

Micro-level insurance claim count modelling: a Cox process approach

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Abstract

Micro-level claims modelling is attracting increasing interest in both academia and the industry. In this paper, we present a Cox process approach to model insurance claims counts based on micro-level observations, and implement the model in the prediction of the numbers of Incurred-But-Not-Reported claims. By using a Cox process approach, our model allows for over-dispersion and serial dependency of claims counts. In order to allow for practicalities of insurance risks, we further incorporate risk exposure information and allow for delays in reporting. The performance and application of our model and estimation algorithms are illustrated using both simulated and real datasets.

Key words: Micro-level reserving, Cox process, Insurance claims
