

Semiparametric Inference for Irregularly-Spaced Repeated Measurements

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In longitudinal studies, measurement time points are usually irregularly-spaced. For example, in an open-labeled, randomized clinical trial for Hepatitis C patients conducted in Japan, the virological responses were evaluated at 145 distinct time points although only 14 points were planned in the protocol. Cheng and Wei (2000, *Biometrika*) and Lin and Ying (2001, *JASA*) successfully introduced survival analysis techniques to longitudinal data analysis and provided simple semiparametric inference procedures. In this talk, we propose an estimation procedure and a model-checking technique for a semiparametric model with irregularly-spaced repeated measurements. Our model-checking technique is constructed based on cumulative residuals and provides formal and graphical methods to evaluate goodness of fitted models. Our proposals are illustrated with data from the Hepatitis C clinical trial.

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