LaTeX Guide for Physics Teacher

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AUTHOR INTRODUCTION

Ms. Li Qing, a first-class teacher with extensive teaching experience and outstanding teaching achievements, has been working as a high school physics teacher and head teacher at JiuTai No.1 Middle School in Changchun City since 2009. She has won several national and provincial teaching awards and actively participates in teaching and research activities. She has published several academic papers and hosted and participated in several research projects. Ms. Li also holds a utility model patent and software copyright, and has written monographs that are about to be published. She is passionate about education and is committed to cultivating students' physics literacy and innovative thinking.

PREFACE

Welcome to this LaTeX guide! This book aims to help physics teachers learn and master the LaTeX typesetting system, enabling them to produce beautiful and standardized documents and presentations more efficiently.

Why Choose Latex?

LaTeX is a powerful typesetting system, especially proficient in handling mathematical formulas and scientific documents. Compared to traditional word processing software, LaTeX offers several advantages:

Aesthetically pleasing formatting: LaTeX automatically handles formatting details such as fonts, spacing, and page layout, ensuring a professional and visually appealing document.

Mathematical formula handling: LaTeX provides extensive features for typesetting mathematical formulas, making it easy to handle complex expressions and ensure their correct formatting.

Customizability: LaTeX allows users to customize document styles and formats, such as titles, chapters, and footnotes.

Cross-platform compatibility: LaTeX runs on various operating systems, including Windows, MacOS, and Linux.

Open-source: LaTeX is open-source software, allowing users to freely use and modify it.

Reading Suggestions

This book is suitable for physics teachers with some computer knowledge. It is recommended to read the chapters in order and practice

hands-on to gradually master the use of LaTeX.

May this book help you easily master the LaTeX typesetting system and improve your document production efficiency!

CHAPTER-1

LATEX Basics

The first part of this chapter presents a short overview of the philosophy and history of LATEX. The second part focuses on the basic structures of a LATEX document. After reading this chapter, you should have a rough knowledge of how LATEX works, which you will need to understand the rest of this book.

1.1 A Bit of History

1.1.1 TEX

TEX is a computer program created by Donald E. Knuth. The original program was aimed at typesetting text and mathematical formulae.Knuth started writing the TEX typesetting engine in 1977 to explore the potential of digital printing equipment. These new devices were beginning to infiltrate the publishing industry at that time. His goal was to reverse the trend of deteriorating typographical quality that he saw affecting his own books and articles. The first stable version of TEX was released in 1982. Version 3.0 was released in 1989 to better support 8-bit characters and multiple languages. Knuth considered the TEX-design to be complete with the release of Version 3. TEX is renowned for being extremely stable, for running on many kinds of