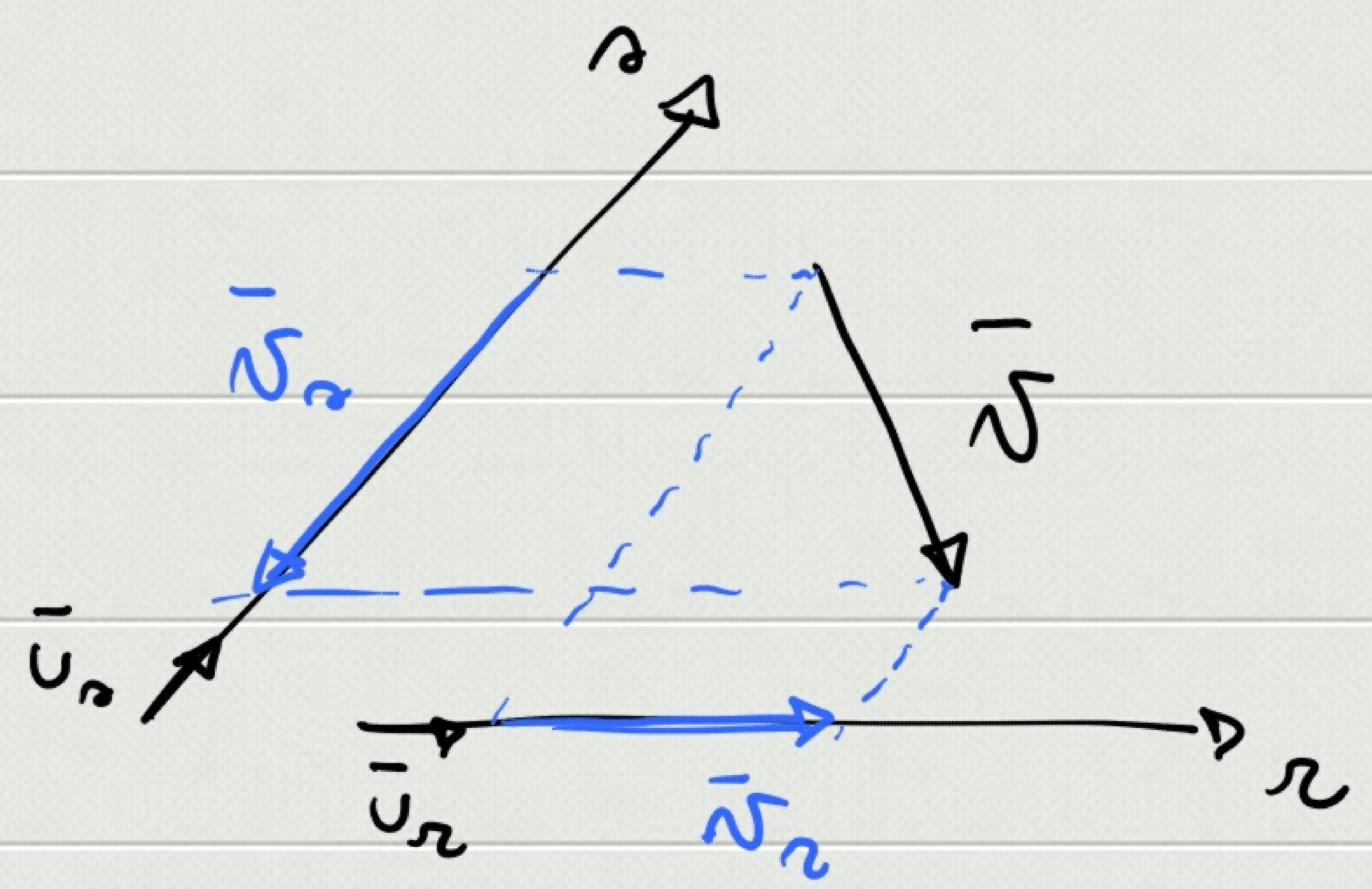


$\bar{v} = \bar{v}_r + \bar{v}_s$

vettori componenti

