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ICTS Thesis Defense Seminar

Title : Holographic Fluctuations at Finite Density

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

Date : Friday, 28 November 2025

Time : 10:00 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 : Chern Lecture Hall

Zoom link: <https://icts-res-in.zoom.us/j/98256293097?pwd=ZsMeFZqCgg1keCQlQ0k4olCRKjwXvt.1>

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