Lab 4 Report

Jonathan Westerfield

224005649

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Objective:

The purpose of this lab is to study some of the advanced op amp configurations commonly found in practical applications. The circuits we will build and study are the summing amplifier, the differential amplifier and the instrumentation amplifier. We will measure the outputs versus the input to see the properties of each.

Introduction:

First, we build the circuits in Multisim to give us a rough estimation on what the values should be. Then, we go through and build each circuit based on the values of the resistances that we calculated, and measure the input and output voltages. To measure this, we look at the transient responses of each circuit.

Simulation Calculations

Simulation Plots

Experimental Plots

Experimental Calculations

Conclusion:

Differences between calculated and simulated results:

There were no differences between the calculated and simulated results.

Differences between all of the results:

Unsurprisingly, the differences between all of the results, from the calculated, simulated and experimental, were negligible. Any differences between the simulated and experimental can be attributed to unaccounted resistances in the breadboard and to resistance values not being exactly as calculated due to not having the proper resistors.