Cross interactions

1) Steady State experiment



At steady state:

$$\tau_L = \beta \cdot \omega_L \tag{1}$$

$$\tau_L = K_g \cdot \eta_g \cdot \tau_M = K_g \cdot \eta_g \cdot \eta_m \cdot K_t \cdot I \qquad 2.$$

$$I = \frac{V - E}{R} = \frac{V - K_m \cdot \omega_m}{R}$$
3.

$$\beta = \frac{\left(K_g \cdot \eta_g \cdot \eta_m \cdot K_t\right)}{\omega_L} \frac{\left(V - K_m \cdot \omega_L \cdot K_g\right)}{R} \tag{4}$$



2) Steiner Links

$$J_{b,\text{piv}} = J_{b,\text{og}} + m_b \cdot \left(\frac{L_b}{2}\right)^2 = 3.49e - 4 \text{ [Kg m2]}$$
 5.

3) x 25 error



$$J_G = K_{GI}^2 \cdot J_{24} + 2 \cdot J_{72} + J_{120} = 25 \cdot J_{24} + 2 \cdot J_{72} + J_{120} = 5.5242e - 05$$
 [Kg m2] 6.

(Row 163)

Jg = J24 + 2 * J72 + J120; % 5.2822e-05