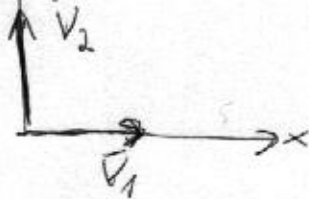


$$\vec{V}_1 = \frac{c}{\sqrt{2}} \hat{e}_x = \left(\frac{c}{\sqrt{2}}, 0 \right)$$

$$\vec{V}_2 = \frac{c}{2} \hat{e}_y = \left(0, \frac{c}{2} \right)$$



Składowe prędkości Titego (\vec{V}_2') w układzie Pimxa:

$$(V_2')_x = \frac{(V_2)_x - V_1}{1 - \frac{V_1 (V_2)_x}{c^2}} = \frac{0 - \frac{c}{\sqrt{2}}}{1 - 0} = -\frac{c}{\sqrt{2}}$$

$$(V_2')_y = \frac{(V_2)_y}{\gamma \left(1 - \frac{V_1 (V_2)_x}{c^2} \right)} = \frac{\frac{c}{2}}{\gamma} = \frac{c}{2\sqrt{2}}$$

$$\gamma = \frac{1}{\sqrt{1 - \left(\frac{V_1}{c} \right)^2}} = \frac{1}{\sqrt{1 - \frac{1}{2}}} = \sqrt{2}$$

$$V_2' = \sqrt{[(V_2')_x]^2 + [(V_2')_y]^2} = c \sqrt{\frac{1}{2} + \frac{1}{8}} = c \sqrt{\frac{5}{8}}$$

Kąt:

$$\text{tg } \Theta' = \frac{(V_2')_y}{(V_2')_x} = \frac{\frac{c}{2\sqrt{2}}}{-\frac{c}{\sqrt{2}}} = -\frac{1}{2}$$

