APPLICATIONS OF THE NORMAL VARIANCE-MEAN MIXTURE DISTRIBUTIONS IN ROBUST STATISTICAL ANALYSIS

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Abstract

In this study, we will explore robust statistical procedures   based on the normal variance-mean mixture distributions (Barndorff-Nielsen, 1977,1978, Barndorff-Nielsen et al., 1982). The normal variance-mean mixture distributions can accommodate both skewness and heavy tails, and hence provide flexible alternatives to the symmetric heavy-tailed distributions for statistical modeling of datasets involving with heavy tails and skewness.   Robust estimators derived from   these distributions are considered and properties   are examined. The performance of these estimators dealing with outliers, heavy-tails and skewness and their comparison with other robust estimators are illustrated through some numerical examples.

References

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