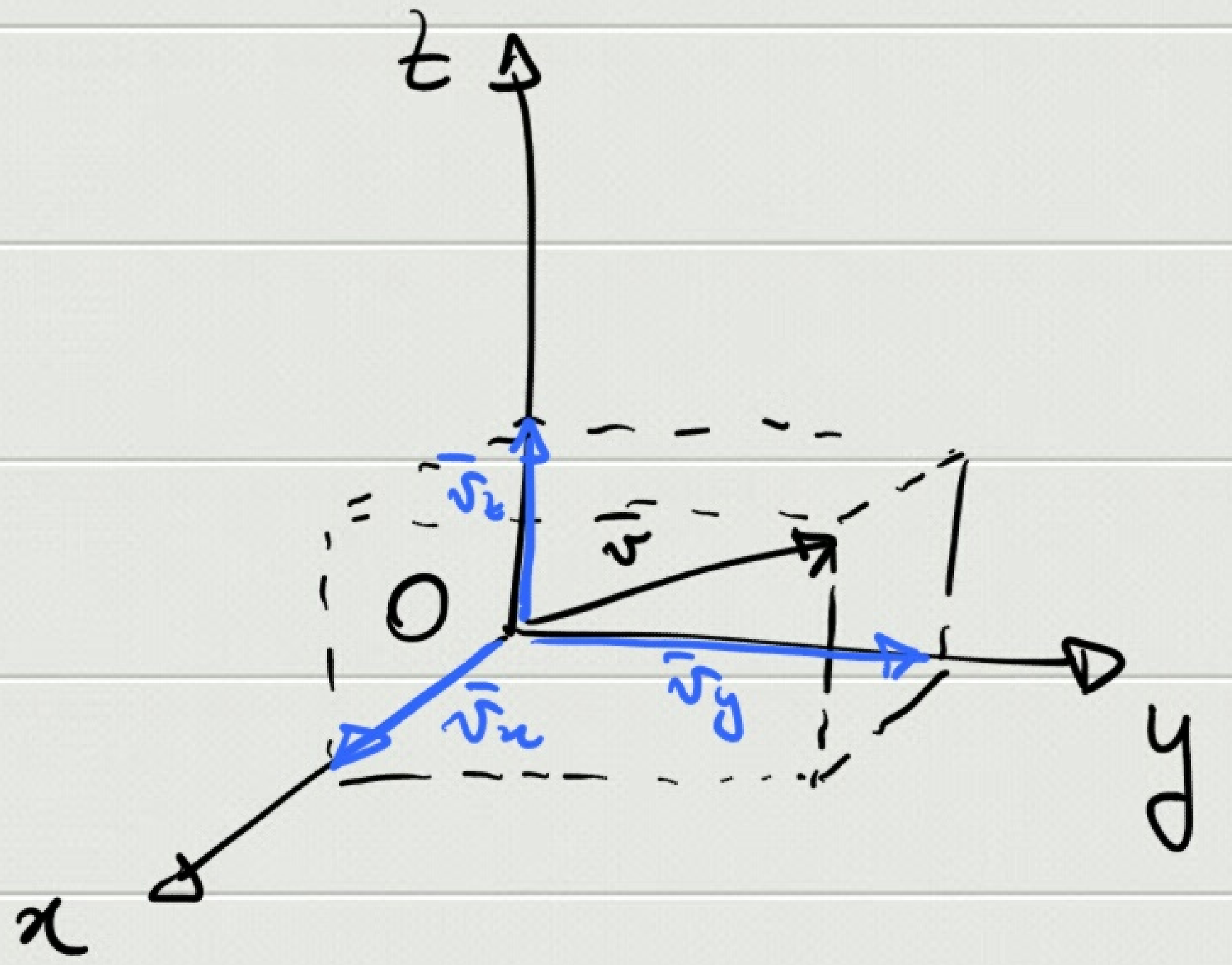
$$\bar{v} = \bar{v}_r + \bar{v}_s = v_r \bar{u}_r + v_s \bar{u}_s$$

