

Tieing the straps tighter for Generalized Linear Models[‡]

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Abstract

We consider a bootstrap “coupling” technique for nonparametric robust smoothers and quantile regression, and verify the bootstrap improvement. To cope with curse of dimensionality, a different “coupling” bootstrap technique is developed for additive models with either symmetric error distributions and further extension to the quantile regression framework. Our bootstrap method can be used in many situations like constructing confidence intervals and bands. We demonstrate the bootstrap improvement in simulations and in applications to firm expenditures and the interaction of economic sectors and the stock market.

Keywords: Nonparametric Regression, Bootstrap, Quantile Regression, Confidence Bands, Additive Model, Robust Statistics

JEL classification: C00, C14, J01, J31

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