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$$\mathbf{\Lambda} = (\Lambda_1, \dots, \Lambda_n), \quad (1)$$

$$\Lambda_k = \frac{\sum_{q=1}^n \beta_{k,q} w_q}{W}, \quad (2)$$

$$\Lambda(\mathbf{\beta}_k, \mathbf{w}) = \frac{\sum_{q=1}^n \beta_{k,q} w_q}{W}, \quad (3)$$

$$\beta_{k,q} = \text{eq}(s(\mathbf{a}_k, \mathbf{a}_q), c_q) \times \text{eq}(\tau_k, \tau_q, c_q) \quad (4)$$

$$W = \sum_{q=1}^n w_q \quad (5)$$

$$\mathbf{B} = \begin{bmatrix} 1 & \beta_{2,1} & \dots & \beta_{n,1} \\ \beta_{1,2} & 1 & \dots & \vdots \\ \vdots & \vdots & \ddots & \vdots \\ \beta_{1,n} & \dots & \dots & 1 \end{bmatrix} \quad (6)$$

$$\mathbf{B} = \begin{bmatrix} \beta_{1,1} & \dots & \beta_{n,1} \\ \vdots & \ddots & \vdots \\ \beta_{1,n} & \dots & \beta_{n,n} \end{bmatrix} \quad (7)$$

$$\mathbf{\beta}_k = (\beta_{k,1}, \dots, \beta_{k,n}) \quad (8)$$

$$\mathbf{\beta}_q = (\beta_{q,1}, \dots, \beta_{q,n}) \quad (9)$$

$$\gamma_k = \gamma(\mathbf{a}_k) = \text{sq}(\mathbf{a}_k) \quad (10)$$

$$c_k = c(\mathbf{a}_k, \gamma_k) = \left( \frac{1}{m} \right) \sum_{i=1}^m \theta_i^k \tilde{a}_i^k, \quad (11)$$

$$\theta_i^k = \text{eq}(\tilde{a}_i^k, \gamma_k) \quad (12)$$

$$\boldsymbol{\theta}_k = (\theta_1^k, \dots, \theta_m^k) \quad (13)$$

$$\boldsymbol{\theta}_q = (\theta_1^q, \dots, \theta_m^q) \quad (14)$$

$$\boldsymbol{\theta}_n = (\theta_1^n, \dots, \theta_m^n) \quad (15)$$

$$\boldsymbol{\Theta} = \begin{bmatrix} \theta_1^1 & \dots & \theta_m^1 \\ \vdots & \ddots & \vdots \\ \theta_1^n & \dots & \theta_m^n \end{bmatrix} \quad (16)$$

$$\text{eq}(x, M, b) = x \{1 + M(1 - x) \exp[-b(x - M)]\}^{-\frac{1-x}{1-M}} \quad (17)$$

$$\text{sq}(x, \sigma_x) = \frac{\sigma_x}{2} + \left(1 - \frac{\sigma_x}{2}\right) \text{mlv}(x) - \frac{\sigma_x^2}{2} - \frac{\sigma_x}{2} [1 - \text{mlv}(x)](1 - 2\sigma_x) \quad (18)$$