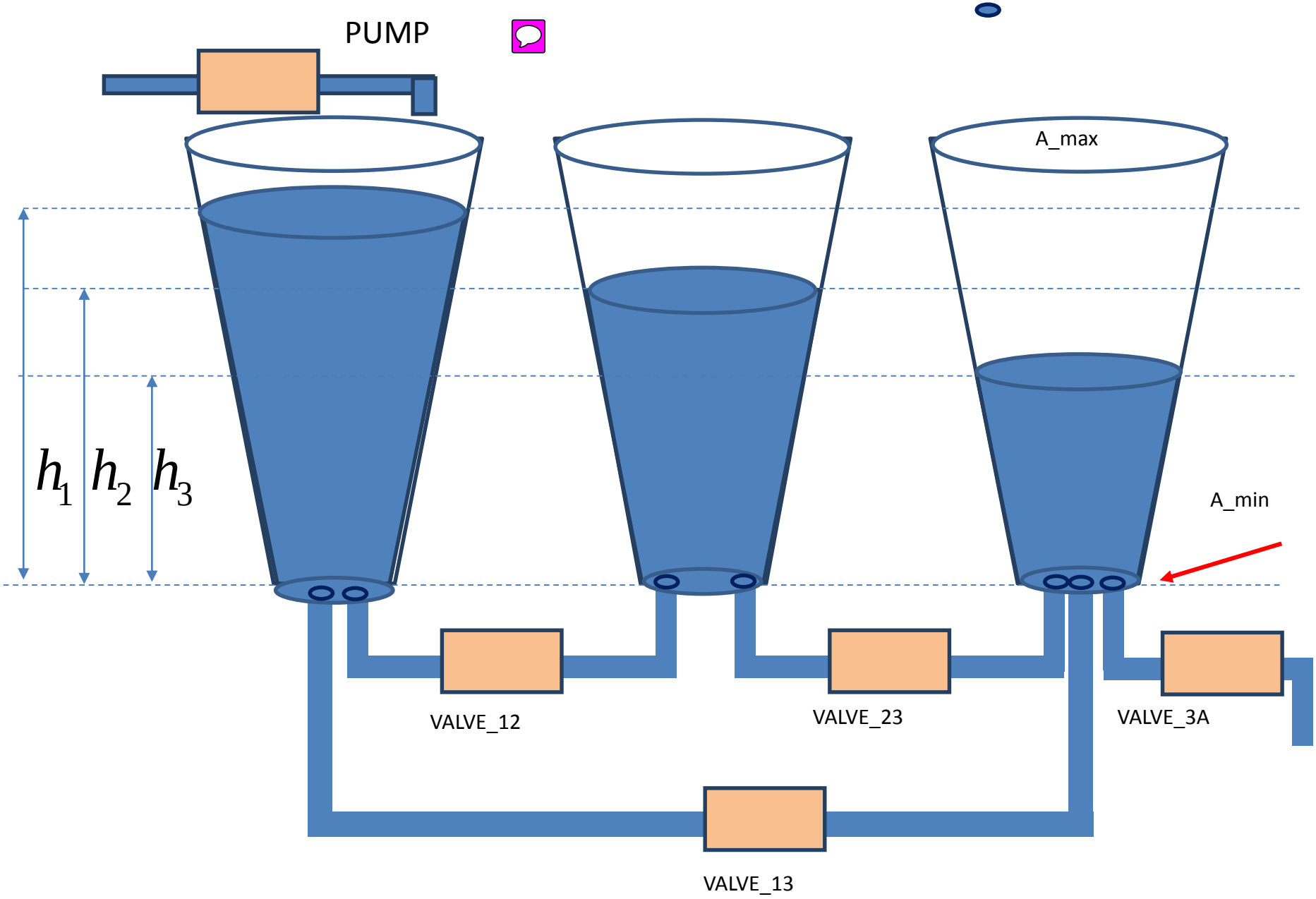
PUMP
A_max
h_1 h_2 h_3
A_min
VALVE_12
VALVE_23
VALVE_3A
VALVE_13

Assuming cylindrical tanks, of identical section areas, we have this model, in state space,

$$\frac{dh_1}{dt} = A^{-1} \cdot \left(q(t) - c_{12} \cdot \left(h_1 - h_2 \right) - c_{13} \cdot \left(h_1 - h_3 \right) \right)$$

$$\frac{dh_2}{dt} = A^{-1} \cdot \left(c_{12} \cdot \left(h_1 - h_2 \right) - c_{23} \cdot \left(h_2 - h_3 \right) \right)$$

$$\frac{dh_3}{dt} = A^{-1} \cdot \left(c_{13} \left(h_1 - h_3 \right) + c_{23} \cdot \left(h_2 - h_3 \right) - c_{3A} \cdot h_3 \right)$$

We implement this model, in the S-Function, via a discrete time model.