

Estimation and Testing in Nonparametric Regression Models for Survival Data

Hannelore Liero

*Institute of Mathematics, University of Potsdam
D-14469 Potsdam, Germany,
E-mail: liero@uni-potsdam.de*

Key words: Cox model, accelerated life time model, nonparametric curve estimators, goodness-of-fit tests

There are well-known models to describe the effect of explanatory variables on lifetimes, among them: The famous Cox model and its extensions, the additive hazards model and the accelerated lifetime model. A common approach is to leave a baseline hazard rate unspecified and to model the influence of the covariates by a parametric function. Thus, these models are semiparametric models. The aim of the talk is to present a complete nonparametric approach. Nonparametric estimators for the relative risk function in the Cox model and for the regression function in the accelerated life time model are discussed. Furthermore, goodness-of-fit tests for testing whether a parametric model is appropriate are proposed.