TWO-PIECE VERSION OF ASYMMETRIC NORMAL DISTRIBUTION

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Abstract

We propose a two-piece version of the asymmetric normal distribution and examine several of its key properties. This novel class of distributions exhibits plurimodality under specific parametric conditions. Additionally, we consider a location-scale extension of the distribution and detail the maximum likelihood estimation procedures for parameter estimation. To demonstrate the model's practical utility, the distribution is applied to a real-life dataset.

Keywords: Characteristic function, Maximum likelihood estimation, Plurimodality, Skewness, Skew normal distribution, Two-piece skew normal distribution