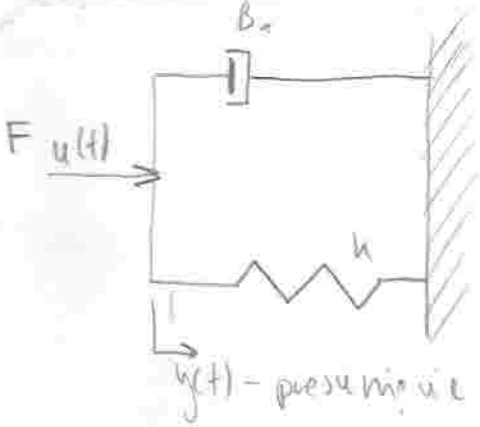

B_1 - stała tłumika wiskotycznego
k - stała sprężyny

$[k] = \frac{N}{m}$

$[B_1] = \frac{N \cdot s}{m}$

Założenia:

$\mathcal{L}[u(t)] = U(s)$

$\mathcal{L}[y(t)] = Y(s)$

$$u(t) = k \cdot y(t) + B_1 \cdot \frac{dy}{dt}$$

$$U(s) = k \cdot Y(s) + B_1 \cdot s \cdot Y(s)$$

$$U(s) = Y(s)\left[k + B_1 \cdot s\right]$$

$$\frac{Y(s)}{U(s)} = \frac{1}{k + B_1 \cdot s} \quad / \cdot \frac{\frac{1}{k}^{-1}}{\frac{1}{k}} = \left(\frac{k}{k}\right)^{-1}$$

$$G(s) = \frac{\frac{1}{k}}{(k + B_1 \cdot s) \cdot \frac{1}{k}}$$

$$G(s) = \frac{\frac{1}{k}}{1 + \gamma \cdot s}$$

Transmitancja operatorowa

$$G(s) = \frac{Y(s)}{U(s)}$$

$$\frac{B_z}{k} = \gamma \left[\frac{N \cdot s}{m} \cdot \frac{m}{N}\right] = [s]$$