Korolyuk, V. S.; **Limnios, N.**

Diffusion approximation for integral functionals in the double merging and averaging scheme. (English. Ukrainian original) Zbl 0955.60041

Theory Probab. Math. Stat. 60, 87-94 (2000); translation from Teor. Jmovirn. Mat. Stat. 60, 77-84 (1999).

The authors consider the family of Markov processes with jumps $x^\varepsilon(t)$, $t \geq 0$, $\varepsilon > 0$, on a measurable space (X, A) with the generating operator Q^ε,

$$Q^\varepsilon \varphi(x) = q(x) \int_X P^\varepsilon(x, dy)[\varphi(y) - \varphi(x)],$$

such that the kernel $P^\varepsilon(x, dy)$ may be represented in the form $P^\varepsilon(x, dy) = P(x, dy) + \varepsilon P_1(x, dy) + \varepsilon^2 P_2(x, dy)$, where $P(x, dy)$, $P_1(x, dy)$ and $P_2(x, dy)$ are kernels of generating operators of certain Markov processes. The authors investigate the integral functional of the form $\zeta^\varepsilon(t) = \int_0^t a(x^\varepsilon(s))ds$, where $a(\cdot)$ is a certain function. Results on diffusion approximation of this functional are presented.

Reviewer: Yu.V.Kozachenko (Kyïv)

MSC:

60G25 Prediction theory (aspects of stochastic processes)
60F17 Functional limit theorems; invariance principles

Keywords:

Markov process; integral functional; diffusion approximation; merging scheme; averaging scheme