



大标题 TITTLE

小标题 title

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山西大學

SHANXI UNIVERSITY



这个模板改自[北大中文模板](#)相比起老套的学院风 \LaTeX 蓝白 PPT，这篇模板算是我在 Overleaf 上看见最好看的一款了，发现咱们山大似乎没有在 Overleaf 上挂自己的模板，马上就要毕业了，临走前，借花献佛，为山大留点东西纪念纪念。

注释和解释我都使用了中文，中间也随便写了点 \LaTeX 的具体操作，以图能够让大大家快速上手。



This template is adapted from the [Peking University's Chinese template](#) and compared to the conventional academic style of the blue and white LaTeX PowerPoint, this template is arguably the most aesthetically pleasing one I've seen on Overleaf. I noticed that our Shanxi University does not have its own template uploaded on Overleaf, so before I graduate and leave, I wanted to contribute something to our university as a memento.

I have provided annotations and explanations in Chinese, and I've also casually included some specific operations of LaTeX in the hope that it will allow everyone to quickly get started. (机翻占字数)



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节标题 Beamer for SINTEF slides

1 Introduction

- We assume you can use \LaTeX ; if you cannot, [you can learn it here](#)
- Beamer is one of the most popular and powerful document classes for presentations in \LaTeX
- Beamer has also a detailed [user manual](#)
- Here we will present only the most basic features to get you up to speed



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方程的输入

2 Some Operation

方程不标号 $u(x, t) = \frac{\varphi(x-at)+\varphi(x+at)}{2} + \frac{1}{2} \int_{x-at}^{x+at} \psi(\alpha)d\alpha$ 插入文段，或者不编号方式另起一行

$$u(x, t) = \frac{\varphi(x - at) + \varphi(x + at)}{2} + \frac{1}{2} \int_{x-at}^{x+at} \psi(\alpha)d\alpha$$

亦或者标号展示：

$$u(x, t) = \frac{\varphi(x - at) + \varphi(x + at)}{2} + \frac{1}{2} \int_{x-at}^{x+at} \psi(\alpha)d\alpha \tag{1}$$

编号后下文可以直接引用这个编号进行跳转。



方程组的输入

2 Some Operation

可以对方程组进行整体标号

$$\begin{cases} \frac{\partial^2 u}{\partial t^2} - a^2 \frac{\partial^2 u}{\partial x^2} = 0 \\ t = 0 : u = \varphi(x), \frac{\partial u}{\partial t} = \psi(x) \end{cases} \quad (2)$$

或者对方程组进行分别标号

$$\begin{cases} \frac{\partial^2 u}{\partial t^2} - a^2 \frac{\partial^2 u}{\partial x^2} = 0 & (1a) \\ t = 0 : u = \varphi(x), \frac{\partial u}{\partial t} = \psi(x) & (1b) \end{cases}$$



分段函数的输入

2 Some Operation

分段函数的输入与方程组是类似的

$$f = \begin{cases} ax^2 + bx + d, & x > 0 \\ cx + d, & x \leq 0 \end{cases} \quad (3)$$



矩阵的输入

2 Some Operation

LaTeX 中提供了多种矩阵输入样式： $\begin{Bmatrix} 1 & 0 \\ 0 & 1 \end{Bmatrix}$, $\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$, $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$, $\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$, $\left\| \begin{array}{cc} 1 & 0 \\ 0 & 1 \end{array} \right\|$, $\left| \begin{array}{cc} 1 & 0 \\ 0 & 1 \end{array} \right|$

包括省略号形式： $\begin{bmatrix} 1 & 0 & \cdots & 0 \\ 0 & 1 & \cdots & 0 \\ \vdots & \vdots & & \vdots \\ 0 & 0 & \cdots & 1 \end{bmatrix}$, $\begin{pmatrix} 1 & & & \\ & 1 & & \\ & & \ddots & \\ & & & 1 \end{pmatrix}$, $\left| \begin{array}{ccc} \mathbf{O} & & \mathbf{A} \\ & \mathbf{B} & \\ \mathbf{C} & \ddots & \mathbf{O} \end{array} \right|$



