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On deterministic approximation of Markov processes by ordinary differential equations.

(English) [Zbl 0914.60035](#)

[Math. Probl. Eng. 4, No. 2, 99-114 \(1998\)](#).

Summary: For a class of Markov processes on the integer multidimensional lattice, it is shown that the evolution of the mean values of some random variables can be approximated by ordinary differential equations. To illustrate the approach, a Markov model of a chemical reaction is considered.

MSC:

[60J05](#) Discrete-time Markov processes on general state spaces

[92E20](#) Classical flows, reactions, etc. in chemistry

[80A30](#) Chemical kinetics in thermodynamics and heat transfer

Cited in **1** Document

Keywords:

[Markov processes](#); [convergence](#); [differential equations](#); [chemical kinetics](#)

Full Text: [DOI](#) [EuDML](#)