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A note on fluctuation theory of spectrally negative MAP. (Chinese. English summary)


Summary: Spectrally negative MAP is one of the important concepts in probability. The fluctuation theory of the spectrally negative MAP $(X, J)$ is generalized by the means of the Asmussen-Kella martingale. The equations that are satisfied by the joint transforms of the level and the extremum of the spectrally negative MAP at an independent Erlang distributed time are discussed. Furthermore, by the Erlangization method, the approximation algorithm of transient joint transform of the level and the extremum of the spectrally negative MAP are obtained.

MSC:

60G51 Processes with independent increments; Lévy processes

Keywords:
spectrally negative MAP; fluctuation theory; Erlangization method; approximation algorithm