Extended Data Table 7|Covariance matrix of $\mathbf{y}_i$ in Step2

Constraint condition 1 and 2	Constraint condition 3	Constraint condition 4
$\sum_{\mathbf{y}_{1\&2}} = \begin{bmatrix} 0.7919 & 0.3744 & -0.6113 \\ 0.3744 & 1.0860 & -0.3274 \\ -0.6113 & -0.3274 & 1.0000 \end{bmatrix}$	$\sum_{\mathbf{y}_3} = \begin{bmatrix} 0.7919 & -0.6113 \\ -0.6113 & 0.7919 \end{bmatrix}$	$\sum_{\mathbf{y}_4} = \begin{bmatrix} 1.0860 & -0.3274 \\ -0.3274 & 1.0000 \end{bmatrix}$

When performing the ECPT transformation, constraint condition 1 and 2 involve three parameters, y_1, y_2, and y_3. Thus, the covariance matrix Σ_y represent the relationship of y_1, y_2, and y_3.Constraint condition 3 and 4 each involve only two parameters: y_1, y_3 for constraint condition 3 and y_2, y_3 for constraint condition 4. Therefore, the covariance matrix Σ_y in constraint condition 3 represents the relationship between parameters y_1 and y_3, while the covariance matrix Σ_y in constraint condition 4 represents the relationship between parameters y_2 and y_3 (Methods, Eq. (16)).