Department of Theoretical Physics

THE QUANTUM SPACETIME SEMINAR SERIES

Entanglement entropies of equilibrated pure states and replica wormholes (Zoom Seminar)

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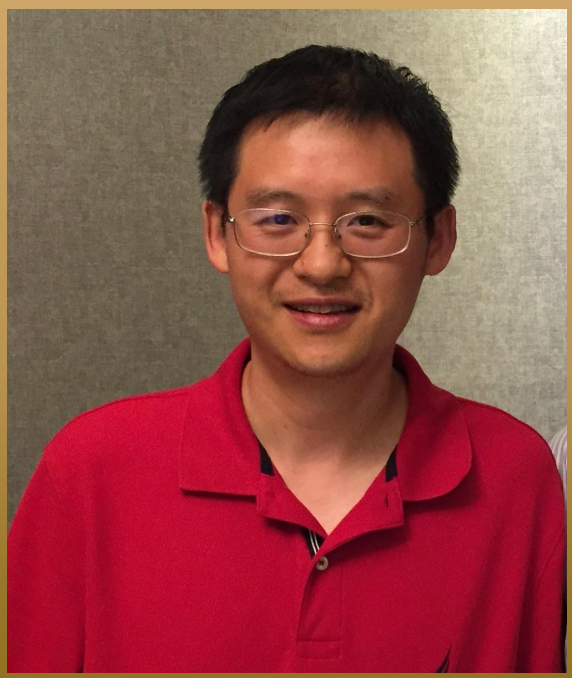
Date: July 7, 2020

Time: 5.30 pm IST

Zoom link shall be shared separately



Consider a quantum many-body system initially in a far-from-equilibrium pure state. If the system is non-integrable, the state should approach a thermal equilibrium after some time. We develop an approximation to calculate quantum informational properties of such an "equilibrated pure state." Applied to gravity systems, the approximation leads to a derivation of replica wormholes discussed recently in the context of black holes, elucidating their mathematical origin, physical interpretation, and why they lead to answers which are consistent with unitarity.

Based on work to appear with Shreya Vardhan.

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