Indications of isotropic Lifshitz points in d=4 dimensions

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Abstract

The presence of isotropic Lifshitz points for a O(N)-symmetric scalar theory is investigated with the help of the Functional Renormalization Group. In particular at the supposed lower critical dimension d=4, indications of a line of fixed points are found for the O(2) theory, with evident similarities with the properties observed in the 2-dimensional Berezinsky-Kosterlitz-Thouless phase.

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