



A USEFUL DISTRIBUTION FOR SYMMETRIC AND BIMODAL DATA

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Abstract

In applied statistics there are many situations in which the data are not satisfied with unimodal distributions. For example, the distribution of uncontrolled data in quality control or outlier observations in linear models and time series may require to be considered as bimodal. Such situations occur, when the recorded data have the probability proportional to square value of deviations. In this paper, a new distribution called double normal distribution is introduced and characterized. This distribution has two symmetric modes about the mean. Estimation of its parameters in moment and maximum likelihood methods are given. Three pivotal values are introduced. Confidence intervals for the parameters by numerical methods are given.

Keywords and phrases: double normal distribution, standard double normal, confidence interval, point estimation, pivotal value.

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