

Метод контурных токов

$$ORIGIN := 1 \quad j := \sqrt{-1}$$

$$Z := \begin{bmatrix} 12j \\ 56 + 33j \\ 81 - 52j \\ 79 \\ 39 - 21j \\ 43 - 26j \end{bmatrix} \quad E := \begin{bmatrix} 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 11 \cdot e^{j \cdot 246^\circ} \end{bmatrix}$$

$$ZD := \text{diag}(Z) \quad G := \frac{1}{ZD} \quad ZD = \begin{bmatrix} 12j & 0 & 0 & 0 & 0 & 0 \\ 0 & 56 + 33j & 0 & 0 & 0 & 0 \\ 0 & 0 & 81 - 52j & 0 & 0 & 0 \\ 0 & 0 & 0 & 79 & 0 & 0 \\ 0 & 0 & 0 & 0 & 39 - 21j & 0 \\ 0 & 0 & 0 & 0 & 0 & 43 - 26j \end{bmatrix}$$

$$A := \begin{bmatrix} -1 & 1 & 0 & 0 & -1 & 0 \\ 0 & 0 & 0 & 1 & 1 & -1 \\ 1 & 0 & 1 & -1 & 0 & 0 \end{bmatrix}$$

$$B := \begin{bmatrix} -1 & -1 & 1 & 0 & 0 & 0 \\ 0 & 0 & -1 & -1 & 0 & -1 \\ 1 & 0 & 0 & 1 & -1 & 0 \end{bmatrix}$$

$$IK := (B \cdot ZD \cdot B^T)^{-1} \cdot (B \cdot E)$$

$$IK = \begin{bmatrix} 0.034 + 0.05j \\ 0.013 + 0.091j \\ -0.001 + 0.064j \end{bmatrix}$$

$$IZ := B^T \cdot IK \quad IZ = \begin{bmatrix} -0.035 + 0.014j \\ -0.034 - 0.05j \\ 0.021 - 0.041j \\ -0.014 - 0.027j \\ 0.001 - 0.064j \\ -0.013 - 0.091j \end{bmatrix}$$