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Type: **Parallel Talk**

The Critical Ising Model on a 2-Sphere

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I derive a formulation of the 2-dimensional critical Ising model on non-uniform simplicial lattices. Surprisingly, the derivation leads to a set of geometric constraints that a lattice must satisfy in order for the model to have a well-defined continuum limit. I perform Monte Carlo simulations of the critical Ising model on discretizations of a 2-sphere and I show that the simulations are in agreement with the 2d Ising CFT in the continuum limit. I discuss the inherent benefits of using non-uniform simplicial lattices to study quantum field theory and how the methods developed here can potentially be generalized for use with other theories.

Topical area

Particle Physics Beyond the Standard Model

Primary author: OWEN, Evan (Boston University)

Co-author: BROWER, Richard C. (Boston University)

Presenter: OWEN, Evan (Boston University)

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