

A Risk Model when Premium Rate Depends on Claim Size

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Abstract: This paper considers a dependent classical risk model with diffusion, in which the premium rate is determined by the amount of the previous claim. It is assumed that different claim size will lead to different premium rate, such as a large claim size will lead to higher premium rate and small claim size will allow to be lower premium rate. At the same time, we can also assume that each premium rate has a different diffusion coefficient. Using the tool of Laplace transform, we give the closed Laplace transform form of the survival probability. Moreover, we also show that the survival probability can be obtained step by step by employing renewal equations. At last, some examples are presented to show the influence of parameters on the probability of ruin.