

$$\begin{array}{l} ?? \\ \mathcal{A}\Phi\lambda_s\sigma\sigma S_iP \\ \mathbf{W} \\ U_jS_iS_iP\mathbf{W}\alpha \\ h \\ kn\mathbf{q} = \\ \{q_1,q_2,\ldots,q_j,\ldots,q_k\} \\ q_j \in \\ \{1,-1\}U_j\mathbf{x} = \\ \{x_1,x_2,\ldots,x_j,\ldots,x_k\} = \\ \{p_1q_1,p_2q_2,\ldots,p_jq_j,\ldots,p_kq_k\} \\ \mathbf{p} = \\ \{p_1,p_2,\ldots,p_j,\ldots,p_k\}jp_j^2 \\ \mathbf{W} = \{w_{ij}\}_{n\times k} \\ w_{ij}jis \end{array}$$

$$\begin{array}{l} \mathbf{s} = \mathbf{W}\mathbf{x} \\ (1) \\ \mathbf{x}\mathbf{W}\mathbf{W}^{n\times} \\ \mathbf{1}\mathbf{W} = \\ \{\mathbf{w}_1,\mathbf{w}_2,\cdots,\mathbf{w}_k\}^T \\ \mathbf{G} = \\ \{g_{ij}\}_{k\times n} \\ g_{ij} \in \\ Rg_{ij} = \\ h_{ij}R_{ij}^{-\alpha} \\ h_{ij}R_{ij}S_iU_j\mathbf{y} \end{array}$$

$$\begin{array}{l} \mathbf{y} = \mathbf{G}\mathbf{s}+\mathbf{z} \\ (2) \\ \mathbf{G}^z \in \\ \mathcal{RN}_0 \\ \mathbf{W} \end{array}$$

$$\begin{array}{l} \mathbf{W} = \mathbf{G}^T(\mathbf{G}\mathbf{G}^T)^{-1} \\ (3) \\ \mathbf{T} \\ \text{??????}\mathbf{xz} \end{array}$$

$$\begin{array}{l} \mathbf{y} = \mathbf{x}+\mathbf{z} \\ (4) \\ j\gamma_j?? \end{array}$$

$$\begin{array}{l} \gamma_j = \frac{x_j^2}{N_0} = \frac{p_j^2}{N_0} \\ (5) \\ U_j \end{array}$$

$$\begin{array}{l} R_j = \log_2(1+\gamma_j) \\ (6) \\ ?? \end{array}$$

$$\begin{array}{l} \max \min\{\gamma_1,\gamma_2,\cdots,\gamma_k\}s.t. \{0 \leq (\mathbf{w}_i\mathbf{x})^2 \leq P, j=1,2,3,\cdots,k, p_j \geq 0, j=1,2,3,\cdots,k. \\ (7) \\ P \\ \max \ R = \sum_{j=1}^n \gamma_j s.t. \{0 \leq (\mathbf{w}_i\mathbf{x})^2 \leq P, j=1,2,3,\cdots,k, p_j \geq 0, j=1,2,3,\cdots,k. \end{array}$$

$$\begin{array}{l} (8) \\ ?? \\ cluster.pdf \\ ?? \\ \vec{D}\mathcal{S}(x,y) = \\ \{S_1(x_1,y_1),S_2(x_2,y_2),\ldots,S_i(x_i,y_i),\ldots,S_n(x_n,y_n)\} \\ xy^l,j \in \\ \{1,2,\ldots,n\}S_iS_jR_{ij} \\ SR_{ij}i,j \in \\ \{1,2,\ldots,n\}\mathcal{G} \\ \mathcal{GV} = \\ \{v_1,v_2,\ldots,v_i,\ldots v_n\}\mathcal{S}i \in \\ \{1,2,\ldots,n\} \\ S_i \overrightarrow{\tau} \\ v_i\mathcal{GE}\tau i,j \in \\ \{1,2,\ldots,n\}R_{ij} < \\ \overrightarrow{\tau} \\ e_{ij} \in \\ \mathcal{E} \\ \mathcal{G}e_{ij}v_iv_j\mathcal{GE}\mathbf{A} = \\ \{a_{ij}\}_{n\times n} \end{array}$$

$$\begin{array}{l} a_{ij} = \{1,e_{ij} \in \mathcal{E},0,e_{ij} \notin \mathcal{E}. \\ (9) \end{array}$$