

Some statistical estimation problems in ruin theory

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Much research in ruin theory in insurance mathematics focuses on the behaviour of various quantities of interest, such as the probability of ruin or the ruin-time moments, for a particular risk model in insurance. In practice, precise knowledge of the risk model is available only via observed data. In this presentation, the problem of statistical estimation of the quantities of interest, given data on claim arrivals and claim sizes, is considered. Nonparametric estimators are proposed and their statistical properties are studied. In many cases, the quantities of interest are functions, and this leads to the use of techniques for estimation in function spaces. The bootstrap is used to obtain simultaneous confidence bands for the unknown quantities.

Key Words: Risk models, nonparametric estimation, bootstrap.