Close Menu

Home [default.htm]

Agenda [agenda.htm]

Registration [https://www.regonline.com/scidac4pi2019]

Lodging [lodging.htm]

Presenters and Presentations [presenters-and-presentations.htm]

Poster List [poster-list.htm]

Poster Sessions [poster-sessions.htm]

Contacts [contacts.htm]

2019 Scientific Discovery through Advanced Computing Principal Investigator (PI) Meeting

Sponsored by the U.S. Department of Energy
Office of Advanced Scientific Computing Research (ASCR)
Hilton Washington DC/Rockville
Rockville, MD
July 16 – 18, 2019

Poster List

All posters are in PDF (Adobe portable document format) format. Adobe Reader may be necessary to view PDF files on your computing device. If you don't have the latest version of Reader, you can download a free copy [https://get.adobe.com/reader/] from Adobe.

Full name	Poster Title
Rick Archibald	FASTMATH Data Analytics Activities [posters/Archibald_FASTMATH_Data_Analytics
Rick Archibald	FASTMATH ML [posters/Archibald_FASTMATH_ML.pdf] [768 KB]

Full name	Poster Title
Riyadh Baghdadi	Accelerating LQCD Calculations Using the Tiramisu Compiler [posters/Baghdadi_Accelerating_LQCD_Calculations_Using_the_Tiramisu_Compiler
Gautam Bisht	Development of Terrestrial Dynamical Core for the E3SM to Simulate Water Cycle [posters/Bisht_Develoment_of_Terrestrial_Dynamical_Core_for_the_E3SM_to_Simu
Sophie Blondel	Xenon Gas Bubble Re-solution Model and Xolotl Code Development [posters/Blonde solution_Model_and_Xolotl_Code_Development.pdf] [1.38 MB]
Luis Chacon	Science and Math in the Center for High Fedelity Boundary Plasma Simulation [posters/Chacon_Science_and_Math_in_the_Center_for_High_Fedelity_Boundary_F
Jonas Chaves-Montero	Accelerating HEP Science: Inference and Machine Learning at Extreme Scales II [po Montero_Accelerating_HEP_Science-Inference_and_Machine_Learning_at_Extreme
Nathan Collier	Choosing a Numerical Methods for a Terrestrial Dynamical Core for the E3SM [posters/Collier_Choosing_a_Numerical_Methods_for_a_Terrestrial_Dynamical_Core
Davide Curreli	Code Development and Recent Progress of the hPIC Particle-in-Cell for Plasma-Mat [posters/Curreli_Code_Development_and_Recent_Progress_of_the_hPIC_Particle-in [3.47 MB]
Ed D'azevedo	Performance Enhancements of XGC [posters/DAzevedo_Performance_Enhancemer
Ed D'azevedo	Computer Science in the Center for High Fidelity Boundary Plasma Physics Simulatic [posters/DAzevedo_Computer_Science_in_the_Center_for_High_Fidelity_Boundary_
Nan Ding	Leveraging One-Sided Communication for Sparse Triangular Solvers [posters/Ding_L Sided_Communication_for_Sparse_Triangular_Solvers.pdf] [5.47 MB]
Anshu Dubey	Applications Engagement and Community Outreach [posters/Dubey_Applications_Er [9.66 MB]
Michael Eldred	FASTMath: UQ Software [posters/Eldred_FASTMath-UQ_Software.pdf] [1.07 MB]
Berk Geveci	In situ Viz Unlocks Unsteady Dynamics at Extreme Scale [posters/Geveci_In_Situ_Viz_Unlocks_Unsteady_Dynamics_at_Extreme_Scale.pdf] [
Pieter Ghysels	Linear Solver Improvements in the ComPASS4 Project [posters/Ghysels_Linear_Solver_Improvements_In_ComPASS4_Project.pdf] [1.08 M
Samuel Andrea Giuliani	Exploring the nuclear chart using density functional theory [posters/Giuliani_Exploring_the_Nuclear_Chart_Using_Density_Functional_Theory.p
Hanqi Guo	In Situ Flow Analysis for MPAS-Ocean Simulations [posters/Guo_In_Situ_Flow_Analy MB]
Martin Head-Gordon	Toward electrocatalysis on metal clusters coupled to an electron reservoir [posters/He Gordon_Toward_Electrocatalysis_on_Metal_Clusters_Coupled_to_an_Electron_Res
Heiko Hergert	The In-Medium Similarity Renormalization Group: Versatile Computational Many-Bod [posters/Hergert_The_In_Medium_Similarity_Renormalization_Group-Versatile_Com
Edward Hohenstein	Low-Rank Tensor Factorizations in Coupled-Cluster Theory [posters/Hohenstein_Low Cluster_Theory.pdf] [3.20 MB]
Jan Hueckelheim	CIVL - The Concurrency Intermediate Verification Language [posters/Hueckelheim_C The_Concurrency_Intermediate_Verification_Language.pdf] [890 KB]
Hans Johansen	FASTMath Structured Mesh Activities [posters/Johansen_FASTMath_Structured_Mes

