

$$\rightarrow \boxed{V = Q_{in} - Q_{out}}$$

$$\rightarrow \frac{dh}{dt}$$

$$\rightarrow Q_{out} = f(P - P_{atmosfer})$$

$$\boxed{Q_{out} = f(P)}$$

$$\hookrightarrow Q_{out} = K \sqrt{|P|}, P \geq 0$$

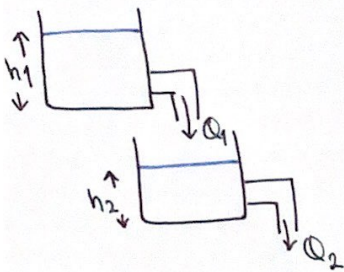
↳ jika  $P = 0$ , model gagal

↳  $P$  +dk mungkin (-), nanti beda arah

$$\boxed{P = \rho g h}$$

$$P = \left( \rho g \cdot \frac{V}{A} \right) = \left( \frac{\rho g}{A} \right) \cdot h$$

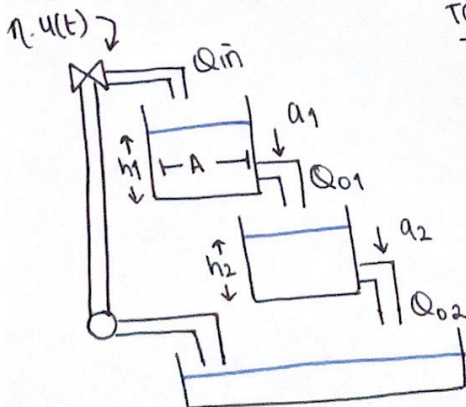
↳  $\frac{1}{C}$ , kapasitor tanki



$$\rightarrow V_1 = -K_1 \sqrt{\left| \frac{1}{C_1} \times V_1 \right|}$$

$$\rightarrow V_2 = K_1 \sqrt{\left| \frac{1}{C_1} \times V_1 \right|} - K_2 \sqrt{\left| \frac{1}{C_2} \times V_2 \right|}$$

#Masuk ke bentuk Tanki kita



$$\boxed{V = Q_{in} - Q_{out}}$$

volume liquid  $\Rightarrow V = A \cdot h$

Tank 1 :

$$A \cdot \frac{dh_1}{dt} = (Q_{in} - Q_{01})$$

$$\frac{dh_1(t)}{dt} = -\frac{a_1}{A} \sqrt{2gh_1(t)} + \eta \cdot u(t)$$

Tank 2 :

$$\frac{dh_2(t)}{dt} = \frac{a_1}{A} \sqrt{2gh_1(t)} - \frac{a_2}{A} \sqrt{2gh_2(t)}$$