22(5)

M-Cross-validation in Local Median Estimation

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摘要 M-cross-validation criterion is proposed for selecting a smoothing parameter in a nonparametric median regression model in which a uniform weak convergency rate for the M-cross-validated local median estimate, and the upper and lower bounds of the smoothing parameter selected by the proposed criterion are established. The main contribution of this study shows a drastic difference from those encountered in the classical L_{2}-, L_{1}- cross-validation technique, which leads only to the consistency in the sense of the average. Obviously, our results are novel and nontrivial from the point of view of mathematics and statistics, which provides insight and possibility for practitioners substituting maximum deviation for average deviation to evaluate the performance of the data-driven technique.

关键词   local median estimate   cross-validation   nonparametric median regression   smoothing parameter   uniform weak convergency rate

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Key words   local median estimate   cross-validation   nonparametric median regression   smoothing parameter   uniform weak convergency rate

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