

ICTS Colloquium

- Title** : Hydrodynamic and Ballistic Transport of Electrons in 2 Dimensions
- Speaker** : Deshdeep Sahdev, Technology Development Board, New Delhi
- Date** : Monday, March 18, 2019
- Time** : 3:00 PM
- Venue** : Emmy Noether Seminar Room, ICTS Campus, Bangalore
- Abstract** : Electron transport in 2D systems with weak electron-lattice interactions can transition from an ohmic to a ballistic or a hydrodynamic regime. We show the occurrence of these transitions by viewing electrons at the kinetic level in experimentally realizable systems. We solve our kinetic model using "bolt", a computer package we have developed for solving the Boltzmann equation, keeping intact its full time-dependence and non-linearity. We trace the choreography of vortices produced by AC drives in each of the non-ohmic regimes and define clear experimental signatures of ballistic and hydrodynamic behaviour. Lastly, time permitting, I will describe our own attempts at setting up experiments to verify our predictions.