

Modelling of Mean-Covariance Structures in Linear Mixed Models for Longitudinal Data

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Abstract: In this talk we propose a data-driven method of joint modelling of mean and covariance structures in the linear mixed models for longitudinal data. The method can be regarded as an extension of the approaches proposed by Pourahmadi (1999) and Pan and MacKenzie (2003). Comparing to existing conventional menu-selection methods of which the covariance structures are chosen from a list of candidates, the proposed approach models longitudinal data much better in the sense of the AIC and BIC model selection criteria. We propose to use EM algorithm to calculate the parameter estimates in the model. Real data analysis and simulation studies reveal that the proposed method is much efficient in modelling longitudinal data.

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