

Simulazione n° 4



$$m_A = m_B = 2,16 \cdot 10^{-25} \text{ kg}$$

$$v_A = v_B = 2,1 \cdot 10^8 \frac{\text{m}}{\text{s}}$$

(A)
$$v = \frac{v_A + v_B}{1 + \frac{v_A v_B}{c^2}} = \frac{2,1 \cdot 10^8 \frac{\text{m}}{\text{s}} + 2,1 \cdot 10^8 \frac{\text{m}}{\text{s}}}{1 + \frac{2,1 \cdot 10^8 \frac{\text{m}}{\text{s}} \cdot 2,1 \cdot 10^8 \frac{\text{m}}{\text{s}}}{(3 \cdot 10^8 \frac{\text{m}}{\text{s}})^2}} = 2,818 \cdot 10^8 \frac{\text{m}}{\text{s}}$$

(B)
$$p = \gamma m v = \frac{1}{\sqrt{1 - \left(\frac{v}{c}\right)^2}} m \cdot v = \frac{1}{\sqrt{1 - \left(\frac{2,818 \cdot 10^8 \frac{\text{m}}{\text{s}}}{3 \cdot 10^8 \frac{\text{m}}{\text{s}}}\right)^2}} \cdot 2,16 \cdot 10^{-25} \text{ kg} \cdot 2,818 \cdot 10^8 \frac{\text{m}}{\text{s}}$$

$$p = 1,77 \cdot 10^{-16} \frac{\text{kg} \cdot \text{m}}{\text{s}}$$