Lab Report Outline

Title of Experiment

Name of Author

Date

Abstract: A brief statement summarizing what was done, why, and giving the principal results. It should be complete enough so that one need not read the paper to understand the abstract. Nothing in the abstract should require referencing the body of the paper. Everything in the abstract is repeated, but with more elaboration, in the paper. The purpose of the abstract is to allow the reader to determine whether or not it will be worth the while to read the entire paper.

Introduction

The introduction provides the background and theory motivating the experiment. Important physical principles that may be used later in the paper should be explained in a general way. Key derivations that lead to predictions should be referenced and included as appendices.

Experiment

The experiment must be described thoroughly but concisely. The description should cover all apparatus used (including diagrams of experimental arrangements, if helpful) and a short discussion of techniques and procedures. This latter discussion only needs to be sufficiently detailed to reveal both the strengths and weaknesses of the work. This section may be divided into two, Apparatus and Procedures.

Data and Analysis

Present data, observations, and results in tabular and/or graphical form. Graphs and tables should be labeled and captioned and referred to in the text. Individual uncertainties should identified and quantified. Include a description of any mathematical manipulations of the data. If it might help to show sample calculations, they should be referenced and included as appendices. This section may be divided into two.

Results

Final results include total uncertainty, confidence interval, and PDF, as well as a comparison of experiment with theory or accepted values, if appropriate.

Graphs comparing data points with theoretical curves belong here, but judgments as to the significance of the results do not. Results stand or fall as supported by the data and analysis, irrespective of your opinion.

Discussion

Draw conclusions about the results. While speculations are sometimes appropriate in this section, opinion must be carefully distinguished from conclusions that are supported completely by evidence.

References

This is a bibliography or list of footnotes, if any.

Appendix

Contains material, if any, that elaborates on or supplements what is in the body of the paper, such as derivations of important relationships and sample calculations.