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Talk Julian Sonner: Gravity as a mesoscopic system

Thursday 3 October 2024 14:30 (1 hour)

Gravity as a mesoscopic system

We employ a probabilistic mesoscopic description to draw conceptual and quantitative analogies between Brownian motion and late-time fluctuations of thermal correlation functions in generic chaotic systems respecting ETH. We apply this formalism to the case of semiclassical gravity in AdS3, showing that wormhole contributions can be naturally identified as moments of stochastic processes. Adopting this perspective shows that semiclassical gravity in AdS can be naturally interpreted as a mesoscopic description of quantum gravity, and a mesoscopic holographic duality can be framed as a moment-vs-probability-distribution duality.