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## THE EXTENDED EPSILON HALF NORMAL DISTRIBUTION WITH APPLICATIONS TO LIFETIME DATA

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### SUMMARY

In this paper, we introduce a new class of non-negative distribution, the extended epsilon half normal distribution. The proposed model extends the half normal distribution, the epsilon half normal distribution and is more flexible. The properties involving moments and some measures based on moments of this distribution are investigated. The inference aspects using methods of moment and maximum likelihood are provided. We conduct a simulation to study the performance of the estimators. Finally, we illustrate it with an application to a real data set.

*Keywords and phrases:* non-negative distributions, half normal distribution, extended epsilon half normal distribution, moment estimation, maximum likelihood estimation

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