
In-Class Lab: Capacitance

Name:

Date:

Instructor:

Section:

For Online Submissions

Take a photo or scan a copy showing **ALL calculations performed during this lab** and upload it with this Lab Report in D2L.

Conclusions:

1. What happened to the voltage as the plates got closer together (d decreasing)?
2. What were your best fit values for the charge Q and C_{sys} ?
3. How well did your model fit the data? Try to explain any discrepancy. Hint: What approximations are made when deriving the parallel plate capacitance ($C = \kappa \epsilon_o A/d$) from Gauss' Law?

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4. Briefly discuss the value of computer modeling.
5. Examine Table II. Does the data agree with Equation 5? What does a dielectric do?

Data

Table 1: Air Gap Capacitor

Separation (cm)	Voltage (V)
8.0	
7.0	
6.0	
5.0	
4.0	
3.0	
2.0	
1.5	
1.0	
0.5	
0.3	

Table 2: Paper Dielectric

	Paper Position	Voltage (V)
1	out	
2	in	
3	out	
4	in	
5	out	
6	in	
7	out	
8	in	
9	out	