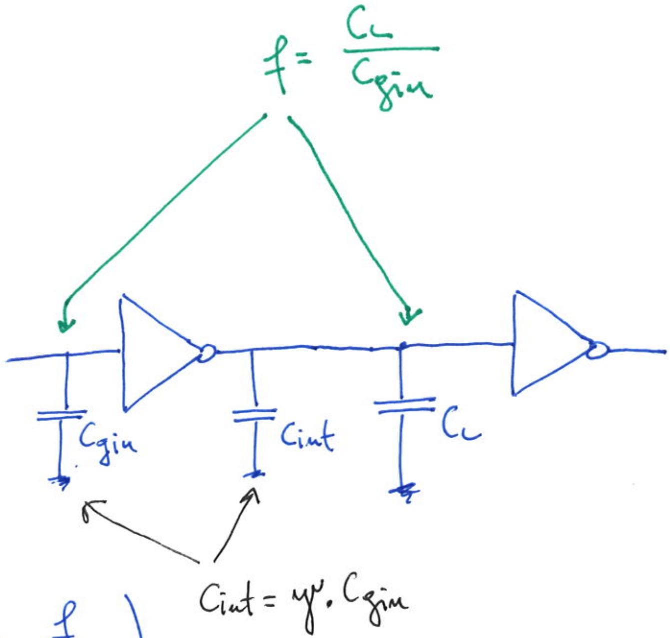
$$t_p = kR_w \cdot C_{int} + kR_w \cdot C_L$$

$$t_p = kR_w \cdot C_{int}\left(1 + \frac{C_L}{C_{int}}\right)$$

$$t_p = t_{p0} \cdot \left(1 + \frac{C_L}{C_{int}}\right)$$



$C_{int} = \gamma \cdot C_{gin}$ $\gamma \approx 1$

$$f = \frac{C_L}{C_{gin}}$$

$$t_p = t_{p0} \cdot \left(1 + \frac{\overbrace{C_L}^{f}}{\gamma \cdot C_{gin}}\right) = t_{p0} \cdot \left(1 + \frac{f}{\gamma}\right)$$

C_L za j-ti inverter je $C_{gin,\,j+1}$

$$t_{pj} = t_{p0} \cdot \left(1 + \frac{C_{gin,\,j+1}}{\gamma \cdot C_{gin,\,j}}\right)$$

$$t_{pj} = t_{p0} \cdot \left(1 + \frac{C_{gin,\,j+1}}{\gamma \cdot C_{gin,\,j}}\right)$$

$$t_{pj} = t_{p0} \cdot \left(1 + \frac{\overbrace{C_{gin,\,j+1}}^{f}}{\gamma \cdot C_{gin,\,j}}\right)$$

$$F = \frac{C_L}{C_{gin,1}} \qquad f^N = F \Rightarrow f = \sqrt[N]{F}$$

$$t_{pj} = t_{p0}\left(1 + \frac{\sqrt[N]{F}}{\gamma}\right)$$

$$t_p = N \cdot t_{p_0}\left(1 + \frac{f}{\gamma}\right)$$

$$f^N = F$$

$$N \cdot \ln f = \ln F$$

$$N = \frac{\ln F}{\ln f}$$

$$t_p = t_{p_0} \cdot \frac{\ln F}{\ln f} \cdot \left(1 + \frac{f}{\gamma}\right)$$

$$= t_{p_0} \cdot \frac{\ln F}{\gamma} \cdot \left(\frac{\gamma}{\ln f} + \frac{f}{\ln f}\right) = t_{p_0} \frac{\ln F}{\gamma} \cdot \left(\frac{\gamma + f}{\ln f}\right)$$

$$\underset{\text{MIN}}{t_p} = t_{p_0} \frac{\ln F}{\gamma} \cdot \left(\frac{\gamma + f}{\ln f}\right) \qquad \left(\frac{x}{y}\right)' = \frac{x'y - xy'}{y^2}$$

$$\frac{dt_p}{df} = 0 = t_{p_0} \frac{\ln F}{\gamma} \cdot \frac{\ln f - (\gamma + f) \cdot \frac{1}{f}}{\ln^2 f}$$

$$= t_{p_0} \frac{\ln F}{\gamma} \cdot \frac{\ln f - 1 - \frac{\gamma}{f}}{\ln^2 f} = 0 \Rightarrow \ln f - 1 - \frac{\gamma}{f} = 0$$

$$\ln f = 1 + \frac{\gamma}{f}$$

če $\gamma = 0$

$$\ln f = 1 \Rightarrow \underline{f = e}$$

če $\gamma \neq 0$

$$\ln f = 1 + \frac{\gamma}{f}$$

$$\underline{f = e^{1 + \frac{\gamma}{f}}}$$