Entanglement in, Field Theory and Gravity workshop Talk Schedule

Events for:
Monday, December 5th - Wednesday, December 7th

Monday, December 5th

9:30am **Guifre Vidal - SCGP 102**

Title: Conformal field theory on the lattice: tensor networks at work

10:00am **Beni Yoshida**

Title: Chaos and Complexity by Design

10:30am **Coffee - SCGP Cafe**

11:00am **Xiaoliang Qi**

Title: Boundary butterfly velocity and bulk causal structure

11:30am **Jamie Sully**

Title: Dynamics in Kinematic Space

12:00pm **Lunch - SCGP Cafe**

2:15pm **Stephen Jordan**

Title: High complexity at low energy

2:45pm **Shira Chapman**

Title: Complexity of Formation in Holography

3:15pm **Tea - SCGP Lobby**

4:00pm **Daniel Harlow**

Title: Symmetries in quantum field theory and quantum gravity

4:30pm **Hirosi Ooguri**

Tuesday, December 6th

9:30am **Erik Tonni**

Title: Entanglement hamiltonians in 2D CFT

Abstract: We enumerate the cases in 2d conformal field theory where the logarithm of the reduced density matrix (the entanglement hamiltonian) may be written as an integral over the energy-momentum tensor times a local weight. These include some known time-independent cases and also new examples corresponding to the time-dependent scenarios of a global and local quench.

10:00am **Michael Walter**

Title: Multipartite entanglement in toy models of holography

10:30am **Coffee - SCGP Cafe**

11:00am **Brian Swingle**

Title: Entanglement from Topology in Chern-Simons Theory

11:30am **Onkar Parrikar**

Title: Multi-Boundary Entanglement in Chern-Simons theory & Link Invariants

12:00pm **Lunch - SCGP Cafe**

2:15pm **Sandip Trivedi - SCGP 103**

Title: Entanglement in Gauge Theories

2:45pm **Tom Faulkner**

Title: Shape dependence of entanglement and the ANEC

3:15pm **Tea - SCGP Lobby**

4:15pm **SCGP-Physics colloquium Mark Van Raamsdonk - SCGP 103**

Speaker: Mark Van Raamsdonk

Title: Gravity and Entanglement

Abstract: The AdS/CFT correspondence from string theory provides a quantum theory of gravity in which spacetime and gravitational physics emerge from an ordinary non-gravitational quantum system with many degrees of freedom. In this talk, I will explain how quantum entanglement between these degrees of freedom is crucial for the emergence of a classical spacetime, and describe progress in understanding how spacetime dynamics (gravitation) arises from the physics of quantum entanglement.

Wednesday, December 7th

9:30am **Aitor Lewkowycz**

Title: Bulk locality from modular flow

10:00am **Netta Engelhardt**

Title: Into the Bulk: A Covariant Approach

10:30am **Coffee - SCGP Cafe**

11:00am **Nima Lashkari**

Title: Eigen-state thermalization in Conformal Field Theories

11:30am **Henry Maxfield**

Title: A conformal block Farey tail

12:00pm **Lunch - SCGP Cafe**

1:30pm **Physics Seminar: Douglas Stanford - SCGP 102**

Speaker: Douglas Stanford

Title: Aspects of the Sachdev-Ye-Kitaev model

Abstract: The SYK model is a strongly interacting but solvable quantum mechanics of N fermions. The low-energy theory includes a sector that is equivalent to an AdS_2 dilaton gravity theory. I will introduce the model and discuss some recent developments.

2:30pm **Aron Wall**

Title: How to make a traversable wormhole

3:00pm **Tea - SCGP Lobby**

5:00pm **WS banquet - scgp cafe**