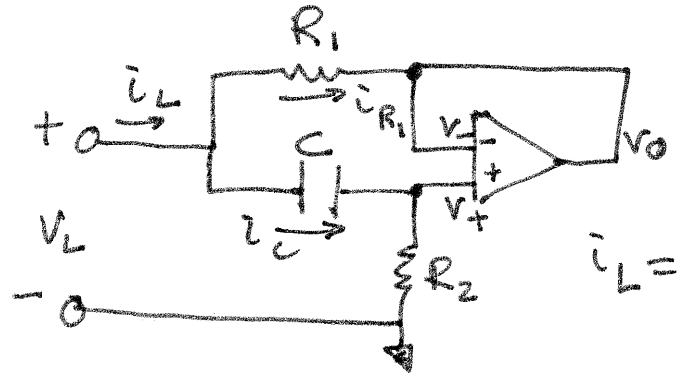

$V_o = V_+ = V_-$

$i_L = i_C + i_{R_1}$

$$i_{R_1} = \frac{V_L - V_o}{R_1} \quad , \quad i_C = C\frac{d}{dt}(V_L - V_o) = \frac{V_o}{R_2}$$

From $i_L = i_C + i_{R_1}$

$$i_L = \frac{V_o}{R_2} + \frac{V_L - V_o}{R_1} \Rightarrow V_o = \frac{R_2\,(i_L R_1 - V_L)}{R_1 - R_2}$$

Plug $v_o = \ldots$ in $C\frac{d}{dt}(V_L - V_o) = \frac{V_o}{R_2}$

$$C\frac{d}{dt}\left(V_L - \frac{R_2}{R_1 - R_2}(i_L R_1 - V_L)\right) = \frac{1}{R_2}\,\frac{R_2\,(i_L R_1 - V_L)}{R_1 - R_2}$$

$$CR_1\frac{d}{dt}V_L + V_L = CR_1R_2\frac{di_L}{dt} + R_1 i_L$$

$$V_L = \underbrace{CR_1R_2\frac{di_L}{dt}}_{\text{simulated inductance.}} + \underbrace{R_1 i_L}_{\text{resistance of the inductor}} - \underbrace{CR_1\frac{d}{dt}V_L}_{\text{small correction} \Rightarrow \text{neglect.}}$$