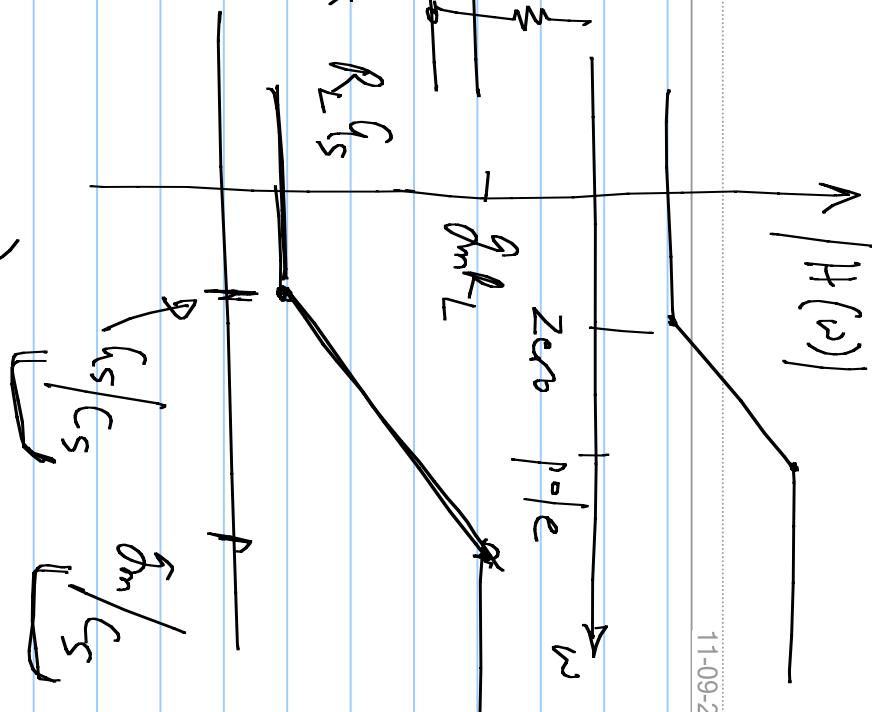
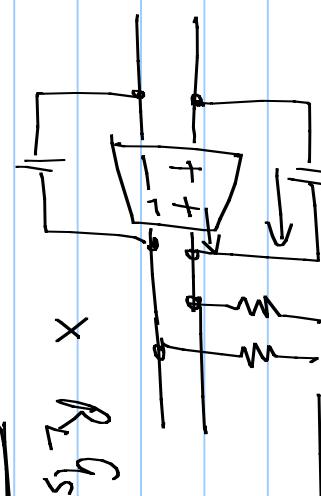
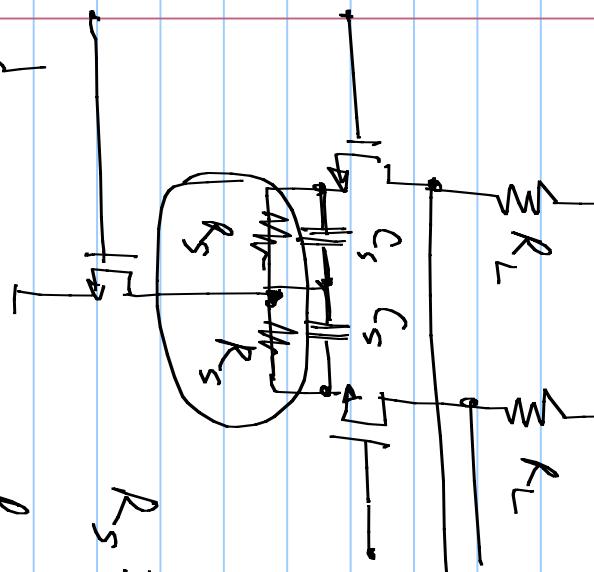


CT Equalizer:

Note Title

11-09-2007

Response with a zero & \sim pole.



$$R_s \gg \frac{1}{g_m}$$

✓

$$\frac{R_s}{R_s + R_L} \rightarrow R_L \left(g_m + \frac{1}{C_s} \right)$$



$$\frac{g_m R_L}{1 + g_m \cdot Z_s} = \frac{g_m R_L}{1 + g_m \left(\frac{R_s}{1 + s C_s R_s} \right)} = g_m R_L \cdot \frac{1 + s C_s R_s}{1 + g_m R_s + s C_s R_s}$$

