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An exact block-spin renormalization on the hierarchical non-linear supersymmetric hyperbolic sigma model

Friday, August 1, 2025 9:20 AM (1 hour)

Initially introduced as toy model for quantum diffusion, the non-linear supersymmetric hyperbolic sigma model has been attracting much attention in recent years due to its connection to history dependent stochastic processes. In this talk I will present a version of the model with hierarchical interactions. The internal symmetries of the model allow to perform some block-spin renormalization steps exactly. The resulting effective action has renormalized coefficients but no additional interaction terms. I will show the corresponding derivation and some applications.

This is joint work with S. Rolles and F. Merkl.