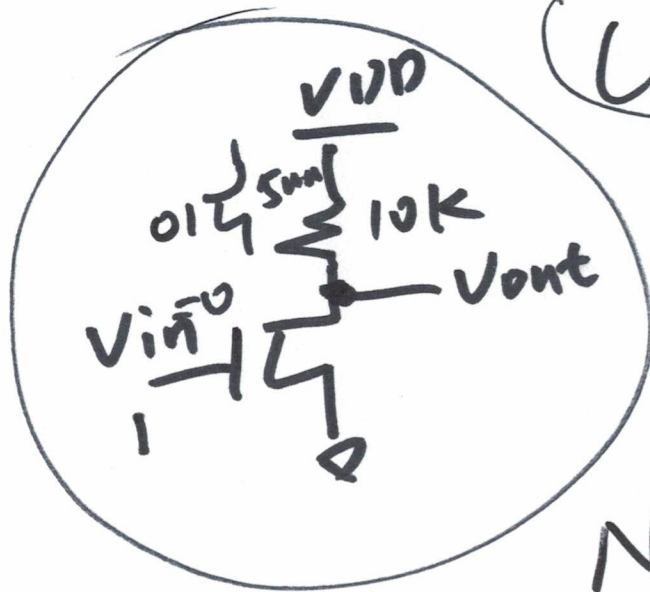
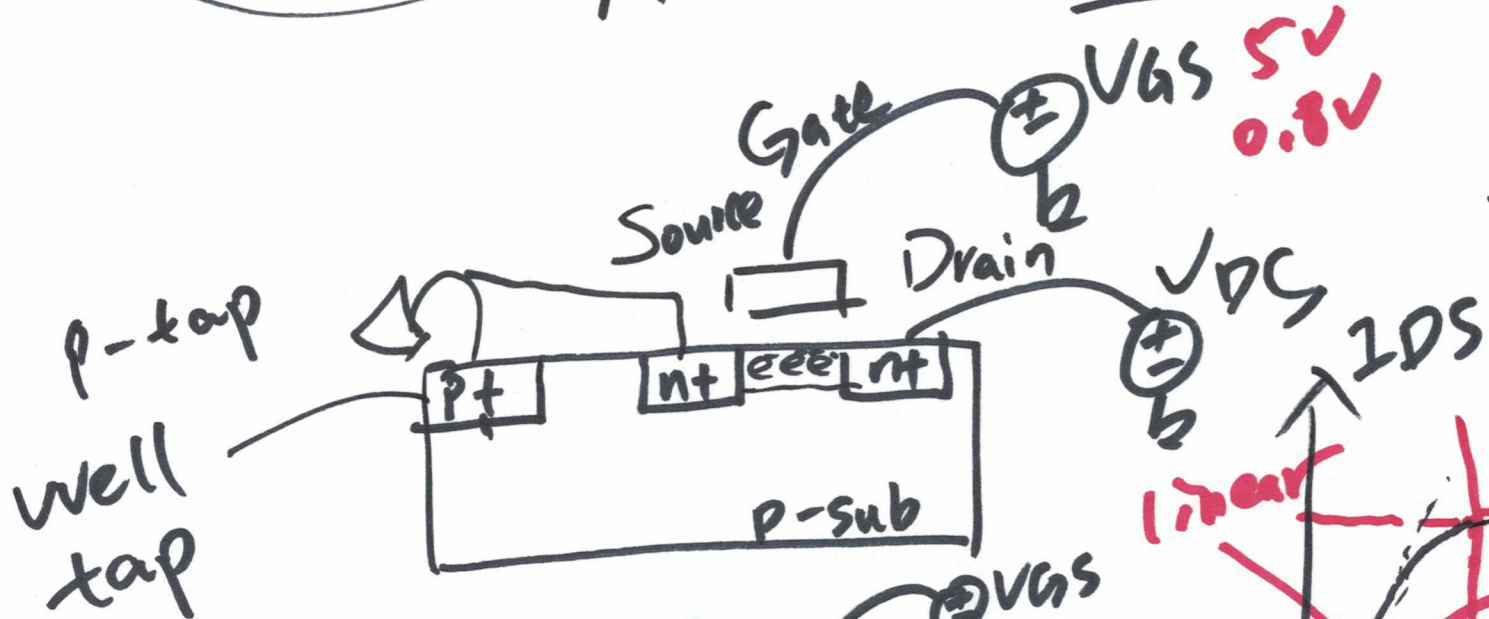
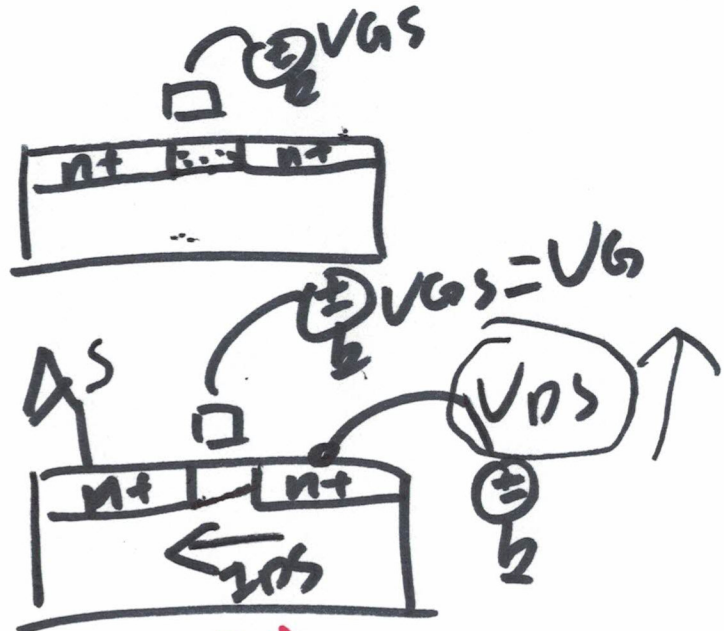


