Tuesday 3/24

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

08:00-10:05 Session 8A: Preconditioning. Bighorn B — Bighorn B

08:00 An implicit approach to phase field modeling of solidification for metals and alloys
Christopher Newman Marianne Francois, Supriyo Ghosh

08:25 Recurrent use of AL preconditioner for fluid equations on manifolds.
Maxim Olshanskiy Alexander Zhiliakov

08:50 Enhanced Relaxed Physical Factorization Preconditioner for Three-Field Poroelasticity
Matteo Frigo Nicola Castelletto, Massimiliano Ferronato

09:15 Spectral-based fast solvers for finite volume discretizations of a conservative fractional diffusion problem
Ken Trotti Mariarosa Mazza, Marco Donatelli, Rolf Krause

09:40 —

08:00-10:05 Session 8B: Quantum Linear Algebra Algorithms I. Bighorn C/1 — Bighorn C/1

08:00 Quantum Computing From a Linear Algebra Perspective
Chao Yang

08:25 Variational quantum algorithms running on quantum supreme chips
Jarrod McClean

08:50 Low-depth gradient measurements can improve convergence in variational hybrid quantum-classical algorithms
Aram Harrow John Napp

09:15 Quantum linear system solver based on time-optimal adiabatic quantum computing and quantum approximate optimization algorithm
Dong An Lin Lin

09:40 —

08:00-10:05 Session 8C: Transport and Nuclear Applications. Bighorn C/2 — Bighorn C/2

08:00 Domain Decomposed Monte Carlo Transport on GPUs in Shift
Steven Hamilton Thomas Evans

08:25 Scalable multilevel domain decomposition methods with SG coarse spaces for the multigroup neutron transport equations
Fande Kong

08:50 Multimaterial, three temperature radiation-hydrodynamics solver for ICF applications
Hyeongkae Park Marc Charest

09:15 Iterative Methods for Thermal Radiation Transport with Multiple Preconditioners
Andrew Till Jim Warsa

09:40 Data motion analysis for Implicit Monte Carlo on CPUs and GPUs
Alex Long

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

10:25- 12:30 Session 9A: Eigenvalue and SVD Computations. Bighorn B Bighorn B

10:25 Hybrid Iterative Refined Methods for Symmetric Eigenvalue Problems
Jennifer Picucci James Baglama

10:50 Low-Rank Stopping Criteria for Block Parallel SVD
Steven Goldenberg Andreas Stathopoulos

11:15 HiSVD: A Hybrid Incremental SVD Method for Streaming Large, Sparse Matrices
Jeremy Myers Andreas Stathopoulos

11:40 Computing Generalized Matrix Functions with Singular Value Estimation
Ru Huang Yuanzhe Xi, Michele Benzi

12:05 Domain decomposition Rayleigh-Ritz approaches for symmetric generalized eigenvalue problems
Vasileios Kalantzis

10:25- 12:30 Session 9B: Quantum Linear Algebra Algorithms II. Bighorn C/1 Bighorn C/1

10:25 Quantum primitives and quantum linear algebra
Lin Lin

10:50 Eigenstate filtering with application to quantum linear systems
Lin Lin Yu Tong

11:15 Quantum state verification in linear algebra problems
Rolando Somma Yigit Subasi

11:40 Quantum algorithm for linear systems and applications to plasma dynamics
Hari Krovi

12:05 —

10:25- 12:30 Session 9C: Preconditioning. Bighorn C/2 Bighorn C/2

10:25 Matrix-free preconditioning for high-order finite elements
Andrew Barker

10:50 Preconditioning for a Stabilized Mixed-Hybrid Formulation of Biot's Poroelasticity Equations
Nicola Castelletto Massimiliano Ferronato, Matteo Frigo, Joshua White

11:15 Peclet-robust preconditioners for singularly perturbed convection-diffusion equations
Scott MacLachlan Niall Madden, Thai Nhan

11:40 Nonsymmetric block preconditioners and heterogeneous DSA, compatible with voids
Ben Southworth

12:05 Multiscale preconditioning for coupled porous media flow and geomechanics on unstructured grids
Sergey Klevtsov Nicola Castelletto, Hamdi Tchelepi

16:30-18:35 Session 10A: Algebraic Preconditioners. Bighorn B

Bighorn B

16:30 Preconditioners based on enhanced structured incomplete factorization (eSIF) for general SPD matrices
Jianlin Xia

16:55 Leveraging One-Sided Communication for Sparse Triangular Solvers
Sherry Li Nan Ding, Samuel Williams, Yang Liu

17:20 Multicolor Block Gauss-Seidel using Kokkos
Brian Kelley Siva Rajamanickam

17:45 SSAI: A symmetric sparse approximate inverse preconditioner for the conjugate gradient methods PCG and PCGLS
Shaked Regev Michael Saunders

18:10 —

16:30-18:35 Session 10B: Quantum Linear Algebra Algorithms III. Bighorn C/1

Bighorn C/1

16:30 Unitary Matrix Decompositions for Quantum Circuit Synthesis
Roel Van Beeumen

16:55 Quantum algorithm for simulating the wave equation
Stephen Jordan Pedro Costa, Aaron Ostrander

17:20 High-precision quantum algorithms for partial differential equations
Andrew Childs Jin-Peng Liu, Aaron Ostrander

17:45 —

18:10 —

16:30-18:35 Session 10C: UQ and Montecarlo methods. Bighorn C/2

Bighorn C/2

16:30 An efficient solver for nonlinear Bayesian inverse problems
Akwum Onwunta Howard Elman

16:55 Multilevel Monte Carlo with improved correlation for kinetic equations in the diffusive scaling
Emil Loevbak Giovanni Samaey, Stefan Vandewalle

17:20 A Discrete-time Cancer Immunotherapy Model under the Kolmogorov Equation View and the Reaction-Diffusion Model
Ye Li

17:45 Exploiting Sparsity in the Estimation of Gaussian Mixture Models
Shahaf Finder Eran Treister, Oren Freifeld

18:10 Deflation and preconditioning strategies for sequences of sampled stochastic elliptic equations
Nicolas Venkovic Paul Mycek, Luc Giraud, Olivier Le Maître