A GENERALIZATION OF THE RESULTS OF PILLAI

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(Received April 20, 1992; revised August 3, 1992)

Abstract. In a recent article Pillai (1990, *Ann. Inst. Statist. Math.*, **42**, 157–161) showed that the distribution $1-E_\alpha(-x^\alpha)$, $0<\alpha\le 1$; $0\le x$, where $E_\alpha(x)$ is the Mittag-Leffler function, is infinitely divisible and geometrically infinitely divisible. He also clarified the relation between this distribution and a stable distribution. In the present paper, we generalize his results by using Bernstein functions. In statistics, this generalization is important, because it gives a new characterization of geometrically infinitely divisible distributions with support in $[0,\infty)$.

Key words and phrases: Bernstein function, Laplace-Stieltjes transform, infinite divisibility, geometric infinite divisibility, Lévy process.