



Department of  
Theoretical Physics

# THE QUANTUM SPACETIME SEMINAR SERIES

## Parisi-Sourlas Supersymmetry and its absence in the Random Field Ising Model (Zoom Seminar)

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**Date:** June 15, 2020

**Time:** 3:00 PM IST

Zoom link shall be shared  
separately



We will discuss the phase transition in the Ising model with magnetic impurities. By one kind of lore, this leads to a non-unitary supersymmetric CFT with scalar supercharges (Parisi-Sourlas supersymmetry). By further lore, Parisi-Sourlas SCFT in  $D$  dimensions is equivalent to a non-SUSY CFT in  $D-2$  dimensions. It is known that this story is not fully correct, but we will put some of it on firmer ground using non-perturbative CFT methods, and we will propose a scenario for why the full conjecture is failing. Joint work with Apratim Kaviraj and Emilio Trevisani.