ICTS Synopsis Seminar

Title : Emergent statistics in measurement-induced quantum dynamics

Speaker : Alan George Sherry (ICTS-TIFR, Bengaluru)

Date : Monday, 18 May 2026

Time : 3:30 PM (IST)

Abstract :

Recent advances in quantum hardware have enabled high-fidelity measurements and precise control of quantum degrees of freedom. These developments have motivated new ways of probing quantum information in many-body systems that go beyond local observables. One such framework is the projected ensemble, which provides a measurement-induced unraveling of reduced density matrices. This extends the notion of quantum thermalisation to “deep thermalisation”, which concerns the statistical mechanics of ensembles of pure states rather than observables.

The first part of this talk discusses the robustness of deep-thermalisation phenomenology by studying the statistical mechanics of projected ensembles generated from mixed states. We then focus on the implications of mixed-state deep thermalisation for the information content of projected ensembles in settings with information loss. Finally, we shift focus from many-body systems to a single continuously monitored qubit, and discuss an emergent statistical law governing fluctuations in the strong-measurement regime across a range of physical settings.

Venue : Emmy Noether Seminar Room
Zoom link ID: https://icts-res-in.zoom.us/j/95925955185?pwd=AsGoX5z9sXjD4Qa0QDawbMNHYArbYO.1
Meeting ID: 959 2595 5185
Passcode: 202030