Interval-censored data arises naturally in the studies of some complex diseases and in the field of epidemiology, where the observations are possibly correlated. A frailty distribution can be used to account for the heterogeneity among observations in the same group. We developed a transformed semi-parametric frailty models to make an inference where the covariates can possess partial linear effects to the response variable and that the parameter used in the transformation function can still be estimable. The class of transformation models takes the advantage of including both the proportional hazards model and proportional odds model as the special cases in the marginal sense. In the literature, no published work has considered to estimate the transformation parameter simultaneously with the other parameters of interest. Generally, the existing methods are trying to first fix the transformation parameter at certain values, followed by some selection procedures for choosing their final model. The corresponding asymptotic properties are established where the proposed estimators are shown to have strong consistency, optimal rates of convergence, as well as asymptotic normality and efficiency. A simulation study has been done to study the finite sample performance of the proposed method by considering the gamma and positive stable distributions for the frailty term, respectively. The proposed method was applied to a dental dataset for illustration purposes.

on

Thursday, April 12, 2018

11:30 a.m. – 12:30 p.m.

at

Room 301, Run Run Shaw Building

All interested are welcome