

Adaptive Wavelet Density Estimation under Independence Hypothesis

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Abstract

Based on a data-driven selection of an estimator from a fixed family of kernel estimators, Goldenshluger & Lepski (2014) considered the problem of adaptive minimax un-compactly supported density estimation on $\mathbb{R}^d$ with L^p risk over Nikol'skii classes. This paper shows the same convergence rates by using a data-driven wavelet estimator over Besov spaces, because the wavelet estimations provide more local information and fast algorithm. Moreover, we provide better convergence rates under the independence hypothesis, which reduces the dimension disaster effectively.

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