



Cadence - Virtuoso schematic.

I have to write a Ocean script for above circuit.

Given $V_{GS_true\ value} = 0.2\ V$; Threshold value ($V_{th} = 0.01$)

$$f(I, W, L) = \{ \text{Overdrive} - V_{GS_true\ value} \}^2$$

$$\text{Overdrive} = V_{GS} - V_{th} \rightarrow \text{from Cadence.}$$

→ Given $V_1 = (I_1, W_1, L_1)$; $V_2 = (I_2, W_2, L_2)$
 $V_3 = (I_3, W_3, L_3)$; $V_4 = (I_4, W_4, L_4)$

Find $f(v_1)$, $f(v_2)$, $f(v_3)$ and $f(v_4)$.

→ The point for which $f(v)$ is maximum is called worst point.

→ The point for which $f(v)$ is minimum is called Best point.

i.e. B = Best point [Lowest function value]

G → Good point [2nd lowest function value]

P → Partially Good point [3rd lowest function value]

W → Worst point [Highest function value]

Now, calculate,

$$M = \frac{B + G}{2}$$

$$R = 2M - W$$

If $f(R) < f(G)$

If $f(B) < f(R)$

replace 'W' with 'R'

else

compute $E = (2R - M)$ & $f(E)$

If $f(E) < f(B)$

replace 'W' with 'E'

else

replace 'W' with 'R'

end

end

else

if $f(R) < f(W)$

replace 'W' with 'R'

else

compute $C_1 = \left(\frac{W+M}{2}\right)$ & $C_2 = \left(\frac{M+R}{2}\right)$ & $f(C_1), f(C_2)$

The point with least function value is taken as 'C'.

if $f(C) < f(W)$

replace 'W' with 'C'

else

compute S & $f(S)$

$$S = \left(\frac{B+W}{2}\right)$$

replace 'W' with 'S'

replace 'G' with 'M'.

end

end

end

→ calculate Gain in db.

if (Gain < 55 db)

break;

if $f(B) < th.$

break

otherwise continue the loop.