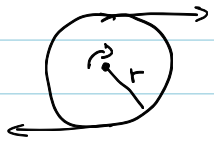
input: V_{ref}, ω_{ref} output: ω_R, ω_L

$$V = \frac{V_R + V_L}{2} \quad \Rightarrow \quad V = \frac{2\pi}{60} \cdot r \cdot RPM$$

$$\omega = \frac{V_R - V_L}{2}$$



RPM to ω

one revolution = 360°

one minute = 60 s

$\omega = RPM \cdot 6$

$$V = \omega \times r$$

(× = kryssprodukt)

$$\omega = \frac{r \times V}{|r|^2}$$

(1)

$$V = \frac{V_R + V_L}{2}$$

$$\Downarrow$$

$$\frac{2\pi}{60} \cdot r \cdot RPM = \frac{\left(\frac{2\pi}{60} \cdot r \cdot RPM_R\right) + \left(\frac{2\pi}{60} \cdot r \cdot RPM_L\right)}{2}$$

$$\Downarrow$$

$$\frac{2\pi}{60} \cdot r \cdot \frac{\omega}{6} = \frac{\left(\frac{2\pi}{60} \cdot r \cdot \frac{\omega_R}{6}\right) + \left(\frac{2\pi}{60} \cdot r \cdot \frac{\omega_L}{6}\right)}{2}$$

$$\omega = \frac{V_R - V_L}{2}$$

(2)

$$\Downarrow$$

$$\omega = \frac{\left(\frac{2\pi}{60} \cdot r \cdot RPM_R\right) - \left(\frac{2\pi}{60} \cdot r \cdot RPM_L\right)}{2}$$

$$\Downarrow$$

$$\omega = \frac{\left(\frac{2\pi}{60} \cdot r \cdot \frac{\omega_R}{6}\right) - \left(\frac{2\pi}{60} \cdot r \cdot \frac{\omega_L}{6}\right)}{2}$$

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$$\frac{2\pi}{60} \cdot r \cdot \frac{\omega}{6} = \frac{\left(\frac{2\pi}{60} \cdot r \cdot \frac{\omega_R}{6}\right) + \left(\frac{2\pi}{60} \cdot r \cdot \frac{\omega_L}{6}\right)}{2}$$