

Some properties of skew-symmetric distributions

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Abstract The family of skew-symmetric distributions is a wide set of probability density functions obtained by suitably combining a few components which can be quite freely selected provided some simple requirements are satisfied. Although intense recent work has produced several results for certain sub-families of this construction, much less is known in general terms. The present paper explores some questions within this framework and provides conditions for the above-mentioned components to ensure that the final distribution enjoys specific properties.

Keywords Central symmetry · Log-concavity · Peakedness · Quasi-concavity · Skew-symmetric distributions · Stochastic ordering · Strong unimodality · Unimodality