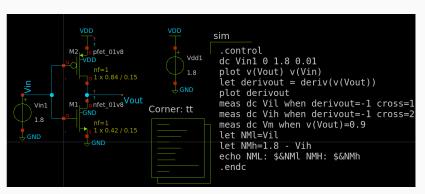
## EE5311: Digital IC Design

Tutorial 2

## **Experiment 2**

Plot the derivative and obtain the noise margins:



## **Experiment 2**

Obtain the DC transfer characteristic for  $V_{DD}$  ranging from 0.2V to 1.8V in steps of 0.2V.

```
sim
                                       .control
       M2. Is pfet 01v8
                                       let vds = 0.2
                                       set cache =
                                       let index = 1
                                       let N = 10
      M1 onfet 01v8 Vout
                                       let imax = vector(N)
Vin1
                      Corner: tt
                                      while index le N
                                         alter Vdd1 $&vds
                                         dc Vin1 0 $&vds 0.01
                                         set cache = ( $cache dc{$&index}.v(Vout) )
                                         let imax[index - 1] = abs(vecmin(dc{$&index}.i(Vdd1)))
                                        let vds = vds + 0.2
                                         let index = index + 1
                                      end
                                       plot $cache
                                       .endc
```