



THE QUANTUM SPACETIME SEMINAR SERIES

The entropy of long wormholes

Pratik Rath

(UC, Berkeley)

Date: May 9, 2025

Time: 11.00 AM IST

Venue: AG 66



The Euclidean gravitational path integral can be used to prepare two sided black hole states with long wormholes filled with particles. Addition of such particles reduces the entanglement between the two sides and a naive extrapolation of the semiclassical result leads to a negative entropy. We discuss how tensor networks, wormholes and random matrix theory can be used to understand how this puzzle gets resolved.

[\(Click here for the zoom link\)](#)