Summary: In this paper we evaluate the probability of the discrete time Parisian ruin that occurs when surplus process stays below or at zero at least for some fixed duration of time $d > 0$. We identify expressions for the ruin probabilities within finite and infinite-time horizon. We also find their light and heavy-tailed asymptotics when initial reserves approach infinity. Finally, we calculate these probabilities for a few explicit examples.

MSC:
91B30 Risk theory, insurance (MSC2010)
60K10 Applications of renewal theory (reliability, demand theory, etc.)
60G51 Processes with independent increments; Lévy processes
62P05 Applications of statistics to actuarial sciences and financial mathematics

Keywords:
discrete time risk process; ruin probability; asymptotic; Parisian ruin

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References:


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