**Lab 7: Operational Amplifier**

Daniel Komac

EEE 117L

2:00pm-4:50pm

**Introduction:**

Understanding the operational amplifier circuit element and how to correctly ready the op amp with oscilloscope, the power supply, the function generator and the digital multimeter.

**Purpose:**

Understanding the purpose of operation amplifiers, these elements take inputs and use it(relative to circuit ground) to modify the output by 100s or 1000s times more potential.

**Data:**

**Inverting Amplifier:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| -V op Amp:  -9.0V | R1: 993.66 Ohms | R2: 995.0 Ohms | Phase Angle: 180 degrees |  |
| +V Op Amp:  +9.0V |  |  |  |  |
| DMM: | 5.94V | 6.08V |  |  |
| Oscilloscope: | 6.08V | 6.16V |  |  |

**Saturation:**

Saturation is observed with the oscilloscope and without any offset the sinusoidal wave is cut off at the cutoff frequency allowing for a saturated voltage to be hit. With offset the op amp never hits saturation

**Strain Gain Amplifier:**

**Data:**

|  |
| --- |
| Resistances: |
| R1: 993.66 Ohms |
| R2: 995.0 Ohms |
| R3: 2.97 KOhms |
| R4: 2.98KOhms |

**Conclusion:**

The lab introduced us to the basics of how the Operation Amplifier works. We studied waveforms of different Operation Amplifier setups, such as Inverting and Unit Gain Operation Amplifiers. They are practical in many different scenarios such as finding the unit gain of an Op Amp circuit. The lab was to accustom us with common practical uses for these circuits in our field such as in filters or other such circuit configurations.