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The asymptotically optimal estimating equation for longitudinal data

In this talk, we introduce a conditional marginal model for longitudinal data, in which the residuals form a martingale difference sequence. This model allows us to consider a rich class of estimating equations, which contains several generalized estimating equations proposed in the literature. Using the approach of Heyde (1997), we identify a sequence of “asymptotically optimal” equations within this class. Next, we prove the existence of a sequence of strongly consistent estimators for the regression parameter, defined as roots of the sequence of asymptotically optimal equations. This talk is based on joint work with Raluca Balan (University of Ottawa) and Ioana Schiopu-Kratina (Statistics Canada).