PHY 338k Lab Report 3

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October 9, 2025

1 Introduction

2 Lab 7: Operational Amplifiers I

2.1 Open-loop op-amp, comparator

include copy of scope display of V_{out} vs. V_{in}

explain why linear gain region of op-amp (slope near $V_{in} = 0$) does not play a role in this circuit

measure max and min output voltage, are these the same or diff than the supply voltages?

compare what you get to the maximum voltage swing shown on the spec sheet

measure the slew rate (clope of rise or fall of output waveform)

2.2 Inverting amplifier

plot gain vs. f for both resistance ratios together on the same log-log plot

extrapolate from the plot curves (can use hand ruler) to get a rough estimate of the open-loop gain as a function of frequency

use the 2 rules for an op-amp (given in manual) to explain/derive how the gain is produced for the inverting amplifier

2.3 Summing amplifier

report each voltage and resistor combination used along with the corresponding output voltage for each

use what you observed to determine an equation relating the input and output voltages to the 3 resistor values. Generalize this equation for N inputs

3 Lab 8: Operational Amplifiers II

Acknowledgements

We would like to thank our laboratory instructor, Dr. Heinzen, and our teaching assistant, Kyle Gable, for their guidance and support through these labs.Their assistance and feedback were invaluable in helping us understand the experimental procedures and circuit concepts. We also appreciate the department's laboratory facilities and equipment, which made these experiments possible.