

The Stochastic Becker-Döring System

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Abstract

The Becker-Döring equations might be “one of the simplest kinetic model to describe a number of issues in the dynamics of phase transitions”, Penrose (1989). This model describes the evolution of the concentration of clusters (or aggregates) according to their size. The rules are simple, a cluster of size i may encounter a particle (cluster of size 1) to form a new one of size $i + 1$. Conversely, a cluster of size i could release a particle leading to a cluster of size $i - 1$. In this talk we will present the stochastic version of this rules when the system consists in a finite number of particles, namely a pure jump Markov process on a finite state space. And we will discuss about some results and issues around the law of large number associate to this problem.

Ref.: E. Hingant and R. Yvinec, Deterministic and Stochastic Becker-Döring equations: Past and Recent Mathematical Developments, Preprint arXiv:1609.00697, 2016.