

Higgs, Flavor and Beyond

DESY THEORY WORKSHOP

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HIGGS, FLAVOR AND BEYOND



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Parisi-Sourlas supersymmetry in branched polymers

Thursday 29 September 2022 14:20 (20 minutes)

I will discuss the critical physics of a class of disordered (impure) quantum field theories, called random field models. An interesting example comes from 'branched polymers' whose critical properties are described by the random field ϕ^3 model. Parisi and Sourlas conjectured nearly 40 years ago that these models have a critical point characterized by an emergent supersymmetry and a mysterious 'dimensional reduction' property. In numerical simulations one finds that the conjecture works only under certain conditions. I will demonstrate how this connection works from a textbook like RG flow analysis of random field models.

Summary

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Session Classification: Parallel Session Strings

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