

Semiparametric Random Effects Models for Longitudinal Data

J.-M. Chiou¹, H.-G. Müller², and J.L. Wang²

¹ Division of Biostatistics, National Health Research Institute, Taipei 115, Taiwan, R.O.C.

² Department of Statistics, University of California, Davis, California 95616 U.S.A.

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Abstract

A class of semiparametric regression models to describe the influence of covariates on a longitudinal (or functional) response is described. The model includes indices, which are linear functions of the covariates, unknown random functions of the indices, and unknown variance functions. They are thus semiparametric random effects models with many parsimonious submodels. The parametric components of the indices are estimated via quasi-score estimating equations, and the unknown smooth random and variance functions are estimated nonparametrically. Consistency of the procedures is obtained, and the procedure is illustrated with fecundity data for 1000 female Mediterranean fruit flies.

References

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