CMOS

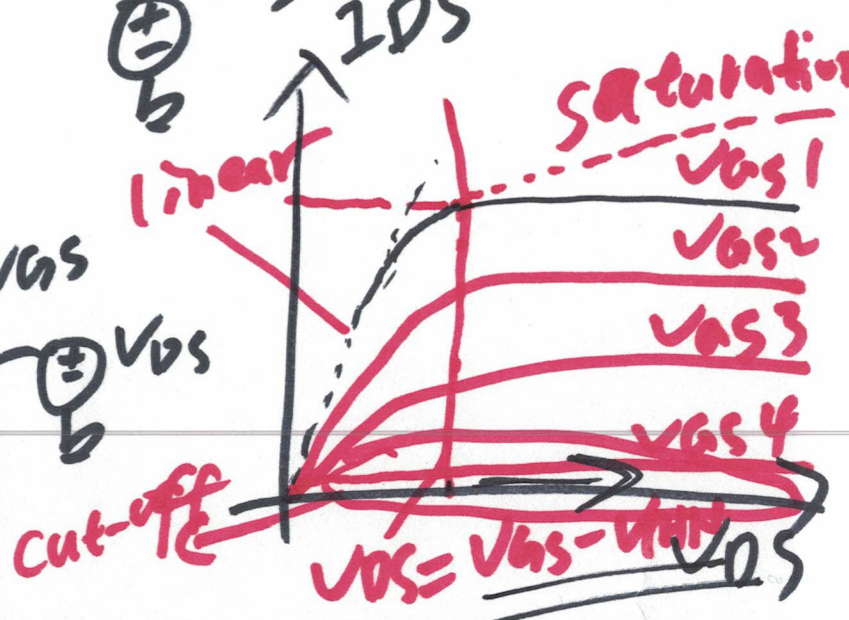
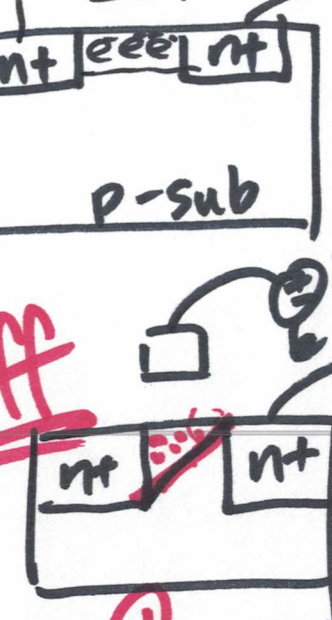


