

Semiparametric robust mean estimations based on the orderliness of quantile averages

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1 **As one of the most fundamental problems in statistics, robust loca-**
2 **tion estimation has many prominent solutions, such as the symmetric**
3 **trimmed mean, symmetric Winsorized mean, Hodges–Lehmann es-**
4 **timator, Huber M-estimator, and median of means. Recent studies**
5 **suggest that their biases concerning the mean can be quite different**
6 **in asymmetric distributions, but the underlying mechanisms remain**
7 **largely unclear.**

semiparametric | mean-median-mode inequality | asymptotic | unimodal
| Hodges–Lehmann estimator

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