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Black Tsunamis and Naked Singularities in AdS

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The AdS/CFT correspondence still has to throw clearer light on the dual (microscopic and fundamental) meaning of known violations of cosmic censorship: What mechanisms drive them? How do they manifest in the dual large-N field theory? How does the theory deal with them when N is finite and quantum gravitational bulk effects are incorporated? For this purpose, we study the evolution of the Gregory-Laflamme instability for black strings in global AdS spacetime, and investigate the CFT dual of the formation of a bulk naked singularity. We uncover a rich variety of dynamical behaviour – including tsunami flows of horizon generators from the boundary, and nakedly singular horizon pinch-offs. The holographic dual describes different patterns of heat flow due to the Hawking radiation of two black holes placed at the antipodes of a spherical universe. We also present a model that describes the burst in the holographic stress-energy tensor when the signal from a bulk naked singularity reaches the boundary.

Type of contribution

Contributed Talk only

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