

A Semiparametric Model for Doubly Truncated Data

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We consider a random truncation model in which the data can be truncated from the left and from the right. This occurs in survival analysis when e.g. the sampling information is restricted to those individuals with event times falling in a given observational window. By specifying a parametric model for the (bivariate) truncation time, we introduce a new semiparametric estimator of the underlying lifetime distribution. Asymptotic properties of the proposed estimator are established, while we illustrate its finite-sample performance via simulations and real data analysis. It is demonstrated that the new estimator may outperform the Efron-Petrosian nonparametric maximum-likelihood estimator.