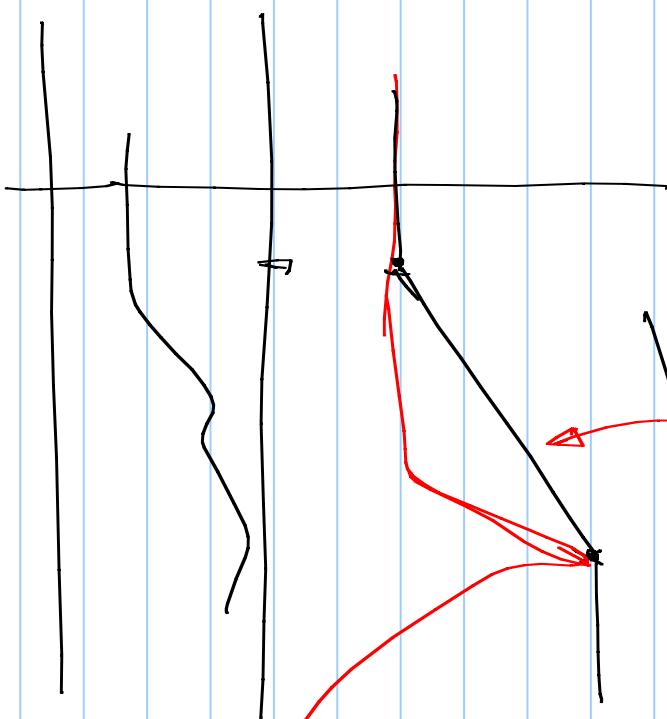
$$= \frac{1 + s C_s R_s}{1 + s C_s R_s} \cdot \frac{1 + s \cdot C_s \cdot \frac{R_s}{1 + g_m R_s}}{1 + \frac{s/w_0}{k} + (s/w_0)^2}$$

