

Beamer v3.0 指南

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2004、11、4

黄旭华(1001) 翻译

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一、为什么使用 Beamer?

Why Beamer?

Pros:

- Both `dvips/ps2pdf`¹ and `pdflatex` supports²
- Rich `overlay` and `transition` effects
- Navigational bars and symbols
- Outputs: screen, transparency, handouts, and notes
- Emulation of other PDF presentation tools such as *Prosper* and *FoilTEX*

Cons:

- Difficult to design a template

¹You need this route if you use `PSTricks`.

²No `dvipdfm` support!

第 2 张

为什么使用 Beamer?

赞成:

- 对 `dvips/ps2pdf` 和 `pdflatex` 均支持²。
- 丰富的覆盖和过渡效果。
- 导航条和符号。
- 输出: 屏幕阅读(screen). 幻灯片(transparency). 讲义(handouts). 笔记.
- 仿效其它 PDF 介绍工具如 *Prosper* 和 *FoilTEX*。

反对:

- 难以设计一个模板。

¹如果你使用 `PSTricks` 必需通过这条途径。 ²无需 `dvipdfm` 支持！

二、Beamer 的结构

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Basic Code I

- Beamer class loading with themes

```
\documentclass[slidestop,compress,mathserif]{beamer}  
\usepackage[bars]{beamertemetree} % Beamer theme v 2.2  
\usetheme{Antibes} % Beamer theme v 3.0  
\usecolortheme{lily} % Beamer color theme
```

- Cover title

```
\title{}  
\author{}  
\institute{}  
\begin{document}  
\begin{frame} % Cover slide  
\titlepage  
\end{frame}  
% Instead, you can use \frame{\titlepage} (Beamer v 2.2 macro)
```



第 3~4 张

1、基本代码

基本代码 I

- 加载了主题样式的 Beamer 类 (注: Beamer 是 latex 上用来制作幻灯片的一个文档类)

```
\documentclass[slidestop,compress,mathserif]{beamer}  
\usepackage[bars]{beamertemetree} % Beamer主题样式v 2.2  
\usetheme{Antibes} % Beamer主题样式v 3.0  
\usecolortheme{lily} % Beamer颜色主题样式
```

- 封面

```
\title{}  
\author{}  
\institute{}  
\begin{document}  
\begin{frame} % Cover slide  
\titlepage  
\end{frame}  
%也可以用 \frame{\titlepage} 代替 (在Beamer v 2.2 宏包中)
```

Basic Code II

- Main slide frame

```
\section{Introduction}          % Bookmark information
\subsection{History}           % Bookmark information
\begin{frame}[options]
  \frametitle{History}
  ... slide contents ...
\end{frame}
```

With v 2.2 macro:

```
\frame[options]{\frametitle{History}}
... slide contents ...
}%
```

基本代码 II

- 幻灯片主体结构

```
\section{介绍}                  % Bookmark信息
\subsection{历史}                % Bookmark信息
\begin{frame}[options]
  \frametitle{历史}
  ... 幻灯片的内容 ...
\end{frame}
```

- 用 2.2 版的宏包:

```
\frame[options]{\frametitle{历史}}
... 幻灯片的内容...
}%
```

Beamer v3.0 Guide

- Beamer Structure
- Five Themes

Five Themes

- The main difference between v 3.0 and v 2.2 is *Beamer themes*.
- Five theme categories:
 - Presentation Themes – *Slide template*
 - Color Themes – *Color scheme for slide template*
 - Font Themes
 - Inner Themes
 - Outer Themes
- Example

```
\documentclass[slidestop,compress,mathserif]{beamer}
%\usepackage[bars]{beamertemetree} % Beamer theme v 2.2
\usetheme{Antibes} % Beamer theme v 3.0
\usecolortheme{lily} % Beamer color theme
```

- Go to [Themes](#) for more information.

第 6 张

2、五个主题样式

五个主题样式

- 3.0 版和 2.2 版主要的不同是 *Beamer 主题样式*。
- 五个主题样式的分类:

- 演示主题 ————— 幻灯片模板
- 色彩主题 ————— 幻灯片模板的色彩配置
- 字体主题
- 内部主题
- 外部主题

- 举例:

```
\documentclass[slidestop,compress,mathserif]{beamer}
%\usepackage[bars]{beamertemetree} % Beamer theme v 2.2
\usetheme{Antibes} % Beamer theme v 3.0
\usecolortheme{lily} % Beamer color theme
```

- 进入 [Themes](#) 获取更多信息。

Beamer v3.0 Guide

└ Beamer Structure

 └ Beamer Options for Layout

Beamer Options for Layout

- `[slidestop]` puts frame titles on the top left corner
(default=[`slidescentered`]).
- `[compress]` makes all navigation bars as small as possible
(default=[`uncompressed`]).
- `[red]` changes navigation bars and titles to reddish color.
 - `blue`: Default color scheme
 - `red`: Used in this presentation
 - `brown`
 - `blackandwhite`: Good for transparencies



第 7 张

3、Beamer 的版面设计 (Layout) 选项

Beamer的版面设计(Layout)选项

- `[slidestop]` 放置页面标题于左上角
(默认=[`slidescentered`]).
- `[compress]` 尽可能压小所有导航条
(默认=[`uncompressed`]).
- `[red]` 改变导航条和标题为淡红色
 - `blue`: (蓝色是) 默认的色彩配置
 - `red`: 这张 (第7张) 的 (航条和标题) 的外观就是 (红色)
 - `brown`
 - `blackandwhite`: (黑白) 对幻灯片有用

Beamer v3.0 Guide

Beamer Structure

Beamer Options for Output

Beamer Options for Output

- Default: PDF screen (size 128mm × 96 mm)³.
- **[handout]** for PDF handouts.
- **[trans]** for PDF transparency.
 - ⇒ For handout and trans, you need some extra work to enlarge the size. Click [here](#) to see an example!
- **[notes=hide/show/only]** for notes. Hide notes (default), add notes to the PDF screen, or notes only PDF.

³Monitor's 4:3 aspect ratio.

