

## ICTS Seminar

- Title : Experimentally robust nonclassicality
- Speaker : Ravi Kunjwal, Perimeter Institute, Canada
- Date : Friday, 21 December 2018
- Time : 10:00 AM
- Venue : Amal Raychaudhuri Meeting Room, ICTS Campus, Bangalore
- Abstract : I will focus on the question of what precise operational signatures can rule out the possibility that an experiment admits a classical model. Our notion of classicality will be “noncontextuality”, inspired by the Kochen-Specker theorem. The Kochen-Specker theorem shows the inconsistency between quantum theory and any putative underlying model of it where the outcomes of a measurement are determined prior to the act of measurement by some (possibly hidden) physical states of the system in a manner that does not depend on (operationally irrelevant) details of the measurement context, i.e., the outcomes are determined noncontextually in the model. However, the KS theorem is not experimentally testable. I will describe recent work on going from the Kochen-Specker theorem to experimentally robust signatures of contextuality. Making minimal assumptions about the operational theory describing the experiment, these signatures can be used to assess nonclassicality even if an experiment admits deviations from quantum theory.