

On the convergence rates of multivariate higher-order polynomial kernels

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SUMMARY

One way of measuring globally the discrepancy between the estimated density \hat{f} and the true density f , in kernel density estimation, is the Asymptotic Mean Integrated Squared Error (AMISE). In this paper, focus is on the derivations of the optimal bandwidth and asymptotic mean integrated squared error of higher order polynomial kernels of multivariate kernel density estimation. The consequence of the latter is that it leads to faster rate of convergence, which is the speed at which the estimated density approaches the true density, compared to some of the rates in the literature, and also leads to bias reduction.

Keywords: Density estimation, AMISE, optimal bandwidth, higher order kernels, rate of convergence.

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