$v = k_\rho \rho$

$w = k_\alpha \alpha + k_\beta \beta$

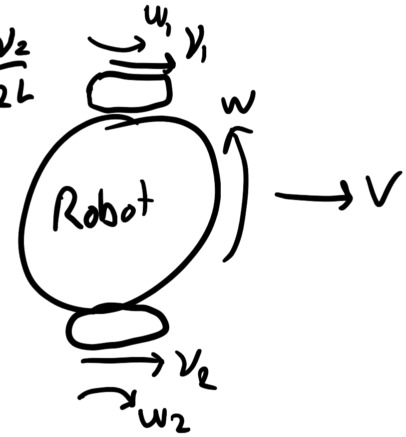
$V = L(\omega_1 - \omega_2)$

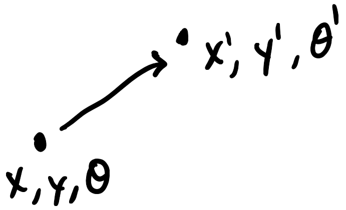
$W = \omega_1 + \omega_2$

$\omega_1 = \frac{\nu_1}{2L}$

$\omega_2 = -\frac{\nu_2}{2L}$

$\rho, \alpha, \beta \longrightarrow V, W \longrightarrow \nu_1, \nu_2 \longrightarrow$ Robot $\longrightarrow V$





$$V = L\left(\frac{\nu_1}{2L} - \left(-\frac{\nu_2}{2L}\right)\right)$$
$$= \cancel{L}\left(\frac{\nu_1 + \nu_2}{2\cancel{L}}\right)$$
$$= \frac{\nu_1 + \nu_2}{2}$$

$$W = \frac{\nu_1}{2L} + \left(-\frac{\nu_2}{2L}\right)$$
$$= \frac{\nu_1 - \nu_2}{2L}$$

$$k_\rho \rho = \frac{\nu_1 + \nu_2}{2}$$

$$2 k_\rho \rho = \nu_1 + \nu_2$$

$$k_\alpha \alpha + k_\beta \beta = \frac{\nu_1 - \nu_2}{2L}$$

$$2L(k_\alpha \alpha + k_\beta \beta) = \nu_1 - \nu_2$$

$$2(k_\alpha \alpha + k_\beta \beta) = \nu_1 - \nu_2$$

* folded L into k_α and k_β... Valid?

$$\nu_1 = 2 k_\rho \rho - \nu_2$$

$$\nu_2 = 2 k_\rho \rho - \nu_1$$

$$\nu_1 = 2(k_\alpha \alpha + k_\beta \beta) + \nu_2$$

$$\nu_2 = \nu_1 - 2(k_\alpha \alpha + k_\beta \beta)$$

$$V_1 = 2k_\rho \rho - V_2 \qquad V_2 = 2k_\rho \rho - V_1$$

$$V_1 = 2(k_\alpha \alpha + k_\beta \beta) + V_2 \qquad V_2 = V_1 - 2(k_\alpha \alpha + k_\beta \beta)$$

$$2k_\rho \rho - V_2 = 2(k_\alpha \alpha + k_\beta \beta) + V_2 \qquad 2k_\rho \rho - V_1 = V_1 - 2(k_\alpha \alpha + k_\beta \beta)$$

$$\cancel{2}k_\rho \rho = \cancel{2}(k_\alpha \alpha + k_\beta \beta) + \cancel{2}V_2 \qquad \cancel{2}k_\rho \rho = \cancel{2}V_1 - \cancel{2}(k_\alpha \alpha + k_\beta \beta)$$

$$\boxed{V_2 = k_\rho \rho - k_\alpha \alpha - k_\beta \beta} \qquad \boxed{V_1 = k_\rho \rho + k_\alpha \alpha + k_\beta \beta}$$