Gusak, D. V.

On a generalized semicontinuous integer-valued Poisson process with reflection. (English. Ukrainian original) Zbl 0958.60076

Theory Probab. Math. Stat. 59, 41-46 (1999); translation from Teor. Jmorvirn. Mat. Stat. 59, 41-46 (1998).

For continuous from below Poisson process $\xi(t)$ with integer-valued jumps relations for the generating function of extrema are established. The distribution of the modified process $\xi_x(t)$ with instantaneous reflection on lower bound is expressed by these generating functions. For the process $\xi_x(t)$ under conditions of ergodicity the limiting distribution is found. This distribution is determined by the distribution of the absolute maximum of the given process $\xi(t)$. Relations for generating functions of the first exit time out of a finite interval for the process $\xi(t)$ in terms of resolvent of the process $\xi(t)$ are established. This resolvent is determined by the distribution of the extrema of the process $\xi(t)$.

Reviewer: A.V.Swishchuk (Kyïv)

MSC:

60J50	Boundary theory for Markov processes
60J70	Applications of Brownian motions and diffusion theory (population genetics, absorption problems, etc.)
60K10	Applications of renewal theory (reliability, demand theory, etc.)
60K15	Markov renewal processes, semi-Markov processes

Cited in **1** Review

Keywords:

semi-continuous Poisson process with reflection; resolvent of process