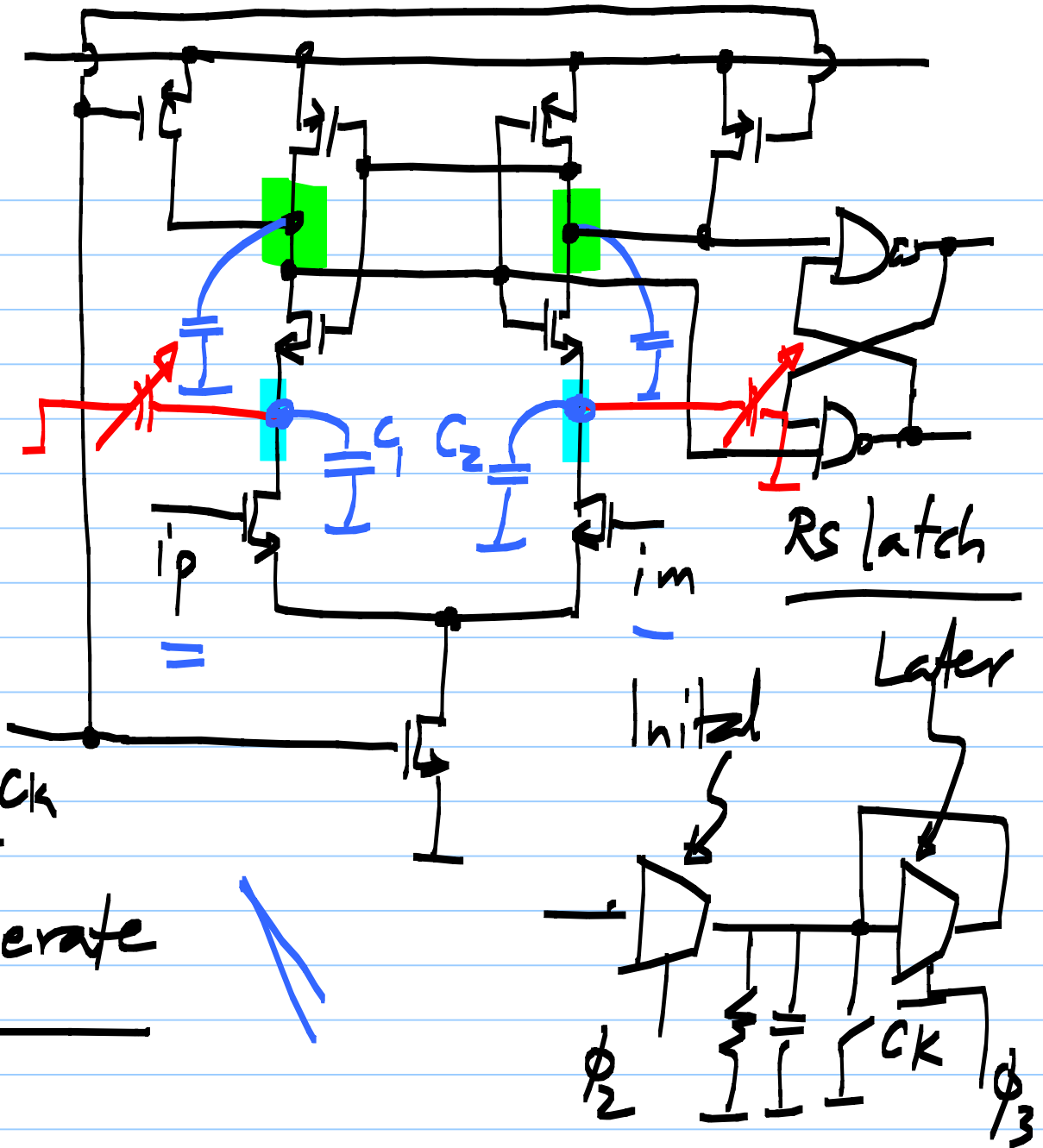


# Strong Arm Latch

- Single clock phase
- No static power dissipation

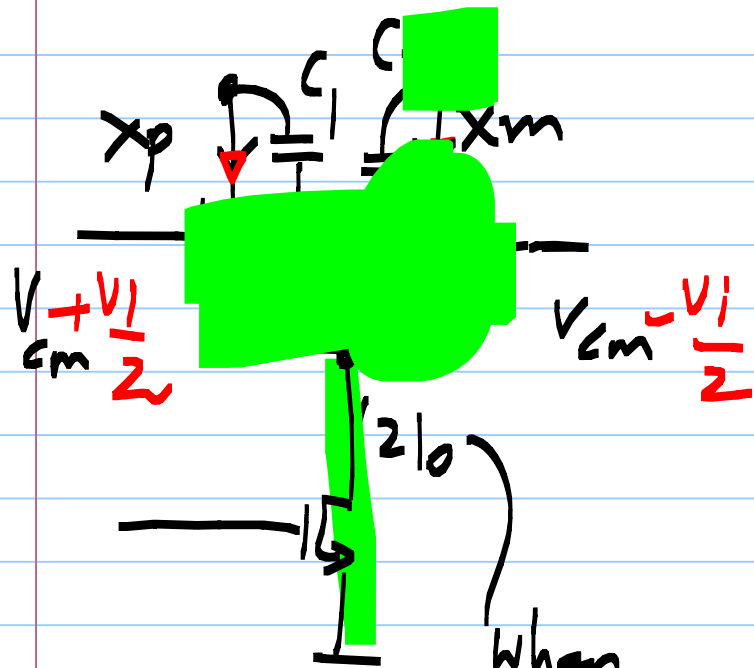
CK = 0: Reset

CK = 1: Initially sample CK  
later regenerate

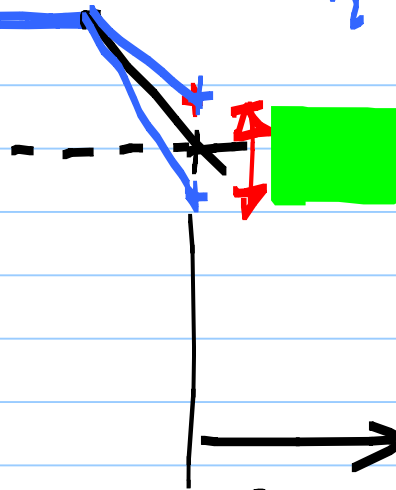




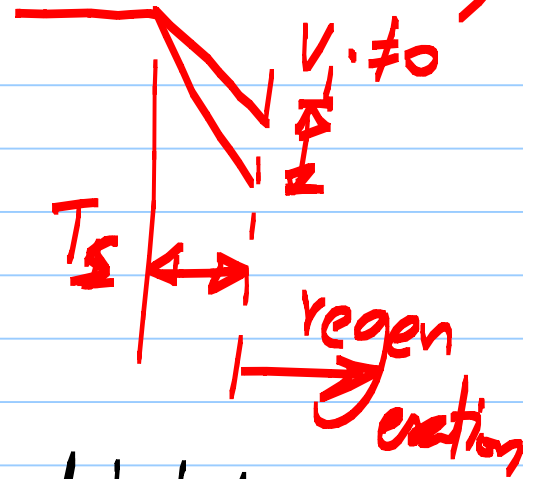
# Dynamic offset



$x_p, x_m$  with cap. mismatch,  $V_i = 0$



without cap mismatch,  $V_i \neq 0$



Cross-coupled latch turns on

regen  
creation

When  $CK = 1$

$$\left( \frac{I_0}{C_1} - \frac{I_0}{C_2} \right) T_s = \frac{I_0}{C} \cdot \frac{\Delta C}{C} \cdot T_s = \frac{g_m V_i \cdot T_s}{C} = \frac{V_{GS} - V_T}{2}$$

$$V_{is} = \left( \frac{I_0}{g_m} \right) \left( \frac{\Delta C}{C} \right)$$