第 8 张

4、Beamer 的输出 (Output) 选项

Beamer的输出(Output)选项

- 默认: PDF屏幕阅读 (尺寸 128mm × 96 mm)³.
- **[handout]** 适用于 PDF 讲义.
- **[trans]** 适用于 PDF 幻灯片.
 - ⇒ 输出为讲义和幻灯片时, 你必需扩大尺寸
点击 [here](#) 观看一个例子!
- **[notes=hide/show/only]** 适用于笔记。隐藏注释(默认), 为 PDF screen 添加注释, 仅产生 PDF 注释。

³显示器的 4:3 外观比率.

Additional Beamer Options

- `[hyperref={bookmarks=false}]` removes bookmarks.
- `[cjk]` for CJK typesetting. ⇒ For hangul, use `\hfont` package.
- `\usepackage[utf8]{inputenc}` for Unicode.

Frame Options

- `\frame[plain]{\frametitle{...}}` for plane frame style as *used in this slide!*
- `[containsverbatim]` for using `verbatim` environment and `\verb` command.
- `[allowframebreaks]` for automatic split of frames if the contents do not fit in a single slide.
- `[shrink]` for shrinking the contents to fit in a single slide.
- `[squeeze]` for squeezing vertical space.

第 9~10 张

5、Beamer 的附加 (Additional) 选项

Beamer附加(Additional)选项

- `[hyperref={bookmarks=false}]` 删除书签。
- `[cjk]` 适用于 CJK 排版. ⇒ 用于韩文(hangul), 用 `\hfont` 宏包.
- `\usepackage[utf8]{inputenc}` 适用于 Unicode(统一码)。

6、结构(Frame)选项

结构(Frame)选项

- `\frame[plain]{\frametitle{...}}` 适用于如本页(第 10 页)所用的 plane 结构!
- `[containsverbatim]` 适用于使用 `verbatim` 环境和 `\verb` 命令。
- `[allowframebreaks]` 适用于一张幻灯片放不下内容时自动分开。
- `[shrink]` 适用于缩小内容充满一张幻灯片。
- `[squeeze]` 适用于挤压垂直空间。

The screenshot shows a Beamer presentation slide titled "Transparency Effects". The navigation bar at the top includes "Beamer v3.0 Guide", "Beamer Structure", and "Transparency Effects". The main content area contains a bulleted list:

- All overlayed stuffs are covered (default)
- `\beamertemplatetransparentcoveredhigh` makes all covered text highly transparent
- `\beamertemplatetransparentcovereddynamicmedium` makes all covered text quite transparent, but is a dynamic way. The range of dynamics is smaller.

At the bottom right of the slide are standard Beamer navigation icons.

第 11 张

7、幻灯片效果

幻灯片效果(Transparency Effects)

- 所有的覆盖要素均隐藏（默认）。
- `\beamertemplatetransparentcoveredhigh` 使所有被隐藏的文本高度透明。
- `\beamertemplatetransparentcovereddynamicmedium` 使所有被隐藏的文本完全透明，动态，动态的范围很小。

三、字体(Fonts)

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Beamer v3.0 Guide

Fonts

Text and Math Fonts

Text and Math Fonts I

- Excellent support for selecting text and math fonts.
- Default text and math fonts: CMSS and CMR Math
 - You should *avoid* CMR Math in presentation
 - Example: <http://faq.ktug.or.kr/wiki/uploads/MathFonts.pdf>
- Beamer option [**sans**] for text font (default)
 - **mathsans** is default.
 - Equivalent to \usefonttheme{default}
- Beamer option [**sefif**] for text font
 - **mathserif** is default.
 - Equivalent to \usefonttheme[options]{serif}
- Beamer option [**mathsans/mathserif**] for math font

第 12 张

1、文本字体和数学字体

文本字体和数学字体 I

- 出色的支持选择文本字体和数学字体.
- 默认的文本字体和数学字体: CMSS 和 CMR Math
 - 尽量避免在介绍中使用 CMR Math
 - 举例: <http://faq.ktug.or.kr/wiki/uploads/MathFonts.pdf>
- Beamer 的文本字体选项 [**sans**] (默认)
 - 默认的是Mathsans.
 - 等效于\usefonttheme{default}
- Beamer 的文本字体选项 [**sefif**]
 - 默认的是mathserif t.
 - 等效于\usefonttheme[options]{serif}
- Beamer 的数学字体选项 [**mathsans/mathserif**]

Beamer v3.0 Guide

- Fonts
- Text and Math Fonts

Text and Math Fonts II

- Beamer option [professionalfonts] to turn off Beamer's internal font rewriting (\Rightarrow Equivalent to \usefonttheme{professionalfonts})
- Additional font theme macros
 - \usefonttheme{structurebold} for bold faced structures (titles, headlines, footlines, sidebars, ...)
 - \usefonttheme{structureitalicserif}
 - \usefonttheme{structuresmallcapsserif}
- Font settings in this document:

```
\documentclass[mathserif]{beamer} % sans (text) + mathserif
\usepackage{lucidaso} % Lucida Bright (SO Version)
\usepackage[small]{eulervm} % Euler VM
```

第 13 张

文本字体和数学字体 II

- Beamer 的选项 [professionalfonts] 关闭 Beamer 的内部字体重写
 \Rightarrow 等效于 \usefonttheme{professionalfonts})
- 附加的字体主题样式宏包
 - \usefonttheme{structurebold} 用于粗体修饰的结构（扉页、标题、横线，侧边栏，...）
 - \usefonttheme{structureitalicserif}
 - \usefonttheme{structuresmallcapsserif}
- 这篇文档中的字体设置：

```
\documentclass[mathserif]{beamer} % sans (text) + mathserif
\usepackage{lucidaso} % Lucida Bright (SO Version)
\usepackage[small]{eulervm} % Euler VM
```

The screenshot shows a Beamer presentation slide. The title bar says 'Beamer v3.0 Guide'. Below it is a red navigation bar with 'Fonts' and 'Font Size' items. The main content area has a light yellow background and contains the following text:

● Default font size: 11pt (At the full screen mode this font size corresponds to 22 pt.)

