

Oral presentations on Thursday, September 21st, 2017

Plenary Session

Time	POB 2.302
Thurs. 12:10pm	<i>Volumetric Spline Parameterization for Isogeometric Analysis with Engineering Applications</i> Jessica Zhang
Thurs. 1:00pm	<i>Large-Scale Bayesian Inversion and the flow of the Antarctic Ice Sheet</i> Omar Ghattas

Session 1

Time	POB 2.402 Optimization and UQ A <i>Chairs: Tim Smith & Tom O'Leary-Roseberry</i>	POB 6.304 Numerical Methods & PDEs A <i>Chair: Brendan Keith</i>
Thurs. 2:05pm	<i>hIPPYlib: An Extensible Software Framework for Large-Scale Deterministic and Linearized Bayesian Inverse Problems</i>	
Thurs. 2:10pm	Villa, Umberto	<i>High-order Relaxed Multirate Infinitesimal Step Methods for Multiphysics Applications</i> Sexton, Jean M.
Thurs. 2:30pm	<i>Identification of Minimum Power Dominating Sets in Re-Configurable Graph Networks</i> Smith, Logan	<i>IMEX HDG-DG: A coupled implicit hybridized discontinuous Galerkin and explicit discontinuous Galerkin approach for Euler systems</i> Kang, Shinhoo
Thurs. 2:50pm	<i>Taylor approximation and variance reduction for PDE-constrained optimal control under uncertainty.</i> Chen, Peng	<i>Higgs Boson Equation in the de Sitter Spacetime: Computational Results</i> Balogh, Andras
Thurs. 3:10pm	<i>Reconstruction of a Compactly Supported Contrast function In The Presence of a Background Random Medium</i> Borges, Carlos	<i>A generalized wavelet based grid-adaptive and scale-selective implementation of WENO schemes for conservation laws</i> Maulik, Romit

Session 2

Time	POB 2.402 Optimization and UQ B <i>Chairs: Tim Smith & Tom O'Leary-Roseberry</i>	POB 6.304 Numerical Methods & PDEs B <i>Chair: Brendan Keith</i>
Thurs. 3:40pm	<i>Multiscale Optimization Using Generalized Mortar Methods</i> Seidl, Tom	<i>The DPG Method for High Frequency Time-harmonic Wave Propagation Problems</i> Petrides, Socratis
Thurs. 4:00pm	<i>A PDE Constrained Optimization Approach to the Solution of the Stefan Problem</i> O'Leary Roseberry, Tom	<i>A DPG Approach to the Full Vectorial Transverse Mode Instability Model of Optical Laser Amplifiers</i> Nagaraj, Sriram
Thurs. 4:20pm	<i>Multiscale methods for filtering turbulent systems</i> Lee, Yoonsang	<i>Construction of h-refined finite element spaces with applications to multigrid algorithms</i> Capodaglio, Giacomo
Thurs. 4:40pm		<i>Fast algorithm in radiative transfer</i> Zhong, Yimin

Poster presentations on Thursday, September 21st, 2017 (5:30pm POB 6.102)

- Amanbek, Yerlan - *Adaptive Numerical Homogenization for Upscaling Single Phase Flow and Transport*
- Bhuiyan, Md Al Masum - *Dynamic Fourier process applied to the study of geophysical time series*
- Dobrovolny, Hana - *Using mathematical models to estimate the ratio of infectious to non-infectious viral production of RSV*
- Feng, Xinzeng - *Measuring the mechanical forces during cancer cell invasion using inverse-method traction microscopy*
- Frank, Florian - *FESTUNG: Finite Element Simulation Toolbox for UNstructured Grids*
- Gudoshnikov, Ivan - *Modelling and stabilization of quasistatic evolution of elastoplastic systems subject to periodic loading*
- Guan, Li - *Impact of model-form-uncertainty of the simple susceptible-infectious-recovery epidemic models*
- Henscheid, Nick - *Uncertainty Quantification for a Predictive Model of Chemotherapy Efficacy*
- Islam, Md Rafiul - *Dynamics of the Emerging Fungal Pathogen Batrachochytrium salamandrivorans on the Eastern Newt*
- Jarrett, Angela - *Improving the predictive ability of a mechanically coupled spatiotemporal model of breast cancer using patient specific MRI data*
- Kazhyken, Kazbek - *dgswev2: a modern c++ discontinuous Galerkin finite element solver*
- Kim, Changho - *Stochastic Simulation Method for Reactive Microfluids under Thermal Fluctuations*
- Le, Ellen - *Model Reduction via Domain Decomposition-based Methods for Large-Scale Inverse Problems*
- Mankad, Het - *Perturbation Theory Applied to a Multiscale Mixed Method: A Parallel Algorithm*
- Marvin, Brad - *A Bayesian Approach to Model Inadequacy*
- Oyekole, Oyekola - *A second-order partitioned scheme for fluid-structure interaction problems*
- Paranamana, Pushpi J. - *Hypersurface model of the fracture for nonlinear fluid flows*
- Pinky, Lubna Jahan Rashid - *Modeling of Viral Coinfection in Human Respiratory Tract Using Stochastic Method*
- Smith, Tim - *Dynamical Reconstruction of AMOC Variability at 34°S*
- Smith, Logan - *Identification of Minimum Power Dominating Sets in Re-Configurable Graph Networks*
- Zhao, Xikai - *Accuracy of Adaptive Order WENO Schemes for Solving Conservation Laws*

Oral presentations on Friday, September 22st, 2017

Plenary Session

Time	POB 2.302
Thurs. 8:30am	<i>Multi-Resolution Geometric Modeling of the Mitral Heart Valve Leaflets</i> Micheal Sacks

