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The Gerber-Shiu function when the claim counting process is a homogeneous compound-birth process

In this paper we introduce a non-homogeneous compound-birth process as the claim-counting process of an insurance company. The main feature of this process is that it may account for batch claim arrivals. As a result, the insurer's detailed record of costs resulting from claim processing may be used for fine-tuning the relative security loading. Further, assuming a homogeneous compound-birth process, we study the Gerber-Shiu function and some of its special cases in more detail.