

Large Deviations for Stochastic Conservation Laws

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Mots-clés : Large Deviations, Entropy, Conservation Laws

Large Deviations of interacting particles models under hyperbolic scaling is a main open problem in the stochastic approach to Statistical Mechanics. A mesoscopic simplification of such models suggest to investigate the asymptotic properties of stochastic PDEs of the form

$$u_t + f(u)_x = \varepsilon[D(u)u_x]_x + \varepsilon^\gamma[\sigma(u)\dot{W}^\varepsilon]_x$$

in the limit $\varepsilon \rightarrow 0$. Here W^ε is a stochastic term and $\gamma > 0$. General tools to study large deviations of diffusion processes in a regime different from the "small noise" one are missing. The problem is thus approached by reducing it to the study of the variational convergence of suitable functionals.

Références

- [1] MARIANI M, *Large Deviations Principles for Stochastic Scalar Conservation Laws*, Prob. Th. and Rel. Fields (to appear).