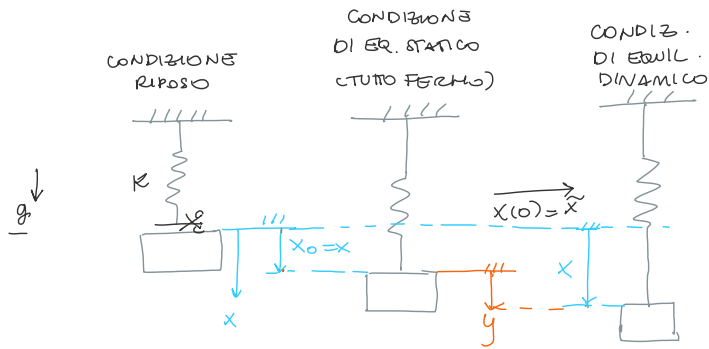
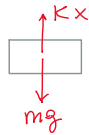


Effetto di una forzante costante

venerdì 13 dicembre 2024 12:40

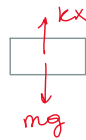


DCL



$$Kx = Kx_0 = mg$$

$$x_0 = \frac{mg}{K} \quad \text{FRECCIA STATICA}$$



$$-Kx + mg = m\ddot{x}$$

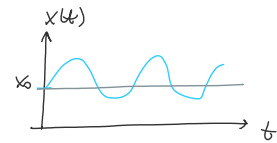
$$\parallel m\ddot{x} + Kx = mg \parallel$$

$$x(t) = x_{om}(t) + x_p$$

$$x_p: \begin{cases} \dot{x}_p = 0 \\ \ddot{x}_p = 0 \end{cases} \rightarrow -Kx_p + mg = 0$$

$$x_p = \frac{mg}{K}$$

$$x(t) = x_0 \cos(\omega_n t) + \frac{mg}{K}$$



$$\parallel x = x_0 + y \parallel$$

$$\dot{x} = \dot{y}$$

$$\ddot{x} = \ddot{y}$$

$$m\ddot{y} + K(x_0 + y) = mg$$

$$m\ddot{y} + Ky + Kx_0 = mg$$

$$m\ddot{y} + Ky = 0$$