Full name	Poster Title
Steven Johnston	Accelerating quantum Monte Carlo simulations using neural networks: applications to [posters/Johnston_Accelerating_quantum_Monte_Carlo_simulations_using_neural_n applications_to_the_Holstein_model_and_beyond.pdf] [2.64 MB]
Balint Joo	Accelerating Gauge Generation for Lattice QCD on Summit [posters/Joo_Accelerating_Gauge_Generation_for_Lattice_QCD_on_Summit.pdf] [98
Balint Joo	MG Proto [posters/Joo_MG_Proto.pdf] [1.44 MB]
Dong-Uk Kim	Multiscale MARMOT-Xolotl coupled framework [posters/Kim_Multisclae_MARMOT-Xolotl_Coupled_Framework_for_Fission_Gas_Bubble_Growth_Simulations.pdf] [11.4
Paul Kuberry	The Compadre Toolkit for Native Degrees-of-Freedom [posters/Kuberry_The_Compa Freedom.pdf] [7.36 MB]
Ruipeng Li	Linear Solvers: Multilevel methods [posters/Li_Linear_Solvers_Multilevel_Methods.pd
Fei Li	The Community Project for Accelerator Science and Simulation 4:Advancing Accelera Computing [posters/Li_The_Community_Project_for_Accelerator_Science_and_Simu Advancing_Accelerator_Physics_through_High_performance_Computing.pdf] [2.77 M
Yang Liu	FASTMATH: Fast and Parallel Direct Linear Solvers [posters/Liu_FASTMATH-Fast_a MB]
Chang Liu	Energy Loss and Radial Diffusion of Runaway Electrons due to Kinetic Instabilities [posters/Liu_Energy_Loss_and_Radial_Diffusion_of_Runaway_Electrons_due_to_Ki
Dan Lu	Advancing predictive understanding of terrestrial ecosystem through machine learnin [posters/Lu_Advancing_Predictive_Understanding_of_Terrestrial_Ecosystem_through
Pieter Maris	AB INITIO NUCLEAR STRUCTURE CALCULATIONS OF ATOMIC NUCLEI UP TO C [posters/Maris_AB_INITIO_NUCLEAR_STRUCTURE_CALCULATIONS.pdf] [595 KB
Daniel Martin	Probabilistic Sea-Level Projections from Ice Sheet and Earth System Models 1:New M [posters/Martin_Probabilistic_Sea-Level_Projections_from_Ice_Sheet_and_Earth_Sy [389 KB]
Jonah Miller	GW170817-Like Disk Produces a Blue Kilonova [posters/Miller_GW170817-Like_Dis
Dmitriy Morozov	RAPIDS Data Understanding Highlights [posters/Morozov_RAPIDS_Data_Understan
Juliane Mueller	FASTMath: Optimizing Computationally Expensive Large-scale Black-box Problems [Optimizing_Computationally_Expensive_Large-scale_Black-box_Problems.pdf] [85.7
Todd Munson	FASTMath: Numerical Optimization Activities [posters/Munson_FASTMath-Numerical
Habib Najm	FASTMath: UQ Algorithms [posters/Najm_FASTMath_UQ_Algorithms.pdf] [1.75 MB]
Esmond Ng	FASTMath Overview [posters/Ng_FASTMath_Overview.pdf] [3.10 MB]
Satoshi Okamoto	Dynamical and thermal magnetic properties of the Kitaev spin liquid candidate α-RuC [posters/Okamoto_Dynamical_and_thermal_magnetic_properties_of_the_Kitaev_spi
Kara Peterson	DEMSI: A Performance Portable Sea Ice Model [posters/Peterson_DEMSI-A_Perform MB]
Siva Rajamanickam	FASTMath: Kokkos Kernels and Linear Solver [posters/Rajamanickam_Kokkos_Kern
Vishagan Ratnaswamy	Physics Informed Neural Network Surrogate for E3SM Land Model [posters/Ratnaswamy_Physics_Informed_Neural_Network_Surrogate_for_E3SM_La
Noemi Rocco	Electroweak responses of nuclei [posters/Rocco_Electroweak_Responses_of_Nuclei
K. J. Roche	Effect of Helium Flux [posters/Roche_Effect_of_Helium_Flux.pdf] [8.83 MB]

