

The 10th Workshop on Quantum Many-Body Computation

8-10 August 2022, Liyang(溧阳)

Monday, 8 August 2022		
Registration at the hotel lobby, 9:00-20:00		
Tutorial Lectures		
10:00-12:00	Tao Xiang	Tensor Network States
12:00-14:00	Lunch	
14:00-15:30	Tianxing Ma	The magnetic, superconducting, and metal-insulator transitions in the Hubbard model
15:30-16:00	Tea Break	
16:00-17:30	Heng Fan	Cloud quantum computation and quantum simulation
18:00	Dinner	
Tuesday, 9 August 2022		
Registration at conference venue, 8:00-8:30		
08:30-08:40	Welcome and opening by Tao Xiang	
Session 1	Chair: Yi Zhou	
08:40-09:00	Zhongyi Lu	Natural Orbitals Renormalization Group, Dynamic Mean Field Theory and DMFT+DFT
09:00-09:20	Qianghua Wang	Effects of electron-phonon coupling and electron-electron interaction within functional renormalization group
09:20-09:40	Guangming Zhang	Phase transitions driven by topological defects in two dimensions
09:40-10:00	Hong Yao/Zixiang Li	Pair-density-wave, charge-6e superconductivity, and Neel antiferromagnetism by electron-phonon coupling
10:00-10:10	Photo	
10:10-10:30	Tea Break	
Session 2	Chair: Congjun Wu	
10:30-10:50	Yi Zhou	Possible chiral spin liquid state in the $S=1/2$ kagome Heisenberg model
10:50-11:10	Fan Yang	Variational Monte-Carlo study of the slightly doped Kagome t-J model
11:10-11:30	Zhengxin Liu	Thermal Transport and Instability of a U(1) Spin Liquid on the Triangular Lattice
11:30-11:50	Xuefeng Zhang	Quantum dynamics of topological strings in a frustrated Ising antiferromagnet
11:50-13:30	Lunch	
Session 3	Chair: Guangming Zhang	
13:30-13:50	Congjun Wu	Locality and itineracy from SU(N) Hubbard models
13:50-14:10	Shoushu Gong	Robust d-wave superconductivity in the square-lattice t-J model
14:10-14:30	Zheng Zhu	Lightly doped Triangular Mott antiferromagnet and Non-Hermitian quantum many-body scar
14:30-14:50	Yuanyao He	Temperature Dependence of Spin and Charge Orders in the Doped Two-Dimensional Hubbard Model
14:50-15:10	Zi Cai	Coupled predator-prey circles: a new family of quasi-Hermitian Hamiltonian
Session 4		
15:10-17:30	Tea Break & Poster Session	
18:00	Dinner	

Wednesday, 10 August 2022		
Session 5	Chair: Zhongyi Lu	
08:00-08:20	Jianxin Li	Itinerant topological magnons and topological protection of magnons from deconfinement in flat-band ferromagnets
08:20-08:40	Daoxin Yao	Spin dynamics of Heisenberg Chains with additional interactions and bond disorder
08:40-09:00	Ling Wang	Exact diagonalization study of the Shastry-Sutherland model
09:00-09:20	Wei Li	Cracking the Mystery of a Triangular Lattice Quantum Antiferromagnet: Effective Spin Model, Quantum Phase Transition, and Spin Supersolid Cooling
09:20-09:40	Zhiyuan Xie	Recent study on some frustrated quantum spin systems
09:40-10:00	Runze Chi	Spin excitation spectra of the spin-1/2 triangular Heisenberg antiferromagnets
10:00-10:20	Tea Break	
Session 6	Chair: Jianxin Li	
10:20-10:40	Gang Su (online)	Intelligent Scientific Computation: New Paradigm
10:40-11:00	Lei Wang	Neural canonical transformation for m^* of two-dimensional electron gas
11:00-11:20	Lixin He	The application of deep learning in quantum many-body systems
11:20-11:40	Rongqiang He	A simple framework for contrastive learning phases of matter
11:40-12:00	Shiju Ran	Functional tensor network solving many-body Schrödinger equation and multi-variable differential equations
12:00-13:30	Lunch	
Session 7	Chair: Lei Wang	
13:30-13:50	Shuo Yang (online)	Quantum error mitigation via matrix product operators
13:50-14:10	Pan Zhang	Solving the Sampling Problem of the Sycamore Quantum Supremacy
14:10-14:30	Guanglei Xu	Variational determination of arbitrarily many eigenpairs in one quantum circuit
14:30-14:50	Xiaoyan Xu	Sign Problem Finds Its Bounds
14:50-15:10	Zixiang Li	Asymptotic Sign-problem-free in Fermionic Quantum Monte-Carlo
15:10-15:30	Tea Break	
Session 8	Chair: Zhiyuan Xie	
15:30-15:50	Shijie Hu (online)	Negative super inflating fluctuations in PT-symmetric non-Hermitian models
15:50-16:10	Youjin Deng	Geometric Upper Critical Dimensions of the Ising Model
16:10-16:30	Qiang Luo	Spontaneous chiral-spin ordering and spin-flop phase in honeycomb Γ - Γ' model
16:30-16:50	Qianqian Shi	Instability of the Luttinger liquids towards an exotic quantum state of matter with highly degenerate ground states: an anisotropic extension of the ferromagnetic spin-1 biquadratic model
16:50-17:10	Tong Liu	Effects of Umklapp Scattering on the Formation of Mott Insulator in One Dimension
17:10-17:30	Closing remark by Haiqing Lin	
18:00	Dinner	