● Available font size options: 8pt, 9pt, 10pt, 11pt, 12pt, 14pt, 17pt, 20pt

At the bottom right of the slide, there is a set of small navigation icons.

第 14 张

2、字体尺寸

字体尺寸

- 默认字体尺寸：11pt(在全屏显示模式下这个尺寸相应地为 22 pt.)
- 可用的字体尺寸选项： 8pt, 9pt, 10pt, 11pt, 12pt, 14pt, 17pt, 20pt。

四、颜色(Colors)

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Beamer v3.0 Guide

Colors

Color Definition

Color Definition

- Beamer loads `xcolor` package by Uwe Kern, which also supports `color` and `pstcol`.
- ‘`xcolor`’ definition
 - `\xdefinecolor{lavendar}{rgb}{0.8,0.6,1}`
 - `\xdefinecolor{olive}{cmyk}{0.64,0,0.95,0.4}`
 - `\colorlet{structure}{green!60!black}` for color substitution
 - Predefined colors: red, green, blue, cyan, magenta, yellow, black, darkgray, gray, lightgray, orange, violet, purple, and brown
- If you want to use the options of ‘`color`’ package, pass `[color=option]` option to Beamer.
- If you want to use ‘`pstcol`’, pass `[xcolor=pst,dvips]` option to Beamer. Now you should use ‘`dvips/ps2pdf`’

第 15 张

1、颜色规定

颜色规定(Definition)

- Beamer 加载由 Uwe Kern 所作的 `xcolor` 宏包, Beamer 同样支持 `color` 和 `pstcol`。
- ‘`xcolor`’ 规定
 - `\xdefinecolor{lavendar}{rgb}{0.8,0.6,1}`
 - `\xdefinecolor{olive}{cmyk}{0.64,0,0.95,0.4}`
 - `\colorlet{structure}{green!60!black}` 用于颜色替换
 - 预定义的颜色: red, green, blue, cyan, magenta, yellow, black, darkgray, gray, lightgray, orange, violet, purple, and brown
- 如果你想使用“`color`”宏包的选项,传递`[color=option]`选项给 Beamer。
- 如果你想使用“`pstcol`”宏包的选项,传递`[xcolor=pst,dvips]` 选项给 Beamer. 因为你必需使用“`dvips/ps2pdf`”

Beamer v3.0 Guide

Colors

More colors in xcolor package

More colors in 'xcolor' package

- Color mixing is very easy!

| color | example | meaning |
|---------------|---------|-------------------------|
| green!80!gray | text | 80% green + 20% gray |
| green!60!gray | text | 60% green + 40% gray |
| green!40!gray | text | 40% green + 60% gray |
| -green | text | remove green from above |

- You can use `animate` (Beamer macro) or `multido` (PSTricks macro) for fade-in and fade-out!

第 16 张

2、“xcolor”宏包中更多的颜色

“xcolor”宏包中更多的颜色

- 颜色混合非常容易！

| 颜色 | 举例 | 含义 |
|---------------|------|----------------------|
| green!80!gray | text | 80% green + 20% gray |
| green!60!gray | text | 60% green + 40% gray |
| green!40!gray | text | 40% green + 60% gray |
| -green | text | 从上面去除 green |

- 你可以使用 `animate` (Beamer 宏包)或 `multido`(PSTricks 宏包)
获得淡入和淡出效果！

Beamer v3.0 Guide

Colors

Highlighting Colors

Highlighting Colors

- Beamer also has theme-specific highlighting colors:
 - `\alert{text}` ⇒ text
 - `\structure{text}` ⇒ text
- To change these colors:
 - `\usecolortheme[named=yellow]{structure}` to change to yellow.
 - `\setbeamercolor{alerted_text}{fg=cyan}`⁴ to change to cyan.

⁴, ‘_’ means space.

第 17 张

3、突出显示颜色

突出显示(Highlighting)颜色

- Beamer 也有突出显示颜色的主题:
 - `\alert{text}` ⇒ text
 - `\structure{text}` ⇒ text
- 改变这些颜色:
 - `\usecolortheme[named=yellow]{structure}` 改成yellow。
 - `\setbeamercolor{alerted_text}{fg=cyan}`⁴ 改成cyan。

⁴, ‘_’ 表示空格(space).

Beamer v3.0 Guide

Colors

Background Colors

Background Colors

- To set **solid** background color,
`\beamersetaveragebackground{color}` or
`\beamertemplatesolidbackgroundcolor{color}`
- To set **gradient** background color,
`\beamertemplateshadingbackground{color1}{color2}`. ⇒ The colors in this slide is {blue!5}{yellow!10}.
- To set **grid** background,
`\beamertemplategridbackground[grid_space]`.



第 18 张

4、背景色

背景色(Background Colors)

- 设置单一的(**solid**)背景色,

```
\beamersetaveragebackground{color} or  
\beamertemplatesolidbackgroundcolor{color}
```

- 设置渐变(**gradient**)背景色,

`\beamertemplateshadingbackground{color1}{color2}`. ⇒ 这张 (第18张) 幻灯片的颜色是{blue!5}{yellow!10}。

- 设置栅格(**grid**) 背景,

```
\beamertemplategridbackground[grid_space]。
```

Beamer v3.0 Guide

- Colors
- Color Example

Color Example

- Color changes in
 - Navigational bars
 - Background
 - `structure{..} color`
- Code:

```
\colorlet{mystruct}{structure} % Save current structure
\colorlet{structure}{magenta} % New structure
\usestructuretemplate{\color{structure}{}}
\beamertemplateshadingbackground{yellow!50}{magenta!50} % New background
\frame{%
...
}
% Back to the original "structure" and bg color schemes
\colorlet{structure}{mystruct}
\beamertemplateshadingbackground{blue!10}{yellow!10}
```

第 19~20 张

5、颜色举例

颜色举例

- 在下面这些地方改变颜色：

- 导航条
- 背景
- `structure{..} color`

- 代码：

```
\colorlet{mystruct}{structure} % 保存当前的structure
\colorlet{structure}{magenta} % 新建structure
\usestructuretemplate{\color{structure}{}}
\beamertemplateshadingbackground{yellow!50}{magenta!50} % \structure{..}
\frame{%
...
}
% 返回到最初的“structure”和背景主题
\colorlet{structure}{mystruct}
\beamertemplateshadingbackground{blue!10}{yellow!10}
```

五、 Verbatim

章目录

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Verbatim w/o Overlays

- '\verb' or 'verbatim' cannot be *directly* used in Beamer!
- If there is no overlay, use \frame[containsverbatim]

```
\frame[containsverbatim]{\frametitle{...}%
\begin{verbatim}
.. verbatim contents ..
\end{verbatim}
}%
```

- Now in-line verbatim is possible with '\verb'.
- Color and size can be easily changed.



