No class, M, no lab.
W - review.
F - midterm in class. I page 2 sided notes. No calculation, books.
Reading: sections + equations, figures.
Active load: \( g_m = X g_m \), \( X = \frac{C_{dua}}{C_{ox}} = n - 1 \).
Typically \( V_b = 0 \), \( V_b = 0 \).
Current is roughly constant (compared to resistance?)
\( g_m, r_o \) roughly constant.
Bias the pair \((V_i, V_b)\) so \( V_o \) mid-rail.
\( I_{dm} = -\frac{M_{max}}{2} (V_{om})^2 (1 + \alpha V_b) \)
\( |I_{dp}| = \frac{C_m}{2} (V_{om})^2 (1 + 2(V_{om} - V_b)) \)
\( \alpha = \frac{2A_D}{2V_{ov}} \).
Can set equal by design.
Mid-rail, \( \lambda_n = \lambda_p \).
Output swing: \( (V_{ov} - V_D) \).
\( C_m = g_{mn} = \frac{2I_D}{V_{ov}} \).
\( R_0 = \frac{r_{o11}(x_p + 1)}{2A_D} \).
\( N = \frac{1}{2A_D} \) if \( \lambda_n = \lambda_p \).
\( A_v = -6mR_0 = \frac{1}{2V_{ov}} \).
\( V_{ov} = 0.1V \).
\( a = \frac{1}{10V} \).
\( A_v < 100 \).