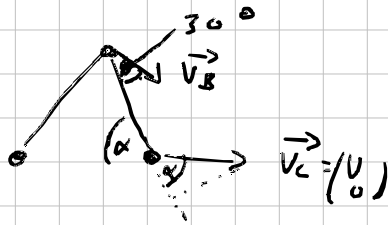


Aufgabe 1



$$\cos(\alpha) \cdot V = |\vec{V}_{CP}| = |\vec{V}_{BP}| = \cos(\beta) |\vec{V}_B|$$

$$\Rightarrow V_B = \frac{\cos \alpha}{\cos 30^\circ} V = \frac{\cos(60^\circ)}{\cos(30^\circ)} V = \frac{1}{\sqrt{3}} \cdot V$$

$$\vec{V}_B = \left(\frac{1}{2} \frac{V}{\sqrt{3}}, -\frac{1}{2} \frac{V}{\sqrt{3}} \right)$$

Aufgabe 2

e)

Aufgabe 3

d)

Aufgabe 4

Besprechen wir nächste Woche

Aufgabe 3 aus Serie 2

$$\vec{V}_B = \begin{pmatrix} 0 \\ -\omega L \end{pmatrix}$$

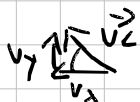
$$\omega_D \cdot 2L = |\vec{V}_B| = \omega L$$

$$\omega_D = \frac{1}{2} \omega$$

$$\vec{r}_{DE} = \begin{pmatrix} -\frac{3}{2}L \\ \sqrt{L^2 - \frac{L^2}{4}} \end{pmatrix} = \begin{pmatrix} -\frac{3}{2}L \\ \frac{\sqrt{3}}{2}L \end{pmatrix}$$

$$\vec{V}_E = \begin{pmatrix} 0 \\ 0 \\ \frac{1}{2}\omega \end{pmatrix} \times \begin{pmatrix} -\frac{3}{2}L \\ \frac{\sqrt{3}}{2}L \\ 0 \end{pmatrix} = \begin{pmatrix} -\frac{3}{4}\omega L \\ \frac{\sqrt{3}}{4}\omega L \\ 0 \end{pmatrix}$$

$$\text{Sei } \vec{V}_C = \begin{pmatrix} v_x \\ v_y \end{pmatrix} \Rightarrow v_x = -\frac{\sqrt{3}}{4}\omega L \quad (\text{Sdp 6})$$



$$v_y = v_x \tan 30^\circ = \frac{\sqrt{3}}{3} v_x = -\frac{1}{4}\omega L$$

$$|\vec{V}_C| = \frac{1}{2}\omega L \Rightarrow \omega_{4C} = \frac{1}{2}\omega$$