1、Verbatim w/o 覆盖

Verbatim w/o 覆盖(Overlays)

- “\verb” 或 “verbatim” 不能直接 在 Beamer 中使用!
- 如果这里没有覆盖, 请使用 \frame[containsverbatim]

```
\frame[containsverbatim]{\frametitle{...}%
\begin{verbatim}
.. verbatim contents ..
\end{verbatim}
}%
```

- 现在行内 verbatim 允许使用 “\verb” 。
- 颜色和尺寸可以轻而易举的改变。

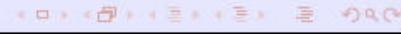
Beamer v3.0 Guide

Verbatim

Inline Verbatim with Overlays

Inline Verbatim with Overlays

- My solution: `\path{..}` instead of `\verb`.
 - Color: Hello, Hello
 - Size: Hello, Hello, Hello
- Beamer solution: `\defverb\command|contents|` outside the frame.
 - Define `\defverb\myverb>Hello,World!`
 - Then use `\myverb` ⇒ Hello, World!



第 22~23 张

2、行内 Verbatim 使用覆盖

行内(Inline)Verbatim 使用覆盖(Overlays)

- 我的解决方法： `\path{..}` 代替 `\verb`.
 - 颜色： Hello, Hello
 - 尺寸： Hello, Hello, Hello
- Beamer 的解决方法： `\defverb\命令|内容|` 在 frame 外。
 - 定义 `\defverb\myverb>Hello,World!`
 - 使用 `\myverb` ⇒ Hello, World!

Verbatim with Overlays

- Use *lstlisting* environment instead of *verbatim* environment.
- Define `\defverbatim[colored]\command{contents}` outside frame.
- ‘contents’ are the *listing* environment.
- Example:

```
\defverbatim[colored]\testcode{%
  \begin{lstlisting}[frame=single,emph={ga},emphstyle=\color{olive}]
  ...
  \end{lstlisting}}%
\frame{%
  \testcode
}%

```

行内(Inline)Verbatim 使用覆盖(Overlays)

- 使用 *lstlisting* 环境代替 *verbatim* 环境。
- 在 frame 外定义 `\defverbatim[colored]\command{contents}`。
- “contents” 是列表(listing) 环境。
- 举例：

```
\defverbatim[colored]\testcode{ %
  \begin{lstlisting}[frame=single,emph={ga},emphstyle=\color{olive}]
  ...
  \end{lstlisting}}%
\frame{ %
  \testcode }%
}%

```

六、图形(Figures)

章目录

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Beamer v3.0 Guide

Figures

Figures Intro

Figures Intro

- Standard L^AT_EX `figure` environment can be used.
- Beamer also loads `pgf` package. So PGF command, `\pgfimage[]{file}`, is also possible.
- `\includegraphics`, `\pgfimage`, and `\pdfuseimage` understand `overlays`.



Figure: Tiger

第 26 张

1、图形介绍

图形介绍

- 标准的 L^AT_EX 图形环境
可以应用。
- Beamer 也可装载 `pgf` 包。所以
PGF命令`\pgfimage[]{file}`，也是
可以用的。
- `\includegraphics`, `\pgfimage`,
和`\pdfuseimage` 懂得（可以用）
覆盖。



图形: 老虎

Beamer v3.0 Guide

- Figures
- PGF Macros

PGF Macros

- PSTricks 和 PGF 可以用于精确地(exactly)定位(locating)图形。
- 幻灯片网格尺寸: $(LL \times UR) = (0\text{cm}, -7\text{cm}) \times (11\text{cm}, 1\text{cm})$
- PGF 宏包用于定位图形:

```
\pgfputat{\pgfxy(0,-6.5)}{\pgfbox[left,base]{\pgfimage[width=1cm]{tiger}}}
```

- 如果你多次使用同一张图片, 请使用 `\pgfdecalreimage` 和 `\pgfuseimage`。或仅使用 `\includegraphics`。

第 27 张

2、PGF 宏包

PGF宏包(Macros)

- PSTricks 和 PGF 能用于精确地(exactly)定位(locating)图形。
- 幻灯片网格尺寸: $(LL \times UR) = (0\text{cm}, -7\text{cm}) \times (11\text{cm}, 1\text{cm})$
- PGF 宏包定位(locating)图形:

```
\pgfputat{\pgfxy(0,-6.5)}{\pgfbox[left,base]{\pgfimage[width=1cm]{tiger}}}
```

- 如果你多次使用同一张图片, 请使用 `\pgfdecalreimage` 和 `\pgfuseimage`。或仅使用 `\includegraphics`。

Figures inside Columns

- Figures inside ‘columns’ environment need exact position.
- PGF macros (PDF, PNG, and JPEG with pdflatex)

```
\begin{columns}
\begin{column}{0.65\textwidth}
A\\B
\end{column}
\begin{column}{0.35\textwidth}
\pgfputat{\pgfxy(0,0)}{\pgfbox[left,top]{\includegraphics[width=\textwidth]{tiger}}}
\end{column}
\end{columns}
```

- PSTricks macros (EPS with dvips)

```
\begin{columns}
\begin{column}{0.65\textwidth}
A\\B
\end{column}
\begin{column}{0.35\textwidth}
\rput[lt](0,0){\includegraphics[clip=true,width=\textwidth]{tiger}}
\end{column}
\end{columns}
```

