Institut Henri Poincaré

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String Theory in Greater Paris

Rencontres Théoriciennes

“Supergravité, théorie des cordes et théorie M”

Jeudi 15 Avril 2021, 17:00

Douglas Stanford

Stanford

Wormsholes without averaging

Spacetime wormholes have contributed a lot to recent understanding of quantum black hole physics, but they lead to puzzles. One way to resolve the puzzles is to interpret the wormholes as computing an average over theories. But what happens if we don’t average ? Are the wormholes still there ? We will discuss this in a very simple model, a reduction of the SYK quantum mechanics model. After averaging over couplings, the collective field description contains "wormhole" solutions. We show that the wormhole solutions survive intact in the non-averaged theory, but there are also new "half wormhole" contributions from elsewhere in the integration space.

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