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# Building up Space-time with BCFT legos

*Monday, 2 December 2024 12:00 (30)*

Is it possible to read off the quantum gravity dual of a CFT directly from its operator algebra? In this talk, we present a step-by-step recipe synthesizing results and techniques from conformal bootstrap, topological symmetries, tensor networks, a novel symmetry-preserving real-space renormalization algorithm devised originally in lattice models, and the asymptotics of quantum 6j symbols, thereby providing an answer in the affirmative. Quantum 2D Liouville theory serves as a simple and explicit example, illustrating how the quantum gravitational path integral can be built up from local pieces of BCFT correlation functions, which we call the "BCFT Legos". If time allows, we will discuss how the bulk theory derived from TTbar flow of CFTs coincides with the bulk that emerges and how that follows from a general holographic principle that we summarize as symQRG = QG.

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**Session Classification :** Day3 Main venue