



HOME DIRECTORY FOR SCIENTISTS TALKS NEWS EVENTS VISITOR INFO OUTREACH CONTACT HELP Jun 08, 2015

KITP Conference: Closing the entanglement gap: Quantum information, quantum matter, and quantum fields
(Jun 1-5, 2015)

Coordinators: Roger Melko, Rob Myers and Senthil Todadri

Monday, Jun 01, 2015

Holographic Entanglement Entropy, Chair: Esperanza Lopez (CSIC)

- 8:50am Lars Bildsten (KITP) [Welcome](#)[\[Podcast\]](#)[\[Aud\]](#)[\[Cam\]](#)
 9:00am Veronika Hubeny (Durham) [Entanglement in holography \(overview\)](#)[\[Slides\]](#)[\[Podcast\]](#)[\[Aud\]](#)[\[Cam\]](#)
 10:00am **Morning Break**

Holographic Entanglement Entropy

- 10:30am Hong Liu (MIT) [Entanglement propagation in many body systems](#)[\[Podcast\]](#)[\[Aud\]](#)[\[Cam\]](#)
 11:10am Matthew Headrick (Brandeis) [A new perspective on holographic entanglement entropy](#)[\[Slides\]](#)[\[Podcast\]](#)[\[Aud\]](#)[\[Cam\]](#)

LUNCH

Entanglement in Condensed Matter, Chair: Senthil Todadri (MIT)

- 2:00pm Ashvin Vishwanath (UCB) [Entanglement in condensed matter \(overview\)](#)[\[Podcast\]](#)[\[Aud\]](#)[\[Cam\]](#)
 3:00pm **Afternoon Break**

Entanglement in Condensed Matter

- 3:30pm Rajiv R. P. Singh (UC Davis) [Computational Methods for Entanglement in Lattice Models](#)[\[Slides\]](#)[\[Podcast\]](#)[\[Aud\]](#)[\[Cam\]](#)
 4:10pm Brian Swingle (Stanford) [How are different ground states in the same phase of matter related?](#)[\[Podcast\]](#)[\[Aud\]](#)[\[Cam\]](#)
 5:00pm **SHUTTLE TO BWSCI**

Tuesday, Jun 02, 2015

Entanglement in Quantum Fields, Chair: Tom Hartman (Cornell)

- 9:00am Horacio Casini (Bariloche) [C-theorems and entanglement entropy \(overview\)](#)[\[Slides\]](#)[\[Podcast\]](#)[\[Aud\]](#)[\[Cam\]](#)
 10:00am **Morning Break**

Entanglement in Quantum Matter

- 10:30am Michael Smolkin (UCB) [On deformations of entanglement](#)[\[Slides\]](#)[\[Podcast\]](#)[\[Aud\]](#)[\[Cam\]](#)
 11:10am Erik Tonni (SISSA) [Entanglement negativity in CFTs](#)[\[Slides\]](#)[\[Podcast\]](#)[\[Aud\]](#)[\[Cam\]](#)

LUNCH

Entanglement and Quantum Matter, Chair: Roger Melko (Waterloo/Perimeter)

- 2:00pm Eun-Ah Kim (Cornell) [Entanglement entropy of composite fermi liquids](#)[\[Slides\]](#)[\[Podcast\]](#)[\[Aud\]](#)[\[Cam\]](#)
 2:40pm **Afternoon Break**

Entanglement and Quantum Fields

- 3:00pm Tarun Grover (KITP) [Entanglement, RG flows and the stability of quantum matter](#)[\[Podcast\]](#)[\[Aud\]](#)[\[Cam\]](#)
 3:40pm Markus Greiner (Harvard) [Entanglement detection through interference of quantum many-body twins in ultra cold atoms](#)[\[Slides\]](#)[\[Podcast\]](#)[\[Aud\]](#)[\[Cam\]](#)

POSTER SESSION

5:30pm **RECEPTION**

6:00pm **SPECIAL EVENTS DINNER**

8:00pm **SHUTTLE TO BWSCI**

Wednesday, Jun 03, 2015

Tensor Networks and Holography, Chair: Steve White (UC Irvine)

9:00am Guifre Vidal (PI) Tensor Networks, renormalization and Holography (overview)[[Slides](#)][[Podcast](#)]
[[Aud](#)][[Cam](#)]

10:00am **Morning Break**

Tensor Networks and Holography

10:30am Bartek Czech (Stanford) From tensor networks to holography via integral geometry[[Slides](#)][[Podcast](#)]
[[Aud](#)][[Cam](#)]

11:10am Jeongwan Haah (MIT) Many-body entanglement witness and branching MERA[[Podcast](#)][[Aud](#)][[Cam](#)]

11:50am **Lunch Break**

2:00pm **FREE AFTERNOON -- SHUTTLE AVAILABLE TO BWSCI**

Thursday, Jun 04, 2015

Quantum Information and Quantum Gravity, Chair: Erik Verlinde (Amsterdam)

9:00am Leonard Susskind (Stanford) ER=EPR but entanglement is not enough (overview)[[Slides](#)][[Podcast](#)]
[[Aud](#)][[Cam](#)]

10:00am **Morning Break**

Quantum Information and Quantum Gravity

10:30am Tadashi Takayanagi (Kyoto) Surface/State Correspondence as a Generalized Holography[[Slides](#)][[Podcast](#)]
[[Aud](#)][[Cam](#)]

11:10am John Preskill (Caltech) Is spacetime a quantum error-correcting code?[[Slides](#)][[Podcast](#)][[Aud](#)][[Cam](#)]

LUNCH

Many-Body Localization, Chair: Joel Moore (UCB)

1:30pm Dmitry Abanin (PI) MBL: integrability, entanglement and dynamics (overview)[[Slides](#)][[Podcast](#)]
[[Aud](#)][[Cam](#)]

2:30pm **Afternoon Break**

Many-Body Localization

3:00pm Ehud Altman (Weizmann) Universal dynamics and entanglement patterns near a MBL transition[[Slides](#)]
[[Podcast](#)][[Aud](#)][[Cam](#)]

3:40pm A. Chandran (PI) Thermalization versus localization in a solvable circuit model[[Slides](#)][[Podcast](#)]
[[Aud](#)][[Cam](#)]

POSTER SESSION

5:30pm **RECEPTION**

6:00pm **SPECIAL EVENTS DINNER**

8:00pm **SHUTTLE TO BWSCI**

Friday, Jun 05, 2015

Closing the Gap, Chair: Birgitta Whaley (UCB)

9:00am Matthew Hastings (Microsoft) Random Holography[[Podcast](#)][[Aud](#)][[Cam](#)]

9:40am **Morning Break**

Closing the Gap

10:10am John Cardy (Oxford) The entanglement gap in CFTs[[Slides](#)][[Podcast](#)][[Aud](#)][[Cam](#)]

10:50am X-G Wen (MIT/PI/Tsinghua) Entanglement and emergence -- a second quantum revolution[[Slides](#)][[Podcast](#)]
[[Aud](#)][[Cam](#)]

11:30am **Lunch Break**

1:30pm **FREE AFTERNOON -- SHUTTLE AVAILABLE TO BWSCI**