

A Second Order Approximation for the Inverse of the Distribution Function of the Sample Mean.

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Abstract: The classical quantile approximation for the sample mean, based on the central limit theorem, has been proved to fail when the sample size is small and we approach the tail of the distribution. In this paper we will develop a second order approximation formula for the quantile which improves the classical one under heavy tails underlying distributions, and performs very accurately in the upper tail of the distribution even for relatively small samples.

Keywords:

AMS Subject Classification: 65U;