Homework 5: Getting Started with LaTeX

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1 Introduction

1.1 What's going on here?

LaTeX is a typesetting language. Instead of visually formatting your text, you enter your manuscript text intertwined with LaTeX commands in a plain text file. You then run LaTeX to produce formatted output, such as a PDF file. Thus, in contrast to standard word processors, your document is a separate file that does not pretend to be a representation of the final typeset output, and so can be easily edited and manipulated.

1.2 Operative Systems

LaTeX is available for most computers, from the PC and Mac to large UNIX and VMS systems. On many university computer clusters you will find that a LaTeX installation is available, ready to use. Information on how to access the local LaTeX installation should be provided in the Local Guide. If you have problems getting started, ask the instructor.

2 Learning to work with LaTeX

2.1 What I have learned today

I learned how to compile tex file on Linux system. Normally I would use Overleaf website or an extension on Visual Studio Code on Window to compile my tex file.

2.2 Difficult Points

I met no particular difficult points the lectures as I already had some experience with Latex.

3 Testing

3.1 My Favorite Equations

$$\textbf{Gauss's law} \iint\limits_{\partial\Omega} \mathbf{E}\cdot\mathrm{d}\mathbf{S} = \frac{1}{\varepsilon_0}\iiint_{\Omega}\rho\,\mathrm{d}V$$

$$\textbf{Gauss's law for magnetism} \iint\limits_{\partial\Omega} \mathbf{B}\cdot\mathrm{d}\mathbf{S} = 0$$

$$\textbf{Maxwell–Faraday equation} \oint_{\partial\Sigma} \mathbf{E}\cdot\mathrm{d}\boldsymbol{l} = -\frac{\mathrm{d}}{\mathrm{d}t}\iint_{\Sigma}\mathbf{B}\cdot\mathrm{d}\mathbf{S}$$

$$\textbf{Ampère's circuital law} \oint_{\partial\Sigma} \mathbf{B}\cdot\mathrm{d}\boldsymbol{l} = \mu_0\left(\iint_{\Sigma}\mathbf{J}\cdot\mathrm{d}\mathbf{S} + \varepsilon_0\frac{\mathrm{d}}{\mathrm{d}t}\iint_{\Sigma}\mathbf{E}\cdot\mathrm{d}\mathbf{S}\right)$$

3.2 Try Drawing with Tikz