Tsai, Cary Chi-Liang; **Willmot, Gordon E.**

On the moments of the surplus process perturbed by diffusion. (English) Zbl 1063.91051

Insur. Math. Econ. 31, No. 3, 327-350 (2002).

The results of *X. S. Lin* and *G. E. Willmot* [Insur. Math. Econ. 27, 19–44 (2000; Zbl 0971.91031)] are extended to those based on the surplus process perturbed by diffusion. First the expression for the (discounted) moments of deficit at the time of ruin is derived. An upper bound is also given if the claim size distribution function satisfies a certain condition. Next, it is shown that the joint moment of the penalty function and the time of ruin due to a claim satisfies a defective renewal equation and has an explicit expression. Finally, the moments of the time of ruin due to oscillation and caused by a claim are studied.

Reviewer: Giacomo Bonanno (Davis)

MSC:

91B30 Risk theory, insurance (MSC2010)
60J70 Applications of Brownian motions and diffusion theory (population genetics, absorption problems, etc.)

Keywords:

discounted moments; time of ruin; penalty function; defective renewal equation

Full Text: DOI

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