

Coarsening dynamics of the long-range Ising model

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We report Monte Carlo computer simulations of the nonequilibrium coarsening dynamics of the two-dimensional long-range Ising model. Employing a novel update scheme, our simulations perform $\sim 10^3$ times faster than the standard approach. We carefully examine previous approaches introducing a cut-off in the long-range potential in order to reduce the computational effort. Special emphasis is put on a careful analysis of finite-size effects. This enables us to establish agreement with a theoretical prediction for the time dependence of the domain growth, in contrast to previous numerical studies. Our method can easily be generalized to applications in other systems.