3、Columns 环境中的图形

Columns环境中的图形

- “columns” 环境中的图形需精确定位（exact position）。
- PGF宏包（用pdflatex编译时，PDF、PNG、和JPEG适用）。

```
\begin{columns}
\begin{column}{0.65\textwidth}
A\\B
\end{column}
\begin{column}{0.35\textwidth}
\pgfputat{\pgfxy(0,0)}{\pgfbox[left,top]{\includegraphics[width=\textwidth]{tiger}}}
\end{column}
\end{columns}
```

- PSTricks宏包（用dvips编译时EPS适用）。

```
\begin{columns}
\begin{column}{0.65\textwidth}
A\\B
\end{column}
\begin{column}{0.35\textwidth}
\rput[l](0,0){\includegraphics[clip=true,width=\textwidth]{tiger}}
\end{column}
\end{columns}
```

Zooming Figures

- Figures can be **zoomed**⁵ using
`\framezoom<button overlay><zoomed overlay>(x,y)(w,h).`
- (x, y): Upper left coordinate point
(w, h): Width and height for zooming
- Example:

```
\frame{\frametitle{Zooming Figures -- Example}}
\framezoom<1><2>[border](0.5cm,0.5cm)(2cm,1.5cm)
\framezoom<1><3>[border](1cm,3cm)(2cm,1.5cm)
\framezoom<1><4>[border](3cm,2cm)(2cm,2cm)

\pgfimage[height=6cm]{tiger}
% \includegraphics[height=6cm]{tiger} is working, too!
}%
```

⁵New in Version 2.2

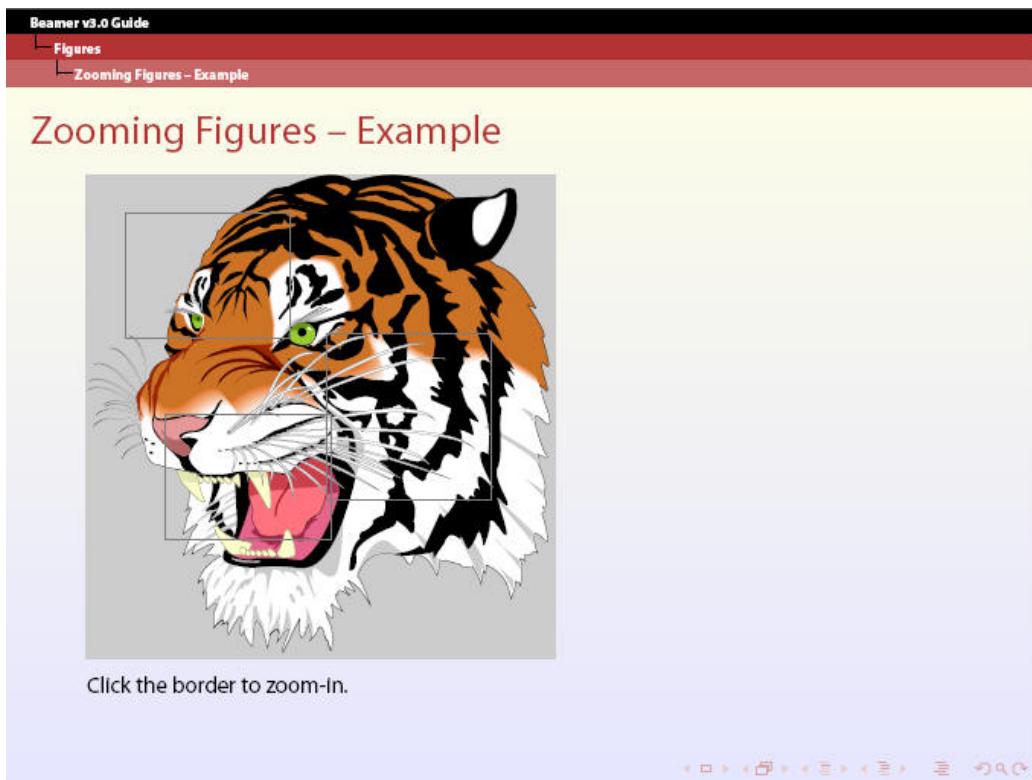
4、缩放图形

缩放图形

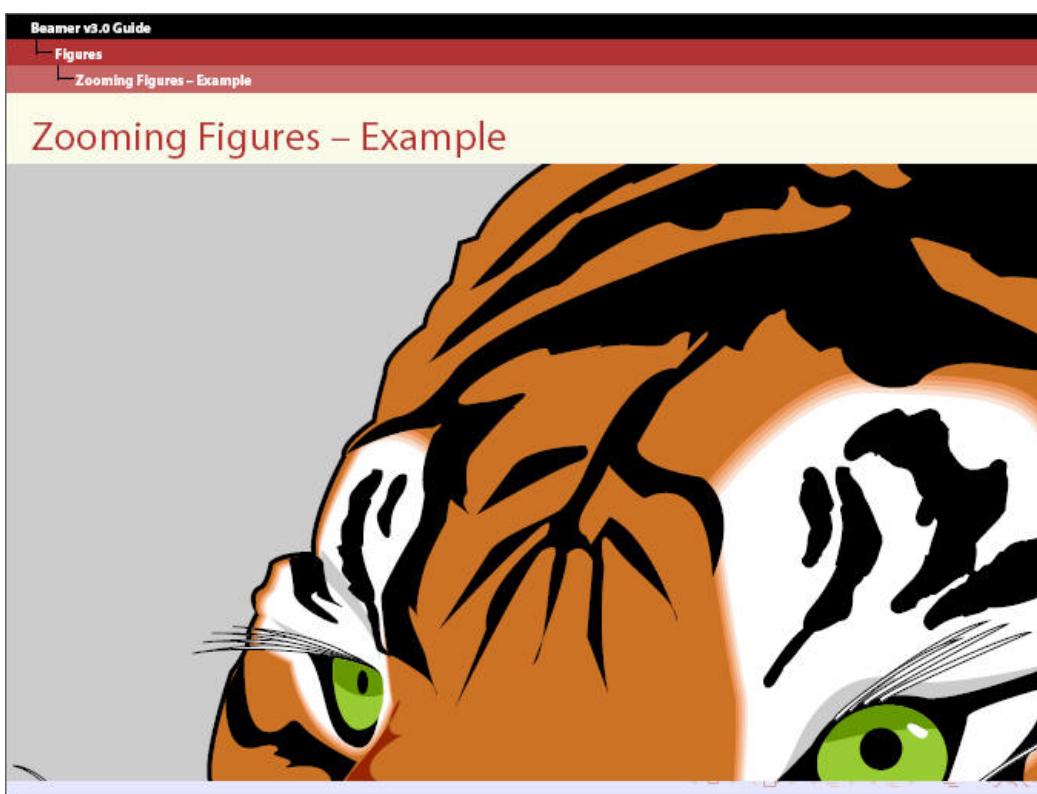
- 图形用下面的命令**缩放**⁵。
`\framezoom<button overlay><zoomed overlay>(x,y)(w,h).`
- (x,y): 左上角 (Upper left) 的坐标 (coordinate)。
(w,h): 缩放的宽和高
- 例子：

