

$$\begin{aligned}
 \mathbf{c}\Lambda = & \left( \eta_i + \frac{e^{-\alpha_i - \epsilon \beta_i} \eta_j}{1 + \epsilon \eta_j \xi_i} \right) \mathbf{y}_k + \\
 & \left( \beta_i + \beta_j + \frac{\text{Log}[1 + \epsilon \eta_j \xi_i]}{\epsilon} \right) \mathbf{b}_k + \\
 & (\alpha_i + \alpha_j + \text{Log}[1 + \epsilon \eta_j \xi_i]) \mathbf{a}_k + \left( \frac{e^{-\alpha_j - \epsilon \beta_j} \xi_i}{1 + \epsilon \eta_j \xi_i} + \xi_j \right) \mathbf{x}_k;
 \end{aligned}$$

Define [

$$\mathbf{c}\mathbf{m}_{i,j \rightarrow k} =$$

$$\begin{aligned}
 \Lambda 2\mathbb{E}_{\{i,j\} \rightarrow \{k\}} [ & \left( \eta_i + \frac{e^{-\alpha_i - \epsilon \beta_i} \eta_j}{1 + \epsilon \eta_j \xi_i} \right) \mathbf{y}_k + \\
 & \left( \beta_i + \beta_j + \frac{\text{Log}[1 + \epsilon \eta_j \xi_i]}{\epsilon} \right) \mathbf{b}_k + \\
 & (\alpha_i + \alpha_j + \text{Log}[1 + \epsilon \eta_j \xi_i]) \mathbf{a}_k + \\
 & \left. \left( \frac{e^{-\alpha_j - \epsilon \beta_j} \xi_i}{1 + \epsilon \eta_j \xi_i} + \xi_j \right) \mathbf{x}_k \right] ]
 \end{aligned}$$