Componenti

$$\bar{v} = |\bar{v}|\, \bar{u}_v = v\, \bar{u}_v$$

3D : $\bar{v} = \bar{v}_r + \bar{v}_s + \bar{v}_t = v_r \bar{u}_r + v_s \bar{u}_s + v_t \bar{u}_t$

$\{\bar{u}_r, \bar{u}_s, \bar{u}_t\}$ base



$$\bar{v} = \bar{v}_x + \bar{v}_y + \bar{v}_z = v_x \bar{u}_x + v_y \bar{u}_y + v_z \bar{u}_z$$

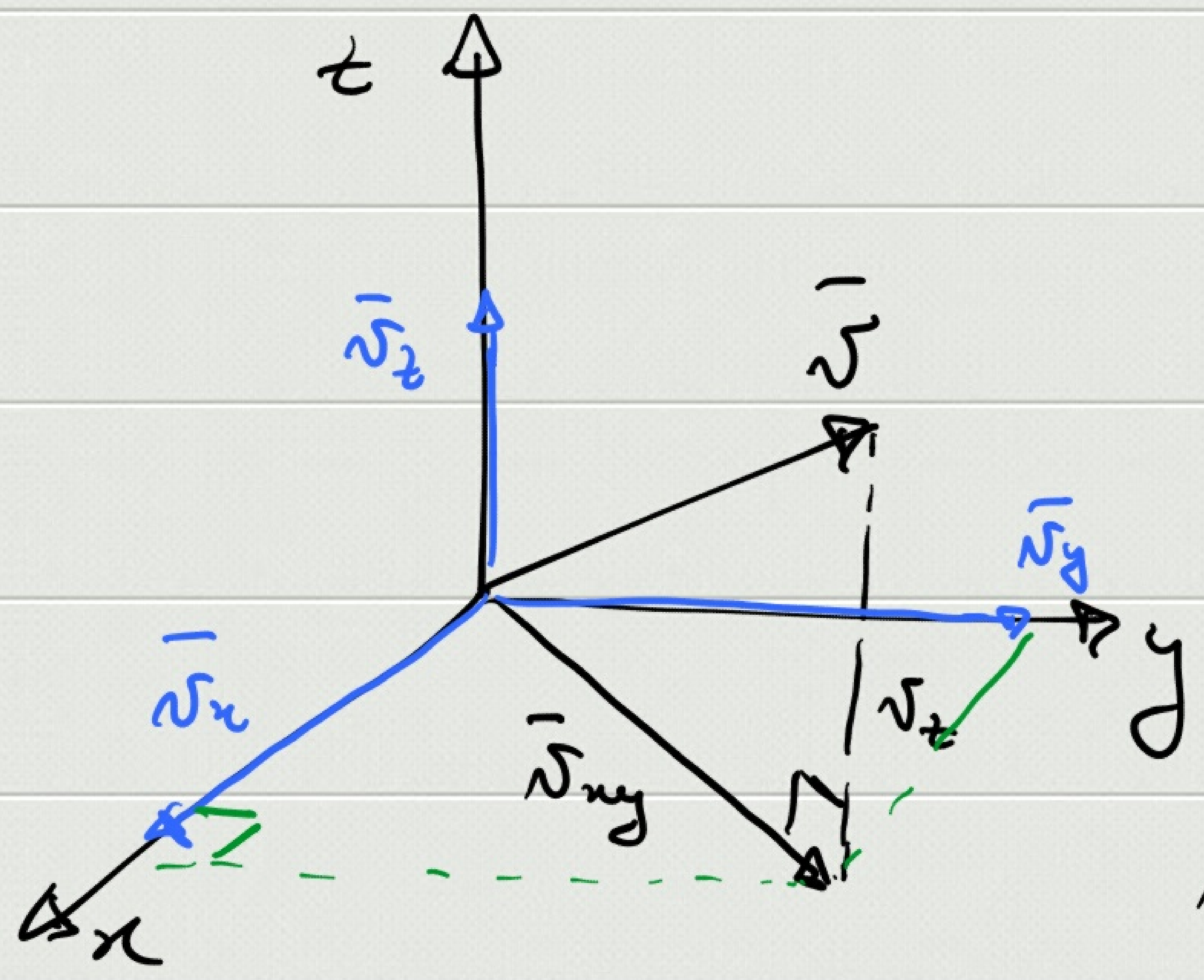
$$\bar{v} = (v_x, v_y, v_z)$$

$$\bar{a} = a_x \bar{u}_x + a_y \bar{u}_y + a_z \bar{u}_z$$

$$\bar{b} = b_x \bar{u}_x + b_y \bar{u}_y + b_z \bar{u}_z$$