NMOS



$$I = \frac{V}{R}$$

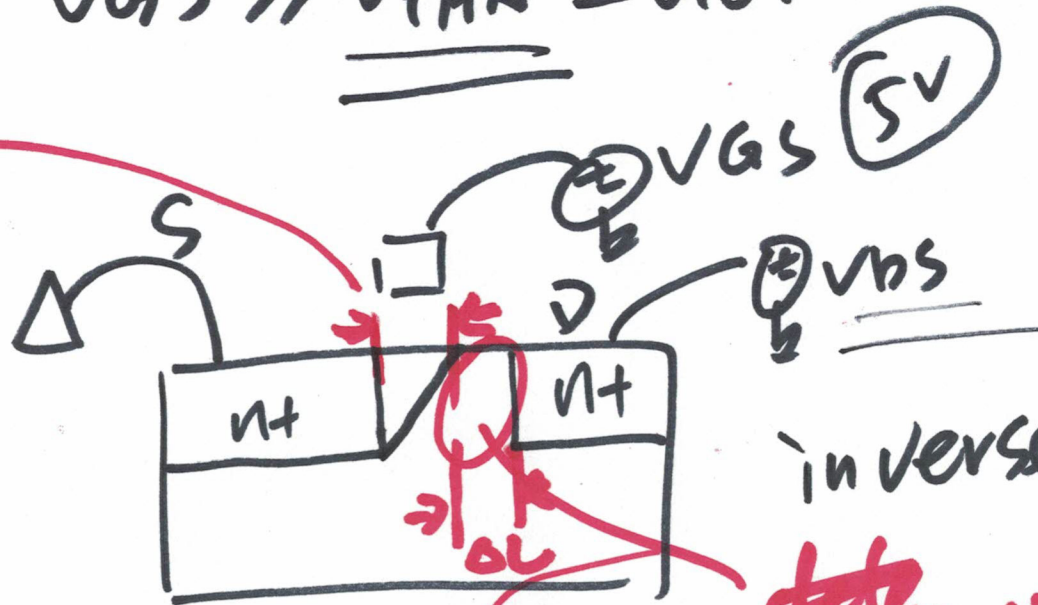
$V_{GS1} > V_{GS2} > V_{GS3} > V_{GS4}$
 $0.7V$
 pinch-off
 $< V_{THN}$



