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Runhuan Feng*, 1409 W Green St., Urbana, IL 61822, and **Alexey Kuznetsov**
(kuznetsov@mathstat.yorku.ca) and **Fenghao Yang**. *Exponential functionals of Lévy processes
and variable annuity guaranteed benefits.*

Exponential functionals of Brownian motion have been extensively studied in financial and insurance mathematics due to their broad applications, for example, in the pricing of Asian options. The Black-Scholes model is appealing because of mathematical tractability, yet empirical evidence shows that geometric Brownian motion does not adequately capture features of market equity returns. One popular alternative for modeling equity returns consists in replacing the geometric Brownian motion by an exponential of a Lévy process. In this paper we use this latter model to study variable annuity guaranteed benefits and to compute explicitly the distribution of certain exponential functionals. (Received January 29, 2018)