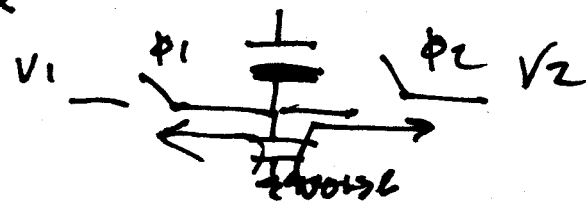


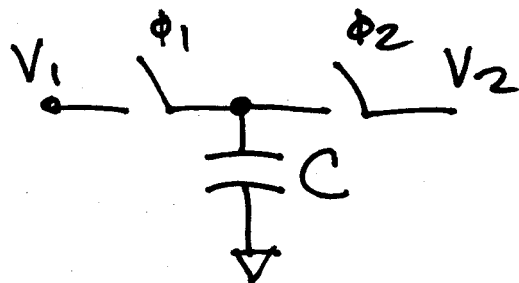
NONE of the charge gets transferred to C_F

If the parasitic C_s don't affect OAI operation why connect bottom plate to V_{IN} ?

Substrate noise

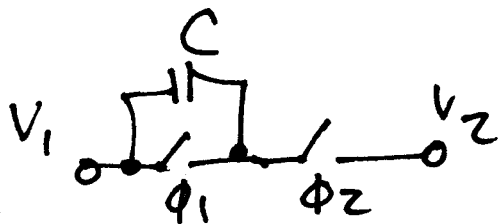
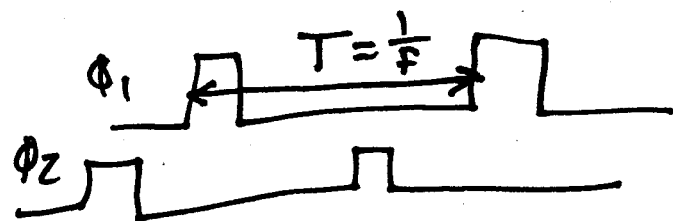


1)



$$Q_1 = V_1 \cdot C$$

$$Q_2 = V_2 \cdot C$$



$$Q_1 - Q_2 = C(V_1 - V_2)$$

$$I = \frac{Q}{T} = Q \cdot f$$

$$I = C(V_1 - V_2) \cdot f$$

$$\frac{V_1 - V_2}{I} = \frac{1}{fC}$$

R_{sc}

$$V_1 - V_2 = R_{sc} \cdot I$$

2)

$$Q_1 \stackrel{q_1 \text{ closed}}{=} (V_{cm} - V_{in}^{(N-1/2)T_s}) C_I$$

$$Q_2 \stackrel{q_2 \text{ closed}}{=} (V_{cm} - V_{cm}) C_I = 0 \quad (N-1/2)T_s$$

$$-Q_1 + Q_2 = Q_1 = -(V_{cm} - V_{in}^{(N-1/2)T_s}) C_I$$

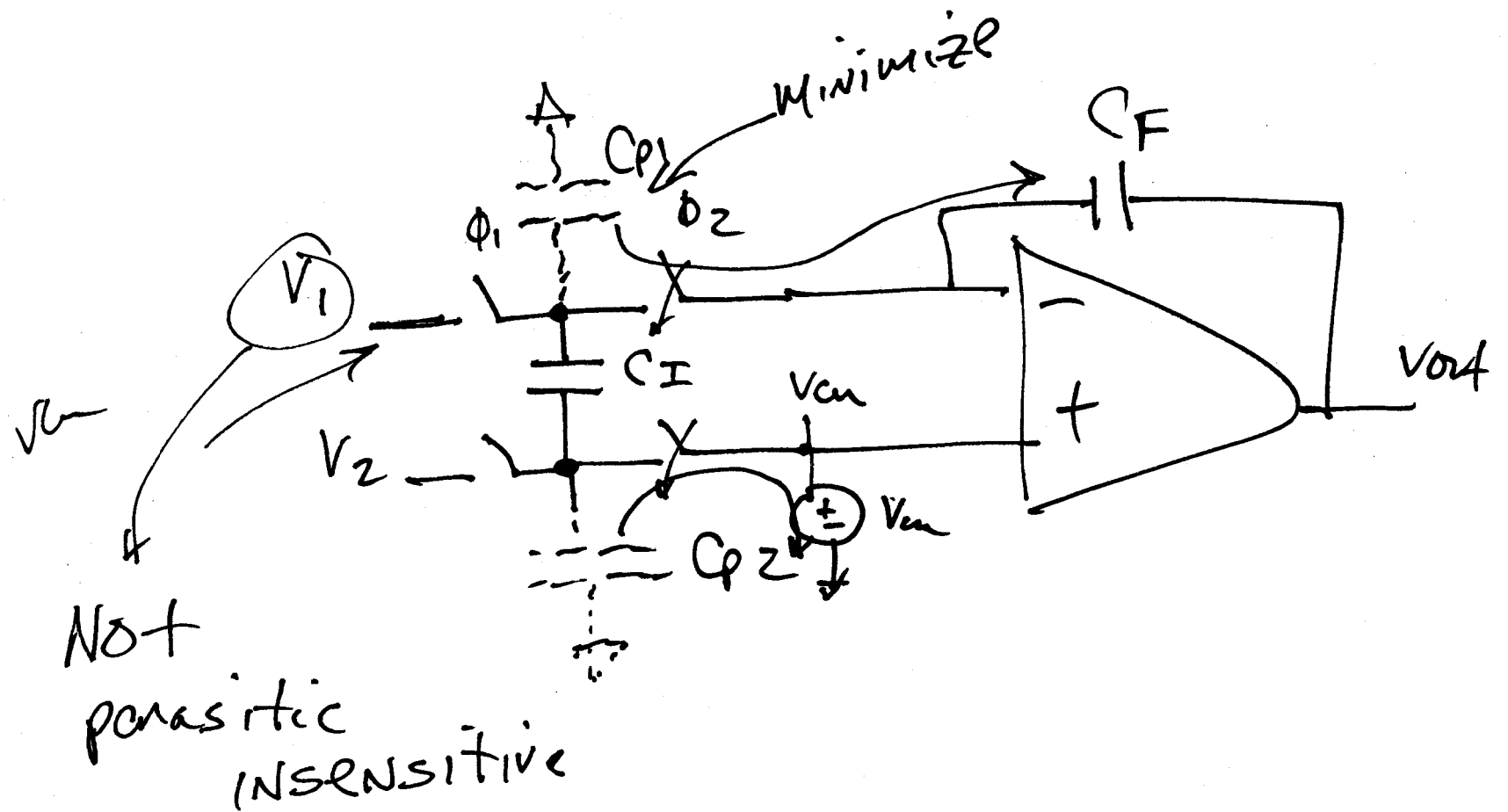
$$C_F (-V_{out}(N(T_s) - 1) + V_{out}(NT_s)) = -(V_{cm} - V_{in}^{(N-1/2)T_s}) C_I$$

$$C_F (V_{out}(z) \cdot z^{-1} + V_{out}(z)) = C_I (V_{in}(z) z^{-1/2} - V_{cm})$$

$$\frac{V_{out}(z)}{C_F} = \frac{C_I}{C_F} \frac{V_{in}(z) z^{-1/2} - V_{cm}}{-z^{-1} + 1}$$

$$V_{out}(z) = \frac{C_I}{C_F} \cdot \frac{V_{in}(z) z^{-1/2} - V_{cm}}{1 - z^{-1}}$$

3)



4)