APPROXIMATING THE FINANCIAL SITUATION
OF AN INSURANCE PORTFOLIO.
AN EVOLUTIONARY APPROACH

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The financial situation of an insurance company/portfolio can be modeled by a classical risk model with homogeneous Poisson arrival process, constant premium rate and constant interest force. Its probability of ruin is of great interest, but unfortunately, there is no closed form for such a complex model.

In this paper, we consider the random variable financial situation of the company/portfolio under study at moment T provided it was no ruin before, or at the moment of ruin, provided ruin happened before T. It is clear that the distribution of this random variable is involved in the evaluation of the finite time ruin probability of the company/portfolio. Because it is difficult to directly find an explicit form for the distribution function, we consider an evolutionary approach by means of genetic programming for approximating this distribution function. In order to illustrate this approach, numerical experiments were conducted on computer generated data.

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