B

Example: DA–Latency Association

Example time-point: 1.7 sec

Model includes fixed- and random-effects for *Latency* ($X_{i,j} = Z_{i,j} = \mathtt{Lat}_{i,j}$):

$$Y_{i,j}(s) = \beta_0(s) + \gamma_{i,0}(s) + \mathtt{Lat}_{i,j}\left[\beta_1(s) + \gamma_{i,1}(s)\right] + \varepsilon_{i,j}(s)$$

$$\mathbf{Y}(1.7) = \begin{bmatrix} \mathbf{Y}_1(1.7) \\ \mathbf{Y}_2(1.7) \\ \mathbf{Y}_3(1.7) \\ \mathbf{Y}_4(1.7) \end{bmatrix} = \begin{bmatrix} Y_{1,1}(1.7) \\ \vdots \\ Y_{1,J}(1.7) \\ Y_{2,1}(1.7) \\ \vdots \\ Y_{2,J}(1.7) \\ \vdots \\ Y_{4,J}(1.7) \end{bmatrix}$$

Latency–DA Association Fixed-Effect: β_1 (s)

Latency–DA Random-Effect for Animal 2