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学术论文

# 带有随机干扰和确定投资回报风险过程下的一些分布

赵霞

山东经济学院概率统计与保险精算研究所

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**摘要** 我们考虑既带有随机干扰又带有确定投资回报的风险过程，得到了破产前瞬间盈余的分布$F_{\delta}(u,x)$及破产前瞬间盈余和破产时赤字的联合分布$H_{\delta}(u,x,y)$所满足的积分表达，连续性及二次连续可微性和积分--微分方程. 同时，只有随机干扰的风险模型下的破产前瞬间盈余的分布及破产前瞬间盈余和破产时赤字的联合分布所满足的性质也被得到. 已有文献中的诸多有关结果均可以通过令我们结论中的某些参数特殊化为零而得到.

**关键词** 风险过程, 破产前瞬间盈余, 破产时赤字, 连续性及二次连续可微性, 积分--微分方程.

分类号

# Some Distributions for Risk Process Perturbed by Diffusion under Interest Force

Zhao Xia

Institute of Statistics and Actuary, Shandong Economic University

**Abstract** We consider the risk process perturbed by diffusion under interest force in this article. The integral expressions, continuities, twice continuous differentiability and integro-differential equations about $F_{\delta}(u;x)$, the distribution of the surplus immediately before ruin, and $H_{\delta}(u;x,y)$, the joint distribution of the surplus immediately before ruin and the deficit at ruin are obtained. As corollaries, some distributions for the classical risk process that is perturbed by diffusion are also considered. Certainly, it is seen that many results in references may be derived from our conclusions by letting some constant variable zero.

**Key words** Risk process, the surplus immediatly before ruin, the deficit at ruin, twice continuous differentiability, integro-differential equation.

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通讯作者 赵霞