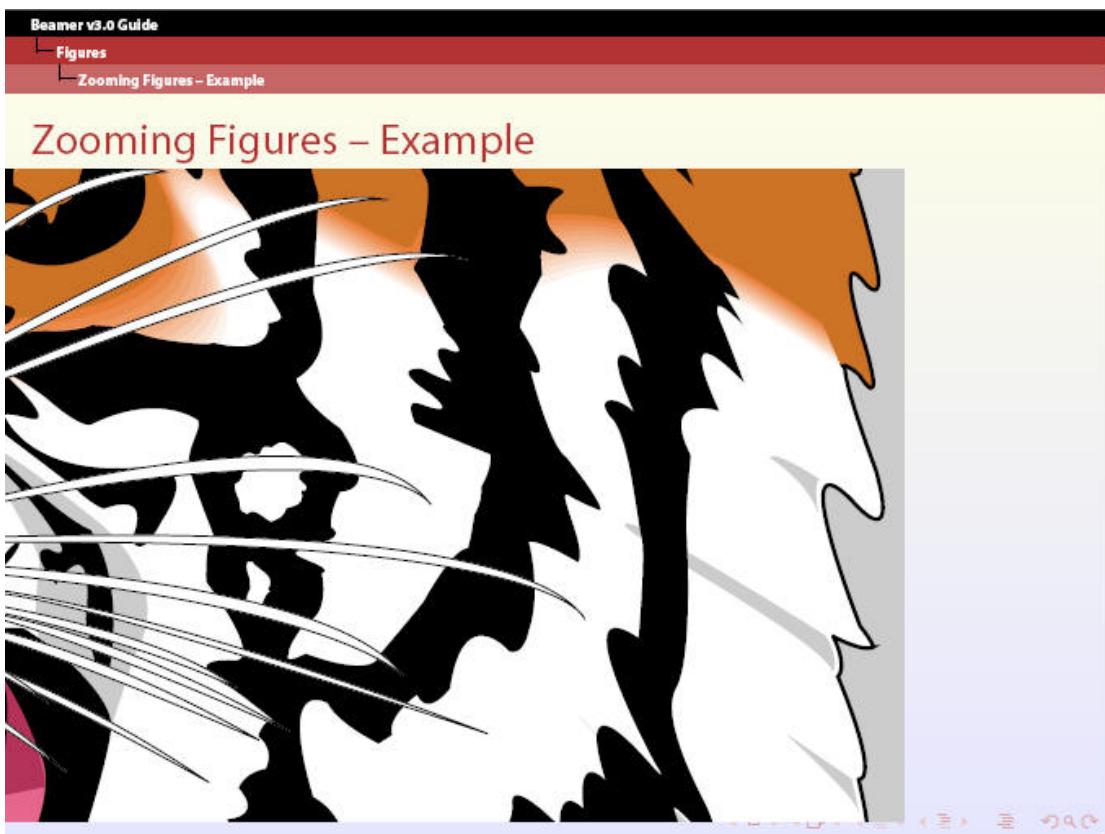
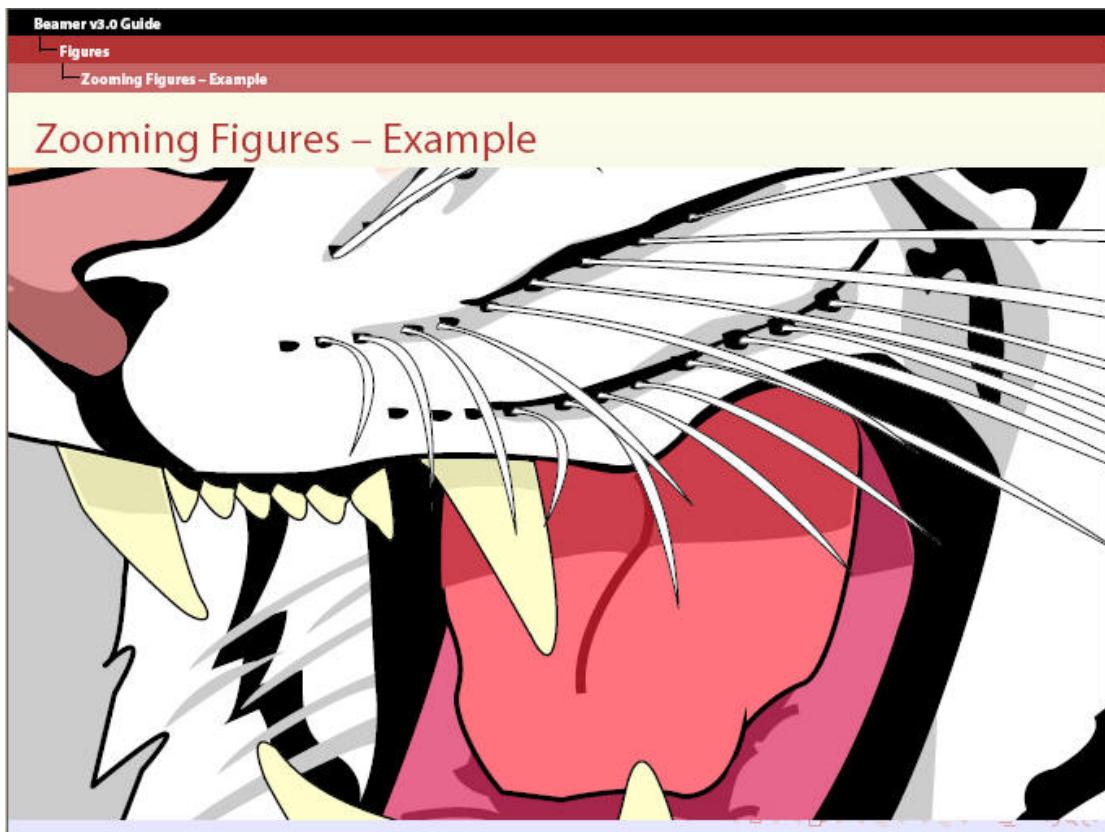
```
\frame{\frametitle{Zooming Figures -- Example}}
\framezoom<1><2>[border](0.5cm,0.5cm)(2cm,1.5cm)
\framezoom<1><3>[border](1cm,3cm)(2cm,1.5cm)
\framezoom<1><4>[border](3cm,2cm)(2cm,2cm)
\pgfimage[height=6cm]{tiger}
% \includegraphics[height=6cm]{tiger} is working, too!
}%
```

