



Quantum Matter in the Age of Entanglement

December 1-4, 2020

Virtual Conference via Zoom

Program Organizers

Amos Chan
Abhinav Prem
Shinsei Ryu
Yizhi You

Quantum Matter in the Age of Entanglement

Tuesday, December 1, 2020

Moderator: Shinsei Ryu and Amos Chan

10:55 am **Zoom log in**

11:00 - 11:40 Peter Zoller
Entanglement Hamiltonian Tomography in Quantum Simulation

11:40 - 12:20 Markus Heyl
Disorder-free localization in an interacting two dimensional lattice gauge theory

12:20 - 13:20 **Break**

13:20 - 14:00 Meng Cheng
Chiral fracton topological order

14:00 - 14:40 Lukasz Fidkowski
How dynamical quantum memories forget

Wednesday, December 2, 2020

Moderator: Yizhi You – Abhinav Prem

10:55 am **Zoom log in**

11:00 - 11:40 Masaki Oshikawa
Twisted boundary condition and Lieb-Schultz-Mattis ingappability for discrete symmetries

11:40 - 12:20 Tim Hsieh
Symmetry, Entanglement, and Criticality in Hybrid Quantum Circuits

12:20 - 13:20 **Break**

13:20 - 14:00 Xueda Wen
Periodically, Quasi-periodically and Randomly Driven Conformal Field Theories

14:00 - 14:40 Dominic Else
Emergent symmetries and anomalies in non-Fermi liquids and strange metals

Quantum Matter in the Age of Entanglement

Thursday, December 3, 2020

Moderator: Amos Chan and Yizhi You

10:55 am **Zoom log in**

11:00 - 11:40 Dima Abanin
Influence matrix approach to quantum many-body dynamics

11:40 - 13:00 **Break**

13:00 - 13:40 Mikhail Lukin
Exploring entangled matter and many-body dynamics on a programmable quantum simulator

13:40 - 14:20 Vedika Khemani
Entanglement dynamics in non-unitary circuits

Friday, December 4, 2020

Moderator: Abhinav Prem – Shinsei Ryu

10:55 am **Zoom log in**

11:00 - 11:40 Monika Aidelsburger
Observing non-ergodicity due to kinetic constraints in tilted Fermi Hubbard chains

11:40 - 13:00 **Break**

13:00 - 13:40 Tarun Grover
Detecting finite-temperature topological order using entanglement

13:40 - 14:20 Nobert Schuch
Entanglement order parameters for quantum matter

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