Robust estimation in mixed linear models with non-monotone missingness

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Abstract

We introduce a model to account for abrupt changes among repeated measures with non-monotone missingness. Development of likelihood inferences for such models is hard because it involves intractable integration to obtain the marginal likelihood. We use hierarchical likelihood to overcome such difficulty. Abrupt changes among repeated measures can be well described by introducing random effects in the dispersion. A simulation study shows that the resulting estimator is efficient, robust against misspecification of fatness of tails. For illustration we use a schizophrenic behavior data presented by Rubin and Wu (1997).