

## Wednesday 3/25

**07:30- Breakfast [Copper Conference Center]**  
**08:30**

<b>08:00-10:05</b>	<b>Session 11A: Optimization Methods. .</b> <b>Bighorn B</b>	<b>08:00-10:05</b>	<b>Session 11B: Low-rank methods.</b> <b>Bighorn C/1</b>	<b>08:00-10:05</b>	<b>Session 11C: Multigrid Algorithms and their Performance on GPU Platforms.</b> <b>Bighorn C/2</b>
08:00	Analysis of the sensitivity of output wave height to input bottom friction and bathymetry in the coastal wave model STWAVE <b>Daniel Reich</b> Matthew Farthing, Tyler Hesser, Carl Kelley, Matthew Parno	08:00	Krylov Methods for Low-Rank Regularization <b>Chang Meng</b> Silvia Gazzola, James Nagy	08:00	Algebraic Multigrid Methods for Large-Scale Electromagnetic Particle-in-Cell Simulations <b>Jonathan Hu</b> Christian Glusa, Paul Lin, Matt Bettencourt, Edward Phillips
08:25	Sparse trigonometric interpolation with applications to computational chemistry <b>Zack Morrow</b> Miroslav Stoyanov, Chang Liu, C. T. Kelley, Elena Jakubikova	08:25	A Low-Rank Solver for the Unsteady Navier-Stokes Equations <b>Howard Elman</b> Tengfei Su	08:25	MueLu's SA-AMG implementation and performance on GPUs <b>Luc Berger-Vergiat</b> Jonathan Hu, Christian Glusa, Christopher Siefert
08:50	Regularized Non-linear Least-Squares Unconstrained Minimization Method for High-order Finite-Element Implicit Shock-Fitting in Space-Time <b>Robert Nourgaliev</b> Andrew Corrigan, Andrew Kercher, Patrick Greene, Steven Wopschall	08:50	Low-rank plus sparse matrices: ill-posedness and guaranteed recovery <b>Jared Tanner</b> Simon Vary	08:50	One-Reduce FGMRES-AMG with Two-Stage Gauss-Seidel Smoothers on GPU <b>Kasia Swirydowicz</b> Stephen Thomas, Ichitaro Yamazaki, Julien Langou, Daniel Bielich
09:15	A Projected Newton-Krylov Method for Large-Scale Bound-Constrained Optimization Problems <b>Kelvin Kan</b> Samy Wu Fung, Lars Ruthotto	09:15	A low-rank matrix equation method for solving PDE-constrained optimization problems <b>Alexandra Buenger</b> Valeria Simoncini, Martin Stoll	09:15	Recent Development of Multigrid Solvers in HYPRE on Modern Heterogeneous Computing Platforms <b>Robert Falgout</b> Ruipeng Li, Bjorn Sjogreen, Ulrike Yang
09:40	Energy Function Approach to the Time-Varying Optimal Gas Flow <b>Aleksandr Lukashevich</b> Yury Maximov, Michael Chertkov	09:40	Randomized Iterative Methods for Low Rank Matrix Approximation <b>Azzam</b> Allan Struthers, Benjamin Ong	09:40	Robust Structured Multigrid on GPUs: Leveraging legacy kernels in the Cedar Framework <b>Andrew Reisner</b> David Moulton, Luke Olson

**10:05- Coffee \& Tea Service**  
**10:25**

<b>10:25- 12:30</b>	<b>Session 12A: Multilevel Methods.</b> Bighorn B	<b>10:25- 12:30</b>	<b>Session 12B: Data Science and Graph Algo- rithm Applications.</b> Bighorn C/1	<b>10:25- 12:30</b>	<b>Session 12C: Nonlinear Problems.</b> Bighorn C/2
10:25	p-Multigrid with Partial Smoothing: An Efficient Preconditioner for Discontinuous Galerkin Discretizations with Modal Bases <b>Christopher Thiele</b> Beatrice Riviere	10:25	Iterative Solution Methods for Nonnegative Matrix Factorizations <b>Matthias Bollhoefer</b>	10:25	A Rational Approximation Method for Large-Scale Nonlinear Eigenvalue Problems <b>Agnieszka Miedlar</b> Mohamed El-Guide, Yousef Saad
10:50	Non-overlapping block smoothers for the Stokes equations <b>Lisa Claus</b> Matthias Bolten	10:50	A Multilevel Subgraph Preconditioner for Linear Equations in Graph Laplacians <b>Junyuan Lin</b> Xiaozhe Hu	10:50	Nonlinear Solvers for Two-species Neutrino-matter Equations in Core-Collapse Supernovae Simulations <b>Paul Laiu</b> Eirik Endeve, Austin Harris, Ran Chu
11:15	Expressing AMG Interpolation in Terms of Sparse Matrix-Matrix Multiplications <b>Rob Falgout</b> Ruipeng Li, Bjorn Sjogreen, Ulrike Yang	11:15	Parallel spectral partitioning on multiple GPUs <b>Erik G. Boman</b> Seher Acer, Siva Rajamanickam	11:15	Optimal Asymptotic Convergence Rates for Nesterov and Anderson Acceleration with Application to Tensor Decomposition <b>Yunhui He</b> Hans De Sterck
11:40	Parallel-in-time simulation of biofluids <b>Weifan Liu</b> Minghao Rostami	11:40	Mixed-Precision Arithmetic for Graph Clustering and Graph Ranking <b>Lucia Yang</b> Alyson Fox, Geoffrey Sanders	11:40	A new quasi-Newton method for a black-box system with a physics-based surrogate <b>Toon Demeester</b> E. Harald van Brummelen, Rob Haelterman, Joris Degroote
12:05	—	12:05	Computing a posteriori error estimates for algebraic multigrid methods on graphs <b>Xiaozhe Hu</b> Kaiyi Wu, Ludmil Zikatanov	12:05	—

**16:00- Coffee \& Tea Service**

**16:30**

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**16:30- Session 13: Student Paper Awards and Presentations. Plenary Session**

**18:10** Bighorn B

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16:30 BiLQ: An Iterative Method for Nonsymmetric Linear Systems with a Quasi-Minimum Error Property

**Alexis Montoison** Dominique Orban

16:55 Predict-and-recompute Conjugate Gradient Variants

**Tyler Chen**

17:20 Optimizing MGRIT and Parareal coarse-grid operators for linear advection

**Oliver Krzysik** Hans De Sterck, Robert Falgout, Stephanie Friedhoff, Scott MacLachlan

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**18:30- Cash Bar at Grand Hall- Copper Station**

**19:00** Bighorn B

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**19:00- Conference Banquet Grand Hall- Copper Station**

**21:30**

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