



ICTS Synopsis Seminar

Title : Holographic Fluctuations at Finite Density

Speaker : Shivam Kumar Sharma (ICTS-TIFR, Bengaluru)

Date : Tuesday, 18 March 2025

Time : 11:30 AM (IST)

Abstract : Understanding fluctuations in strongly coupled, finite-density systems poses a significant challenge. The AdS/CFT correspondence offers a robust framework for exploring these systems via their gravitational duals. In this talk, I will present recent advancements in constructing an open Effective Field Theory (EFT) for probes interacting with finite-density holographic systems. I will also explore the deep connection between Hawking fluctuations and quasinormal mode dissipation, as captured by fluctuation-dissipation relations (FDRs). Notably, we have derived non-linear FDRs at finite density—results that are challenging to obtain through other methods—providing new insights into the dynamics of strongly coupled systems.

Venue : Feynman Lecture Hall

Zoom Link: <https://icts-res-in.zoom.us/j/94481416860?pwd=0hPLhG1fbB8bglvn5nvaJVkbbISJOU.1>

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