

As we saw previously:

$$Z_1 = \sqrt[3]{k_1}$$

$$Z_4 = \sqrt[3]{k_2}$$

$$Z_2 = \sqrt[3]{k_1} \cdot \omega_1$$

$$Z_5 = \sqrt[3]{k_2} \cdot \omega_1$$

$$Z_3 = \sqrt[3]{k_1} \cdot \omega_2$$

$$Z_6 = \sqrt[3]{k_2} \cdot \omega_2$$

$$\frac{1}{\omega_2} = \omega_1 \quad \frac{1}{\omega_1} = \omega_2$$

$$\frac{1}{\sqrt[3]{k_1}} = -\left(\frac{3}{\rho}\right) \cdot \sqrt[3]{k_2}$$

$$Y = Z - \left(\frac{\rho}{3}\right) \cdot \frac{1}{Z}$$

$$\frac{1}{\sqrt[3]{k_2}} = -\left(\frac{3}{\rho}\right) \cdot \sqrt[3]{k_1}$$

Now we going to find Y_1, Y_2, Y_3, Y_4, Y_5 and Y_6 .

$$Y_1 = Z_1 - \left(\frac{\rho}{3}\right) \cdot \frac{1}{Z_1} = \sqrt[3]{k_1} - \left(\frac{\rho}{3}\right) \cdot \frac{1}{\sqrt[3]{k_1}}$$

$$= \sqrt[3]{k_1} - \left(\frac{\rho}{3}\right) \cdot \left(-\frac{3}{\rho}\right) \cdot \sqrt[3]{k_2} = \sqrt[3]{k_1} + \sqrt[3]{k_2}$$

$$Y_1 = \sqrt[3]{k_1} + \sqrt[3]{k_2}$$

$$Y_2 = Z_2 + \left(-\frac{\rho}{3}\right) \cdot \frac{1}{Z_2} = \sqrt[3]{k_1} \cdot \omega_1 + \left(-\frac{\rho}{3}\right) \cdot \frac{1}{\omega_1} \cdot \frac{1}{\sqrt[3]{k_1}}$$

$$= \sqrt[3]{k_1} \cdot \omega_1 + \left(-\frac{\rho}{3}\right) \cdot \omega_2 \cdot \left(-\frac{3}{\rho}\right) \cdot \sqrt[3]{k_2}$$

$$= \sqrt[3]{k_1} \cdot \omega_1 + \sqrt[3]{k_2} \cdot \omega_2$$

$$Y_2 = \sqrt[3]{k_1} \cdot \omega_1 + \sqrt[3]{k_2} \cdot \omega_2$$

$$Y_3 = Z_3 + \left(-\frac{\rho}{3}\right) \cdot \frac{1}{Z_3} = \sqrt[3]{k_1} \cdot \omega_2 + \left(-\frac{\rho}{3}\right) \cdot \frac{1}{\sqrt[3]{k_1} \cdot \omega_2}$$

$$= \sqrt[3]{k_1} \cdot \omega_2 + \left(-\frac{\rho}{3}\right) \cdot \left(-\frac{3}{\rho}\right) \cdot \sqrt[3]{k_2} \cdot \omega_1$$

$$= \sqrt[3]{k_1} \cdot \omega_2 + \sqrt[3]{k_2} \cdot \omega_1$$

$$Y_3 = \sqrt[3]{k_1} \cdot \omega_2 + \sqrt[3]{k_2} \cdot \omega_1$$

$$Y_4 = Z_4 + \left(-\frac{\rho}{3}\right) \cdot \frac{1}{Z_4} = \sqrt[3]{k_2} + \left(-\frac{\rho}{3}\right) \cdot \frac{1}{\sqrt[3]{k_2}}$$

$$= \sqrt[3]{k_2} + \left(-\frac{\rho}{3}\right) \cdot \left(-\frac{3}{\rho}\right) \cdot \sqrt[3]{k_1} = \sqrt[3]{k_1} + \sqrt[3]{k_2}$$

$$Y_4 = \sqrt[3]{k_1} + \sqrt[3]{k_2}$$

$$Y_5 = Z_5 + \left(-\frac{\rho}{3}\right) \cdot \frac{1}{Z_5} = \sqrt[3]{k_2} \cdot \omega_1 + \left(-\frac{\rho}{3}\right) \cdot \frac{1}{\sqrt[3]{k_2} \cdot \omega_1}$$

$$= \sqrt[3]{k_2} \cdot \omega_1 + \left(-\frac{\rho}{3}\right) \cdot \omega_2 \cdot \sqrt[3]{k_1} \cdot \left(-\frac{3}{\rho}\right)$$

$$= \omega_1 \cdot \sqrt[3]{k_2} + \omega_2 \cdot \sqrt[3]{k_1}$$

$$Y_5 = \sqrt[3]{k_1} \cdot \omega_2 + \sqrt[3]{k_2} \cdot \omega_1$$

$$Y_6 = Z_6 + \left(-\frac{\rho}{3}\right) \cdot \frac{1}{Z_6} = \sqrt[3]{k_2} \cdot \omega_2 + \left(-\frac{\rho}{3}\right) \cdot \frac{1}{\sqrt[3]{k_2} \cdot \omega_2}$$

$$= \sqrt[3]{k_2} \cdot \omega_2 + \left(-\frac{\rho}{3}\right) \cdot \omega_1 \cdot \left(-\frac{3}{\rho}\right) \cdot \sqrt[3]{k_1}$$

$$= \sqrt[3]{k_2} \cdot \omega_2 + \omega_1 \cdot \sqrt[3]{k_1}$$

$$Y_6 = \sqrt[3]{k_1} \cdot \omega_1 + \sqrt[3]{k_2} \cdot \omega_2$$

$$Y_1 = Y_4$$

$$Y_2 = Y_6$$

$$Y_3 = Y_5$$

thus, the only thing to do we left is add constant.