



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

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In recent years, new insights about holographic dualities have led to unexpected connections between low-dimensional quantum gravity, black hole mechanics, and condensed matter physics. For example, quantum mechanical systems describing non-Fermi liquids such as the Sachdev-Ye-Kitaev (SYK) model have been understood to be dual, in some limit, to theories of two dimensional dilaton-gravity with black holes. Simple models of holography in low dimensions thus give a dual description of quantum black holes, and also provide an arena in which general consistency principles may be used to bootstrap quantum gravity. The tractability of these models even when quantum gravity effects become strong has opened a new window on black hole physics, thermalization, quantum chaos, and more. These developments have also helped elucidate a spacetime picture of how information comes out of an evaporating black hole, its relation to spacetime wormholes, and the role of disorder in gravity. This workshop aims to bring together experts from these fields to take stock of recent progress and develop new collaborations.

Speakers

Ahmed Almheiri
Nathan Benjamin
Micha Berkooz
Alejandra Castro Anich
Netta Engelhardt
Yingfei Gu
Thomas Hartman

Daniel Jafferis
Clifford Johnson
Daniel Kapec
Vladimir Kazakov
Finn Larsen
Henry Maxfield
Sameer Murthy

Geoff Penington
Eric Perlmutter
Xiaoliang Qi
Subir Sachdev
Douglas Stanford
Zhenbin Yang
Xi Yin