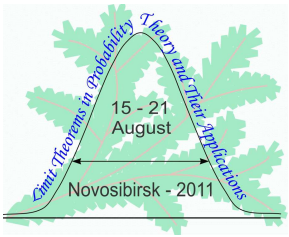

Ruin probabilities for some regenerative risk process

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Asmussen, Schmidli & Schidt (1999) developed a general theory for risk processes with a regenerative structure. We follow up here with (I) a concrete example as well as (II) some general results. In (I), a risk process with constant premium rate and Poisson arrivals of claims is considered. Motivated by earthquake models where longer interevent times tend to trigger larger earthquakes, a threshold r is defined for claim interarrival times, such that if k consecutive interarrival times are larger than r, then the next claim has distribution G. Otherwise, the claim size distribution is F. Asymptotic expressions for the infinite horizon ruin probabilities are given for both the light- and the heavy-tailed case. A basic observation is that the process regenerates at each G-claim. Also an approach via Markov additive processes is outlined. In (II), we study the distribution of the time to ruin in the case of heavy tailed. Under a suitable condition, it is shown that, as for the classical case, a suitable normalization will ensure a limit that is either Pareto or exponential.