Department of Theoretical Physics

THE QUANTUM SPACETIME SEMINAR SERIES

Firewall from Wormholes

(Zoom Seminar)

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Date: September 5, 2022

Time: 9 AM IST

Zoom link shall be shared separately

Spacetime wormholes can lead to surprises in black hole physics. We show that a very old black hole can tunnel to a white hole/firewall by emitting a large baby universe. We study the process for a perturbed thermofield double black hole in Jackiw-Teitelboim (JT) gravity, using the lowest order (genus one) spacetime wormhole that corresponds to single baby-universe emission.

The probability for tunneling to a white hole is proportional to t^2e^(−2S) where t is the age of the black hole and S is the entropy of one black hole.