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## **ICTS Thesis Defense Seminar**

- Title** : Open quantum mechanics for cosmological observers
- Speaker** : Omkar Sanjay Shetye (ICTS-TIFR, Bengaluru)
- Date** : Monday, 18 August 2025
- Time** : 2:00 PM (IST)
- Abstract** : In this talk, I will present a novel geometric method, inspired by similar computations in AdS-CFT, to obtain the open system dynamics of a localised observer in de Sitter spacetime. This dynamics is encoded in a Schwinger-Keldysh effective action that describes the observer's radiation reaction as well as fluctuations associated with de Sitter Hawking radiation. I will discuss the computation of such an action for observers coupled to scalar and electromagnetic fields. We will find that the action provides a Langevin description of the observer at cosmologically long time-scales. In contrast, the near-flat space expansion reproduces the Abraham-Lorentz-Dirac force with cosmological corrections..
- Venue** : Chern Lecture Hall
- Zoom link: <https://icts-res-in.zoom.us/j/93583264998?pwd=ughZ8HgI3QY5faBPibZp0HHa7TE5Qa.1>
- Meeting ID: 935 8326 4998
- Passcode: 181819