

A Stochastic Mean-Field Approach For Nuclear Dynamics

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Abstract

After a brief introduction to nuclear transport theory, in the first part, I briefly describe a stochastic model for fusion near barrier energies and talk about a stochastic mean-field approach for description of heavy-ion collisions at low energies. In the second part, I illustrate several applications of the stochastic mean-field approach including transport coefficients associated with macroscopic variables such as relative momentum and mass/charge asymmetry, and briefly discuss spinodal instabilities in nuclear matter.