



Department of  
Theoretical Physics

# THE QUANTUM SPACETIME SEMINAR SERIES

## Emergent Spacetime Symmetries from Quantum Ergodicity

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**Date:** August 5, 2024

**Time:** 11 AM IST

**Venue:** A304

Zoom link shall be shared separately



In holography, the symmetries of the emergent spacetime act as unitary transformations on the algebras of the boundary. We investigate the reverse scenario: under what conditions the spacetime symmetries emerge from operator algebras of a general boundary theory? We derive sufficient conditions for the emergence of a local Poincare group around the bifurcate Killing horizon, and the conformal group  $PSL(2, \mathbb{R})$  acting on future and past killing horizons. We discuss generalizations of these result within the framework of quantum ergodic hierarchy.