$$D=\sqrt[3]{D_{12}\cdot D_{23}\cdot D_{13}}$$
$$L_1=2\cdot10^{-4}\cdot\ln\frac{\sqrt[3]{D_{12}\cdot D_{23}\cdot D_{13}}}{r_{\mathrm{zv}}\cdot\sqrt[n]{\xi}}$$
$$L_1=\frac{1{,}11\cdot10^{-2}\cdot\varepsilon_{\mathrm{r}}}{C_1}+0{,}05$$
$$L_1=0{,}46\cdot\log\frac{R}{r}+0{,}05$$
$$\boldsymbol{Z}_1=\frac{R_1}{n}+j\cdot\omega\cdot L_1$$
$$h_1=H_1-\frac{2}{3}\cdot f_{\max};\ h=\sqrt[3]{h_1\cdot h_2\cdot h_3}$$
$$p=18\cdot10^6\cdot\ln\frac{2\cdot h}{r_{\mathrm{zv}}}$$
$$p_{\mathrm{vz}}=18\cdot10^6\cdot\ln\frac{D'}{D}$$
$$p_{\mathrm{vz}}=18\cdot10^6\cdot\ln\frac{\sqrt{4\cdot h^2+D^2}}{D}$$
$$p_{\mathrm{zl,zl}}=18\cdot10^6\cdot\ln\frac{2\cdot h_{\mathrm{zl}}}{r_{\mathrm{zl}}}$$
$$p_{\mathrm{v,zl}}=18\cdot10^6\cdot\ln\sqrt[3]{\frac{D_{1\mathrm{zl}'}\cdot D_{2\mathrm{zl}'}\cdot D_{3\mathrm{zl}'}}{D_{1\mathrm{zl}}\cdot D_{2\mathrm{zl}}\cdot D_{3\mathrm{zl}}}}$$
$$p_{\mathrm{s}}=\frac{\mathrm{ZL}\cdot p_{\mathrm{v,zl}}^2}{p_{\mathrm{zl,zl}}+(\mathrm{ZL}-1)\cdot p_{\mathrm{zl1,zl2}}}$$
$$C_1=\frac{1}{(p-p_{\mathrm{s}})-(p_{\mathrm{vz}}-p_{\mathrm{s}})}$$
$$C_0=\frac{1}{(p-p_{\mathrm{s}})+2\cdot(p_{\mathrm{vz}}-p_{\mathrm{s}})}$$
$$C_{\mathrm{vz}}=C_1\cdot C_0\cdot(p_{\mathrm{vz}}-p_{\mathrm{s}})$$
$$G_1=\frac{\Delta P_{\mathrm{priecne}}}{U_{\mathrm{n}}^2}$$
$$\boldsymbol{Y}_1=G_1+j\cdot\omega\cdot C_1$$
$$r_{\mathrm{zv}}=\sqrt[n]{n\cdot r\cdot\rho^{(n-1)}}$$
$$\rho=\frac{a}{2\cdot\sin\frac{\pi}{n}}$$
$$R=b+r+t_1+t_2$$
$$\delta=\frac{1}{0{,}0242\cdot\varepsilon_{\mathrm{r}}}\cdot\log\frac{R^2-b^2}{R\cdot r}$$
$$\delta'=\frac{1}{0{,}0242\cdot\varepsilon_{\mathrm{r}}}\cdot\log\sqrt{\frac{1+\left(\frac{R}{b}\right)^2+\left(\frac{b}{R}\right)^2}{3}}$$
$$C_1=\frac{1}{\delta-\delta'};\ C=\frac{1}{\delta+2\cdot\delta'};\ C'=C_1\cdot C\cdot\delta'$$

