

THE **LITEBOOK** TEMPLATE

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1 The LiteBook Template

CHAPTER

1.1 The purpose of this package

This template provides a fresh cover and chapter design for book. Welcome to feedback bugs or ideas via email xiamyphys@gmail.com or [GitHub](#).

This template is used by me to reformat the textbook *General Relativity*, *R. Wald*, and I also use this template to typesetting my notes on *Group Theory in Physics*. You can download their codes on [GitHub](#).

1.2 Installing LiteBook and loading it

For portable version, simply download latest `litebook.cls` file from [GitHub](#) or [CTAN](#) and save it under your working directory. This way of installation is simple and convenient, but you have to manually update `.cls` now and then.

However, I strongly suggest that you should use terminal/cmd to implement the commands to update all the packages (and install this package) to the latest version or switch to portable version instead

```
sudo tlmgr update --self --all
```

If you are in some areas with awful Internet environment (such as GFW), you can choose a proper mirror source or use other means¹. To learn more, please refer to [How do I update my T_EX distribution?](#)

1.3 Compatibility

The test environments are macOS + MacT_EX 2024 / Overleaf and they all work fine for pdfT_EX and X_YT_EX compilers. Windows, Linux and Unix platforms' unknown. The compile time of current document via pdfT_EX compiler is 0.965±0.0019s on MacBook Air M2 8GB (macOS Sonoma 14.4) when charging.

1.4 Cover Information Settings

There are several lines of information and a cover image on the cover of this document, the corresponding commands are the following

```
\cover{\UPLowFadingImage[trim={0 {.9\paperheight} 0 0},clip]{cover}
[trim={0 {.5\paperheight} 0 0},clip]{cover}}
\title{\scshape The \pkg{LiteBook} Template}
\subtitle{Version 0.2a \today} \author{Hsia Mingyu}
\bioinfo{Hangzhou Dianzi University}
\press{\scshape The University of Chicago Press}
```

The same as the `book` class, the command `title` could not be omitted, or it will return an error, and there will be a warning if the command `author` is omitted. The `cover` can assign the format of the image on the cover and you can adjust the format of the image with the `fadingimage` package.

¹Please comply with local network regulations.

1.5 Global options of this template

```
\documentclass[<math>,<thmstyle>]{litebook}
```

- The `math` option can set the math font to be `newtx` (default) or `mtpro2`.
- The `thmstyle` option can set the style of `amsthm` environments be the `mdframed` (default) or `amsthm`.

1.6 Preset packages and commands

This template has been preset with the following packages:

<code>amsthm</code>	<code>bm</code>	<code>cancel</code>	<code>derivative</code>	<code>esvect</code>	<code>extarrows</code>	<code>fixdif</code>	<code>nicefrac</code>
<code>nicematrix</code>	<code>physics2</code>	<code>refstyle</code>	<code>siunitx</code>	<code>booktabs</code>	<code>diagbox</code>	<code>fontawesome5</code>	<code>geometry</code>
<code>indentfirst</code>	<code>mdframed</code>	<code>multicol</code>	<code>multirow</code>	<code>setspace</code>	<code>tabularx</code>	<code>tcolorbox</code>	<code>tikz</code>

You can click on them to go to the homepage to view the documentation.

And commands `\i`, `\e`, `\T` have been defined to input *i*, *e* in roman (non-italic) text and matrix transpose symbol *T*, which can help you typeset math quickly.

The template has been preset the following reference command via `refstyle` package: `\eqref{<label>}`, `\figref{<label>}` and `\tabref{<label>}`, you can add other ref commands via `refstyle` package.

1.7 Equation Test

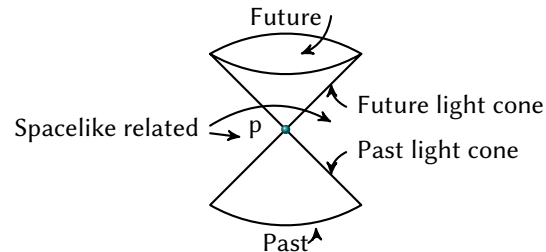
The following is the Schrödinger Equation

$$i\hbar \frac{\partial}{\partial t} \Psi(x, t) = \left[-\frac{\hbar^2}{2m} \frac{\partial^2}{\partial x^2} + V(x, t) \right] \Psi(x, t) \quad (1.7.1)$$

The above equations are the integral formula of the Maxwell's Equations in Gaussian units.

1.8 Figure and Caption Side by Side Test

Figure 1.1. A diagram showing the causal structure of spacetime in special relativity. The “light cone” of *p* rather than a “surface of simultaneity” with *p* now plays a fundamental role in determining the causal relationship of *p* to other events.



Here, **Figure 1.1** is a diagram showing the causal structure of spacetime in special relativity.

1.9 Preset Environments

```
\begin{<theoremname>} ... \end{<theoremname>}    \begin{axiom} ... \end{axiom}
```

Definition 1.1 (The Definition Environment).

From Wikipedia: A definition is used to give a precise meaning to a new term, by describing a condition which unambiguously qualifies what a mathematical term is and is not.

Theorem 1.1 (The Theorem Environment).

From Wikipedia: A theorem is a statement that has been proved, or can be proved.

Lemma 1.1 (The Lemma Environment).

From Wikipedia: In mathematics, informal logic and argument mapping, a lemma (pl.: lemmas or lemmata) is a generally minor, proven proposition which is used as a stepping stone to a larger result. For that reason, it is also known as a “helping theorem” or an “auxiliary theorem”.

Corollary 1.1 (The Corollary Environment).

From Wikipedia: A corollary is a theorem of less importance which can be readily deduced from a previous, more notable statement.

Proposition 1.1 (The Proposition Environment).

From Wikipedia: A proposition is a central concept in the philosophy of language, semantics, logic, and related fields, often characterized as the primary bearer of truth or falsity.

Postulate 1.1 (The Postulate Environment).

From Wikipedia: A postulate is a statement everyone agrees to be correct.

Axiom 1.1 (The Axiom Environment).

From Wikipedia: An axiom is a statement that is taken to be true, to serve as a premise or starting point for further reasoning and arguments.

Remark (The Remark Environment).

From Math StackExchange: The remark device is used for material that is too long to be included in parentheses, while it deserves greater prominence than a footnote.

Example 1. From Cambridge Dictionary: The example is a way of helping someone to understand something by showing them how it is used.

Problem 1. From Springer: A problem is generally considered to be a task, a situation, or person which is difficult to deal with or control due to complexity and intransparency.

Solution. The quick brown fox jumps over the lazy dog.

A Test to Unnumbered Chapter

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