$$\Psi = \int e^{\frac{i}{\hbar}\int\left(\frac{R}{16\pi G} - \frac{1}{4}F^2 + \overline{\psi}i\not{D}\psi - \lambda\varphi\overline{\psi}\psi + |D\varphi|^2 - V(\varphi)\right)}$$

The **LiteSolution** Class

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An Introduction to the LiteSolution Class

1 Introduction

This is the document for litesolution template, which provides a lite design of the solution of test paper.

1.1 The purpose of this template

This template provides a fresh design for typesetting solutions of exams, textbooks or other exercises. Welcome to feedback bugs or ideas via email `xiamyphys@gmail.com` or GitHub.

1.2 Installing Litesolution and loading it

Simply download `litesolution.cls` file from GitHub or CTAN and save it under your working directory. However, I strongly suggest to use terminal to install and update all packages to the latest version

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

To learn more, please refer to How do I update my TeX distribution?

1.3 Compatibility

The test environments are macOS + MacTeX 2024 / Overleaf and they all work fine for pdfLaTeX and XeLaTeX compilers. Windows, Linux and Unix platforms compatibility unknown.

2 Global Options of Litesolution

```
\documentclass[<options>]{litesolution}
```

2.1 The answer option

This option has two modes, ans and noans, which can show or hide answers. After the noans mode is enabled, the environment `solution` will be deactivated and contents in command `ans` will be hidden.

2.2 The counter option

This option has two modes, separate and continuous, which can make the page number between chapters be reset or continuous.

3   Cover Configurations

3.1   The cover page configurations

```
\cover{<image name>}   \title{<title>}   \subtitle{<vertical subtitle>}
\bioinfo{<bioinfo on bottom>}              \coverdecoration{<above contents>}
```

The same as the book class, the macro title could not be omitted, or it will return an error. The following is the cover configurations of this document

```
\title{\sffamily The \pkg{litesolution} Class}
\subtitle{\sffamily\scshape Hangzhou Dianzi University}
\bioinfo{\scshape\sffamily Mingyu Hsia, \href{mailto:xiamyphys@gmail.com}
    {\ttfamily xiamyphys@gmail.com} | \today, Version 2.1a}
\coverdecoration{$\Psi=\displaystyle\int\e^{\frac i\hbar
    \int\ab(\frac{R}{16\pi G}-\frac14F^2+\overline\psi i\cancel D\psi
    -\lambda\varphi\overline\psi\psi+\abs{D\varphi}^2-V(\varphi))}$}
\cover{schrodinger}
```

3.2   The chapter head configurations

```
\chapterimage {<insert image macro>}
```

This command can assign the format of the image at every chapters begin and you can adjust the format of the image with the fadingimage package.

4   Preset Commands

4.1   The ans command

```
\ans {<contents>}
```

This command can underline the answer, and if mode noans is enabled, the answer will be hidden.

4.2   The solute command

```
\solute {<number>}                 \solute* {<contents>}
```

This command can create a fixable answer box when the mode noans is enabled.

4.3   Other preset commands

This template provides the same math commands as §1.5 of the template LiteBook described additionly.

5   Preset amsthm Environments

5.1   The problem environment

```
\begin{problem}\leavevmode
\begin{tasks}(2)
  \task Choice A  \task[\true] Choice B
  \task Choice C  \task Choice D
\end{tasks}
\end{problem}
```

☑ **PROBLEM 1.**

A. Choice A   ✔ Choice B

C. Choice C   D. Choice D

5.2   The solution and note environment

```
\begin{solution}
  B is correct.
\end{solution}
```

☑ **SOLUTION.** B is correct.

```
\begin{note}
  We note that.
\end{note}
```

❶ **NOTE.** We note that.

Appendix A   An Introduction to The notebeamer Class

This class provides an easy way to input Beamers on note papers and make notebook quickly. It's optimized for Goodnotes' default paper size and there won't have difference between papers.

In the future, this class will be redesigned to a package that optimized for the litesolution class.

Appendix B   An Introduction to The fadingimage Package

This package provides three commands for adding fading full width picture at the top or bottom of a page.