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Articles

Ruin probabilities in classical risk models with gamma claims

Corina Constantinescu , Gennady Samorodnitsky & Wei Zhu Pages 555-575 | Received 11 Dec 2016, Accepted 06 Nov 2017, Published online: 20 Nov 2017

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Abstract

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In this paper, we provide three equivalent expressions for ruin probabilities in a Cramér-Lundberg model with gamma distributed claims. The results are solutions of integro-differential equations, derived by means of (inverse) Laplace transforms. All the three formulas have infinite series forms, two involving Mittag-Leffler functions and the third one involving moments of the claims distribution. This last result applies to any other claim size distributions that exhibits finite moments.

Keywords:

Ruin probability Mittag-Leffler function gamma distribution Laplace transform

Notes

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Additional information

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