

Tensor Network States: Algorithms and Applications 2023

21-24 August 2023, Shanghai

Monday, 21 August 2023		
08:50-09:00	Welcome and opening remarks by Tao Xiang	
Session 1	Chair: Steven White	
09:00-09:30	Chia-Min Chung	Matrix product state simulations of quantum quenches and transport in Coulomb blockaded superconducting devices
09:30-10:00	Yi Zhou	Chiral spin liquid ground states for the antiferromagnetic Heisenberg model on the Kagome lattice
10:00-10:30	Hiroshi Shinaoka	Quantics tensor train approaches for quantum field theories
10:30-11:00	Photo and tea break	
Session 2	Chair: Dong-Hee Kim	
11:00-11:30	Naoki Kawashima	TRG with nuclear norm regularization
11:30-12:00	Xiaoqun Wang	Density-matrix renormalization group method for non-Hermitian physics
12:00-14:00	Lunch	
Session 3	Chair: Yi Zhou	
14:00-14:30	Dong-Hee Kim	Neural-network quantum state study of the long-range antiferromagnetic Ising chain
14:30-15:00	Guoyi Zhu	Stable long-range entanglement from finite-depth unitaries and measurements
15:00-15:30	Pan Zhang	Tensor-Network Message-Passing
15:30-16:00	Ruizhen Huang	Quantum Anomaly and Symmetry Aspect of Entanglement Scaling in 2D CFT
16:00-16:30	Tea break	
Session 4	Chair: Xiaoqun Wang	
16:30-17:00	Toshiya Hikihara	Structural optimization of tree tensor networks
17:00-17:30	Shuo Yang	Scalable Quantum State Tomography with Locally Purified Density Operators and Local Measurements
17:30-18:00	Wei Zhu	Critical Phenomena on a Quantum Fuzzy Sphere: Uncovering Conformal Symmetry in the 3D Ising Transition
18:30	Dinner	

Tuesday, 22 August 2023

Session 5	Chair: Hong Yao	
09:00-09:30	Stefan Wessel	Reduced basis modeling for quantum spin systems based on DMRG
09:30-10:00	Yuanyao He	Accelerating Finite-temperature Auxiliary-field Quantum Monte Carlo algorithm by low-rank factorization——The inspiration from DMRG
10:00-10:30	Zi-Xiang Li	
10:30-11:00	Tea break	
Session 6	Chair: Stefan Wessel	
11:00-11:30	Zi Yang Meng	
11:30-12:00	Ian McCulloch	Environment Expansion for tensor networks
12:00-14:00	Lunch	
Session 7	Chair: Philippe Corboz	
14:00-14:30	Zhengcheng Gu	The emergence of gapless quantum spin liquid near deconfined quantum critical point
14:30-15:00	Zhiyuan Xie	Recent Tensor Network Studies on Frustrated Spin Systems
15:00-16:30	Tea break and poster	
16:30	Depart for banquet	

Thursday, 24 August 2023

Session 8	Chair: Tao Xiang	
09:00-09:30	Steven White	Does the single band Hubbard model describe superconductivity in the cuprates?
09:30-10:00	Hong Yao	
10:00-10:30	Shoushu Gong	Emergent superconductivity with suppressed charge order in the square-lattice t-J model
10:30-11:00	Tea break	
Session 9	Chair: Zi Yang Meng	
11:00-11:30	Xuan Li	Accurate determination of low-energy eigenspectra with multi-target matrix product states
11:30-12:00	Johnnie Gray	Combined picture quantum dynamics on arbitrary graphs with tensor networks and multiple belief propagation tools
12:00-14:00	Lunch	
Session 10	Chair: Naoki Kawashima	
14:00-14:30	Philippe Corboz	iPEPS beyond 2D ground states: finite temperature, excitations and extensions to 3D
14:30-15:00	Hong-Hao Tu	Particle-number-conserving Gaussian fermionic PEPS and their Gutzwiller projection
15:00-15:30	Haijun Liao	Simulation of IBM's kicked Ising experiment with Projected Entangled Pair Operator
15:30-16:00	Tea break	
Session 11	Chair: Ian McCulloch	
16:00-16:30	Wei Li	Thermal Tensor Network Approaches for 2D Fermi-Hubbard Model
16:30-17:00	Xiao Yan Xu	Delay Update in Determinant Quantum Monte Carlo
17:00-17:30	Manuel Schneider	Fermionic Tensor Network States for the honeycomb Hubbard model
17:30-17:45	Steven White	Closing Remarks
18:00	Dinner	