Kompenzácia vedení:

$\mathrm{R} = \mathrm{R} * \mathrm{l}$

$\mathrm{X} = \mathrm{X} * \mathrm{l}$

$\mathrm{I} = \frac{\mathrm{P}}{\sqrt{3} * \mathrm{U} * \cos\varphi}$

$\Delta\mathrm{u} = \mathrm{R} * \mathrm{I}_{č} + \mathrm{X} * \mathrm{I}_{j}$

$\Delta\mathrm{u} = \mathrm{R} * \mathrm{I}\cos\varphi + \mathrm{X} * \mathrm{I}\sin\varphi$

$\Delta u_{\%} = \frac{\Delta u}{U} * 100$

$\Delta u_k = \frac{1}{3}\Delta\mathrm{u}$

$\Delta u_k = R * I\,cos\varphi + (X - X_c) * I\,sin\varphi = R * I\,cos\varphi + k * X * I\,sin\varphi$

$k = \frac{\Delta u_k - R * I\,cos\varphi}{X * I\,sin\varphi}$

$X_C = -k * X + X = X(1 - k)$

$C = \frac{1}{\omega * X_C}$

$U_{Kf} = \frac{U_N}{\sqrt{3}} + \Delta u_C - \Delta u = \frac{U_N}{\sqrt{3}} + X_C * I\,sin\varphi - (R * I\,cos\varphi + X * I\,sin\varphi)$

$U_{Kz} = \sqrt{3} * U_{Kf}$

$\Delta u_Z = \sqrt{3} * \Delta u_f;$ $\Delta u_{kZ} = \frac{1}{3}\Delta u_Z$

$\Delta u_X = \frac{\Delta u_C}{2}$

$\Delta u * l_X = \frac{\Delta u_C}{2} * l$

$U_2 = \frac{U_1}{A}$

$\overline{\gamma} = \sqrt{\overline{Z}_1 \overline{Y}_1}$

$\overline{Z}_V = \sqrt{\frac{\overline{Z}_1}{\overline{Y}_1}}$

$I_1 = C * U_2$

$U_1 = A * U_2 + B * I_2\ ;$ $B = j * Z_V * sin \propto * l$

$Q_{tl} = 3 * \frac{U_{2z}}{\sqrt{3}} * I_2$

Jednosmerné prenosy:

$I_{js} = \frac{I_{\sim}}{0{,}95}$

$U_{k\sim} = k * r * log\frac{d}{r}$

$U_{k=} = 2k * r * log\frac{d}{r}$

$\frac{U_{k\sim}}{U_{k=}} = \frac{1}{2};$ $U_{k\sim} = U_f = \frac{U_z}{\sqrt{3}}$

$U_{k=} = U_{=} = \frac{U_{js}}{2} => U_{js} = 2 * U_{k=}$

$$U_{js} = 2 * U_{k=} = 4 * \frac{U_Z}{\sqrt{3}}$$

$$U_{k=} 2 * U_{k\sim}$$

$$S_{st} = \sqrt{3} * U_Z * I_\sim$$

$$P_{js} = U_{js} * I_{js} = 4 * \frac{U_Z}{\sqrt{3}} * \frac{I_\sim}{0{,}95} = \frac{4}{\sqrt{3}\sqrt{3}} * \frac{\sqrt{3} * U_Z * I_\sim}{0{,}95} = \frac{4}{3 * 0{,}95} * S_{st}$$

$$G_\sim = G_{js}$$

$$3 * L * \pi * r_\sim^2 * \gamma = 2 * L * \pi * r_{js}^2 * \gamma$$

$$3 * r_\sim^2 = 2 * r_{js}^2 => \ r_{js} = r_\sim * \sqrt{\frac{3}{2}}$$

$$r_\sim = r_{js} * \sqrt{\frac{2}{3}}$$

$$\frac{U_{k\sim}}{U_{k=}} = \frac{k * r_\sim * log\frac{d}{r_\sim}}{2k * r_{js} * log\frac{d}{r_{js}}} => \frac{1}{2} * \sqrt{\frac{2}{3}}$$

$$\sigma = \frac{I_\sim}{A_\sim} = \frac{I_{js}}{A_{js}}$$

$$I_{js} = I_\sim * \frac{A_{js}}{A_\sim} = I_\sim * \frac{3}{2}$$

$$U_{k\sim} = \frac{U_Z}{\sqrt{3}}$$

$$U_{k=} = U_= = \frac{U_{js}}{2}$$

$$U_{js} = \frac{4}{\sqrt{2}} * U_Z$$

$$U_f = \frac{1}{4} * U_r; \qquad U_= = \frac{U_r}{1{,}7}$$

$$U_{js} = \frac{2}{1{,}7} * 4 * U_f = 2{,}72 * U_Z$$

$$I_{js} = \frac{I_\sim}{0{,}95}$$

$$P_{js} = U_{js} * I_{js}$$

$$\Delta P_\sim = 3 * R_\sim * I_\sim^2 = 3 * R * \left(\frac{I_W}{cos\varphi}\right)^2 = \sqrt{3} * U_Z * I_W$$

$$\Delta P_{js} = 2 * R_{js} * I_{js}^2$$

$$I_{js} = \frac{\sqrt{3} * U_Z}{U_{js}} * I_W$$

$$\Delta P_{js} = \frac{9}{8} * R_{js} * I_W^2$$

$$\Delta P_\sim = 3 * R_\sim * \frac{I_W^2}{cos^2\varphi}$$

$$R_\sim = R_{js}; \qquad I_\sim = \frac{S_N}{\sqrt{3} * U_Z}$$

$$\frac{\Delta P_{js}}{\Delta P_\sim} = \frac{3}{8} * cos^2\varphi$$

$$I_\sim = \frac{S_N}{\sqrt{3} * U_Z}$$

$$\Delta U_\sim = R_\sim * I_W + X_L * I_L; \qquad \Delta U_{js} = 2 * R_{js} * I_{js};$$