RIShet(loglindisp).Rmd

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$$Y_{ij} = (\beta_0 + \mu_{0j}) + (\beta_1 + \mu_{1j})\mathbf{time_{ij}} + \beta_\mathbf{2}\mathbf{SNP_j} + \epsilon_\mathbf{ij}$$

$$\epsilon_{ij} \sim N(0, \sigma^2_{\epsilon ij})$$

$$\sigma_{\epsilon ij} = exp(\alpha + \tau\mathbf{SNP_j})$$

$$\begin{bmatrix} \mu_{0j} \\ \mu_{1j} \end{bmatrix} \sim N(0, \Omega)$$

$$\Omega = \begin{bmatrix} \sigma^2_{\mu 0j} & \\ \sigma_{\mu 01j} & \sigma^2_{\mu 1j} \end{bmatrix}$$

NOTE: I removed the ^2 in $\sigma_{\epsilon ij}$ since the function stats::rnorm takes the standard deviation not variance in the data generating process. Similarly, nlme::lme returns the SD and not the variance in modmer objects.