Mathematics > Statistics Theory

Simultaneous L^2- and L^inf-Adaptation in Nonparametric Regression

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Consider the nonparametric regression framework. It is a classical result that the minimax rates for L^2- and L^inf-risk over a H\"older ball with smoothness index \beta are n^(-\beta/(2\beta+1)) and (n/log n)^(-\beta/(2\beta+1)), respectively. By using a specific thresholding procedure, we construct an estimator that simultaneously achieves the optimal rates in L^2 and L^inf without prior knowledge of \beta, i.e. it is simultaneously adaptive.

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