Semiparametric estimation with profile algorithm for longitudinal binary data

Abstract

This article considers analyzing longitudinal binary data semiparametrically and proposing GEE-Smoothing spline in the estimation of parametric and nonparametric components. The method is an extension of the parametric generalized estimating equation to semiparametric. The nonparametric component is estimated by smoothing spline approach, i.e., natural cubic spline. We use profile algorithm in the estimation of both parametric and nonparametric components. Properties of the estimators are evaluated by simulation.