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Optimization problems for a class of diffusion processes in semimarkov environment. (Bulgarian. English summary) [Zbl 0729.60084](#)

Mathematics and education in mathematics, Proc. 19th Spring Conf., Sunny Beach/Bulg. 1990, 315-320 (1990).

Summary: [For the entire collection see [Zbl 0713.00003](#).]

Let Y be a random process determined by a class of diffusion processes and a semi-Markov process (SMP) X_0 with a phase space consisting of a single class of stable states. We say the process Y_0 is controlled by the SMP X_0 . A process Y^ϵ controlled by the perturbed SMP X^ϵ with a phase space consisting of a single class of stable states and one absorbing state is considered. If $\epsilon \rightarrow 0$, the process Y^ϵ converges to the random process Y controlled by the limit phase aggregated Markov process X . The present work deals with some optimization problems where the relations between the moment of first reaching of given level by the process Y and the absorbing time of the process X are studied.

MSC:

[60K15](#) Markov renewal processes, semi-Markov processes

[60J60](#) Diffusion processes

Keywords:

[diffusion processes](#); [semi-Markov process](#); [single class of stable states](#); [optimization problems](#)