

ICTS Seminar

- Title** : Work Fluctuation Theorems for Quantum Systems - The role of measurement
- Speaker** : Prasanna Venkatesh, Institute for Quantum Optics and Quantum Information of Austrian Academy of Sciences, Austria
- Date** : Wednesday, February 3, 2016
- Time** : 3:00 pm
- Venue** : Emmy Noether Seminar Room, ICTS Campus, Bangalore
- Abstract** : The Jarzynski and Crooks work fluctuation theorems (FTs) are remarkable exact relations that provide an useful paradigm to examine non-equilibrium thermodynamics. For classical systems, these relations are very well understood theoretically and experimentally. However, for quantum systems, the standard procedure that preserves the form of the FTs requires the projective measurement of energy at the beginning and the end of the protocol. We have explored the dependence of the form of the fluctuation theorems on the energy measurements by considering generalized measurements. Such a line of enquiry highlights some of the unique issues with regard to FTs in quantum systems and may provide an easier way to experimentally verify them.

Relevant Publications:- New Journal of Physics 16 (2014) 015032; Phys. Rev. E 89, 052116 (2014); New J. Phys. 17 (2015) 075018; arXiv:1508.02444

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