Near-consistent robust estimations of moments for unimodal distributions

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Descriptive statistics for parametric models currently rely heavily on the accuracy of distributional assumptions. Here, leveraging the structures of parametric distributions and their central moment kernel distributions, a series of robust estimators, resilient to both gross errors and departures from parametric assumptions, is proposed for estimating the mean and central moments of common unimodal distributions.

Theorem .1.

Proof. $\square$