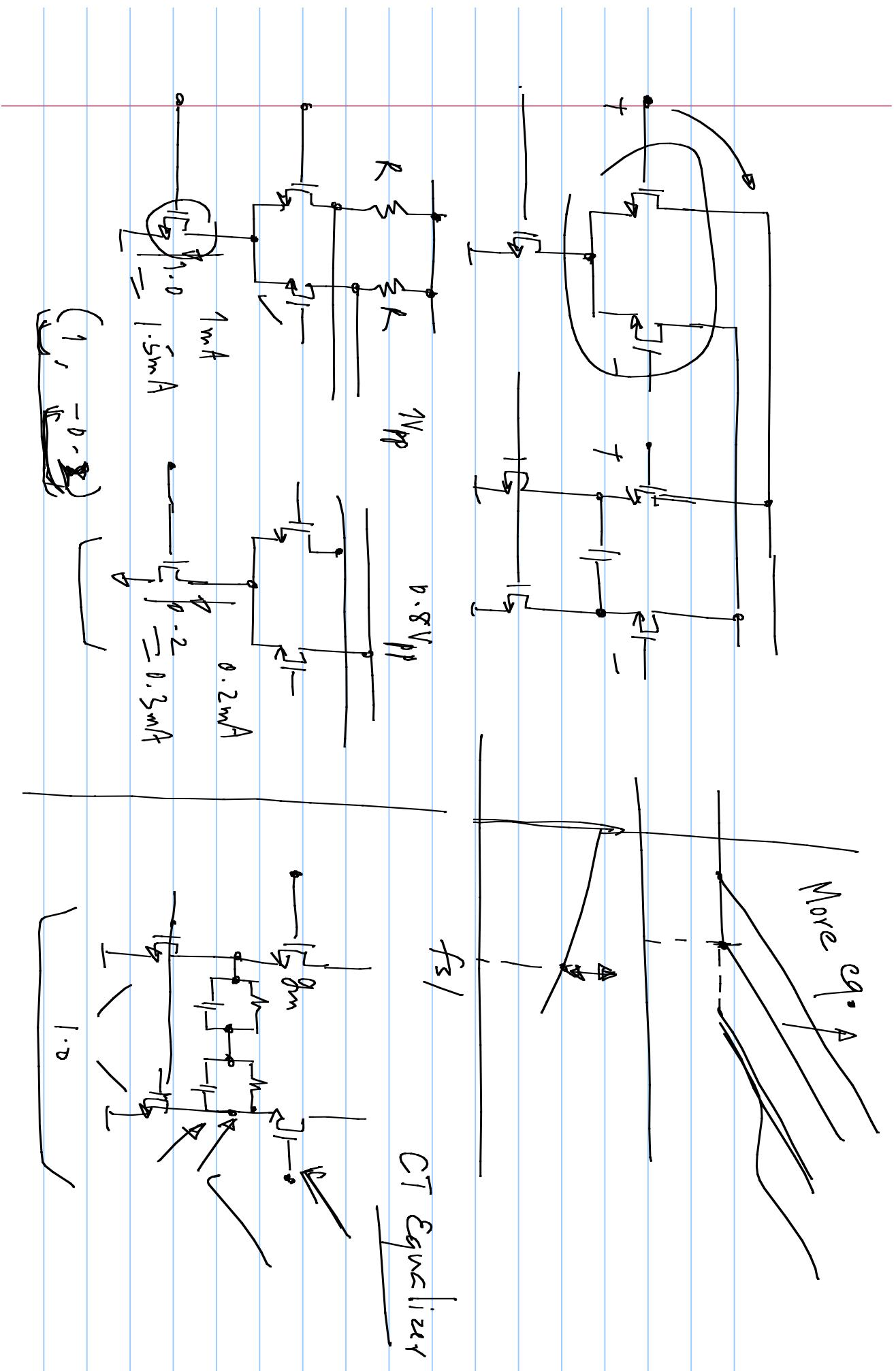
$$20 \text{ dB/kC}$$

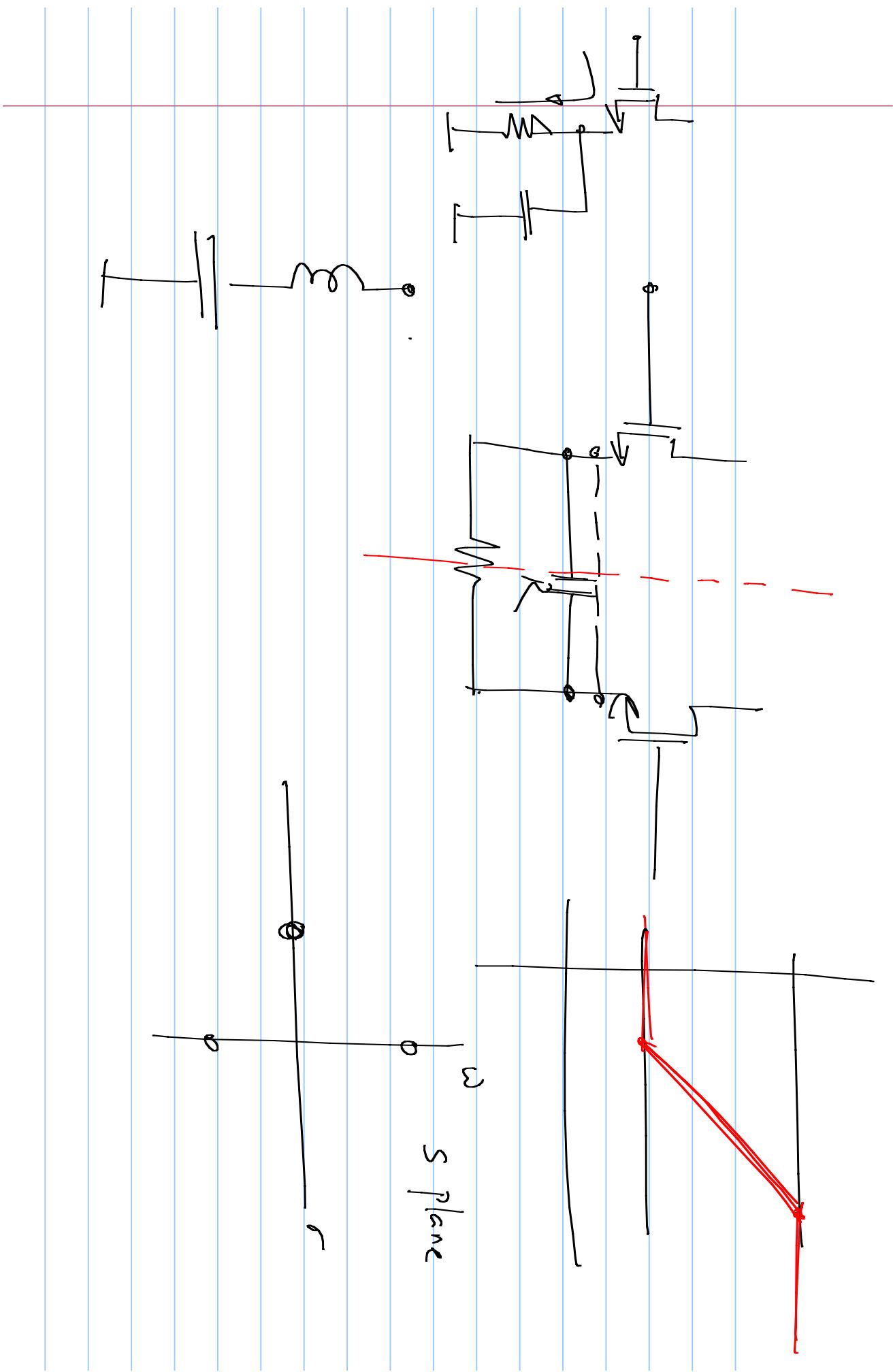
$$|H(\omega)| \uparrow$$

Equalizer response

$$\frac{1}{1 + \frac{g_m R_s}{C_s R_s}}$$







$$R \text{ (on chip)} \pm 25\%$$

$$\frac{225 \text{ mV}}{300 \text{ mV}}$$

$$375 \text{ mV} \rightarrow$$

I_R

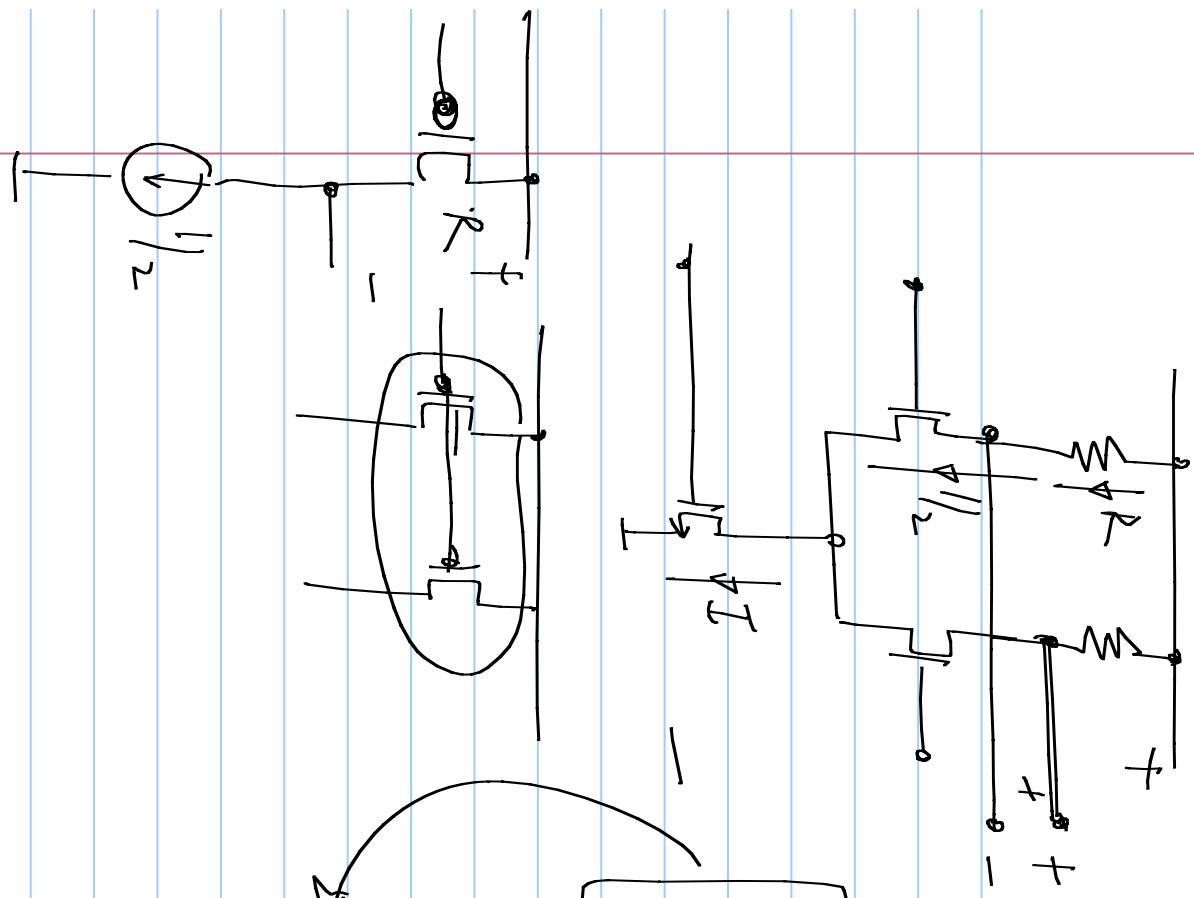
$$375 \text{ mV}$$

- ① Measure the ϕ_p , adjust I
