

# Exponential stopping of jump-diffusion processes and applications

Hailiang Yang\*

## Abstract

In this paper, we first obtain results for exponential stopping of a Brownian motion plus an independent compound Poisson process whose upward and downward jumps are modeled by an exponential distribution. Then the results will be used to the valuation problem of Guaranteed Minimum Death Benefits in various equity-linked products. A series of closed-form formulas for call, put, lookback, and barrier options is obtained.

---

\*Department of Statistics and Actuarial Science, The University of Hong Kong, Pokfulam Road, Hong Kong, e-mail: hlyang@hku.hk. This is a joint paper with Hans U. Gerber and Elias S.W. Shiu