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Learning subgaussian classes : Upper and minimax bounds

Guillaume Lecué, Shahar Mendelson

(Submitted on 21 May 2013)

We obtain sharp oracle inequalities for the empirical risk minimization procedure in the regression model under the assumption that the target Y and the model $\cF$ are subgaussian. The bound we obtain is sharp in the minimax sense if $\cF$ is convex. Moreover, under mild assumptions on $\cF$, the error rate of ERM remains optimal even if the procedure is allowed to perform with constant probability. A part of our analysis is a new proof of minimax results for the gaussian regression model.

Comments:	learning theory, empirical process, minimax rates
Subjects:	**Statistics Theory (math.ST)**
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