

RUIN PROBABILITIES FOR TWO COLLABORATING INSURANCE COMPANIES

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Abstract. We find a formula for the supremum distribution of spectrally positive or negative Lévy processes with a broken linear drift. This gives formulas for ruin probabilities if two insurance companies (or two branches of the same company) divide between them both claims and premia in some specified proportions or if the premium rate for a given insurance portfolio is changed at a certain time. As an example we consider a gamma Lévy process, an α -stable Lévy process and Brownian motion. Moreover we obtain identities for the Laplace transform of the distribution of the supremum of Lévy processes with a randomly broken drift (random time of the premium rate change) and on random intervals (random time when the insurance portfolio is closed).

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Key words and phrases: Lévy process, distribution of supremum of a stochastic process, ruin probability, gamma Lévy process, α -stable Lévy process.

THE FULL TEXT IS AVAILABLE HERE