
Cluster variational method for stochastic dynamics

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Abstract

One of us has recently proposed [1] a generalization of the cluster variational method which can be used to study the out of equilibrium dynamics and the steady states of kinetic Ising-like model. Here we show that this approach provides a general framework in which several previous results of a mean-field nature are reproduced as particular cases and can be systematically improved. We consider applications to Ising-like models on various graphs, epidemic models on networks and asymmetric exclusion processes. [1] A. Pelizzola, Eur. Phys. J. B 86, 120 (2013)

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