$$\bar{a} + \bar{b} = (a_x \bar{u}_x + \dots) + (b_x \bar{u}_x + \dots) =$$

$$= (a_x + b_x)\bar{u}_x + (a_y + b_y)\bar{u}_y + (a_z + b_z)\bar{u}_z$$



$$v^2 = v_{xy}^2 + v_z^2$$

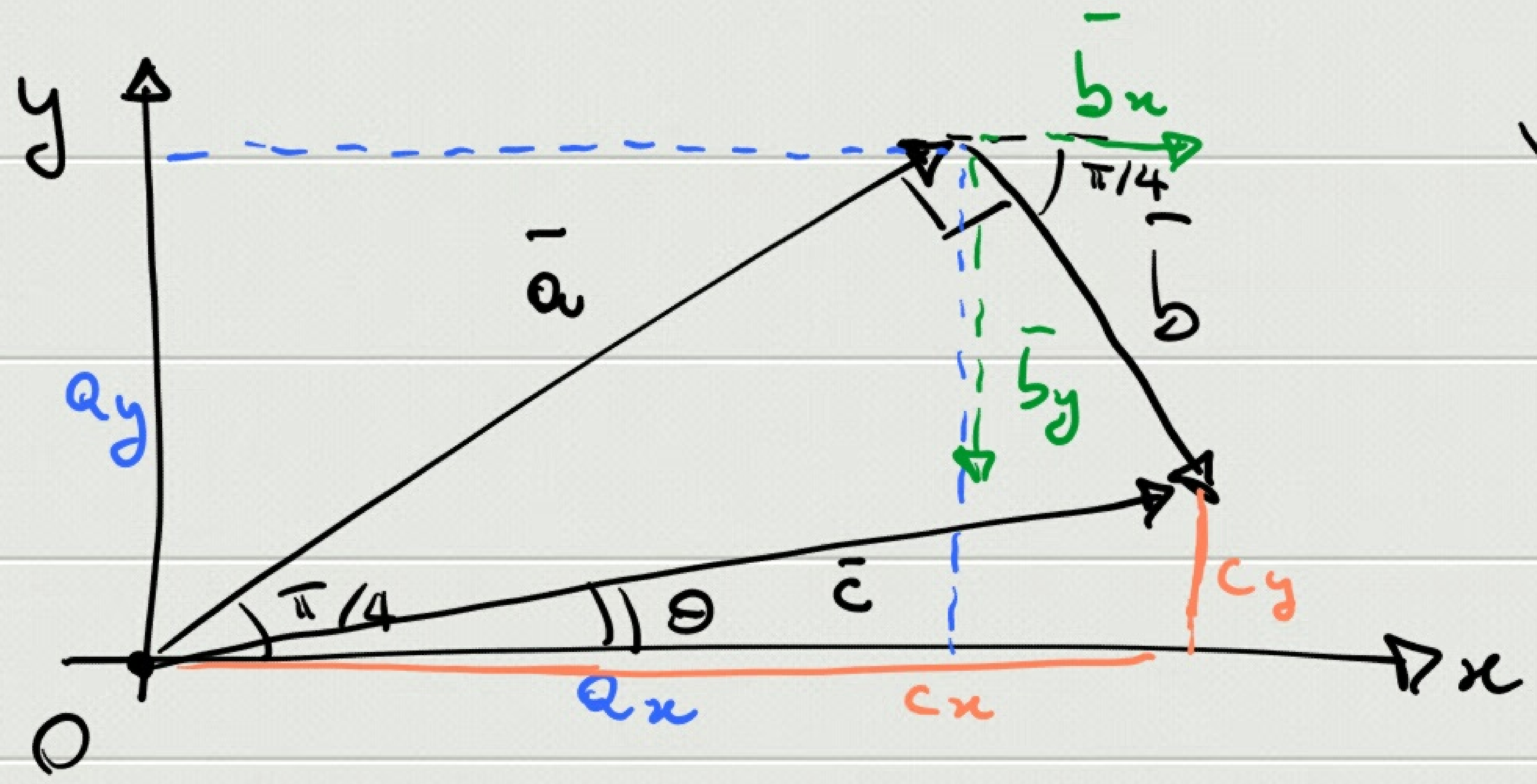
$$v_{xy}^2 = v_x^2 + v_y^2$$

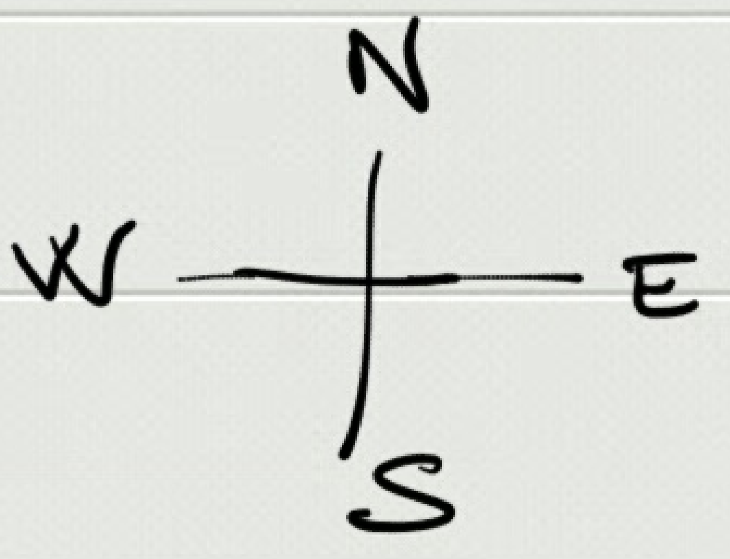
$$\boxed{v^2 = v_x^2 + v_y^2 + v_z^2}$$

$$v = \sqrt{v_x^2 + v_y^2 + v_z^2}$$

$a = 4\ km$ NE

$b = 3\ km$ SE





$\bar{c} = \bar{a} + \bar{b}$

$$a_x = a \cos\frac{\pi}{4} = 4\frac{\sqrt{2}}{2} \cong 2.83\ km$$

$$a_y = a \sin\frac{\pi}{4} = 4\frac{\sqrt{2}}{2} \cong 2.83\ km$$

$$b_x = b \cos\frac{\pi}{4} = 3\frac{\sqrt{2}}{2} \cong 2.12\ km$$

$$b_y = -b \sin\frac{\pi}{4} = -3\frac{\sqrt{2}}{2} \cong -2.12\ km$$

$$c_x = a_x + b_x = 4.95\ km$$

$$c_y = a_y + b_y = 0.71\ km$$

$$c = |\bar{c}| = \sqrt{c_x^2 + c_y^2} = 5\ km$$

$$c_y = c_x \operatorname{tg}\theta \Rightarrow \theta = \operatorname{atg}\left(\frac{c_y}{c_x}\right) = 8.13^\circ$$