof. HINZE, Michael (University of Hamburg)

Presenter: Mrs GRÄSSLE, Carmen (University of Hamburg)

Session Classification: CP2 Poster blitz

Track Classification: Posters