

Title: Ruin Probabilities with Dependence on the Number of Claims within Fixed Window Time
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Abstract:

We analyse the ruin probability for the Cramer renewal risk process with consideration of an inter-arrival time depending on a number of claims that have come within past fixed time-window. This adjusted model could be explained through the construction of a regenerative process whose properties are employed in further analysis. Asymptotic results of ruin probabilities for different regimes of the claim distributions will first be examined and discussed. Furthermore, through a connection with Markov Additive Process, a solution of the ruin probability will be demonstrated. We will also calculate numerical examples via the Importance Sampling method.

KEYWORDS: Regenerative Risk Process, Ruin Probability, Cramer Asymptotics, Importance Sampling, Markov Additive Process

This is a joint work with **Corina Constantinescu, Zbigniew Palmowski** and **Suhang Dai**