文字分级

2 Some Operation

比如说我希望以二级文字去描述二元关系的定义：

如果一个非空集合 S 的一个二元关系 \cdot 满足下列三个条件：

- 反身性：对任意的 $a \in S$ ，都有 $a \cdot a$ ；
- 对称性：对任意的 $a, b \in S$ ，都有 $a \cdot b \Rightarrow b \cdot a$ ；
- 传递性：对任意的 $a, b, c \in S$ ，都有 $a \cdot b, b \cdot c \Rightarrow a \cdot c$ 。

我也可以对二级文字提供编号：

- 1 反身性：对任意的 $a \in S$ ，都有 $a \cdot a$ ；
- 2 对称性：对任意的 $a, b \in S$ ，都有 $aRb \Rightarrow b \cdot a$ ；
- 3 传递性：对任意的 $a, b, c \in S$ ，都有 $a \cdot b, b \cdot c \Rightarrow a \cdot c$ 。



插入表格

2 Some Operation

时间 \ 星期	Mon	Tue	Wed
上午	1	0	
下午		0	1



插入表格

2 Some Operation

I	感染类型
A	携带者人数
S_i	易感人数
B_i	感染人数
Q_i	人群招聘率
t	传播时间
k_i	个人离开易感速率
μ	死亡率
γ_i	感染发展速率
λ_i	感染率
β_i	线性系数



插入流程图

2 Some Operation

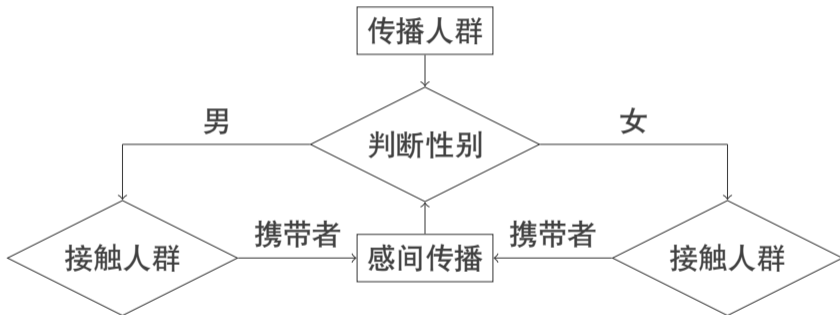


Figure: 传播类型判断流程



插入代码

2 Some Operation

在这里输入一串 \LaTeX 代码:

\LaTeX 代码块

```
\documentclass{beamer}
\usetheme{sintef}
\begin{document}
\begin{frame}{Hello, world!}
\end{frame}
\end{document}
```



插入代码

2 Some Operation

也可以插入 Python 代码块:

HDBSCAN聚类函数

```
def hdbscan_cluster(pos, min_cluster_size=100, min_samples=20):  
    pos = StandardScaler().fit_transform(pos)  
    hdb = hdbscan.HDBSCAN(min_cluster_size=min_cluster_size,  
        min_samples=min_samples).fit(pos)  
    print(hdb.labels_.max())  
    return hdb.labels_, hdb.probabilities_
```

其中的主函数hdbscan_cluster的参数设定为:

```
min_cluster_size=100, min_samples=20
```




插入图片

2 Some Operation

可以在文段中居中插入图片并附上标题：



Figure: 山西大学校徽



插入多张图片

2 Some Operation

可以在文段中居中插入多张图片并附上子标题：



Figure: 山西大学校徽



Figure: 山西大学校旗



分栏操作

2 Some Operation

比如我将一大段文字进行分栏（这个操作似乎在 PPT 中不太常用）

<p>设 S 为一非空集合，a, b, c, \dots 表示它的元素。设其中任意两个元素中存在（或不）某种属性 R，使得对 S 中任意一对有序元素 a, b 而言，命题“a, b 有这种</p>	<p>属性”与命题“a, b 没有这种属性”有且仅有一个成立，则称 \cdot 为集合 S 上的一个二元关系（简称关系），若 a, b 有关系 \cdot，则记作 $a \cdot b$。</p>
--	--

