

QUASI UNIVERSAL BANDWIDTH SELECTION FOR KERNEL DENSITY ESTIMATORS

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Let $\hat{f}_{n,h}$ denote the kernel density estimate based on a sample of size n drawn from an unknown density f . Using techniques from L_2 projection density estimators, it is shown how to construct a data-driven estimator which satisfies for all $C > 0$

$$\sup_{\|f\|_\infty \leq C} \limsup_{n \rightarrow \infty} \frac{\int \mathbb{E}|\hat{f}_{n,H}(x) - f(x)|^2 dx}{\inf_{h>0} \int \mathbb{E}|\hat{f}_{n,h}(x) - f(x)|^2 dx} = 1.$$

This paper is inspired by work of Stone (1984), Devroye & Lugosi (1996) and Birgé & Massart (1997).

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