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The q-continuous distributions

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Résumé :

In this work, two q-moment types called normalized and unnormalized q-moments are introduced in details. Some properties of q-moments are given. Several relationships between them are established, and some results related to q-moments are also obtained. Moreover, we show that these new q-moments may be regarded as a generalization of the classical case for q = 1. Also, we determine the q-moments of q-Gaussian and q-exponential distributions. Furthermore, we compute the expression of the q-Laplace transform of the q-Gaussian and q-exponential distribution. Finally, we study the distribution of sum of q-independent Gaussian distributions. Afterwards the confidence interval of the mean parameter is estimated on the basis of the q-central limit theorem.

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