

# A template for light notes

Feifei

DATE CREATED: March 27, 2025

DATE MODIFIED: March 31, 2025

## Abstract

This is a template designed for writing scientific notes.

## Contents

1. Usage .....	1
2. Fonts .....	2
3. Headings .....	2
3.1. Adjusting fonts of headings .....	2
3.2. Second-level heading .....	3
3.2.1. Third-level heading .....	3
3.2.1.1. Please avoid using headings of higher levels .....	3
4. Equation .....	3
5. Theorems .....	3
6. Figure and caption .....	4
7. Bibliography and citation .....	5
Bibliography .....	5

## 1. Usage

Copy `light_note.typ` to your working directory, then

```
#import "light_note.typ": light_note_cn
#show: light_note_cn.with(
  title: [A template for light notes],
  author: "Feifei",
  header: "Instruction", // indicating the class of the file
  date_created: "2025-03-27",
  date_modified: "2025-03-30",
  abstract: [This is the abstract],
```

```
toc: true, // whether to display table of contents, default to be true
)
```

It might be good to publish this template later so that one can use it without copying the file.

## 2. Fonts

Fonts can be globally adjusted in the `#let light_note()` block. In this block, several types of fonts are specified, including

**body-font** This is the font used for the main text.

**raw-font** This is the font used for the `raw text`.

**heading-font** This is the font used for the headings. I choose to use sans serif fonts for the headings for a modern look. You can modify it to serif fonts with higher weight if you like. See Section 3.1 for details.

**math-font** This is the font used for the math equations.

For each type of font, I provide several options. The compiler will choose the first available font in the list. All these fonts I choose is free to download from the internet.

I would to comment more on the math font. I have set it to match the body font in the first 3 options. I highly recommend this matching since text can appear in equations, while different fonts for text in and out of equations look really weird. For example, compare the following two examples:

- The failure probability is  $P[\text{fail}] = 1/2$ . (The math font is set to be the same as the body font, i.e., the New Computer Modern font, which is default for  $\text{\LaTeX}$ .)
- The failure probability is  $P[\text{fail}] = 1/2$ . (The math font is set to be the same as the body font, i.e., the Libertinus font.)
- The failure probability is  $P[\text{fail}] = 1/2$ . (The math font is set to be Libertinus Math, not matching the text font.)

Human beings should be uncomfortable with the third example. For available opentype fonts supporting math, please refer to

## 3. Headings

### 3.1. Adjusting fonts of headings

Headings are set to their default size in typst, but using a sans serif font with normal weight. You can set it to the default serif font with higher weight if you like, by removing the line after `// Set headings font`

```
...
// set headings font
set text(font: headings-font, weight: "regular")
...
```

## 3.2. Second-level heading

### 3.2.1. Third-level heading

Note that third-level heading has the same font size as the body text. A light note within 100 pages should rarely use a third-level heading. For example, Kitaev's paper [1–3] and Witten's note [4–6] never uses a third-level heading.

#### 3.2.1.1. Please avoid using headings of higher levels

If a still higher-level heading is needed, the note might be malstructured.

## 4. Equation

Equations are numbered by default,

$$\mathcal{F} f(k) = \frac{1}{2\pi i} \int dk e^{ikx} f(x), \quad (1)$$

and you can refer to it by its number (1).

By default, line after an equation is not indented,

$$1 + 1 = 2. \quad (2)$$

This is an example. But if you want to end a paragraph by an equation, you can add a paragraph manually by `#parvirtual`.

$$1 + 1 = 2. \quad (3)$$

And then you can add a new paragraph.

## 5. Theorems

Our template provides several theorem environments through the lemmify package.

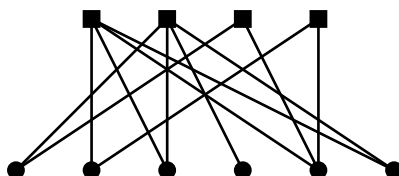
**Theorem 5.1** This is a theorem.

**Lemma 5.2** This is a lemma.

## 6. Figure and caption

This template allows for two kinds of figures. First, a figure inside a paragraph. Such a figure is described by contents round it in the main text and hence has no caption or label. As a result, content following this figure should not be indented since it is not a new paragraph.

For example, we can plot a bipartite graph as follows:



and go on to say something about it.

Another kind of figure is a standalone figure, which has a caption and label. For such figures, we change the typst default behaviour by following 3 features:

- Figure caption is centered if it is within one line, otherwise it is aligned to the left. See Figure 2 and Figure 3 for examples. Refer to [Typst Examples Book: Multiline detection](#).
- Figure caption has a smaller size than the main text, defined by `caption-size`.
- We add vertical space equal to one line of text before and after such a figure.

The second and the third features are set to avoid mixing the caption with the main text.

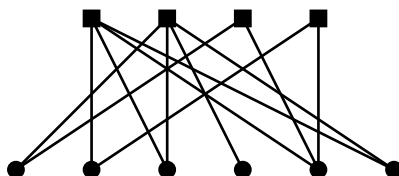


Figure 2: A figure with a centered short caption.

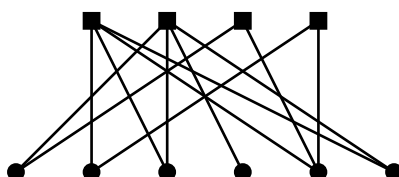


Figure 3: A figure with a long caption. If the caption is long enough such that it occupies multiple lines, then the caption is aligned to the left.

You can see that contents following a standalone figure is indented, indicating that it is a new paragraph. The following paragraph is well separated from the figure caption.

## 7. Bibliography and citation

Bibliography and citation style is set in

```
// set citation
set bibliography(style: "american-physics-society")
```

You can also choose other styles, see <https://typst.app/docs/reference/model/bibliography/#parameters-style>.

### Bibliography

- [1] A. Y. Kitaev, Quantum Computations: Algorithms and Error Correction, Russian Mathematical Surveys **52**, 1191 (1997).
- [2] A. Kitaev, Anyons in an Exactly Solved Model and Beyond, Annals of Physics **321**, 2 (2006).
- [3] A. Kitaev, Almost-Idempotent Quantum Channels and Approximate  $C^*$ -Algebras, (2025).
- [4] E. Witten, Notes on Some Entanglement Properties of Quantum Field Theory, Reviews of Modern Physics **90**, 45003 (2018).
- [5] E. Witten, A Mini-Introduction To Information Theory, La Rivista Del Nuovo Cimento **43**, 187 (2020).
- [6] E. Witten, Introduction to Black Hole Thermodynamics, (2025).