Approximate Minimum Hellinger Distance Estimator

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Abstract

Approximate Minimum Hellinger Distance Estimator (AMHDE) is a first order approximation to Minimum Hellinger Distance Estimator (MHDE) for grouped data from a continuous distribution. It lowers the computation cost associated with nonparametric density estimation and evaluation of integrals, yet retains the robustness of the MHDE. When the group size is small, the estimator is nearly as efficient as the MLE. The validity of AMHDE is demonstrated through asymptotic analyses and real examples.