1 extended LME model

The extended single level LME model relaxes the independence assumption, allowing heteroscedastic and correlated within group errors.

$$\epsilon_i = \mathcal{N}(0, \sigma^2 \Lambda_i) \tag{1}$$

Λ_i are positive definite matrices. σ^2 is factored out of the matrix for computational reasons.

2 Variance functions

Variance functions are applied to LME models through the 'weights' argument. R supports several variance functions.

'varIdent' cosntructs a model with different variances per stratum.

2.1 Diagnostic plots

Diagnostic plots for identifying within-group heteroscedascity and assessing the adequacy of a variance function can also be used with 'nlme' objects.

References