"The Optimal Rate of Deconvolution Problems"

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ABSTRACT

The deconvolution problem is to estimate the density \( f \) of a random variable \( X \) based on \( n \) i.i.d. observations from \( Y = X + e \), where \( e \) is a measurement error with a known distribution. Fan (1991, 1993) found the local and global optimal rate of deconvolution and shows that the rate depends on the smoothness of the error distributions: the smoother, the harder. Also the optimal rates are attained by deconvolution kernel density estimators.