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Adaptive quantile estimation in deconvolution with unknown error distribution

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We study the problem of quantile estimation in deconvolution with ordinary smooth error distributions. In particular, we focus on the more realistic setup of unknown error distributions. We develop a minimax optimal procedure and construct an adaptive estimation method under natural conditions on the densities. As a side result we obtain minimax optimal rates for the plug-in estimation of distribution functions with unknown error distributions. Some numerical results are presented and the application of our estimator to a real data example is studied.

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