

Quality of the Ruin Probabilities Approximation Using the Regenerative Processes Approach regarding to Large Claims

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Abstract : Risk models, recently studied in the literature, are becoming increasingly complex. It is rare to find explicit analytical relations to calculate the ruin probability. Indeed, the stability issue occurs naturally in ruin theory, when parameters in risk cannot be estimated than with uncertainty. However, in most cases, there are no explicit formulas for the ruin probability. Hence, the interest to obtain explicit stability bounds for these probabilities in different risk models. In this paper, we interest to the stability bounds of the univariate classical risk model established using the regenerative processes approach. By adopting an algorithmic approach, we implement this approximation and determine numerically the bounds of ruin probability in the case of large claims (heavy-tailed distribution).

Keywords : heavy-tailed distribution, large claims, regenerative process, risk model, ruin probability, stability

Conference Title : ICAMA 2017 : International Conference on Applied Mathematics and Analysis

Conference Location : Paris, France

Conference Dates : February 23-24, 2017