

## 基于污染Gamma分布的聚合风险模型及其在风险分类中的应用

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收稿日期 2006-12-15 修回日期 网络版发布日期 2009-3-11 接受日期

**摘要** 分析了污染Gamma分布及其性质, 讨论了基于污染Gamma分布的聚合风险模型. 对模型的概率特性和参数估计进行了分析, 并对该模型在风险分类中的应用进行了讨论. 为克服索赔总量的分布函数在计算上的困难, 利用同单调性理论得到了随机凸序意义下索赔总量随机变量 $SS$ 的随机上界 $S^c$ , 对 $S^c$ 的分布函数及限额损失保费进行了讨论. 通过一个例子对所述结论的有效性进行验证.

**关键词** [污染Gamma分布](#) [聚合风险模型](#) [风险分类](#) [同单调性](#) [随机凸界](#).

分类号 [62P05](#)

## Collective Risk Model Based on the Contaminated Gamma Distribution and Its Application in Risk Classification

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**Abstract** The contaminated Gamma distribution and its properties are analyzed. The collective risk model based on contaminated Gamma distribution is put forward and its probability character is considered. Then the application of the model in risk classification is discussed. To overcome the difficulty in calculating the distribution function of claim amount  $SS$ , a stochastic upper bound  $S^c$  of  $SS$  in the sense of stochastic convex order is obtained by using the comonotonicity theory. The distribution function of  $S^c$  and stop-loss premium are discussed. A numerical examples is given to illustrate the validity of the proposed method.

**Key words** [Contaminated Gamma distribution](#) [collective risk model](#) [risk classification](#) [comonotonicity](#) [stochastic convex bounds](#).

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