

YKIS conference: “Quantum Matter, Spacetime and Information” June 13 - 17

Mon. June 13

9:20 - 9:25 **Opening**

Chair: Tadashi Takayanagi (YITP, Kyoto)

9:25 - 10:10 **Robert Myers (Perimeter)**
“Entanglement Holography”

10:10- 10:30 **Masahiro Hotta (Tohoku)**
“Horizontal Charge Excitation of Supertranslation and Superrotation”

Coffee Break

Chair: Veronika Hubeny (UC Davis)

11:00 - 11:45 **Hiroshi Ooguri (Caltech/Kavil IPMU)**
“Gravitational Positive Energy Theorems from Information Inequalities”

11:45 - 12:30 **Mark Van Raamsdonk (UBC)**
“Gravitational Physics from Entanglement Constraints ”

Lunch Break

Chair: Shigeki Sugimoto (YITP, Kyoto)

14:00 - 14:45 **Sean Hartnoll (Stanford)**
“Matrix Quantum Mechanics from Qbits”

14:45 - 15:30 **Johanna Erdmenger (MPI, Munich)**
“Holographic defect entropies and information flows”

Coffee Break

Chair: Masaki Shigemori (Hakubi, YITP, Kyoto)

16:00 - 16:45 **Norihiro Iizuka (Osaka)**
“Exact Path Integral for 3D Quantum Gravity”

16:45 - 17:30 **Philip Phillips (UIUC)**
“Detecting Anomalous Dimensions in the Strange Metal”

Tue. June 14

Chair: Keisuke Totsuka (YITP, Kyoto)

9:00 - 9:45 **Ignacio Cirac (MPI, Garching)**
“Bulk-boundary correspondence in tensor networks”

9:45 - 10:30 **Frank Verstraete (Vienna)**
“Entanglement of distillation for gauge theories”

Coffee Break

Chair: Masahiro Hotta (Tohoku)

11:00 - 11:45 **Seth Lloyd (MIT)**
“Quantum computation and quantum gravity”

11:45 - 12:30 **Masaki Oshikawa (ISSP, Tokyo)**
“Renyi-Shannon Entropy and Boundary Field Theory”

Lunch Break

Chair: Jonathan Oppenheim (Univ. College London)

14:00 - 14:45 **Daniel Harlow (Harvard)**
“Subregion Duality in the Entanglement Wedge”

14:45 - 15:30 **Hector Bombin (YITP, Kyoto)**
“Time correlated-errors and confinement phenomena in quantum computation”

Coffee Break

Chair: Seiji Terashima (YITP, Kyoto)

16:00 - 16:20 **Moshe Rozali (UBC)**
“Evolution of Entanglement Entropy following a Local Quench”

16:20 – 16:40 **Rene Meyer (Stony Brook)**
“Holographic Yang-Mills-Chern-Simons Defects ”

Short Break

Chair: Yu Watanabe (YITP, Kyoto)

17:00 - 17:20 **Volker Scholz (Ghent)**
“Matrix product approximations to multipoint functions in two-dimensional conformal field theory”

17:20 - 17:40 **Hiroyasu Tajima (RIKEN)**

“Measurement-based formulation of quantum heat engines and Optimal performance of quantum heat engines; maximal efficiency and minimal variance”

17:40 - 18:00 **Keiji Matsumoto (National Institute of Informatics)**

“On distortion-free measurements”

Wed. June 15

Chair: Tatsuma Nishioka (Tokyo)

9:00 - 9:45 **Igor Klebanov (Princeton)**
“F-Theorem and the Epsilon Expansion”

9:45 - 10:30 **Horacio Casini (Bariloche)**
“Quantum quenches and boundary entropy: some new applications of relative entropy”

Coffee Break

Chair: Shinsei Ryu (UIUC)

11:00 - 11:45 **Pasquale Calabrese (SISSA)**
“Real time confinement following a quantum quench to a non-integrable model”

11:45 - 12:30 **Hosho Katsura (Tokyo)**
“Supersymmetry breaking and Nambu-Goldstone fermions in lattice models”

Lunch Break

Chair: Beni Yoshida (Perimeter)

14:00 - 14:20 **Jose Barbon (IFT, Madrid)**
“Holographic complexity and cosmological singularities ”

14:20 - 14:40 **Adam Brown (Stanford)**
“Wormholes and Complexity”

14:40 - 15:00 **Masahiro Nozaki (Kadanoff Center, Chicago)**
“Quantum Entanglement of Operators in Various Field Theories”

15:00 - 15:20 **Pawel Caputa (NORDITA)**
“Quantum Entanglement and local excitations”

Coffee Break

Chair: Yu Watanabe (YITP, Kyoto)

15:50 - 17:20 **Gong-show by Poster Presenters**

17:20 - 18:40 **Poster Session @ Y206 and Y306**

19:00 - 21:00 **Banquet @ University Cafeteria 2F**

Thu. June 16

Chair: Sumit Das (Kentucky)

9:00 - 9:45 **John Cardy (UC Berkeley)**
“Entanglement in CFTs at finite chemical potential”

9:45 - 10:30 **Takahiro Sagawa (Tokyo)**
“Emergent Fluctuation Theorem in Pure Quantum States”

Coffee Break

Chair: Mukund Rangamani (UC Davis)

11:00 - 11:45 **Subir Sachdev (Harvard)**
“Strange metals in graphene, random fermion models, and charged black holes”

11:45 - 12:30 **Hong Liu (MIT)**
“Effective field theory for dissipative fluids”

Lunch Break

Chair: Erik Tonni (SISSA)

14:00 - 14:45 **Xiao-Liang Qi (Stanford)**
“Space-time random tensor networks and holographic duality”

14:45 - 15:05 **Massimiliano Rota (Durham)**
“Entanglement versus nonlocality in field theory and many body systems”

15:05 - 15:25 **Tomonori Ugajin (KITP, UCSB)**
“Relative entropy in 2d CFTs ”

15:25 - 15:45 **Felix Haehl (Durham)**
“A topological gauge theory for entropy and the emergence of hydrodynamics”

Coffee Break

Chair: Masanori Hanada (Hakubi, YITP, Kyoto)

16:15 - 17:00 **Andreas Karch (Washington)**
“A Precision Test of AdS/CFT with Flavor ”

17:00 - 17:45 **Shinsei Ryu (UIUC)**
“Mutual information and entanglement negativity in topologically ordered phases ”

Fri June 17

Chair: Andreas Karch (Washington)

9:00 - 9:45 **Mukund Rangamani (UC Davis)**
“Covariant holographic entanglement: a derivation”

9:45 - 10:30 **Matthew Headrick (Brandeis)**
“A new perspective on holographic entanglement”

Coffee Break

Chair: Sunil Mukhi (IISER, Pune)

11:00 - 11:45 **Veronika Hubeny (UC Davis)**
“Covariant entanglement constructs”

11:45 - 12:05 **Etsuko Itou (KEK)**
“Numerical study on the entropic c-function for SU(3) gauge theory”

12:05 - 12:50 **Eduardo Fradkin (UIUC)**
“Finite universal terms in the entanglement entropy: new results for the quantum Lifshitz model”