

An algorithm for studying the renormalization group dynamics in the projective space

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Abstract

© 2014, Pleiades Publishing, Ltd. The renormalization group dynamics is studied in the four-component fermionic hierarchical model in the space of coefficients that determine the Grassmann-valued density of the free measure. This space is treated as a two-dimensional projective space. If the renormalization group parameter is greater than 1, then the only attracting fixed point of the renormalization group transformation is defined by the density of the Grassmann δ -function. Two different invariant neighborhoods of this fixed point are described, and an algorithm is constructed that allows one to classify the points on the plane according to the way they tend to the fixed point.

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