ICTS | INTERNATIONAL CENTRE for THEORETICAL SCIENCES

TATA INSTITUTE OF FUNDAMENTAL RESEARCH

# ICTS Statistical Physics Journal Club Seminar

**Title** : Large deviations of currents in diffusions with reflective boundaries

**Speaker** : Emil Mallmin (University of Edinburgh)

**Date** : Thursday, 27th May 2021

**Time** : 03:00 pm (IST)

**Abstract** : The presence of steady-state currents of matter or energy is the defining feature of a nonequilibrium system. The fluctuations of such currents can be studied using large deviation theory which has revealed the existence of universal symmetries (fluctuation relations) and dynamical phase transitions. In this talk I will explain our recent results that extend dynamical large deviation theory to a ubiquitous class of models in physics and other fields: diffusion processes with reflecting boundaries. As a an application of these tools, we derive how atypical currents arise in a model of heterogeneous volume-excluding particles on a ring.

This talk is based on the preprint arxiv:2102.04846 co-authored with Johan du Buisson and Hugo Touchette.

**Venue** : Please click on the below link to join the seminar

https://zoom.us/j/97603697884?pwd=UWJXeUd4dnZnVlhNdXhObitFWERxQT09
Meeting ID: 976 0369 7884
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