Status

$$f(t) = \sum c_i \cos \omega_i t$$

$$U = \frac{1}{2} k x^2 = \frac{f^2}{2k}$$

$$u_j \cos \omega_j t = A_j \cos \omega_j t$$

$$f_i = \sqrt{2Uk} = \sqrt{2 P_j k}$$

$$A_j = u_j$$

$$f_i \propto \sqrt{P_j}$$

$$f_i = b \sqrt{P_j}$$

$$m_i \propto \frac{1}{{\omega^*_i}^2}$$

$$m_i = \frac{c}{{\omega^*_i}^2}$$

$$\gamma = \frac{b}{c}$$

$$g_j = \frac{{\omega^*_j}^2}{\sqrt{4\gamma_j^2 \left({\omega^*_j}^2 + \gamma_j^2\right)}}$$

$$A_j = u_j = \frac{f_j / m_j}{\sqrt{4\gamma_j^2 \left({\omega^*_j}^2 + \gamma_j^2\right)}} = \frac{\frac{b}{c}\sqrt{p_j} \cdot {\omega^*_j}^2}{\sqrt{4\gamma_j^2 \left({\omega^*_j}^2 + \gamma_j^2\right)}} = \gamma \cdot g_j \cdot \sqrt{p_j}$$

$$B_{i \leftarrow i+1} = \alpha_{i,i+1} A_{i+1}$$

$$\tilde{A}_i = A_i + \sum_j B_{i \leftarrow j} = A_i + \sum_j \alpha_{ij} A_j$$

$$\begin{bmatrix} \tilde{A}_1 \\ \vdots \\ \tilde{A}_K \end{bmatrix} = \begin{bmatrix} 1 & \alpha_{12} & \cdots & \alpha_{1K} \\ \alpha_{21} & \ddots & \vdots & \vdots \\ \vdots & \cdots & \ddots & \alpha_{K-1K} \\ \alpha_{K1} & \cdots & \alpha_{KK-1} & 1 \end{bmatrix} \begin{bmatrix} A_1 \\ \vdots \\ A_K \end{bmatrix}$$

$$\tilde{p}_i = \left(\frac{\tilde{A}_i}{\gamma \cdot g_i} \right)^2$$

$$\hat{P}_i = \max\left[p_i, \tilde{p}_i \right]$$

- 1. $$\alpha_{ij} = \begin{cases} 0 & \text{for } \Omega_i - \Omega_j < \text{-}1.3, \\ 10^{2.5(\Omega+0.5)} & \text{for } \text{-}1.3 \le \Omega_i - \Omega_j \le \text{-}0.5, \\ 1 & \text{for } \text{-}0.5 < \Omega_i - \Omega_j < 0.5, \\ 10^{-1.0(\Omega-0.5)} & \text{for } 0.5 \le \Omega_i - \Omega_j \le 2.5, \\ 0 & \text{for } \Omega > \Omega_i - \Omega_j \end{cases}$$
- 2. $$\alpha_{ij} = pow\left(z, \left|i - j\right|\right)$$
- 3. $$\alpha_{ij} = 1$$

$$\tilde{A}_i = \frac{\sum_j \alpha_{ij} A_j}{\sum_j \alpha_{ij}}$$