

Nonparametric Estimation of Error Density in Censored Linear Regression

Fuxia Cheng*

Department of Mathematics, Illinois State University, Normal, IL 61790, U. S. A.

Email Address: fcheng@ilstu.edu

Donglin Zeng

Department of Biostatistics, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599,

U.S.A. Email Address: dzeng@email.unc.edu

Abstract

This paper considers smooth estimation of error density function in linear regression with right censored data. We propose the kernel-smoothed estimator based on the Kaplan-Meier estimator of the residual distribution. The asymptotic normality of the estimator is rigorously proved. The proposed method is illustrated with simulation study and application to a real data set.

Keywords: Censored linear regression, Kaplan-Meier estimator, right censored data, kernel density estimation, hazard rate function.

2000 Mathematics Subject Classification: 62N01, 62N02.

*Corresponding author.