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Convergent Perturbation Theory for ϕ^4 model on lattice

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The small coupling expansions in the lattice field theory are asymptotic
and do not converge. It was shown in previous studies, that an appropriate regularization of the integrals or shifting of the initial approximation allows one to construct convergent series.
In this work we study the convergent series in application to the lattice ϕ^4-model
and compare the observables calculated using the series with the results of the Monte Carlo simulations.
In addition, we consider the Borel resummation of the weak coupling lattice ϕ^4-perturbation theory.

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