<p>设 S 为一非空集合，a, b, c, \dots 表示它的元素。设其中任意两个元素中存在（或不）某种属性</p>	<p>R，使得对 S 中任意一对有序元素 a, b 而言，命题“a, b 有这种属性”与命题“a, b 没有这种属性”有且</p>	<p>仅有一个成立，则称 \cdot 为集合 S 上的一个二元关系（简称关系），若 a, b 有关系 \cdot，则记作 $a \cdot b$。</p>
--	--	--



分栏操作

2 Some Operation

或者将文字与图片进行分栏：

设 S 为一非空集合， a, b, c, \dots 表示它的元素。设其中任意两个元素中存在（或不存在）某种属性 R ，使得对 S 中任意一对有序元素 a, b 而言，命题“ a, b 有这种属性”与命题“ a, b 没有这种属性”有且仅有一个成立，则称 \cdot 为集合 S 上的一个二元关系（简称关系），若 a, b 有关系 \cdot ，则记作 $a \cdot b$ 。



Figure: 山西大学校徽



标题

2 Some Operation

- 底边
- 颜色



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底边

2 Some Operation

当然也可以为 PPT 加上底边，这个时候使用代码：

底边代码

```
\footlinecolor{maincolor}  
\begin{frame}[fragile]{  
...  
\end{frame}
```

不过你需要在不使用底边之后的第一页 PPT 前加上`\footlinecolor{}`代码取消对底边的使用。



颜色

2 Some Operation

在`sintefcolor.sty`文件中内置了 7 种颜色（比如说我将这页底边改为了 70% 透明度的`maincolor`）：

-  `maincolor`
-  `sintefdargreen`
-  `sintefgreen`
-  `sinteflightgreen`
-  `sintefred`
-  `sintefyellow`
-  `sinteflilla`

你也可以进入`sintefcolor.sty`文件中更改这些颜色，每种颜色的 RGB/cmyk 值可以通过 Photoshop 查看。



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Changing Slide Style

3 Personalization

- You can select the white or *maincolor* **slide style** in the preamble with `\themecolor{white}` (default) or `\themecolor{main}`
 - You should *not* change these within the document: Beamer does not like it
 - If you *really* must, you may have to add `\usebeamercolor [fg] {normal text}` in the slide
- You can change the **footline colour** with `\footlinecolor{color}`
 - Place the command *before* a new frame
 - There are four “official” colors:  `maincolor`,  `sintefyellow`,  `sintefgreen`,  `sintefdargreen`
 - Default is no footline; you can restore it with `\footlinecolor{}`
 - Others may work, but no guarantees!
 - Should *not* be used with the `maincolor` theme!



Blocks

3 Personalization

Standard Blocks

These have a color coordinated with the footline (and grey in the blue theme)

```
\begin{block}{title}
content...
\end{block}
```

Colour Blocks

Similar to the ones on the left, but you pick the colour. Text will be white by default, but you may set it with an optional argument.









```
\begin{colorblock}[black]{sinteflightgreen}{title}
content...
\end{colorblock}
```

The “official” colours of colour blocks are:  `sinteflilla`,  `maincolor`,  `sintefdargreen`, and  `sintefyellow`.



Using Colours

3 Personalization

- You can use colours with the `\textcolor{<color name>}{text}` command
- The colours are defined in the `sintefcolor` package:
 - Primary colours:  `maincolor` and its sidekick  `sintefgrey`
 - Three shades of green:  `sinteflightgreen`,  `sintefgreen`,
 `sintefdarkgreen`
 - Additional colours:  `sintefyellow`,  `sintefred`,  `sinteflilla`
 - These may be shaded—see the `sintefcolor` documentation or the [SINTEF profile manual](#)
- Do *not* abuse colours: `\emph{}` is usually enough
- Use `\alert{}` to bring the focus somewhere



Using Colours

3 Personalization

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 - Additional colours:  `sintefyellow`,  `sintefred`,  `sinteflilla`
 - These may be shaded—see the `sintefcolor` documentation or the SINTEF profile manual
- Do *not* abuse colours: `\emph{}` is usually enough
- Use `\alert{}` to bring the focus somewhere
- If you highlight too much, you don't highlight at all!



