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. Provided that both distributions are belong to a larger semiparametric distribution, these estimators are robust to both gross errors and departures from parametric assumptions,

Theorem .1.

Proof. □