

$$\begin{array}{|c|} \hline A \\ \hline \end{array} \begin{array}{|c|} \hline B^T \\ \hline \end{array} = \begin{array}{|c|} \hline Q_A \\ \hline \end{array} \begin{array}{|c|} \hline R_A \\ \hline \end{array} \begin{array}{|c|} \hline R_B^T \\ \hline \end{array} \begin{array}{|c|} \hline Q_B^T \\ \hline \end{array} = \begin{array}{|c|} \hline Q_A \\ \hline \end{array} \begin{array}{|c|} \hline C \\ \hline \end{array} \begin{array}{|c|} \hline Q_B^T \\ \hline \end{array} = \begin{array}{|c|} \hline Q_A \\ \hline \end{array} \begin{array}{|c|} \hline \tilde{U}_C \\ \hline \end{array} \begin{array}{|c|} \hline S_C \\ \hline \end{array} \begin{array}{|c|} \hline \tilde{V}_C^T \\ \hline \end{array} \begin{array}{|c|} \hline Q_B^T \\ \hline \end{array} = \begin{array}{|c|} \hline U_C \\ \hline \end{array} \begin{array}{|c|} \hline S_C \\ \hline \end{array} \begin{array}{|c|} \hline V_C^T \\ \hline \end{array}$$