Mathematical and Computational Challenges in Quantum Computing

Tuesday September 19, 2023

2:30–3:00 **Zhiyan Ding** (University of California, Berkeley (UC Berkeley))
Short circuit depth Quantum phase estimation

3:00–3:30 *Tea Time*

3:30–4:00 **Ruizhe Zhang** (University of Texas at Austin)
Quantum Speedups of Optimizing Approximately Convex Functions

Thursday September 21, 2023

2:00–3:00 **Rahul Sarkar** (Stanford University)
The qudit Pauli group: non-commuting pairs, non-commuting sets, and structure theorems.

3:00–3:30 *Tea Time*

3:30–4:30
TBA

Tuesday September 26, 2023

2:30–3:00 **Adam Marks** (University of California, Irvine (UCI))
Quantum Error-Correcting Codes from Affine Buildings

3:00–3:30 *Tea Time*

3:30–4:00 **Rahul Sarkar** (Stanford University)
Maximally commuting & anticommuting sets of qubit Pauli operators

Thursday September 28, 2023

2:30–3:00 **Katerina Gratsea** (ICFO)
When to Reject a Ground State Preparation Algorithm

3:00–3:30 *Tea Time*

3:30–4:30 **Jiasu Wang** (University of California, Berkeley (UC Berkeley))
Iterative algorithms for finding phase factors in quantum signal processing

Tuesday October 10, 2023

2:30–3:00 **Spencer Lee** (Michigan State University)
Classically-Simulated Quantum Optimal Control Methods for Designing Gates using Continuous Control Functions

3:00–3:30 *Tea Time*

3:30–4:00 **Jiaqi Leng** (University of Maryland)
Hamiltonian embedding and a paradigm shift in quantum algorithm design

Thursday October 12, 2023

2:30–3:00 **Ke Wang** (Penn State University)
Simulation-assisted learning of open quantum systems

3:00–3:30 *Tea Time*

3:30–4:00 **Lucas Tecot** (University of California, Los Angeles (UCLA))
TBA

Tuesday October 24, 2023

2:00–3:00 **Sophia Simon** (University of Toronto)
Improved precision scaling for simulating coupled quantum-classical dynamics

3:00–3:30 *Tea Time*

Thursday October 26, 2023

2:00–3:00 **Yasuyuki Kawahigashi** (University of Tokyo)
Two-dimensional topological order, tensor networks, and operator algebras

3:00–3:30 *Tea Time*

Tuesday October 31, 2023

2:00–3:00
TBA

3:00–3:30 *Tea Time*

3:30–4:30
TBA

Thursday November 2, 2023

2:00–3:00
TBA

3:00–3:30 *Tea Time*

3:30–4:30
TBA

Tuesday November 14, 2023

2:00–3:00 **Anirban Chowdhury** (University of Waterloo)
Quantum counting and the symmetric group

3:00–3:30 *Tea Time*

Thursday November 16, 2023

2:00–3:00 **Brandon Barton** (Colorado School of Mines)
Symphonic tunneling: A story of high frequency drives with applications to quantum optimization algorithms

3:00–3:30 *Tea Time*

Tuesday November 21, 2023

2:00–3:00
TBA

3:00–3:30 *Tea Time*

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