

# Near-consistent robust estimations of moments for unimodal distributions

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This manuscript was compiled on June 8, 2023

1 **A. Invariant Moments.** All popular robust location estimators,  
2 such as the trimmed mean, Winsorized mean, Hodges-Lehmann  
3 estimator, Huber  $M$ -estimator, and median of means, are  
4 symmetric, and therefore, asymptotically coincide with the  
5 population mean in any symmetric distribution provided that  
6 the mean is finite.

DRAFT