

## **ICTS Ph.D. Thesis Defence**

Title	: Transport in open quantum system
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Date	: Tuesday, September 4, 2018
Time	: 2:30 PM
Venue	: Emmy Noether Seminar Room, ICTS Campus, Bangalore
Abstract	: An open system is a system connected with the environment. Real systems are always open. Far from equilibrium open quantum systems are extensively studied because of their novel physics and their very interesting and diverse potential applications. These include molecular electronics, nanoscale diodes, thermal rectification, quantum logic gates and even gravitational wave detection. Theoretical challenge in understanding such open quantum systems arise because the usual equilibrium statistical mechanics is not applicable. I will describe various theoretical approaches used to treat such set-ups. By explicitly working out some experimentally relevant examples, I will show that one approach has a wider range of validity as well as simplicity. I will also show that even for extended systems, transport through an open system can be completely different from the usual notion of transport in an isolated system in the thermodynamic limit.