Monday 3/23

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

08:00-10:05	Session 5A: Machine Learning and Iterative Methods. Bighorn B Bighorn B	08:00-10:05	Session 5B: Helmholtz Solvers. Bighorn C/1 Bighorn C/1	08:00-10:05	Session 5C: Algebraic Multigrid. Bighorn C/2 Bighorn C/2
08:00	Future of Computing – How May Iterative Methods Exploit Future Technology Directions **Kirk Jordan**	08:00	WaveHoltz an Iterative Solver for the Helmholtz Equation via the Wave Equation. Part 1: Theoretical Aspects. **Fortino Garcia** Daniel Appelo, Olof Runborg	08:00	Finding AMG aggregates in a haystack: from maximum product matching to scalable solvers **Pasqua D'Ambra** Fabio Durastante, Salvatore Filippone
08:25	Asynchronous SGD for Training DNNs **Edmond Chow** Florent Lopez, Stan Tomov	08:25	WaveHoltz an Iterative Solver for the Helmholtz Equation via the Wave Equation. Part 2: Experiments, implementation and extensions. **Daniel Appelo** Fortino Garcia, Olof Runborg	08:25	Algebraicly generated line relaxation for algebraic multigrid domain decomposition **Wayne Mitchell**
08:50	Towards Robust Training and Initialization of Deep Neural Networks: An Adaptive Basis Viewpoint **Eric C. Cyr** Mamikon A. Gulian, Ravi G. Patel, Mauro Perego, Nathaniel A. Trask	08:50	Scalable convergence using two-level deflation preconditioning for the Helmholtz equation **Vandana Dwarka**	08:50	Coarse Grid Selection using Simulated Annealing **Scott MacLachlan** Luke Olson, Matthew West, Tareq Uz Zaman
09:15	Multilevel training of deep residual networks **Alena Kopanicakova** Lisa Gaedke-Merzhauser, Vanessa Braglia, Rolf Krause	09:15	A Fast Solver for the Fractional Helmholtz Equation **Christian Glusa** Harbir Antil, Marta D'Elia, Bart Van Bloemen Waanders, Chester Weiss	09:15	A Multigrid Reduction Framework for Flow in Porous and Fractured Media **Quan Bui** Daniel Osei-Kuffuor, Nicola Castelletto, Joshua White
09:40	Layer-Parallel Training and Multilevel Initialization for Deep Residual Neural Networks **Jacob Schroder** Stefanie Guenther, Lars Ruthotto, Eric Cyr, Nicolas Gauger	09:40	A GenEO coarse space for solving the heterogeneous Helmholtz equation with domain decomposition methods **Niall Bootland** Victorita Dolean, Pierre Jolivet	09:40	Developing Work-Optimal Multilevel Methods **Scott MacLachlan** Luke Olson, Yuchen Su, Matt West

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

10:25-12:30 Session 6A: Machine Learning and Iterative Methods. Bighorn B Bighorn B

10:25 Improving linear solver performance using machine learning
Christopher Siefert Daniel Sunderland, John Kaushagen

10:50 Multigrid Methods and Convolutional Neural Network
Jinchao Xu

11:15 Machine Learning in adaptive domain decomposition methods– predicting the geometric location of constraints
Alexander Heinlein Axel Klawonn, Martin Lanser, Janine Weber

11:40 Optimizing parameters of iterative methods with stochastic optimization
Ivan Oseledets Alexander Katrutsa

12:05 Generative adversarial networks and iterative methods
Ekaterina Muravleva Ivan Oseledets

10:25-12:30 Session 6B: Computational Electromagnetics. Bighorn C/1 Bighorn C/1

10:25 High Performance Domain Decomposition Method for 3D Electromagnetic simulations
Matthieu Lecouvez Bruno Stupfel

10:50 Analysis of parallel Schwarz solvers for time-harmonic wave propagation problems
Victorita Dolean Niall Bootland, Alexandros Kyriakis

11:15 A Finite-Element Framework for a Mimetic Finite-Difference Discretization of Maxwell's Equations
Casey Cavanaugh James Adler, Xiaozhe Hu, Carmen Rodrigo, Francisco Gaspar, Ludmil Zikatanov

11:40 —

12:05 —

10:25-12:30 Session 6C: Multigrid. Bighorn C/2 Bighorn C/2

10:25 An h-multigrid method for Hybrid High-Order discretizations
Pierre Matalon Daniele Di Pietro, Ulrich Rüde

10:50 Multigrid in H(div) on Axisymmetric Domains
Minah Oh

11:15 A two level method for isogeometric discretizations
Álvaro Pé Carmen Rodrigo, Francisco Gaspar

11:40 Deflated p-multigrid solvers for Isogeometric Analysis
Roel Tielen Matthias Möller, Cornelis Vuik

12:05 Nesterov Accelerated Multigrid Method
Xiaozhe Hu Chunyan Niu

16:30-18:35 Session 7A: Machine Learning and Iterative Methods. Bighorn B Bighorn B

16:30 Efficient Training of Neural Network Surrogate Methods with Variable Projection
Elizabeth Newman Lars Ruthotto, Joseph Hart, Bart van Bloemen Waanders

16:55 Multi-tasking deep learning models for predictions of total energy of solid solution alloys
Massimiliano Lupo Pasini Ying Wai Li, Junqi Yin, Jiaxin Zhang, Kipton Barros, Markus Eisenbach

17:20 LeanConvNets: Low-cost Yet Effective Convolutional Neural Networks
Eran Treister Jonathan Ephrath, Moshe Eliasof, Lars Ruthotto, Eldad Haber

17:45 GMLS-Nets: a convolutional neural network architecture for unstructured point-cloud data
Ravi Patel Nathaniel Trask, Ben Gross, Eric Eric C. Cyr, Paul Atzberger

18:10 Deep Learning Enriched with Fractional Operators
Ratna Khatri

16:30-18:35 Session 7B: Mixed Precision. Bighorn C/1 Bighorn C/1

16:30 Newton's Method in Mixed Precision
C. T. Kelley

16:55 Low-precision orthogonalization in eigensolvers
Eloy Romero Alcalde Andreas Stathopoulos

17:20 Compressibility Constraints for Adaptive Rate ZFP Compression in Iterative Methods
Alyson Fox Peter Lindstrom

17:45 Progressive three-precision multigrid solvers
Rasmus Tamstorf Joseph Benzaken, Steve McCormick

18:10 Error Analysis of Mixed Precision Algorithms for Computing Matrix Interpolative Decompositions
Alec Dunton Alyson Fox

16:30-18:35 Session 7C: Domain Decomposition. Bighorn C/2 Bighorn C/2

16:30 Primal-Dual Weak Galerkin Finite Element Methods for First-Order Transport Problems
Chunmei Wang

16:55 Additive Schwarz Preconditioners for a Localized Orthogonal Decomposition Method
José Garay Susanne Brenner, Li-Yeng Sung

17:20 FROSch - A framework for parallel Schwarz preconditioners in Trilinos
Alexander Heinlein Axel Klawonn, Sivasankaran Rajamanickam, Oliver Rheinbach

17:45 On appropriate coarse spaces for asynchronous Optimized Schwarz Method
Faycal Chaouqui Daniel Szyld

18:10 —