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Title: Imprints of quantum information scrambling on eigenstate correlations

Abstract: How is the spatiotemporal structure of information scrambling imprinted on the eigenstates of quantum many-body systems? This talk will focus on the operator entanglement of the time-evolution operator as a key measure of information scrambling, demonstrating how it encodes the spatial and temporal patterns of this phenomenon. We will then explore the connections between operator entanglement and other more commonly employed measures, such as out-of-time-ordered correlators and dynamical two-point correlation functions. We will show how eigenstate correlations provide a unifying framework for understanding these measures. Finally, I will present exact results for relevant eigenstate correlations in the context of a minimal circuit model that exhibits maximal quantum chaos.