

ICTS String Seminar

Title : Open QFTs from holography

Speaker : R Loganayagam (ICTS, Bengaluru)

Date : Wednesday, April 22, 2020

Time : 03:00 pm

Abstract : In this talk, I will outline a formalism to study open quantum field theories using holographic methods. More precisely, I will consider a quantum field theory (the system) coupled to a holographic field theory at finite temperature (the environment). The aim here is to integrate out the holographic environment with an aim of obtaining an effective dynamics for the resulting open quantum field theory. This is done using semiclassical gravitational Schwinger-Keldysh saddle geometries obtained by complexifying black hole spacetimes. In addition to shedding light on open quantum systems coupled to strongly correlated thermal environments, these results also provide a principled computation of Schwinger-Keldysh observables in gravity and holography. In particular, these influence functionals capture both the dissipative physics of black hole quasinormal modes, as well as that of the fluctuations encoded in outgoing Hawking quanta, and interactions between them.

This talk will be based on arxiv.org/abs/2004.02888

ICTS virtual seminar : Please register at
<https://docs.google.com/forms/d/e/1FAIpQLSf0jLgoqiOgDnxbEBGiuIWiOmh9WX8caH-pr13qDBZOO91img/viewform>

(Links to join the seminars will be sent to your registered email address)

Recordings of past talks can be found here:

<https://www.youtube.com/channel/UCw9LdPQ5t7Q7muD0qzn70TA>