Ryter, D.

On the eigenfunctions of the Fokker-Planck operator and of its adjoint. (English)

Zbl 0667.60081

Physica A 142, 103-121 (1987).

The eigenfunctions of the forward and backward operator are linked by means of an "associate system", for which the stationary distribution and the eigenvalues are the same. For systems with M(≥ 2) stable states a Feynman-Kac result provides an efficient approximation of the first M backward eigenfunctions when the noise is "moderate"; the corresponding form of the first M forward eigenfunctions follows by the above relation. At weak noise the associate system becomes more explicit; moreover, it leads to a new understanding and to a generalization of the Kramers method.

MSC:

60J70 Applications of Brownian motions and diffusion theory (population genetics, absorption problems, etc.)

Cited in **6** Documents

Keywords:

eigenfunctions of the forward and backward operator; stationary distribution; generalization of the Kramers method

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