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The Center is home to a corps of Center Postdoctoral Fellows, chosen from nominations made by senior theoretical scientists around the world. A group of senior Faculty Fellows, chosen from science and engineering departments across the campus, are responsible for guiding the Center. Center activities include focused topical programs chosen from proposals by Princeton faculty across the natural sciences. The Center is located on the fourth floor of Jadwin Hall, in the heart of the campus "science neighborhood". The Center hopes to become the focus for innovation and cross-fertilization in theoretical natural science at Princeton.

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To find out more about Center Postdoctoral Fellowships and Programs see: https://pcts.princeton.edu

PRINCETON CENTER FOR THEORETICAL SCIENCE

Low-Dimensional Holography and Black Holes

March 30- April 2, 2022

Virtual on Zoom & In person for PU ID holders.
Registration required for all.

Program Organizers
Scott Collier
Matthew Heydeman
Luca Iliesiu
Vladimir Narovlansky
Gustavo Joaquin Turiaci
Herman Verlinde

Low-Dimensional Holography and Black Holes

Talks are 30 minutes + 10 min. for questions.

Wednesday, March 30, 2022

8:45 AM: Continental Breakfast at PCTS

9:15-9:30: Opening remarks

9:30-10:10: **Subir Sachdev**
"Universal, low temperature, T-linear resistivity in two-dimensional quantum-critical metals from spatially random interactions"

10:15-10:55: **Micha Berkooz**
"Multi trace correlators in the SYK model and non-geometric wormholes"

11:00-11:30: Break

11:30-12:10: **Zhenbin Yang**
"Late time behavior of OTOC"

12:15-1:30: Lunch at PCTS

1:30-2:10: **Alejandra Castro**
"Engineering theories of AdS_3 via CFT_2"

2:15-2:55: **Sameer Murthy**
"Unitary matrix models, free fermion ensembles, and the giant graviton expansion"

3:00-3:30: Break

3:30-4:10: **Henry Maxfield**
"Counting states in a simple model of replica wormholes"

4:15-4:55: **Netta Engelhardt**
"Canonical Purification of Evaporating Black Holes"

Thursday, March 31, 2022

9:00 AM: Continental Breakfast at PCTS

9:30-10:10: Xiaoliang Qi – VIRTUAL TALK OVER ZOOM
"Holevo information and ensemble theory of gravity"

Low-Dimensional Holography and Black Hole

Thursday, March 31, 2022 (cont.)

10:15-10:55: **Vladimir Kazakov**
"Bootstrapping the Lattice Yang-Mills Theory"

11:00-11:30: Break

11:30-12:10: **Nathan Benjamin**
"Narain CFTs, the scalar bootstrap, and the Riemann hypothesis"

12:15-1:30: Lunch at PCTS

1:30-2:10: **Thomas Hartman**
"Semiclassical 3D gravity as an average of large-c CFTs"

2:15-2:55: **Yingfei Gu**
"Aspects of OTOC in SYK-like models"

3:00-4:00: Break

4:00-5:00: **Physics Colloquium, Jadwin Hall Room A-10**
"The Black Hole Information Paradox in the Age of Holographic Entanglement Entropy"
Netta Engelhardt, MIT

5:00-7:00: Return to PCTS for a reception immediately following the Physics Colloquium.

Friday, April 1, 2022

9:00 AM: Continental Breakfast at PCTS

9:30-10:10: **Lorenz Eberhardt**
"A perturbative CFT dual for pure NS-NS AdS3 strings"

10:15-10:55: **Eric Perlmutter**
"Harnessing S-duality in N=4 SYM & Supergravity as SL(2,Z)-Averaged Strings"

11:00-11:30: Break

Low-Dimensional Holography and Black Holes

Talks are 30 minutes + 10 min. for questions.

Friday, April 1, 2022 (cont.)

11:30-12:10: Xi Yin – VIRTUAL TALK OVER ZOOM
"D-instanton effects in 2D type 0B string theory"

12:15-1:30: Lunch at PCTS

1:30-2:10: **Geoffrey Penington**
"Some comments on large N von Neumann algebras and generalised entropies"

2:15-2:55: **Finn Larsen**
"Effective Field Theory of Near-Extreme Black Holes"

3:00-3:30: Break

3:30-4:10: **Daniel Kapec**
"Classical and Quantum Aspects of the Photon Ring"

4:15-4:55: **Matthias Gaberdiel**
"The string dual of free N=4 SYM"

Saturday, April 2, 2022

9:00 AM: Continental Breakfast at PCTS

9:30-10:10: **Clifford Johnson**
"Embracing both Wigner and 't Hooft: How Holography, Ensembles, and Factorization coexist in 2D"

10:15-10:55: **Daniel Jafferis**
"Matrix models, the ETH, and JT gravity with matter"

11:00-11:40: **Juan Maldacena**
"Probing extremal black hole hole ground states in supersymmetric theories"

11:45-1:00: Conclusion and networking lunch at PCTS