

Moments of the doubly truncated selection elliptical distributions: recurrence, existence, and applications

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Abstract : We compute doubly truncated moments for the selection elliptical (SE) class of distributions, which includes some multivariate asymmetric versions of well-known elliptical distributions, such as, the normal, Student's t, among others. We address the moments for doubly truncated members of this family, establishing neat formulation for high order moments as well as for its first two moments. We establish sufficient and necessary conditions for their existence. Further, we propose computational efficient methods to deal with extreme settings of the parameters, partitions with almost zero volume or no truncation. Applications and simulation studies are presented in order to illustrate the usefulness of the proposed methods.

Keyword : truncated distributions, truncated moments, elliptical distributions, higher moments