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On the alpha power Kumaraswamy distribution: properties, simulation and application.
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Summary: Adding new parameters to classical distributions becomes one of the most important methods for increasing distributions flexibility, especially, in simulation studies and real data sets. In this paper, alpha power transformation (APT) is used and applied to the Kumaraswamy (K) distribution and a proposed distribution, so called the alpha power Kumaraswamy (AK) distribution, is presented. Some important mathematical properties are derived, parameters estimation of the AK distribution using maximum likelihood method is considered. A simulation study and a real data set are used to illustrate the flexibility of the AK distribution compared with other distributions.

MSC:
62E15 Exact distribution theory in statistics
62G30 Order statistics; empirical distribution functions
62N05 Reliability and life testing
62P30 Applications of statistics in engineering and industry; control charts

Keywords:
alpha power transformation; maximum likelihood estimation; moments; orders statistics; Kumaraswamy distribution

Full Text: DOI

References:
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