

## ICTS Postdoc/Graduate Student Seminar Series

- Title : Quantum thermal diode with low non-linearity and/or at high Temperature
- Speaker : Archak Purkayastha, ICTS-TIFR, Bangalore
- Date : Friday, June 9, 2017
- Time : 11:15 AM
- Venue : Emmy Noether Seminar Room, ICTS Campus, Bangalore
- Abstract : Heating effects in solid-state nano-structures are unavoidable. However, recent theoretical and experimental research has been paving the way to control the heat flow and use it constructively for device applications. The key ingredient in controlling heat flow is *thermal rectification* (akin to electronic rectification in an electronic diode). Currently, there is a lot of theoretical and experimental research concerning devising and characterising thermal diodes. The most important features required for thermal rectification are *non-linearity* and *asymmetry*. In our recent work [1], we have explored the behaviour of thermal rectification of a non-linear junction as a function of the strength of non-linearity. We have found various interesting results (e.g., *a change in the direction of rectification with temperature and more rectification at lower non-linearity*) which I will discuss.

[1] A. Purkayastha, A. Dhar, and M. Kulkarni. Phys. Rev. A, 94:052134, 2016.

Note: This will be an ongoing biweekly seminar series (Fridays, 11:15 am) by the ICTS postdocs and graduate students