Full name	Poster Title
Phil Roth	Reducing the Memory Footprint of a PETSc-based Cluster Dynamics Simulation [posters/Roth_Reducing_the_Memory_Footprint_of_a_PETSc-based_Cluster_Dynar
Andrew Salinger	Algorithms and Software for Fast E3SM Atmosphere Tracer Transport [posters/Salinger_Algorithms_and_Software_for_Fast_E3SM_Atmosphere_Tracer_T
Adam Schneider	Probabilistic Sea-Level Projections from Ice Sheet and Earth System Models 2: Ice S [posters/Schneider_Probabilistic_Sea-Level_Projections_from_Ice_Sheet_and_Earth Ice_Sheet_and_Earth_System_Model_Coupling.pdf] [513 KB]
John Shadid	Tokamak Disruption Simulation (TDS) Center: Toward Robust and Efficient Simulatio UQ [posters/Shadid_Tokamak_Disruption_Simulation_(TDS)_Center-Toward_Robust_and__Efficient_Simulation_using_Scalable_Formulations,_Solvers,_
Mark Shephard	FASTMath: Unstructured Mesh Technologies for Fusion Simulation Codes [posters/S Unstructured_Mesh_Technologies_for_Fusion_Simulation_Codes.pdf] [12.48 MB]
Mark Shephard	Unstructured Meshing Technologies [posters/Shephard_Unstructured_Meshing_Tech
Trevor Sprouse	Implementing and evaluating modern nuclear models in the study of r-process nuclec [posters/Sprouse_Implementing_and_Evaluating_Modern_Nuclear_Models_in_the_S [1.23 MB]
Patrick Steinbrecher	Performance of Staggered Fermion Kernels using Grid [posters/Steinbrecher_Performance_of_Staggered_Fermion_Kernels_using_Grid.pdf
Panos Stinis	Improving convergence for stochastic physics parameterizations [posters/Stinis_Improving_Convergence_for_Stochastic_Physics_Parameterizations.
Mark Stowell	MFEM: Scalable Finite Element Methods [posters/Stowell_MFEM_Scalable_Finite_E
Xianzhu Tang	Tokamak Disruption Simulation (TDS) Center: Charting a Path for Disruption Mitigatic [posters/Tang_Tokamak_Disruption_Simulation_(TDS)_Center-Charting_a_Path_for_ Scale_Predictive_Simulations.pdf] [661 KB]
Ingo Tews	Neutron-Star Mergers as Probes for Nuclear Physics [posters/Tews_Neutron-Star_M [4.67 MB]
Adrian Turner	DEMSI: Discrete Element Model for Sea Ice [posters/Turner_DEMSI-Discrete_Eleme
Maxim Umansky	Dynamic plasma material interactions at the tokamak edge [posters/Umansky_Dynamic_plasma_material_interactions_at_the_tokamak_edge.p
James Vary	Deep Learning for Ab Initio Nuclear Theory Extrapolations [posters/Vary_Deep_Learning_for_Ab_Initio_Nuclear_Theory_Extrapolations.pdf] [58
Alice Walker	QM/MM studies of fatty acid photodecarboxylase [posters/Walker_QM-MM_studies_ MB]
Hui Wan	Atmospheric physics convergence project overview [posters/Wan_Atmospheric_Phys [1.51 MB]
Jerry Watkins	Probabilistic Sea-Level Projections from Ice Sheet and Earth System Models 3: Perfo Quantification [posters/Watkins_Probablistic_Sea-Level_Projections_from_Ice_Sheet Performance_Optimization_and_Uncertainty_Quantification.pdf] [405 KB]
Samuel Williams	Performance Analysis using the Roofline Model [posters/Williams_Performance_Ana MB]
David Williams-Young	Shift Placement in a Parallel Spectrum Slicing Method [posters/WilliamsYoung_Shift_Placement_in_a_Parallel_Spectrum_Slicing_Method_f Consistent_Eigenvalue_Computation.pdf] [955 KB]

Full name	Poster Title
Carol Woodward	FASTMath: Time Integration Activities [posters/Woodward_FASTMath_Time_Integrat
Carol Woodward	Improving numerical robustness and physical consistency [posters/Woodward_Improving_numerical_robustness_and_physical_consistency_of [2.0 MB]
John Wu	Scientific Data Management: Supporting Scientific Discoveries Through Efficient I/O | Supporting_Scientific_Discoveries_Through_Efficient_IO.pdf] [3.15 MB]
Xuping Xie	Analytic Continuation of Noisy Data Using Multistep Neural Network [posters/Xie_Analytic_Continuation_of_Noisy_Data_Using_Multistep_Neural_Networ
Takanobu Yamaguchi	Progress toward adaptive vertical grid enhancement in E3SM [posters/Yamaguchi_Progress_Toward_Adaptive_Grid_Enhancement_in_E3SM.pdf]
Chao Yang	FASTMath: Eigensolver Activities [posters/Yang_FASTMath_Eigensolver_Activities.p
Shixuan Zhang	Efficient and objective testing of solution correctness for HPC applications [posters/Zhang_Efficient_and_objective_testing_of_solution_correctness_for_HPC_a

Copyright 2019, Oak Ridge Associated Universities | Privacy Security Notice [https://www.orau.gov/disclaimer.htm] | Contract Acknowledgement [http://orise.orau.gov/contract-acknowledgement.htm]