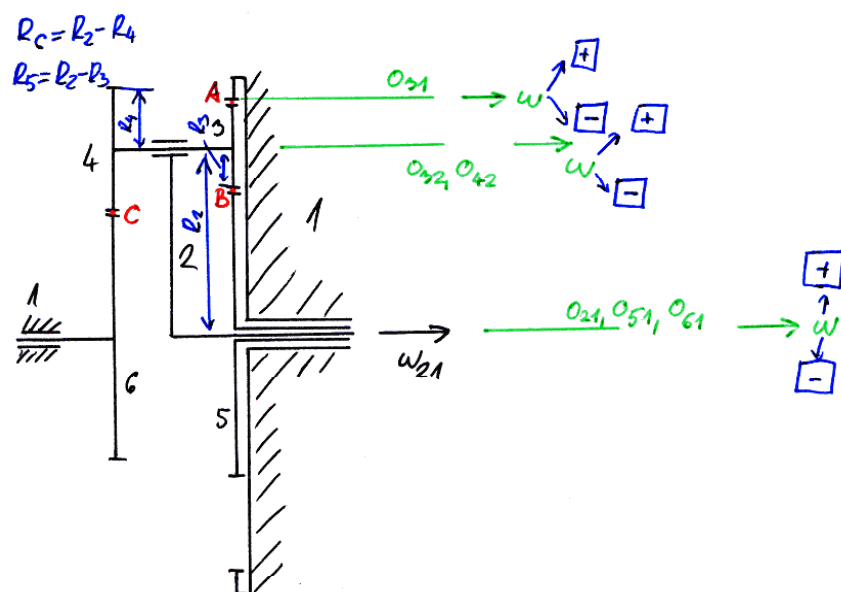


Znáš ω_{21} , urči ω_{61}



1) osy, kladné smysly $\vec{\omega}$

2) kladné smysly $\vec{v}$ (PPR: $\begin{matrix} \odot \vec{v} & \boxed{+} \\ \rightarrow \vec{v} & \\ \otimes \vec{v} & \boxed{-} \end{matrix}$)

3) Body styku v ozubení

4) Rovnice SP

$$A: \quad 31 = 32 + 21$$

$$B: \quad 31 = 32 + 21$$

$$31 = 35 + 51$$

$$C: \quad 42 = 32$$

$$41 = 42 + 21$$

$$41 = 46 + 61$$

5) Rovnice vektorové

$$a) \quad A: \quad \vec{v}_{31}^A = \vec{v}_{32}^A + \vec{v}_{21}^A$$

$$\vec{0} = \vec{x} = \vec{0}$$

$$b) \quad B: \quad \vec{v}_{31}^B = \vec{v}_{32}^B + \vec{v}_{21}^B$$

$$\vec{v}_{31}^B = \vec{v}_{35}^B + \vec{v}_{51}^B$$

$$\vec{v}_{51}^B = \vec{v}_{32}^B + \vec{v}_{21}^B$$

$$\vec{x} = \vec{0} = \vec{0}$$

A... bod styku v ozubení 3-1 $\Rightarrow \vec{v}_{31}^A = \vec{0}$

B... bod styku v ozubení 3-5 $\Rightarrow \vec{v}_{35}^B = \vec{0}$

$$\vec{v}_{31}^B = \vec{v}_{51}^B$$

$$c) \vec{w}_{42} = \vec{w}_{32}$$

$$d) C: \vec{V}_{41}^C = \vec{V}_{42}^C + \vec{V}_{21}^C \quad C \dots \text{bod stykn rozubeni 4-6} \Rightarrow \vec{V}_{46}^C = \vec{0}$$

$$\vec{V}_{41}^C = \vec{V}_{46}^C + \vec{V}_{61}^C \quad \vec{V}_{41}^C = \vec{V}_{61}^C$$

$$\vec{V}_{61}^C = \vec{V}_{42}^C + \vec{V}_{21}^C$$

$$\vec{x} \Rightarrow \vec{x}$$

6) vyřešení rovnic

$$a) \vec{V}_{21}^A = \vec{V}_{32}^A + \vec{V}_{21}^A$$

$$0 = \vec{V}_{32}^A + \vec{V}_{21}^A$$

$$0 = \omega_{32} R_3 + \omega_{21} (R_2 + R_3)$$

$$\omega_{32} = -\omega_{21} \frac{R_2 + R_3}{R_3}$$

$$b) \vec{V}_{51}^B = \vec{V}_{32}^B + \vec{V}_{21}^B$$

$$\vec{V}_{51}^B = -\vec{V}_{32}^B + \vec{V}_{21}^B$$

$$\omega_{51} (R_2 - R_3) = -\omega_{32} R_3 + \omega_{21} (R_2 - R_3)$$

$$\omega_{51} (R_2 - R_3) = -(-\omega_{21} \frac{R_2 + R_3}{R_3}) R_3 + \omega_{21} (R_2 - R_3)$$

$$\omega_{51} (R_2 - R_3) = \omega_{21} (R_2 + R_3) + \omega_{21} (R_2 - R_3)$$

$$\omega_{51} = \omega_{21} \frac{2R_2}{R_2 - R_3}$$

$$c) \omega_{42} = \omega_{32} = -\omega_{21} \frac{R_2 + R_3}{R_3}$$

$$d) \vec{V}_{61}^C = \vec{V}_{42}^C + \vec{V}_{21}^C$$

$$\vec{V}_{61}^C = -\vec{V}_{42}^C + \vec{V}_{21}^C$$

$$\omega_{61} (R_2 - R_4) = -\omega_{42} R_4 + \omega_{21} (R_2 - R_4)$$

$$\omega_{61} (R_2 - R_4) = -(-\omega_{21} \frac{R_2 + R_3}{R_3}) R_4 + \omega_{21} (R_2 - R_4)$$

$$\omega_{61} (R_2 - R_4) = \omega_{21} \frac{(R_2 + R_3) R_4}{R_3} + \omega_{21} (R_2 - R_4)$$

$$\omega_{61} = \omega_{21} \frac{\frac{(R_2 + R_3) R_4}{R_3} + R_2 - R_4}{R_2 - R_4} = \omega_{21} \frac{\frac{R_2 R_4 + R_3 R_4 + R_2 R_3 - R_3 R_4}{R_3}}{R_2 - R_4} = \omega_{21} \frac{R_2 R_4 + R_2 R_3}{R_3 (R_2 - R_4)}$$

$$\omega_{61} = \omega_{21} \frac{R_2 (R_3 + R_4)}{R_3 (R_2 - R_4)}$$