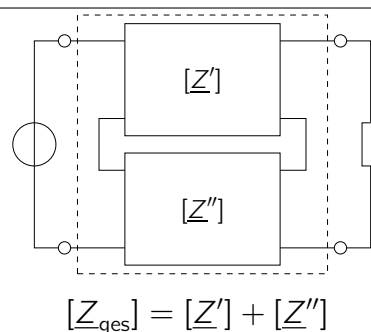


Serien-Serien-Kopplung (SSK)

$$\begin{pmatrix} U_1 \\ U_2 \end{pmatrix} = \begin{pmatrix} Z_{11} & Z_{12} \\ Z_{21} & Z_{22} \end{pmatrix} \begin{pmatrix} I_1 \\ I_2 \end{pmatrix}$$

$$Z_{11} = \left. \frac{U_1}{I_1} \right|_{I_2=0} \quad Z_{12} = \left. \frac{U_1}{I_2} \right|_{I_1=0}$$

$$Z_{21} = \left. \frac{U_2}{I_1} \right|_{I_2=0} \quad Z_{22} = \left. \frac{U_2}{I_2} \right|_{I_1=0}$$

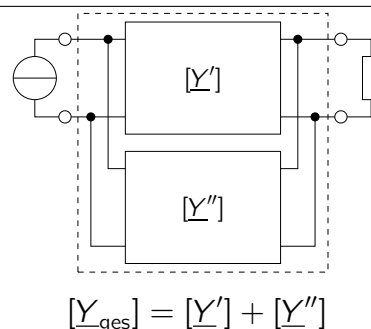


Parallel-Parallel-Kopplung (PPK)

$$\begin{pmatrix} I_1 \\ I_2 \end{pmatrix} = \begin{pmatrix} Y_{11} & Y_{12} \\ Y_{21} & Y_{22} \end{pmatrix} \begin{pmatrix} U_1 \\ U_2 \end{pmatrix}$$

$$Y_{11} = \left. \frac{I_1}{U_1} \right|_{U_2=0} \quad Y_{12} = \left. \frac{I_1}{U_2} \right|_{U_1=0}$$

$$Y_{21} = \left. \frac{I_2}{U_1} \right|_{U_2=0} \quad Y_{22} = \left. \frac{I_2}{U_2} \right|_{U_1=0}$$

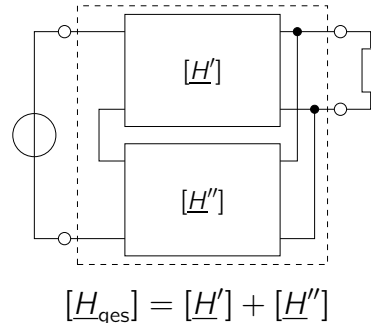


Serien-Parallel-Kopplung (SPK)

$$\begin{pmatrix} U_1 \\ I_2 \end{pmatrix} = \begin{pmatrix} H_{11} & H_{12} \\ H_{21} & H_{22} \end{pmatrix} \begin{pmatrix} I_1 \\ U_2 \end{pmatrix}$$

$$H_{11} = \left. \frac{U_1}{I_1} \right|_{U_2=0} \quad H_{12} = \left. \frac{U_1}{U_2} \right|_{I_1=0}$$

$$H_{21} = \left. \frac{I_2}{I_1} \right|_{U_2=0} \quad H_{22} = \left. \frac{I_2}{U_2} \right|_{I_1=0}$$

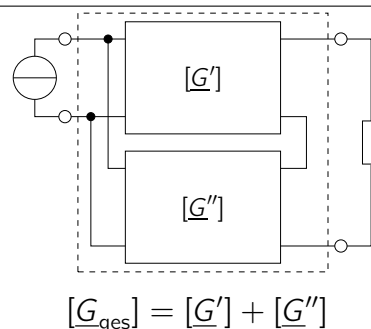


Parallel-Serien-Kopplung (PSK)

$$\begin{pmatrix} I_1 \\ U_2 \end{pmatrix} = \begin{pmatrix} G_{11} & G_{12} \\ G_{21} & G_{22} \end{pmatrix} \begin{pmatrix} U_1 \\ I_2 \end{pmatrix}$$

$$G_{11} = \left. \frac{I_1}{U_1} \right|_{I_2=0} \quad G_{12} = \left. \frac{I_1}{I_2} \right|_{U_1=0}$$

$$G_{21} = \left. \frac{U_2}{U_1} \right|_{I_2=0} \quad G_{22} = \left. \frac{U_2}{I_2} \right|_{U_1=0}$$



Die Torbedingung muss überall erfüllt sein. Es gilt: $[Y] = [Z]^{-1}$ bzw. $[G] = [H]^{-1}$.