

$$(\mathbf{D}, \mathbf{X}) = \arg \min_{\mathbf{D}, \mathbf{X}} \sum_{c=1}^C ||\mathbf{Y}_c - \mathbf{D}_c \mathbf{X}^c||_F^2 + \lambda ||\mathbf{X}^c||_1 + \frac{\eta}{2} \sum_{j=1, j \neq c}^C ||\mathbf{D}_j^T \mathbf{D}_c||_F^2)$$