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Analysis of the duration of the negative surplus for a generalized compound Poisson-geometric risk model. (Chinese. English summary) [Zbl 1265.62034](#)

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Summary: This paper mainly studies a generalized compound Poisson geometric risk model where the income of insurance premiums is a compound Poisson process and the number of claims is a compound Poisson geometric process. This risk model has practical applications in the insurance companies. The authors focus on the duration of the negative surplus (DNS) under the above risk model. By taking full advantage of the strong Markov property of the surplus process and the total expectation formula, they derive the distribution of the deficit at ruin, and the moment generating functions of the DNS.

MSC:

[62P05](#) Applications of statistics to actuarial sciences and financial mathematics

[91B30](#) Risk theory, insurance (MSC2010)

[60J99](#) Markov processes

[60J75](#) Jump processes (MSC2010)

Keywords:

distribution of deficits; strong Markov property; moment generating function