

Define $[am_{i,j \rightarrow k} = \mathbb{E}_{\{i,j\} \rightarrow \{k\}} [(\alpha_i + \alpha_j) a_k + (\mathcal{R}_j^{-1} \xi_i + \xi_j) x_k]$,

$bm_{i,j \rightarrow k} = \mathbb{E}_{\{i,j\} \rightarrow \{k\}} [(\beta_i + \beta_j) b_k + (\eta_i + e^{-\epsilon \beta_i} \eta_j) y_k]$]