

Near-consistent robust estimations of moments for unimodal distributions

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1 Descriptive statistics for parametric models currently rely heavily
2 on the accuracy of distributional assumptions. Here, leveraging the
3 structures of parametric distributions and their central moment kernel
4 distributions, a class of estimators, consistent simultaneously for both
5 a semiparametric distribution and a distinct parametric distribution, is
6 proposed. These efficient estimators are robust to both gross errors
7 and departures from parametric assumptions, making them ideal
8 for estimating the mean and central moments of common unimodal
9 distributions. This article also illuminates the understanding of the
10 common nature of probability distributions and the measures of them.

1 Theorem .1.

2 *Proof.*

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