

URTI

$$\Delta \vec{p} = 0 \rightarrow \text{SEMPRE}$$

Se elastico \rightarrow anche $\Delta K = 0$

$$\begin{cases} p_i = p_f \\ v_i = v_f \end{cases}$$

\rightarrow

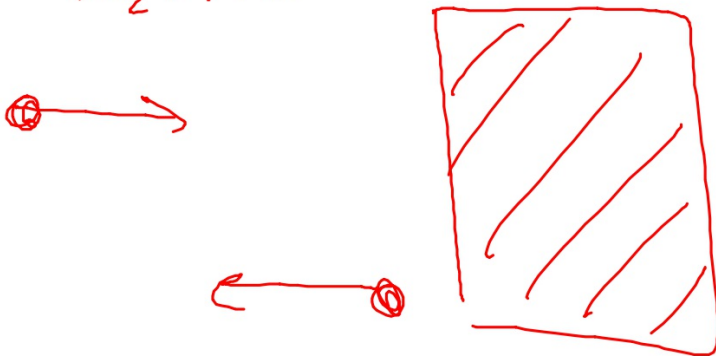
$$\begin{cases} \underline{v_{1F}} = \frac{m_1 - m_2}{m_1 + m_2} v_{1i} \\ \underline{v_{2F}} = \frac{2m_1}{m_1 + m_2} v_{1i} \end{cases}$$

$$m_1 = m_2$$



$$\begin{cases} V_{1F} = 0 \\ V_{2F} = V_{1i} \end{cases}$$

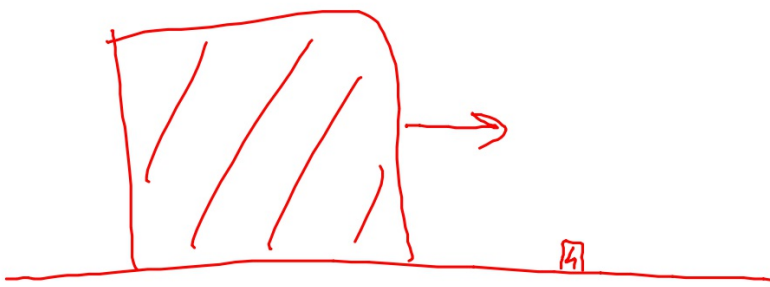
$$m_2 \gg m_1$$



$$\begin{cases} V_{1F} = \frac{m_1 - m_2}{m_1 + m_2} V_{1i} \\ V_{2F} = 0 \end{cases}$$

$\frac{99999}{-100001}$
 $\frac{100001}{-99999}$

V_{2i}
 $\frac{1}{-1}$



$$\begin{cases} v_{1f} = v_{1i} \\ v_{2f} = 2v_{1i} \end{cases} \quad M_1 \gg M_2$$

$$\begin{cases} p_1 = p_2 \\ K_1 = K_2 \end{cases}$$



$$m_e = 5240 \text{ kg}$$

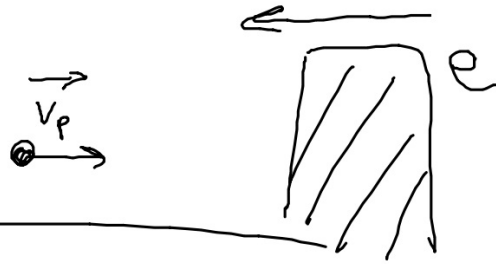
$$\begin{cases} m_p v_p + m_e v_e = m_p v_{pf} + m_e v_{ef} & v_e = 4,55 \text{ m/s} \\ & m_p = 0,150 \text{ kg} \\ & v_p = 7,81 \text{ m/s} \end{cases}$$

$$\begin{cases} \frac{1}{2} m_p v_{pi}^2 + \frac{1}{2} m_e v_{ei}^2 = \frac{1}{2} m_p v_{pf}^2 + \frac{1}{2} m_e v_{ef}^2 \end{cases}$$

$$\begin{cases} (0,150)(7,81) + (5240)(-4,55) = (0,150)v_{pf} + (5240)v_{ef} \end{cases}$$

$$V_e = 4,55 \text{ m/s}$$

$$V_p = 7,81 \text{ m/s}$$



merito $V_p' = 4,55 + 7,81 = 12,36 \text{ m/s}$

$$V_{PF}' = -12,36 \text{ m/s}$$

$$V_{PF} = -12,36 - 4,55 \text{ m/s} = -16,91 \text{ m/s}$$

CASO 2 CORPI IN MOVIMENTO

$$\left\{ \begin{array}{l} m_1 v_{1i} + m_2 v_{2i} = m_1 v_{1F} + m_2 v_{2F} \end{array} \right.$$

$$\left\{ \begin{array}{l} \frac{1}{2} m_1 v_{1i}^2 + \frac{1}{2} m_2 v_{2i}^2 = \frac{1}{2} m_1 v_{1F}^2 + \frac{1}{2} m_2 v_{2F}^2 \end{array} \right.$$

$$v_{1F} = \frac{(m_1 - m_2) v_{1i} + 2m_2 v_{2i}}{m_1 + m_2}$$

$$v_{2F} = \frac{(m_2 - m_1) v_{2i} + 2m_1 v_{1i}}{m_1 + m_2}$$

