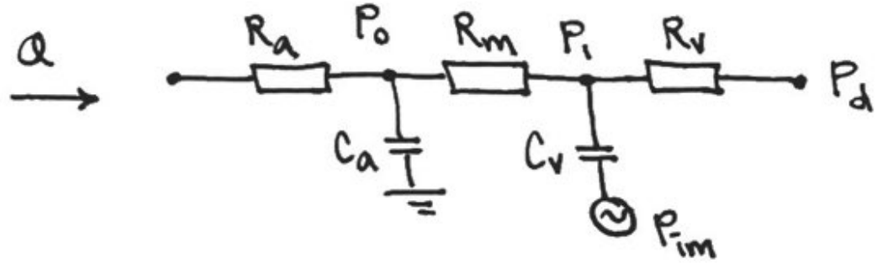
Coronary BCs



$$\begin{cases} Q - \dfrac{P_o - P_i}{R_m} = C_a \dfrac{dP_o}{dt} \\ \dfrac{P_o - P_i}{R_m} - \dfrac{P_i - P_d}{R_v} = C_v \left(\dfrac{dP_i}{dt} - \dfrac{dP_{im}}{dt} \right) \end{cases} \Rightarrow \begin{cases} \dfrac{dP_o}{dt} = \dfrac{1}{C_a} \left(Q - \dfrac{P_o - P_i}{R_m} \right) \\ \dfrac{dP_i}{dt} = \dfrac{1}{C_v} \left(\dfrac{P_o - P_i}{R_m} - \dfrac{P_i - P_d}{R_v} \right) + \dfrac{dP_{im}}{dt} \end{cases}$$