PROBABILITY
AND
MATHEMATICAL STATISTICS
Vol. 42, Fasc. 1 (2022), pp. 81–96
Published online 11.4.2022
doi:10.37190/0208-4147.00055

ON THE SEMI-MITTAG-LEFFLER DISTRIBUTIONS

BY

GWO DONG LIN (TAIPEI) AND CHIN-YUAN HU (CHANGHUA)

Abstract. The semi-Mittag-Leffler (SML) distribution arises as the marginal of a stationary Markovian process, and is a generalization of the well-known Mittag-Leffler (ML) or positive Linnik distribution. Unlike the ML distribution, which has been well established, few properties of the SML distribution are discussed in the literature. In this paper, we derive some more characterizations of the SML and related distributions. By using stochastic inequalities, we further extend some characterizations, including Pitman and Yor's (2003) result about the hyperbolic sine distribution.

2020 Mathematics Subject Classification: Primary 62E10, 60E10, 60G10; Secondary 33E12, 42B10.

Key words and phrases: semi-Mittag-Leffler distribution, positive semi-stable distribution, geometric infinite divisibility, Laplace–Stieltjes transform, characterization of distributions, random summation.

THE FULL TEXT IS AVAILABLE HERE