Department of Theoretical Physics

THE QUANTUM SPACETIME SEMINAR SERIES

Uptunneling to de Sitter (Zoom Seminar)

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Zoom link shall be shared separately

We propose a Euclidean preparation of an asymptotically AdS_2 spacetime that contains an inflating dS_2 bubble. The setup can be embedded in a four dimensional theory with a Minkowski vacuum and a false vacuum. AdS_2 approximates the near horizon geometry of a two-sided near-extremal Reissner-Nordström black hole, and the two sides can connect to the same Minkowski asymptotics to form a topologically nontrivial wormhole geometry. Likewise, in the false vacuum the near-horizon geometry of near-extremal black holes is approximately dS_2 times 2-sphere. We interpret the Euclidean solution as describing the decay of an excitation inside the wormhole to a false vacuum bubble. The result is an inflating region inside a non-traversable asymptotically Minkowski wormhole.