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De Finetti's Control Problem

An offshoot of the classical ruin problem for the Cramer-Lundberg process was introduced by de Finetti [7]. His intention was to make the study of ruin under the Cramer-Lundberg dynamics more realistic by introducing the possibility that dividends are paid out to share holders up to the moment of ruin. Further, the payment of dividends should be made in such a way as to optimize the expected net present value of the total dividends paid to the shareholders from time zero until ruin, this is the so-called value function. It has been proved that for a rather general class of ruin processes, which are modeled by spectrally negative Levy process, the optimal value function is a result of a barrier strategy. The aim of this talk is to give a panorama of the recent developments around this problem.