

ICTS Probability Seminar

- Title** : The truncated correlations of the Ising model in any dimension decay exponentially fast at all but the critical temperature
- Speaker** : Subhajit Goswami, Institut des Hautes Études Scientifiques, France.
- Date** : Wednesday, March 21, 2018
- Time** : 11:00 A.M
- Venue** : Emmy Noether Seminar Room, ICTS Campus, Bangalore
- Abstract** : Our main result is that the truncated two-point function of the nearest neighbor ferromagnetic Ising model on the hypercubic lattice in dimensions 3 and higher decay exponentially fast below the critical temperature. We will see that this is a consequence of a similar bound on the rate at which the finite volume FK-Ising measures converge to the infinite volume FK-Ising measure. In order to prove the last statement we use yet another percolation model known as the *random currents* initiated by Griffiths, Hurst, Sherman (1970) and Aizenman (1982) for analyzing Ising correlations. Our approach is thus based on an eclectic combination of different representations for the correlation function of Ising. Based on a joint work with Hugo Duminil-Copin and Aran Raoufi.