Smooth estimation of mean residual life under random censoring

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Abstract: We propose here a smooth estimator of the mean residual life function based on randomly censored data. This is derived by smoothing the Product-Limit estimator using the Chaubey-Sen technique (Chaubey and Sen (1998)). The resulting estimator does not suffer from the boundary bias as is the case with standard kernel smoothing. The asymptotic properties of the estimator are investigated. We establish strong uniform consistency and asymptotic normality. This complements the work of Chaubey and Sen (1999) which considered a similar estimation procedure in the case of complete data. It is seen that the properties are similar, though technically more difficult to prove, to those in the complete data case with appropriate modifications due to censoring.

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