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Effective field theory approach to low temperature thermodynamics of two-dimensional O(3) ferromagnets

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Magnetization of two dimensional O(3) Heisenberg ferromagnet is investigated using perturbation theory for type-B Nambu-Goldstone bosons, quantum Monte Carlo simulations and nonlinear spin wave theory.

By calculating loop corrections to the magnon self-energy, in combination with QMC data and spin wave theory, we discuss the applicability of effective field theory for two dimensional O(3) ferromagnet in external magnetic field.

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