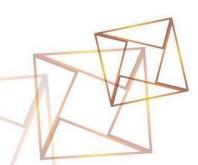
TATA INSTITUTE OF FUNDAMENTAL RESEARCH



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/i/94481416860?pwd=0hPLhG1fbB8bglvn5nvaJVkbbISJOU_1

Meeting ID: 944 8141 6860

Passcode: 202030