Session 3

Time	POB 2.302	POB 2.402	POB 6.304
	Numerical Methods & PDEs C <i>Chair: Federico Fuentes</i>	CS & Data Science <i>Chair: Max Bremer</i>	Biology A <i>Chair: Josh Chen</i>
Fri. 9:30am	<i>Discretely entropy stable discontinuous Galerkin methods</i> Chan, Jesse	<i>Performance Comparison of HPX vs. MPI+X Threading Models for Discontinuous Galerkin Finite Element Methods</i> Bremer, Max	<i>An in Silico Heart Model of Pulmonary Arterial Hypertension</i> Avaz, Reza
Fri. 9:50am	<i>Fractional-Parabolic Deformations With Sinh-Acceleration</i> Levendorskii, Sergei	<i>An Extended DEIM Algorithm for Subset Selection</i> Hendryx, Emily	<i>Uncertainty Quantification for a Predictive Model of Chemotherapy Efficacy</i> Henscheid, Nick
Fri. 10:10am	<i>High-order polygonal discontinuous Petrov-Galerkin (PolyDPG) methods using ultraweak formulations</i> Jaime Mora Paz	<i>Block-wise Implementation of the Kalman Filter Based Iterative Learning Control for MIMO Systems</i> Jayawardhana, Rangana	<i>Fluid-structure interaction modeling of bioprosthetic heart valves</i> Zakerzadeh, Rana
Fri. 10:30am	<i>Inexact hierarchical scale separation: A two-scale approach for linear systems from discontinuous Galerkin discretizations</i> Frank, Florian		<i>Simulating Bacterial Motility in Confined Environments</i> LaGrone, John

Plenary Session

Time	POB 2.302
Thurs. 11:00am	<i>Learning From Aggregated Data</i> Joydeep Ghosh
Thurs. 1:10pm	<i>A New Hybrid RANS/LES Modeling Approach for Complex Turbulent Flows</i> Robert Moser

Session 4

Time	POB 2.302 Fluid Mechanics <i>Chairs: Gopal Yalla & Prakash Mohan</i>	POB 6.304 Geological and Structural Mechanics <i>Chairs: Tim Smith & Tom O'Leary-Roseberry</i>
Fri. 2:10pm	<i>Scaling of Lyapunov Exponents in Homogeneous Isotropic Turbulence</i> Mohan, Prakash	<i>Numerical Simulation of Carbonate Matrix Acidization Using Adaptive Enriched Galerkin Method with Entropy Residual Stabilization</i> Dong, Rencheng
Fri. 2:30pm	<i>Stochastic Simulation Method for Reactive Microfluids under Thermal Fluctuations</i> Kim, Changho	<i>Hypersurface model of the fracture for nonlinear fluid flows</i> Paranamana, Pushpi
Fri. 2:50pm	<i>Effective Boundary Conditions for Viscous Incompressible Flow Over Rough Boundaries</i> Carney, Sean	<i>Adaptive multiscale modeling of the flow and reactive transport using Numerical Homogenization and Enhanced Velocity Mixed FEM in porous media</i> Amanbek, Yerlan
Fri. 3:10pm	<i>A DG method for the coupled Navier-Stokes and Cahn-Hilliard equations</i> Liu, Chen	<i>Modelling and stabilization of quasistatic evolution of elastoplastic systems subject to periodic loading</i> Gudoshnikov, Ivan
Fri. 3:30pm	<i>Global stability of 2D plane Couette flow beyond the energy stability limit</i> Fuentes, Federico	

Plenary Session

Time	POB 2.302
Thurs. 4:00pm	<i>Isogeometric Analysis of Solids, Structures, and Fluid-Structure Interaction: From Early Results to Recent Developments</i> Yuri Bazilevs

Oral presentations on Saturday, September 23rd, 2017**Plenary Session**

Time	POB 2.302
Thurs. 9:00am	<i>Personalized Blood Flow Simulations from an Image-Derived Model: Changing the Paradigm for Cardiovascular Diagnostics</i> Leo Grady

Session 5

Time	POB 2.302 Biology B <i>Chair: TBD</i>	POB 6.402 Numerical Methods & PDEs D <i>Chairs: Tom O'Leary-Roseberry & Brendan Keith</i>
Sat. 10:10am	<i>Magnetic drug targeting: a comparison between CFD and FSI simulations</i> Calandrini, Sara	<i>The Double Membrane Problem</i> Duque, Luis
Sat. 10:30am	<i>A biophysical model for tumor induced angiogenesis calibrated and validated with a murine model of glioma</i> Hormuth, David	<i>Isogeometric shape optimization on triangulations</i> Wang, Cunfu
Sat. 10:50am	<i>Cooperative Learning with Iterative Learning Control</i> Jayawardhana, Rangana	<i>Multilevel and Multigrid solvers for hybridized discontinuous Galerkin (HDG) methods</i> Muralikrishnan, Sriramkrishnan
Sat. 11:10am	<i>Two Possible Mechanisms of Chronic Viral Coinfections : Cellular</i>	<i>A New Discontinuous Galerkin Method for the Wave Equation With Background</i>

	<i>Regeneration and Superinfection</i> Pinky, Lubna Jahan Rashid	<i>Flow</i> Zhang, Lu
Sat. 11:30am	<i>Respiratory Control System Model During Exercise With Two Delays</i> Pradhan, Saroj P.	<i>New families of $H(\text{div})$ mixed finite elements on cuboidal hexahedra</i> Tao, Zhen
Sat. 11:50am	<i>Numerical simulation of deformability-based red blood cell separation in a microfluidic device</i> Kabacaoglu, Gokberk	<i>Goal-oriented adaptive mesh refinement with discontinuous Petrov–Galerkin methods</i> Keith, Brendan