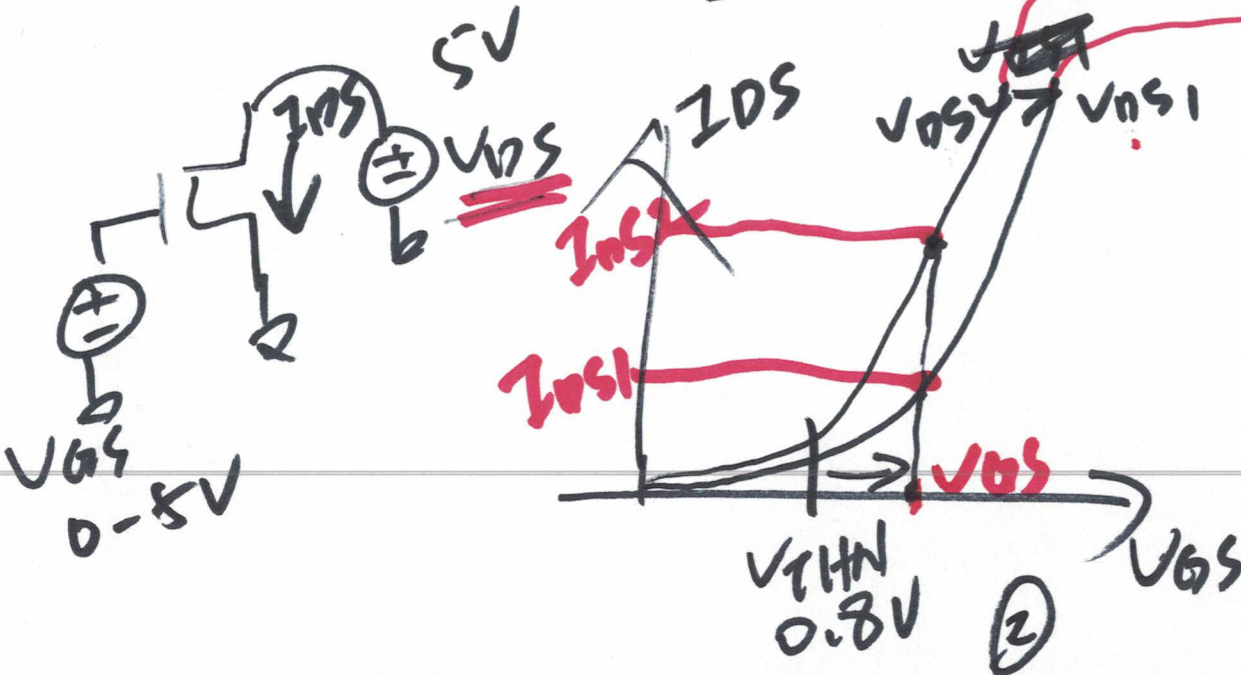
V_{THN} = Thresh voltage of the NMOS

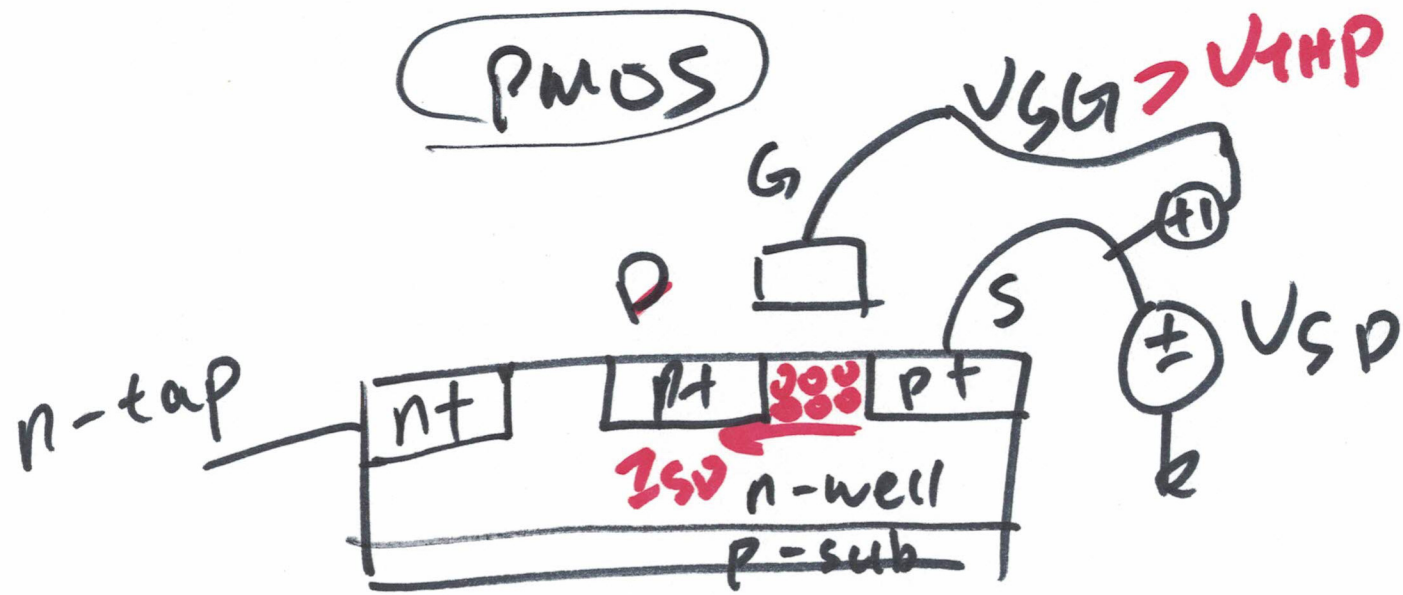
$V_{GS} \geq \underline{\underline{V_{THN} = 0.8V}}$

channel length modulation (CLM)



in verse deple depletion region





DC sweep
AC analysis
transient

$$V_{THP} = 0.9V$$



$$V_{DS} > \underbrace{V_{GS}}_{V_{DS}} - V_{THN}$$

$\hookrightarrow V_{DS, sat}$

$$\underline{V_{DS} = V_{GS}}$$

V_{DS}

