ISIM Lab No. 7 Report: Concerning Controlling Current with Op-Amps

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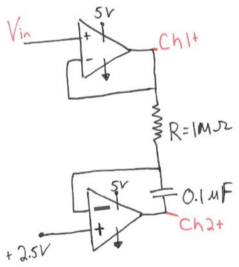

Figure 1: This is the circuit diagram I used to test the effect of varying V_{in} on the voltage across the 1M resistor with a 0.1μF capacitor.

Vin (V)	dV/dt Measured (V/s)	dV/dt Expected (V/s) = (Vin-2.5) / (RC)
2.718	2.10	2.18
3.018	4.95	5.18
3.523	9.61	10.23
4.016	13.77	15.16
4.547	18.58	20.47

Figure 2: The results of the aforementioned test can be seen in the first 2 columns of this table. The third column represents the theoretical values of the resistor voltage for the tested V_{in}s using the equation $\frac{dV}{dt} = \frac{V_{in}-2.5}{RC}$

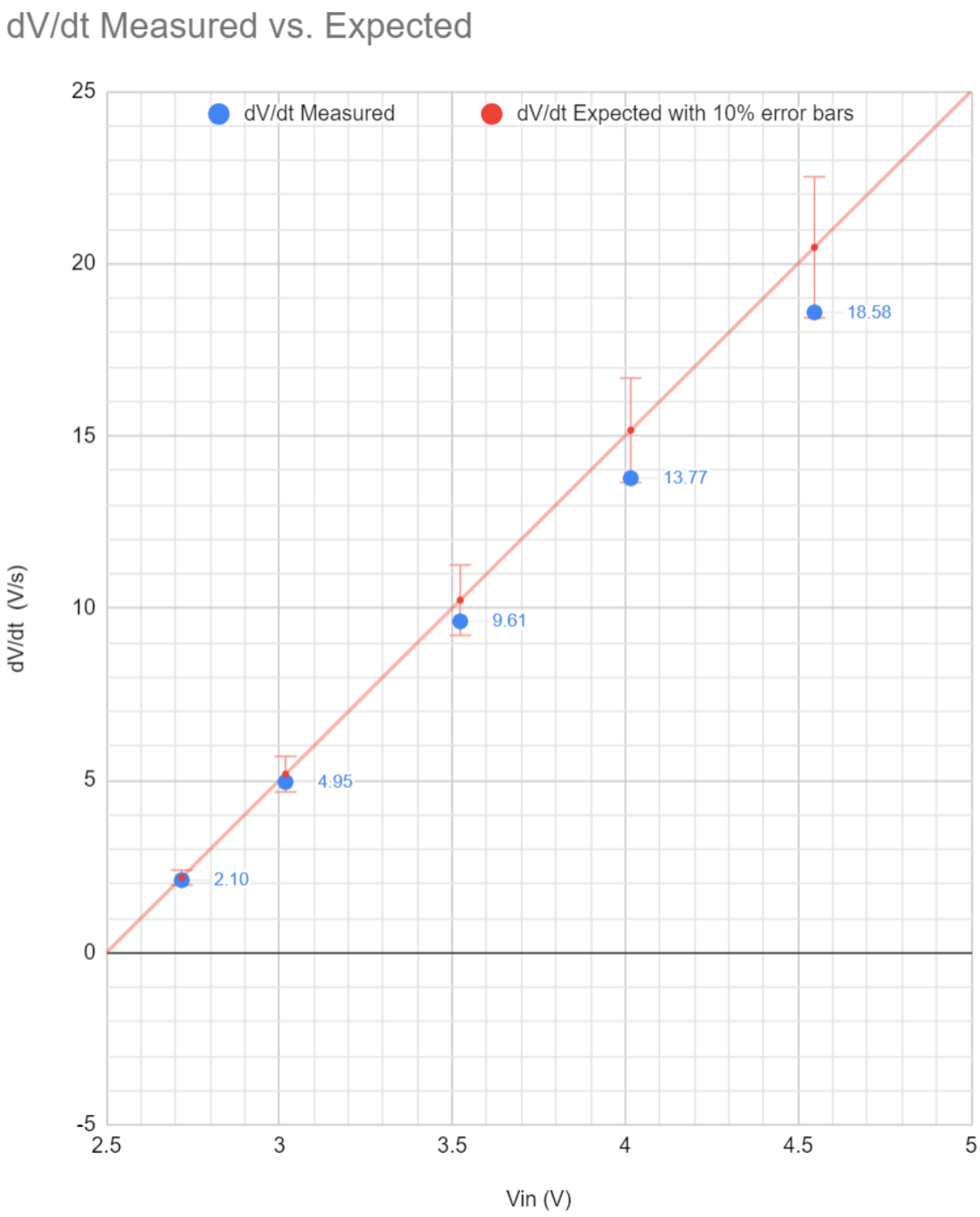

Figure 3: This graph illustrates the measured data-points on top of the calculated theoretical values. The 10 percent error bars around the red dots show that each of the measured values falls within 10 percent of the theoretical value. With this information we can verify the capacitor law.