⁵在 2.2 版本中为新增的内容。



第 32 张





Beamer v3.0 Guide

Figures

Drawing Figures

Drawing Figures

- The most powerful and easiest-to-use package, *PSTricks*, does not work with `pdflatex` due to fundamental differences in PS and PDF.
- *PGF* (portable graphics format) by the Beamer author.
 - Less powerful than *PSTricks*, but works fine.
 - Supports `dvi ps`, `dvi pdfm`⁶, and `pdflatex`.
- *MetaPost*
 - Works with `dvi ps2pdf`, `dvi pdfm`, and `pdflatex`
- I prefer *Beamer + PSTricks*.
⇒ See [beamer_pstricks.pdf \[1\]](#)

⁶Note that Beamer does not support `dvi pdfm`.

第 36~39 张

5、画图

画图

- 功能强大极易使用 (easiest-to-use) 的宏包, *PSTricks*, 无法对 `pdflatex` 起作用, 归因于 PS 和 PDF 基本的不同。
- 由 Beamer 作者创建的 *PGF* (portable graphics format):
 - 功能没有 *PSTricks* 强大, 但工作得更好。
 - 支持 `dvi ps`, `dvi pdfm`⁶, 和 `pdflatex`。
- *MetaPost*
 - 对 `dvi ps2pdf`, `dvi pdfm` 和 `pdflatex` 起作用。
- 我更喜欢 *Beamer + PSTricks*.
⇒ 参 [beamer_pstricks.pdf \[1\]](#)

⁶注意 Beamer 不支持 `dvi pdfm`。

Masking Figures

- Want to mask *white background* of your images?



- Make a mask image in **256 Colors** and **JPEG Compression**⁷
- Use `\pgfdeclaremask` in pdf package. But only works with **pdflatex**!
- Source code:

```
\pgfdeclaremask{mymask}{ppt.mask}      % Mask image: ppt.mask.jpg
\pgfimage[mask=mymask,interpolate=true]{ppt}    % Masking ppt.png
```

- But the mask image masks the whole slide! See the font outlines.

⁷I do not know the exact requirement.

6、图形遮罩

图形遮罩

- 想遮挡住 (mask) 图形的 *白色背景*吗？



- 制作一个**256色**和**JPEG压缩格式**⁷ (**Compression**) 的图形遮罩。
- 在pdf包中使用`\pgfdeclaremask`。但只对**pdflatex**起作用！
- 源代码：

```
\pgfdeclaremask{mymask}{ppt.mask}      % Mask image: ppt.mask.jpg
\pgfimage[mask=mymask,interpolate=true]{ppt}    % Masking ppt.png
```

- 但是图形遮罩遮住了整个幻灯版！看看字的轮廓。

⁷我不知道确切的条件。

七、局部结构(LOCAL Structurs)

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Fancy Bullets

- ① \beamertemplateballitem in the preamble
- ② itemize environment ⇒ Fancy ball
- ③ enumerate environment ⇒ Fancy numbered ball (used here).

To use different enumerate templates,

```
\begin{enumerate}[minitemplate]
  \item ...
\end{enumerate}
```

where **mini template** can be 'A', 'a', 'i', 'I', '(A)', But the indentation may be changed (bug?)

- i Item 1
- ii Item 2

第 45~46 张

1、奇妙的粗体圆点 (Bullets)

奇妙的粗圆点

- \beamertemplateballitem 放在导言区(preamble)中。
- itemize环境⇒ 奇妙的圆球
- enumerate环境 ⇒ 奇妙的带数字的圆球(这里使用的)。

使用不同的enumerate模板，

```
\begin{enumerate}[minitemplate]
  \item ...
\end{enumerate}
```

这里**mini template**可以是“A”，“a”，“i”，“I”，“(A)”，.... 但会变成呈锯齿状(indentation) (臭虫?)

- i Item 1
- ii Item 2

Beamer v3.0 Guide
Local Structures
Framed Text

Framed Text – Predefined

- Beamer supports predefined framed texts:
 - `theorem`, `corollary`, `definition` in structure color frame
 - `examples` in green color frame
 - `block` in structure color frame with your own title
 - `alertblock` in alert color frame with your own title
- They are aware of `overlay`
- But their color schemes are *theme dependent*
- Example:

Summary

Beamer is excellent!

- Sample code:

```
\begin{block}<+>{Summary}
Beamer is exllent
\end{block}
```

第 47~50 张

2、加外框的文本

加外框的文本 – 预定义

- Beamer支持预定义(predefined)加外框的文本(framed texts):
 - `theorem`, `corollary`, `definition` in structure color frame
 - `examples` in green color frame
 - `block` in structure color frame with your own title
 - `alertblock` in alert color frame with your own title
- 它们可以用覆盖(`overlay`)
- 它们的颜色设计是主题样式依赖的(*theme dependent*)
- 示例:

Summary

Beamer is excellent!

