ICTS Colloquium

Title : Percolation and the critical behaviour of φ^4 and Blume-Capel models

Speaker : Trishen Gunaratnam (University of Geneva, Switzerland)

Date : Thursday, 08th February, 2024

Time : 04:00 PM (IST)

Abstract : The φ^4 and Blume-Capel models are lattice spin models that generalise the famous Ising model of ferromagnetism. Their origins are in lattice quantum field theory and in the statistical physics of uranium dioxide, respectively. These models are known to undergo phase transitions, but there are few rigorous results concerning their critical phases. On the other hand, in recent decades there has been astounding progress in the mathematical study of critical phenomena in the Ising model. At the heart of these results is percolation theory, which concerns the connectivity properties of random graphs. In this talk I will discuss how percolation techniques are robust enough to extend to analyse critical phenomena in the φ^4 and Blume-Capel models, despite their lack of symmetries/integrability as compared with the Ising model.

Venue : Offline: Madhava Lecture Hall

Online: Please click on the below link to join the colloquium

https://icts-res-in.zoom.us/j/96401100280?pwd=NVVpR05BcmprMDVJK2oydGxudlE0UT09

Meeting ID: 964 0110 0280

Passcode: 080924