

An extension of skew-t distribution

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Abstract

A new class of heavy-tailed distribution, which contains Azzalini and Capitanio skew-t distribution [Azzalini, A. and Capitanio, A., 2003, Distributions generated by perturbation of symmetry with emphasis on a multivariate skew t-distribution. *J. Roy. Soc. Ser. B* 65, 367-389.] as a special case, is introduced and investigated. The probability density function, distribution function and moments of this new distribution are given by a closed expression which allows us to easily compute probabilities, skewness, kurtosis and related measurements. Finally we illustrate the flexibility of this new distribution with a simulated data and a real data.

Keywords: half-normal, recurrence relations, skew-normal, skew-t, moments