

Semiparametric consistent estimators for virtual age models under right censoring

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SUMMARY

We consider a large class of semiparametric models for recurrent events based on virtual ages (see for instance Doyen and Gaudoin in [2]). The model consists of an unknown hazard rate function, the infinite-dimensional parameter of the model, and a parametrically specified effective age function. We recently (Beutner et al. in [1]) derived condition on the family of effective age functions under which the profile likelihood inference method for the finite-dimensional parameter of the model leads to inconsistent estimates. In this talk we show that we can overcome the failure of the profile likelihood method by smoothing the pseudo-estimator of the infinite-dimensional parameter of the model, by adapting a method proposed by Zeng and Lin in [3] for the accelerated failure time model. We show that the resulting estimators are asymptotically consistent and we study numerically their behavior for finite sample size.

Keywords: Recurrent events, Virtual age, Semiparametric estimation, Empirical processes, Reliability

AMS Classification: 62G05, 62N05, 62G20

References

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