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# Adaptive estimation in nonparametric regression with one-sided errors

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We consider the model of non-regular nonparametric regression where smoothness constraints are imposed on the regression function and the regression errors are assumed to decay with some sharpness level at their endpoints. These conditions allow to improve the regular nonparametric convergence rates by using estimation procedures which are based on local extreme values rather than local averaging. We study this model under the realistic setting in which both the smoothness and the sharpness degree are unknown in advance. We construct adaptation procedures by Lepski's method and Pickands's estimator which show no loss in the convergence rates with respect to the integrated squared risk and a logarithmic loss with respect to the pointwise risk. Optimality of these rates is proved. Some numerical simulations and an

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application to real data are provided.

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