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On a generalization of the risk model with Markovian claim arrivals. (English) Zbl 1237.91124
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Summary: The class of risk models with Markovian arrival process (MAP, see e.g., [*M. F. Neuts*, *J. Appl. Probab.* 16, 764–774 (1979; [Zbl 0422.60043](#)))] is generalized by allowing the waiting times between two successive events (which can be a change in the environmental state and/or a claim arrival) to have an arbitrary distribution. Using a probabilistic approach, we determine the solution for a class of Gerber-Shiu functions apart from some unknown constants when claim sizes have a mixed exponential distribution. Such constants are later determined using the more classic ruin-analytic approach. A numerical example is later considered to illustrate the tractability of the suggested methodology in the study of Gerber-Shiu functions.

MSC:

91B30 Risk theory, insurance (MSC2010)
60K15 Markov renewal processes, semi-Markov processes
60J75 Jump processes (MSC2010)

Cited in 5 Documents

Keywords:

combination of exponentials; discounted density; Gerber-Shiu function; Markovian arrival process

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