Monday 3/23

08:00-10:05	**Session 5A: Machine Learning and Iterative Methods.** Bighorn B	08:00-10:05	**Session 5B: Helmholtz Solvers.** Bighorn C/1	08:00-10:05	**Session 5C: Algebraic Multigrid.** 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	10:25-12:30	**Session 6B: Computational Electromagnetics.** Bighorn C/1		**Session 6C: Multigrid.** Bighorn C/2
	10:25 Improving linear solver performance using machine learning **Christopher Siefert** Daniel Sunderland, John Kaushagen	10:25 High Performance Domain Decomposition Method for 3D Electromagnetic simulations **Matthieu Lecouvez** Bruno Stupfel		10:25 An h-multigrid method for Hybrid High-Order discretizations **Pierre Matalon** Daniele Di Pietro, Ulrich Rüde	
	10:50 Multigrid Methods and Convolutional Neural Network **Jinchao Xu**	10:50 Analysis of parallel Schwarz solvers for time-harmonic wave propagation problems **Victorita Dolean** Niall Bootland, Alexandros Kyriakis		10:50 Multigrid in H(div) on Axisymmetric Domains **Minah Oh**	
	11:15 Machine Learning in adaptive domain decomposition methods– predicting the geometric location of constraints **Alexander Heinlein** Axel Klawonn, Martin Lanser, Janine Weber	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		11:15 A two level method for isogeometric discretizations **Álvaro Pé** Carmen Rodrigo, Francisco Gaspar	
	11:40 Optimizing parameters of iterative methods with stochastic optimization **Ivan Oseledets** Alexander Katrutsa	11:40 —		11:40 Deflated p-multigrid solvers for Isogeometric Analysis **Roel Tielen** Matthias Möller, Cornelis Vuik	
	12:05 Generative adversarial networks and iterative methods **Ekaterina Muravleva** Ivan Oseledets	12:05 —		12:05 Nesterov Accelerated Multigrid Method **Xiaozhe Hu** Chunyan Niu	

16:30-18:35	Session 7A: Machine Learning and Iterative Methods. Bighorn B	16:30-18:35	Session 7B: Mixed Precision. Bighorn C/1	16:30-18:35	Session 7C: Domain Decomposition. Bighorn C/2
16:30	Efficient Training of Neural Network Surrogate Methods with Variable Projection **Elizabeth Newman** Lars Ruthotto, Joseph Hart, Bart van Bloemen Waanders	16:30	Newton's Method in Mixed Precision **C. T. Kelley**	16:30	Primal-Dual Weak Galerkin Finite Element Methods for First-Order Transport Problems **Chunmei Wang**
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	16:55	Low-precision orthogonalization in eigensolvers **Eloy Romero Alcalde** Andreas Stathopoulos	16:55	Additive Schwarz Preconditioners for a Localized Orthogonal Decomposition Method **José Garay** Susanne Brenner, Li-Yeng Sung
17:20	LeanConvNets: Low-cost Yet Effective Convolutional Neural Networks **Eran Treister** Jonathan Ephrath, Moshe Eliasof, Lars Ruthotto, Eldad Haber	17:20	Compressibility Constraints for Adaptive Rate ZFP Compression in Iterative Methods **Alyson Fox** Peter Lindstrom	17:20	FROSch - A framework for parallel Schwarz preconditioners in Trilinos **Alexander Heinlein** Axel Klawonn, Sivasankaran Rajamanickam, Oliver Rheinbach
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	17:45	Progressive three-precision multigrid solvers **Rasmus Tamstorf** Joseph Benzaken, Steve McCormick	17:45	On appropriate coarse spaces for asynchronous Optimized Schwarz Method **Faycal Chaouqui** Daniel Szyld
18:10	Deep Learning Enriched with Fractional Operators **Ratna Khatri**	18:10	Error Analysis of Mixed Precision Algorithms for Computing Matrix Interpolative Decompositions **Alec Dunton** Alyson Fox	18:10	—