应用数学学报
Acta Mathematicae Applicatae Sinica (Chinese Series)
ISSN 0254-3079
CN 11-2040/O1

应用数学学报 » 2011, Vol. 34 » Issue (5): 949-956 DOI:

带干扰phaes-type风险模型中的最大盈余及相关分布

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The Maximum Surplus in the Phase-type Risk Model Perturbed by Diffusion and Related Distributions

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摘要 本文考虑了索赔时间间距为phase-type分布时带干扰更新风险模型中的破产前最大盈余、 破产后赤字的分布, 建立了相应的积分一微分方程. 最后, 讨论了当索赔时间间距为Erlang (2)分布且索赔量满足指数分布时的特殊情形.

关键词： phase-type分布 干扰风险过程 破产前最大盈余 破产后盈余分布 积分一微分方程

Abstract: In this paper, we consider a perturbed sparre andersen model by diffusion in which the claim inter-arrival times are the phase-type distributions. We prove some prop-erties of the maximum surplus before ruin of the risk process before ruin when ruin occurs and the surplus distribution at the time of tuin. Integro-differential equations are derived. Finally, to illustrate these results, the special case where the inter-claim times are Erlang (2) distributed and the claim size distribution is exponential is considered.

Key words: phase-type distribution diffusion risk process maximum surplus before ruin surplus distribution at the time of ruin integro-differential equation

收稿日期: 2011-04-20;

基金资助:

湖南省教育厅(10C0754)资助项目.

引用本文:

. 带干扰phaes-type风险模型中的最大盈余及相关分布[J]. 应用数学学报, 2011, 34(5): 949-956.

. The Maximum Surplus in the Phase-type Risk Model Perturbed by Diffusion and Related Distributions[J]. Acta Mathematicae Applicatae Sinica, 2011, 34(5): 949-956.

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