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Title: Insurance risk models with periodic observations: Dividends, capital injections and taxation

Abstract:

In many classical risk models, it is implicitly assumed that (1) the insurer's surplus is checked continuously for bankruptcy; and (2) payments such as dividends, capital injections and taxation are made immediately once the surplus reaches certain levels. In the context of the compound Poisson model, we propose modifications such that the event of ruin is monitored periodically and/or the afore-mentioned payments can only be made periodically (e.g. monthly, quarterly or annually). Motivated by the Erlangization technique proposed by Asmussen, Avram and Usabel (2002), the intervals between these successive 'observation' time points are assumed to follow an Erlang(n) distribution which can be used to approximate a deterministic time interval. Numerical examples concerning applications in optimal dividends and reinsurance problems are given. This presentation involves joint works with Hansjoerg Albrecher, Michael Choi, Stefan Thonhauser, Hailiang Yang and Zhimin Zhang.