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 class of estimators, consistent simultaneously for both a semiparametric distribution and a distinct parametric distribution, is proposed. These estimators have excellent performance for estimating the mean and central moments in common unimodal distributions.

Theorem .1.

Proof. □