Date to Performexperiment:18/03/25 **Report Submission Date:23/03/2025, 11:59 PM**

EE 517: VLSI Lab II

Experiment 8: Design a fully differential folded cascode single-stage opamp.
Objective: To find W/L, gain bandwidth product, output swing, ICMR, and compare the practical and theoretical results.

Specifications:

V_{DD}= 1.8V

Differential output swing= 1.8V

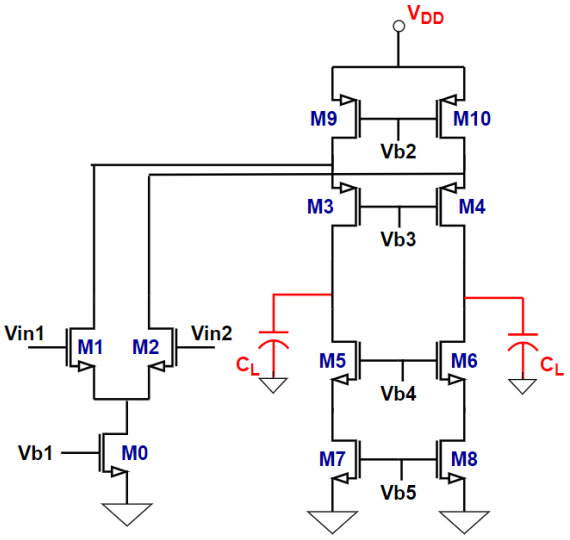
Power dissipation<=0.12mW

Voltage Gain=2000 V/V

Technology=180 nm

C_L=10pF

Circuit Schematic:



Analysis:

- DC Analysis
  - Report the schematic of the diff pair with DC OP point annotated: I_d, V_{gs}, V_{ds}, V_{th}, V_{dsat}, g_m, g_{ds}, g_{mb}, region.
  - Check that all transistors operate in saturation.

- AC Analysis.
  - Observe pole-zero analysis of your circuit.
  - Frequency response of your circuit.
  - Find Av, PM, Bandwidth, CMRR, PSRR.
  - Give a proper reason for selecting any value of any parameter.
- Transient Analysis.
  - slew rate.
  - ICMR, OCMR.