

$$\sum_{g=1}^{|\Phi_j|} \sum_{h=2}^{n_g^j} r_{gh}^j \log_e \left( 1 + \frac{P_{gh}^j \frac{\chi}{(r_{gh}^j)^\alpha}}{I_{gh}^j} \right) \leq \sum_{g=1}^{|\Phi_j|} \sum_{h=2}^{n_g^j} r_{gh}^j \log_e \left( 1 + \frac{2P_{gh}^j}{P_g^j} \frac{((\sqrt{2}+1)R_j)^\alpha}{(r_{gh}^j)^\alpha} \right)$$