

# Effective dynamics of a coupled microscopic-macroscopic stochastic system

Jian Ren, Hongbo Fu, Daomin Cao, Jinqiao Duan

(Submitted on 12 Nov 2010)

A conceptual model for microscopic-macroscopic slow-fast stochastic systems is considered. A dynamical reduction procedure is presented in order to extract effective dynamics for this kind of systems. Under appropriate assumptions, the effective system is shown to approximate the original system, in the sense of a probabilistic convergence.

Comments: 14 pages

Subjects: **Probability (math.PR)**

Cite as: [arXiv:1011.2909v1](#) [math.PR]

## Submission history

From: Hongbo Fu [[view email](#)]

[v1] Fri, 12 Nov 2010 13:49:32 GMT (14kb)

*[Which authors of this paper are endorsers?](#)*

Link back to: [arXiv](#), [form interface](#), [contact](#).

## Download:

- [PDF](#)
- [PostScript](#)
- [Other formats](#)

Current browse context:

[math.PR](#)

[< prev](#) | [next >](#)

[new](#) | [recent](#) | [1011](#)

Change to browse by:

[math](#)

## References & Citations

- [NASA ADS](#)

Bookmark([what is this?](#))

