

Inference of Mixed-Effects Model when the Number of Repeated Measurements is Large

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Abstract: Motivated by business commercial data used in Fan and Lin (1998), we consider the mixed-effects model with large number of repeated measurements taken at different time points on each of the subjects. Arbitrary dependencies are allowed between the observations within one subject. Of interest are the interaction effect of treatment with time point, and the main and simple effect of treatment. The projection method suggested by Akritas and Papadatos (2001) is used to derive the asymptotic distribution of the F-statistic for the test of interaction term. When the sample sizes are also large, theoretical results for the test of main and simple effects are discussed. Finally, a simulation study will illustrate the proposed testing procedures.