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ON MITTAG-LEFFLER FUNCTIONS AND RELATED DISTRIBUTIONS

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Abstract. The distribution $F_\alpha(x) = 1 - E_\alpha(-x^\alpha)$, $0 < \alpha \leq 1$; $x \geq 0$, where $E_\alpha(x)$ is the Mittag-Leffler function is studied here with respect to its Laplace transform. Its infinite divisibility and geometric infinite divisibility are proved, along with many other properties. Its relation with stable distribution is established. The Mittag-Leffler process is defined and some of its properties are deduced.

Key words and phrases: Completely monotone function, Laplace transform, infinite divisibility, geometric infinite divisibility, stable process.