



ICTS String Seminar

Title : Chaos and Fortuity of Holographic BPS States

Speaker : Yiming Chen (Stanford University, USA)

Date : Thursday, 14 November 2024

Time : 10:00 AM (IST)

Abstract : Quantum chaos is a powerful framework for describing strongly coupled quantum systems and black holes. However, the usual random matrix characteristics of energy levels conflict with supersymmetry, where BPS states are constrained to be exactly degenerate. In this talk, I will review a generalized notion of chaos for BPS states and connect it to a recently proposed classification of BPS states as either fortuitous or monotonous. In specific models, such as the $N=4$ SYM theory, explicit computations show that monotonous states, which are holographically dual to horizonless geometries, exhibit only weak chaos. In contrast, fortuitous states, which correspond to black holes, can exhibit strong chaos due to an “invasion” mechanism. I will also discuss the $N=2$ SUSY SYK model as a toy model to explore these ideas.

Venue : Chern Lecture Hall and Online

Zoom Link: <https://icts-res-in.zoom.us/j/88092766911?pwd=R3ZrVk9yeW96ZmQ4ZG9KRzVhenRKZz09>

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