

$$\mathbf{Y}^{\text{ctrl}} = \mathbf{X}^{\text{ctrl}} (\mathbf{U}^{\text{ctrl}})^{\top} \quad , \quad x_{ij}^{\text{ctrl}} \sim \mathcal{N}(0, 1)$$

$$\mathbf{Y}^{\text{case}} = \mathbf{X}^{\text{case}} (\mathbf{U}^{\text{case}})^{\top} \quad , \quad x_{ij}^{\text{case}} \sim \mathcal{N}(0, 1)$$

$$\mathbf{X} = \begin{bmatrix} \mathbf{Y}^{\text{ctrl}} \\ \text{---} \\ \mathbf{Y}^{\text{case}} \end{bmatrix}$$