- ② Make a tunable resistor

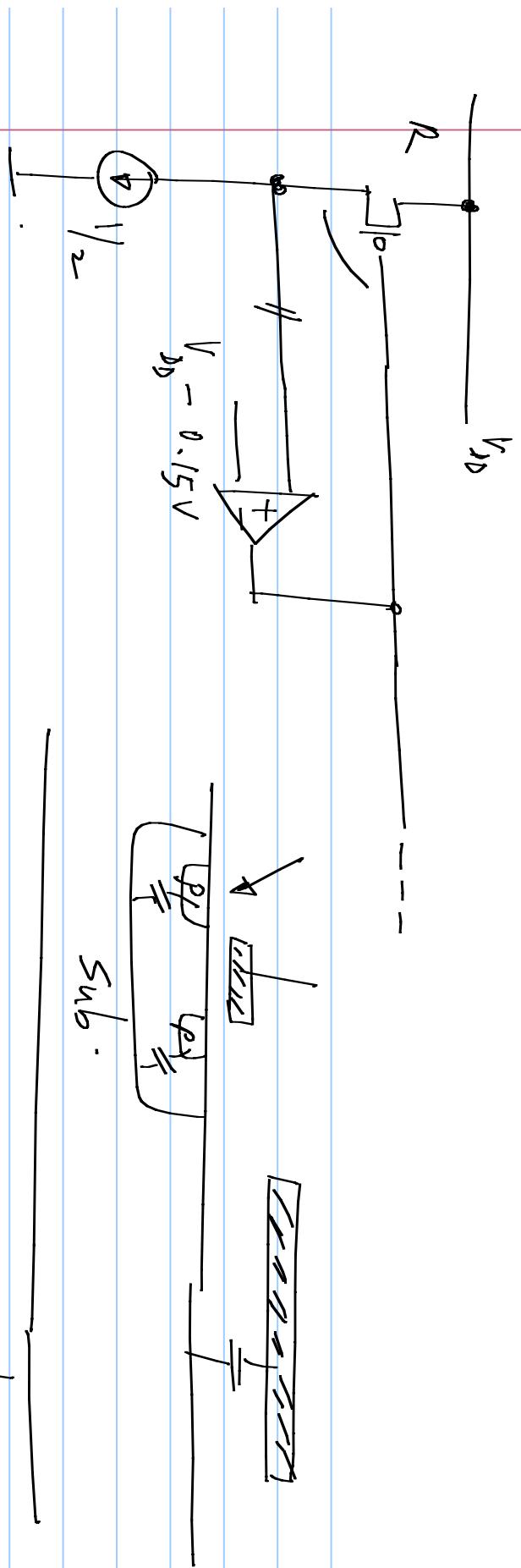
(PMOS) — adjust that

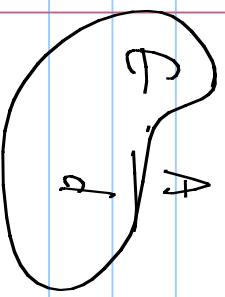
Measure the ϕ_p cm V_D change

& adjust the resistance current



$$\begin{aligned}
 \omega_{\text{lin}} &= \frac{\omega_0}{f_{21}V} \cdot \gamma_5 \\
 &= \frac{\omega_0}{f_{21}V} \cdot f_{21}V = \left(\frac{\omega_0}{f_{21}} \right) V \\
 &= \left[\frac{\omega_0}{f_{21}} \cdot \gamma_5 \right] \cdot \frac{\omega_0}{f_{21}V} = \left(\frac{\omega_0^2}{f_{21}^2} \right) \gamma_5 \cdot \frac{\omega_0}{V} \\
 &\quad \text{with } \gamma_5 = \frac{R_h}{R_s} \cdot \frac{\omega_0}{V}
 \end{aligned}$$





$$\pi / \text{se}$$

$$R_{\text{eff}} = \frac{\pi}{L} \left(\frac{m}{p} \right) \left(\frac{t}{L} \right)$$

$$\frac{[E]_m}{L} \cdot J$$

