

Maximum likelihood estimation in the proportional hazards cure model

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Abstract The proportional hazards cure model generalizes Cox's proportional hazards model which allows that a proportion of study subjects may never experience the event of interest. Here nonparametric maximum likelihood approach is proposed to estimating the cumulative hazard and the regression parameters. The asymptotic properties of the resulting estimators are established using the modern empirical process theory. And the estimators for the regression parameters are shown to be semiparametric efficient.

Keywords Censoring · Maximum likelihood estimation · Mixture models · Proportional hazards cure model · Semiparametric efficiency