

$$\begin{array}{c}
 \begin{array}{|c|} \hline X^{(1,2)} \\ \hline \end{array}
 \end{array}
 \begin{array}{c}
 n_1 n_2 \\
 \\
 \\
 \\
 n_3 n_4
 \end{array}
 =
 \begin{array}{c}
 \begin{array}{|c|} \hline U_{12} \\ \hline \end{array}
 \end{array}
 \begin{array}{c}
 n_1 n_2 \\
 \\
 \\
 \\
 k_{12}
 \end{array}
 \begin{array}{c}
 \begin{array}{|c|} \hline B_{1234}^T \\ \hline \end{array}
 \end{array}
 k_{34}
 \begin{array}{c}
 \begin{array}{|c|} \hline U_{34}^T \\ \hline \end{array}
 \end{array}
 \begin{array}{c}
 \\
 \\
 \\
 n_3 n_4
 \end{array}$$

$$\begin{array}{c}
 \begin{array}{|c|} \hline U_{12} \\ \hline \end{array}
 \end{array}
 \begin{array}{c}
 n_1 n_2 \\
 \\
 \\
 \\
 k_{12}
 \end{array}
 \rightarrow
 \begin{array}{c}
 n_1 \\
 \begin{array}{|c|} \hline U_{12} \\ \hline \end{array} \\
 \begin{array}{|c|} \hline n_2 \\ \hline \end{array}
 \end{array}
 \begin{array}{c}
 k_{12} \\
 \\
 \\
 \\
 \end{array}
 \rightarrow
 \begin{array}{c}
 n_1 \\
 \begin{array}{|c|} \hline U_1 \\ \hline \end{array} \\
 \begin{array}{|c|} \hline k_1 \\ \hline \end{array}
 \end{array}
 \begin{array}{c}
 \begin{array}{|c|} \hline B_{12} \\ \hline \end{array} \\
 \begin{array}{|c|} \hline U_2^T \\ \hline \end{array}
 \end{array}
 \begin{array}{c}
 k_2 \\
 \\
 n_2
 \end{array}$$