

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

Diagram illustrating the components of the wave function  $\Psi$ :

- Path integral Feynmann
- Imaginary unit
- Spacetime-relativity Einstein
- Strong/weak/e.m. interactions Maxwell Yang-Mills
- $\varphi - \psi$  interaction Yukawa
- Schrödinger wave function
- Planck quantum
- Euler exponential
- Newton gravitation
- Dirac relativistic wave function
- Kobayashi-Maskawa CKM matrix
- Higgs Boson

## The WhatsNote Class

Version 3.0A





# 1

# Introduction & Demo

CHAPTER

## 1.1 Cover configuration

```
\coverset
{
    title      = The \pkg{WhatsNote} Class,
    subtitle   = Version 3.0A,
    bioinfo    = Mingyu Xia \url{<xiamyphys@gmail.com>},
    color      = MidnightBlue,
    head       = universe/3,
    logo       = cat/sixpointed stars,
}
```

## 1.2 Global Options

### 1.2.1 Font

You can set `\mathsf{math-font}`, `\mathsf{main-font}`, `\mathsf{sans-font}` and `\mathsf{mono-font}`. The `\mathsf{CJK-font}` can be set via X<sup>A</sup>TEX compiler.

```
math-font      = STIX Two Math,
main-font     = { {Libertinus Serif} },
sans-font     = { {Libertinus Sans} },
mono-font     = { {Libertinus Mono} },
CJKmain-font =
    { {Zhuque Fangsong (technical preview)} [AutoFakeBold, AutoFakeSlant] },
CJKsans-font = { {LXGW WenKai} [BoldFont = *-Medium, AutoFakeSlant] },
CJKmono-font = { {LXGW WenKai Mono} [BoldFont = *-Medium, AutoFakeSlant] },
```

**SOLUTION.** Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris. [This is the answer.](#)

### 1.2.2 Hideanswer

The default Boolean value of the key `\mathsf{hideanswer}` is true, environment `solution` and content in the macro `\result` will be hidden when enable this.

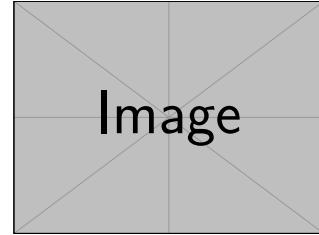
### 1.3 Left Text & Right Figure

```
\begin{textfig}[ key values ]
  <Left Content>
  \textfigsplit
  <Right Content>
\end{textfig}
```

The keys in the environment `textfig` accepts the following values:

- `\lefthand ratio` accepts float point number.
- `\righthand ratio` accepts float point number.
- `\lefthand width` accepts diameter.
- `\righthand width` accepts diameter.

**PROBLEM 1.1** ( `text-fig` layout). Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.



- A. A      B. B      C. C      D. D

**Remark.** This is an `amsthm` environment surrounded by a `mdframed` box. Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

### 1.4 Other Preset `amsthm` environments

`theorem`, `lemma`, `corollary`, `proposition`, `conjecture`, `criterion`, `assertion`, `definition`, `condition`, `example`, `exercise`, `algorithm`, `question`, `axiom`, `property`, `assumption`, `hypothesis`, `note`, `notation`, `claim`, `summary`, `acknowledgment`, `case`, `conclusion`.