

Müller, Ursula U.; Schick, Anton; Wefelmeyer, Wolfgang

Estimating the error distribution function in nonparametric regression with multivariate covariates. (English) [Zbl 1158.62032](#)

Stat. Probab. Lett. 79, No. 7, 957-964 (2009).

Summary: We consider nonparametric regression models with multivariate covariates and estimate the regression curve by an undersmoothed local polynomial smoother. The resulting residual-based empirical distribution function is shown to differ from the error-based empirical distribution function by the density times the average of the errors, up to a uniformly negligible remainder term. This result implies a functional central limit theorem for the residual-based empirical distribution function.

MSC:

[62G08](#) Nonparametric regression and quantile regression
[62G30](#) Order statistics; empirical distribution functions
[60F17](#) Functional limit theorems; invariance principles

Cited in **1** Review
Cited in **16** Documents

Full Text: [DOI](#)

References:

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- [3] Müller, U.U.; Schick, A.; Wefelmeyer, W., Estimating the error distribution in semiparametric regression, Statist. decisions, 25, 1-18, (2007) · [Zbl 1137.62023](#)
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- [5] van der Vaart, A.W.; Wellner, J.A., Weak convergence and empirical processes, with applications to statistics, (1996), Springer New York · [Zbl 0862.60002](#)

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