

4. Brunovsky canonical form (MIMO)

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(A, B) reachable, \exists a state feedback (F^o) and input and state transformations (Q_c, T_c) :

$$T_c (A + B Q_c F^o) T_c^{-1} = A_B \quad T_c B Q_c = B_B$$

$$A_B = \left(\begin{array}{ccc|ccc} 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 \\ \hline 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 \end{array} \right)$$

$$B_B Q_c = \left(\begin{array}{ccc|ccc} 0 & 0 & 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 & 0 & 0 \\ \hline 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 \end{array} \right)$$