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Ruin probabilities for Erlang (2) risk processes. (English) Zbl 0907.90097

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Summary: We consider a risk process in which claim inter-arrival times have an Erlang(2) distribution. We consider the infinite time survival probability as a compound geometric random variable and give expressions from which both the survival probability from initial surplus zero and the ladder height distribution can be calculated. We consider explicit solutions for the survival ruin probability in the case where the individual claim amount distribution is phase-type, and show how the survival/ruin probability can be calculated for other individual claim amount distributions.

MSC:

91B30	Risk theory, insurance (MSC2010)	
62P05	Applications of statistics to actuarial sciences and financial mathematics	

Keywords:

Erlang process; phase-type distribution; recursive calculation; risk process; infinite time survival probability; survival/ruin probability

Full Text: DOI

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