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計算手順

- 1. ポテンショメータからサーボ角度を計算
- *2.* x_{in} , x_{out} を計算
- 3. $\dot{ heta}_{in}$, $\dot{ heta}_{out}$ を計算
- 4. θ_{in} , θ_{out} を計算
- 5. W_{in}, W_{out}を計算
- 6. r_1, r_2, r_3, r_4 を計算 7. r_4 を1としたときの $r_1 \sim r_3$ の比率をDuty比とする

$$x_{in} = \frac{l_2 - l_1}{2} + r \sin \theta$$

$$x_{out} = \frac{l_2 - l_1}{2} - r \sin \theta$$

$$\dot{\theta}_{in} = \cos^{-1} \frac{x_{in}}{l_3}$$

$$\dot{\theta}_{out} = \cos^{-1} \frac{x_{out}}{l_3}$$

$$\theta_{in} = 180 - (\dot{\theta}_{in} + \alpha)$$

$$\theta_{out} = 180 - (\dot{\theta}_{out} + \alpha)$$

$$W_{in} = W - (l_4 \sin \theta_{in})$$

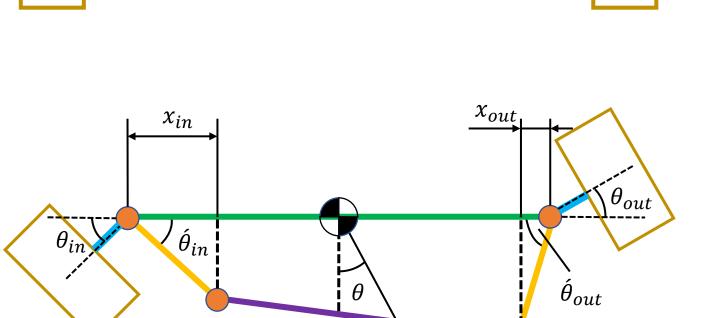
$$W_{out} = W + (l_4 \sin \theta_{out})$$

$$r_3 = \frac{W_{in}}{\sin \theta_{in}}$$

$$r_1 = r_3 \cos \theta_{in}$$

$$r_4 = \frac{W_{out}}{\sin \theta_{out}}$$

 $r_2 = r_4 \cos \theta_{out}$



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