

EYSIP 2020
PROJECT 17

State Space Equation (Problems)

by

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1 Spring Mass System

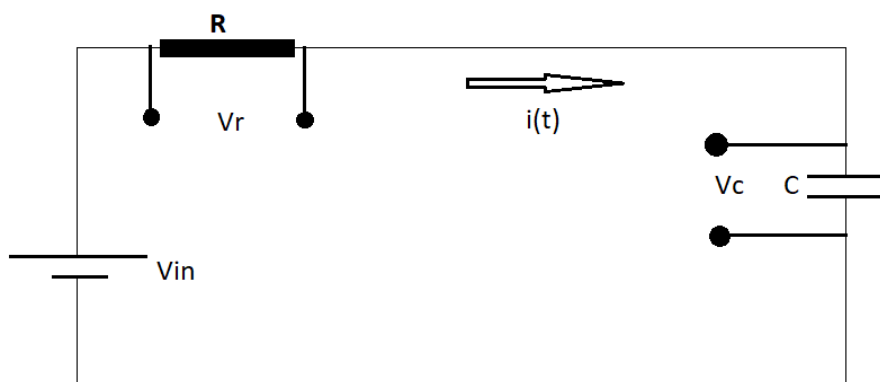


Figure 1: RC Circuit

Consider a RC circuit where input voltage is V_{in} and current through the circuit is $i(t)$, value of resistor is R and capacitor C is connected to the resistor in series, Voltage across resistor is V_r and voltage across capacitor is V_c . Find out state the state variables for system and also derive the state space model using those state variables of this system.