

On the skew-normal distribution

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Abstract

We point out that the skew-normal distributions and their limits are exactly the distributions of order statistics of bivariate normally distributed variables. Using skew-symmetric functions we characterize the distributions of random variables whose transformations have prescribed density functions. Finally, the moment problem of powers of the skew-normal random variables is investigated.

Key words and phrases: Skew-normal distribution; generalized chi distribution; order statistics; distribution equation; moment problem.