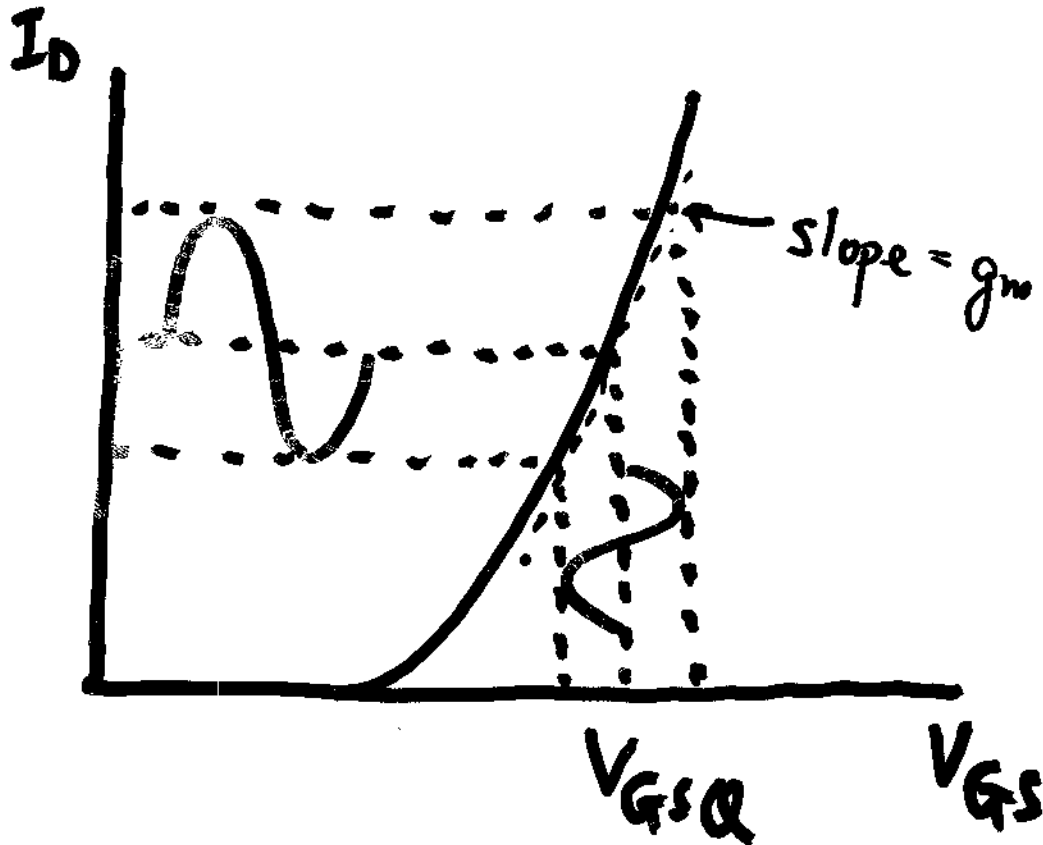


AC model



$$g_m = \left. \frac{\partial i_D}{\partial v_{GS}} \right|_{V_{GSQ}}$$

$$= 2K_n (V_{GSQ} - V_{TH})$$

$$= \sqrt{2K_n I_{DQ}}$$

Linear Amplifier!