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Some Limit Theorems in Geometric Processes

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摘要 Geometric process (GP) was introduced by Lam, it is defined as a stochastic process $\{X_n, n = 1, 2, \dots\}$ for which there exists a real number $a > 0$, such that $\{a^{-(n-1)}X_n, n = 1, 2, \dots\}$ forms a renewal process (RP). In this paper, we study some limit theorems in GP. We first derive the Wald equation for GP and then obtain the limit theorems of the age, residual life and the total life at t for a GP. A general limit theorem for S_n with $a > 1$ is also studied. Furthermore, we make a comparison between GP and RP, including the comparison of their limit distributions of the age, residual life and the total life at t .

关键词 [geometric process](#) [new better than used in expectation](#)

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Key words [geometric process](#) [new better than used in expectation](#)

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