ICTS Seminar (Bangalore Probability Seminar)

Title : Tricritical phenomena in the Blume-Capel model

Speaker : Trishen.Gunaratnam (University of Geneva)

Date : Monday, 04th December 2023

Time : 02:15 PM (IST)

Abstract : The Blume-Capel model is a ferromagnetic spin model that was introduced in the '60s to model an exotic phase transition in uranium oxide. Mathematically speaking, it is an Ising model coupled to a site percolation, combining two of the most beautiful models in statistical physics. It has a line of critical points - the Curie temperatures whereby the magnetisation-demagnetisation transition occurs. Along this critical line, the model is expected to undergo a further phase transition at the so-called tricritical point. Despite many fascinating physics conjectures concerning the tricritical universality class, there are few rigorous results. In the first part of the talk, I will discuss these conjectures and touch upon recent results joint with Dmitry Krachun (Princeton University) and Christoforos Panagiotis (University of Bath) in establishing the existence of a tricritical phenomenon in all dimensions. This will be accessible to all. In the second part of the talk, I will explain the juice of the proof.

Venue : Offline: Chern Lecture Hall

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

https://us02web.zoom.us/j/88670406480

Meeting ID: 886 7040 6480