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Asymptotic properties of a nonparametric regression function estimator with randomly truncated data

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Abstract In this paper, we define a new kernel estimator of the regression function under a left truncation model. We establish the pointwise and uniform strong consistency over a compact set and give a rate of convergence of the estimate. The pointwise asymptotic normality of the estimate is also given. Some simulations are given to show the asymptotic behavior of the estimate in different cases. The distribution function and the covariable's density are also estimated.

Keywords Asymptotic normality · Kernel · Nonparametric regression · Rate of convergence · Strong consistency · Truncated data · V-C class