Monte Carlo/Statistical Simulation in TSMC 65 (Inter-die Variation check) <Process only Monte Carlo simulation>
Summary

• Steps for Monte Carlo/Statistical Simulation
  • Set up an analysis. Transient or AC or DC or ….
    Run that simulation at least once.
  • Set the Monte Carlo library in model libraries
  • Use All normal components
  • Set up the Monte Carlo with Process only
  • Add desired parameter(s) to observed the variation
  • Simulate!!
Set up an analysis. Transient or AC or DC or …. 

• This is very straight forward. 
• Open Analog Design Environment 
• Set any analysis. Transient..dc..ac.. …. 
• Run the simulation at least once before starting Monte Carlo simulation
Set the Monte Carlo library in model libraries

- Open Analog Design Environment
- Go to Setup → Model Libraries ..
- A library window will be appeared
Set the Monte Carlo library in model libraries

- Select any library path and write `mc` at section (opt.)
- Click Add. Click Apply and then click Ok.
- Similarly write `stat` and click add
Set the Monte Carlo library in model libraries

- Only **mc** and **stat** are enable
- Others are disable (leading # sign)
All components are normal
Set up the Monte Carlo with Process variation only

- Click Tools → Monte Carlo.. in ADE
- Analog Statistical Analysis window will be appeared
- Set Number of Runs to 200 (minimum)
- Analysis Variation – Process Only
Add desired parameter(s) to observed the variation

- **Process only** Monte Carlo simulation is performed for a current mirror
- We will observe the current of each branch and difference
- $S_3$ \( \text{IDC(“/M0/D”) - IDC(“/M1/D”)})\)
- Datatype is scalar
- Autoplot is yes
Simulation Results
For any problem

aurangoz@ualberta.ca