

Talk 3 - Arnab Sen (Indian Association for the Cultivation of Science, India): Monte Carlo for lattice field theories

Tuesday 28 October 2025 14:00 (1h 30m)

In these lectures, I will first motivate the equivalence of lattice field theories in Euclidean time to statistical mechanics models, and establish a dictionary between the two. I then discuss the general idea of Monte Carlo sampling in a class of models and finally focus on two interacting models in d dimensions as examples, a ϕ^4 theory and an Ising model. I explain the extraction of low lying masses using correlation functions and critical exponents at criticality using finite size scaling through these examples.