$$I_G=I_C\cdot\mathrm{tg}\,\delta;\ I_C=\omega\cdot C_1\cdot U_{\mathrm{f}}$$
$$G=\frac{1}{R_{\mathrm{i}}}=\frac{I_G}{U_{\mathrm{f}}}$$
$$\Delta P_G=U_{\mathrm{f}}\cdot I_G$$
$$C_1=\frac{0{,}0242\cdot\varepsilon_{\mathrm{r}}}{\log\frac{R}{r}}$$
$$\gamma=\sqrt{\boldsymbol{Z}_1\cdot\boldsymbol{Y}_1}=\beta+j\cdot\alpha$$
$$\boldsymbol{Z}_0=\sqrt{\frac{\boldsymbol{Z}_1}{\boldsymbol{Y}_1}}$$
$$\boldsymbol{S}_{\mathrm{p}}=\frac{U^2}{\boldsymbol{Z}_0^*}$$
$$\boldsymbol{U}_{1\mathrm{f}}=\boldsymbol{U}_{2\mathrm{f}}\cdot\cosh(\gamma\cdot l)+\boldsymbol{I}_2\cdot\boldsymbol{Z}_0\cdot\sinh(\gamma\cdot l)$$
$$\boldsymbol{I}_1=\boldsymbol{I}_2\cdot\cosh(\gamma\cdot l)+\frac{\boldsymbol{U}_{2\mathrm{f}}}{\boldsymbol{Z}_0}\cdot\sinh(\gamma\cdot l)$$
$$\boldsymbol{I}_2=\frac{\boldsymbol{S}_2^*}{3\cdot\boldsymbol{U}_{2\mathrm{f}}^*}$$
$$\boldsymbol{S}_1=3\cdot\boldsymbol{U}_{1\mathrm{f}}\cdot\boldsymbol{I}_1^*;\ \Delta\boldsymbol{S}_{\mathrm{c}}=\boldsymbol{S}_1-\boldsymbol{S}_2$$
$$\Delta\boldsymbol{U}=\boldsymbol{U}_{1\mathrm{f}}-\boldsymbol{U}_{2\mathrm{f}}$$
$$\begin{bmatrix}\boldsymbol{U}_{1\mathrm{f}}\\\boldsymbol{I}_1\end{bmatrix}=\begin{bmatrix}\boldsymbol{A}&\boldsymbol{B}\\\boldsymbol{C}&\boldsymbol{D}\end{bmatrix}\cdot\begin{bmatrix}\boldsymbol{U}_{2\mathrm{f}}\\\boldsymbol{I}_2\end{bmatrix}$$

П:

$$\boldsymbol{A}=\boldsymbol{D}=1+\frac{\boldsymbol{Z}\cdot\boldsymbol{Y}}{2};\ \boldsymbol{B}=\boldsymbol{Z};\ \boldsymbol{C}=\boldsymbol{Y}\cdot\left(1+\frac{\boldsymbol{Z}\cdot\boldsymbol{Y}}{4}\right)$$

T:

$$\boldsymbol{A}=\boldsymbol{D}=1+\frac{\boldsymbol{Z}\cdot\boldsymbol{Y}}{2};\ \boldsymbol{B}=\boldsymbol{Z}\cdot\left(1+\frac{\boldsymbol{Z}\cdot\boldsymbol{Y}}{4}\right);\ \boldsymbol{C}=\boldsymbol{Y}$$

Г:

$$\boldsymbol{A}=1;\ \boldsymbol{B}=\boldsymbol{Z};\ \boldsymbol{C}=\boldsymbol{Y};\ \boldsymbol{D}=1+\boldsymbol{Z}\cdot\boldsymbol{Y}$$
$$\Delta\boldsymbol{S}_{\mathrm{pozdlzne}}=\frac{3\cdot\Delta U^2}{\boldsymbol{Z}^*}$$
$$\Delta\boldsymbol{S}_{\mathrm{priecne}}=\frac{1}{2}\cdot\boldsymbol{Y}^*\cdot\left(3\cdot U_{\mathrm{f}1}^2+3\cdot U_{\mathrm{f}2}^2\right)$$
$$Q_{\mathrm{c}}=\mathrm{Im}(\Delta\boldsymbol{S}_{\mathrm{priecne}})$$
$$\sinh(\gamma\cdot l)=\sinh(\beta\cdot l+j\cdot\alpha\cdot l)=$$
$$=\sinh(\beta\cdot l)\cdot\cos(\alpha\cdot l)+j\cdot\cosh(\beta\cdot l)\cdot\sin(\alpha\cdot l)$$
$$\cosh(\gamma\cdot l)=\cosh(\beta\cdot l+j\cdot\alpha\cdot l)=$$
$$=\cosh(\beta\cdot l)\cdot\cos(\alpha\cdot l)+j\cdot\sinh(\beta\cdot l)\cdot\sin(\alpha\cdot l)$$
$$\varphi_1=\langle U_1\rangle-\langle I_1\rangle$$
$$P_1=3\cdot U_{1\mathrm{f}}\cdot I_1\cdot\cos\varphi_1$$
$$\Delta p_{\%}=\frac{P_1-P_2}{P_1}\cdot100$$