Adding images

3 Personalization

Adding images works like in normal \LaTeX :

Code for Adding Images

```
\usepackage{graphicx}
% ...
\includegraphics[width=\textwidth]
{assets/greenlogo}
```





Splitting in Columns

3 Personalization

Splitting the page is easy and common; typically, one side has a picture and the other text:

This is the first column

And this the second

Column Code

```
\begin{columns}
  \begin{column}{0.6\textwidth}
    This is the first column
  \end{column}
  \begin{column}{0.3\textwidth}
    And this the second
  \end{column}
  % There could be more!
\end{columns}
```



Special Slides

3 Personalization

- Chapter slides
- Side-picture slides










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Chapter slides

3 Personalization

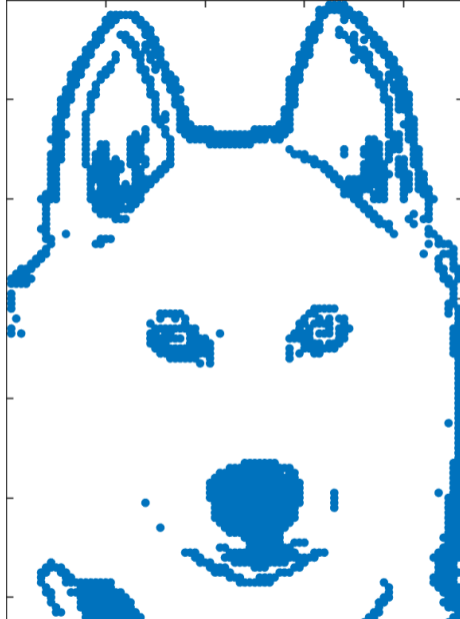
- Similar to frames, but with a few more options
- Opened with `\begin{chapter} [<image>] {<color>} {<title>}`
- Image is optional, colour and title are mandatory
- There are seven “official” colours:  `maincolor`,  `sintefdarkgreen`,  `sintefgreen`,  `sinteflightgreen`,  `sintefred`,  `sintefyellow`,  `sinteflilla`.
 - Strangely enough, these are *more* than the official colours for the footline.
 - It may still be a nice touch to change the footline of following slides to the same color of a chapter slide. Your choice.
- Otherwise, `chapter` behaves just like `frame`.



Side-Picture Slides

3 Personalization

- Opened with
`\begin{sidepic}{<image>}{<title>}`
- Otherwise, sidepic works just like frame





Fonts

3 Personalization

- The paramount task of fonts is being readable
- There are good ones...
 - Use serif fonts only with high-definition projectors
 - Use sans-serif fonts otherwise (or if you simply prefer them)
- ... and not so good ones:
 - Never use monospace for normal text
 - Gothic, calligraphic or weird fonts should always be avoided



Look

3 Personalization

- To insert a final slide with the title and final thanks, use `\backmatter`.
 - The title also appears in footlines along with the author name, you can change this text with `\footlinepayoff`
 - You can remove the title from the final slide with `\backmatter[notitle]`
- The aspect ratio defaults to 16:9, and you should not change it to 4:3 for old projectors as it is inherently impossible to perfectly convert a 16:9 presentation to 4:3 one; spacings *will* break
 - The `aspectratio` argument to the `beamer` class is overridden by the SINTEF theme
 - If you *really* know what you are doing, check the package code and look for the `geometry` class.



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Good Luck!

4 Summary

- Enough for an introduction! You should know enough by now
- If you have corrections or suggestions, [send them to me!](#)



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Thank you for listening!
Any questions?