- 示例代码:

```
\begin{block}<+>{Summary}
Beamer is exllent
\end{block}
```

Framed Text – User-defined

- `beamerboxesrounded` environment
- Example

Theorem

$$A = B$$

$$B = C$$

Theorem

$$A = C?$$

- Source Code:

```
\setbeamercolor{uppercol}{fg=white,bg=ugreen}%
\setbeamercolor{lowercol}{fg=black,bg=lgreen}%
\begin{beamerboxesrounded}[upper=uppercol,lower=lowercol,shadow=true]{Theorem}
$A = B$.
\end{beamerboxesrounded}}
```

加外框的文本 – 用户定义

- `beamerboxesrounded` 环境
- 示例

Theorem

$$A = B$$

$$B = C$$

Theorem

$$A = C?$$

- 示例代码:

```
\setbeamercolor{uppercol}{fg=white,bg=ugreen}%
\setbeamercolor{lowercol}{fg=black,bg=lgreen}%
\begin{beamerboxesrounded}[upper=uppercol,lower=lowercol,shadow=true]{Theorem}
$A = B$.
\end{beamerboxesrounded}}
```

Columns

- Use L^AT_EX `minipage` environment or
- Use Beamer `columns` environment

```
\begin{columns}
  \begin{column}[pos]{width}
    ... contents ...
  \end{column}
  \begin{column}[pos]{width}
    ... contents ...
  \end{column}
\end{columns}
```

3、分栏 (Columns)

Columns

- 使用LATEX的`minipage`环境或
- 使用Beamer的`columns`环境

```
\begin{columns}
  \begin{column}[pos]{width}
    ... 内容 ...
  \end{column}
  \begin{column}[pos]{width}
    ... 内容...
  \end{column}
\end{columns}
```

Tables

- Standard L^AT_EX table environment can be used.
- `\onslide` inside ‘overprint’ environment for showing overlays in the right example.

Table Overlays:

| | | |
|-------|-----|-----------|
| Cells | are | growing |
| step | by | |
| Step, | | Finished! |

第 54~58 张

4、表格 (Tables)

表格

- 标准的LATEX table环境可用。
- 在“overprint”环境中使用`\onslide`, 将会显示右边例子中所示的覆盖。

表格的覆盖：

| | | |
|-------|-----|-----------|
| Cells | are | growing |
| step | by | |
| Step, | | Finished! |

八、过渡效果(Transitions)

The screenshot shows a Beamer presentation slide titled 'Transitions'. The top navigation bar includes 'Beamer v3.0 Guide' and 'Transitions'. The main content area contains a bulleted list of transition features and examples:

- PDF supports **seven** transitions: Blinds, Box, Dissolve, Glitter, Replace, Split, Wipe.
- Transition commands are inside `frame` environment.
- Beamer transition commands understand **overlays**. Without overlays the transition is *global* to the current frame.
- Overlayed transition examples:
 - Glitter at /Di 315 (default on this slide): `\transglitter[direction=315]`
 - Boxout `\transboxout<3>`
 - Boxin: `\transboxin<4>`
 - Dissolve transition: `\transdissolve<5>`
 - Split vertical out: `\transsplitverticalout<6>`

第 59~64 张

过渡效果

- PDF支持**七种**过渡效果: Blinds、Box、溶解(Dissolve)、闪光(Glitter)、替换(Replace)、裂开(Split)、擦除(Wipe)。
- 产生过渡效果的命令必需在在frame环境中。
- Beamer的过渡效果命令知道(understand)**覆盖**。没有覆盖过渡效果对当前的**整个(global)**frame起作用。
- 覆盖的过渡效果示例:
 - 以/Di 315的速度闪出(这张幻灯片默认的): `\transglitter[direction=315]`
 - Boxout `\transboxout<3>`
 - Boxin: `\transboxin<4>`
 - 溶解过渡效果: `\transdissolve<5>`
 - 垂直裂开: `\transsplitverticalout<6>`

九、覆盖(Overlays)

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The screenshot shows a Beamer presentation slide titled "Overlays - Overview". The navigation bar at the top includes "Beamer v3.0 Guide", "Overlays", and "Overview". The main content area contains a bulleted list:

- Overlays is the heart of dynamic PDF presentation.
- Beamer provides plenty of overlay commands.
- Key overlay functions are:
 - Stepwise viewing
 - Replace
 - Highlighting
- Various overlay counters: 'n', 'n-', '-n', 'n1-n2', '+-'

At the bottom right, there is a set of Beamer navigation icons.

第 65~67 张

1、概述 (Overview)

覆盖 – 概述

- 覆盖是动态(dynamic) PDF presentation的精神所在。
- Beamer提供了大量的覆盖命令。
- 覆盖功能的关键所在:
 - 逐步显示()
 - 替代
 - 高亮
- 多种覆盖计数器: ‘n’, ‘n-’, ‘-n’, ‘n1-n2’, ‘+’。

Pause for Stepwise Viewing

`pause` command⁸ for easy and simple overlays.

| | |
|---------------------------------------|---------------|
| <code>\begin{itemize}</code> | |
| <code>\pause \item Every thing</code> | ● Every thing |
| <code>\pause \item that has</code> | ● that has |
| <code>\pause \item beginning</code> | ● beginning |
| <code>\pause \item has end.</code> | ● has end. |
| <code>\end{itemize}</code> | |

Note that `pause` does not know `overlay counters`.

⁸There is also `\unpause` command.

2、暂停 (Pause)

逐步显示中的暂停

简易覆盖中的暂停命令⁸。

| | |
|---------------------------------------|---------------|
| <code>\begin{itemize}</code> | |
| <code>\pause \item Every thing</code> | ● Every thing |
| <code>\pause \item that has</code> | ● that has |
| <code>\pause \item beginning</code> | ● beginning |
| <code>\pause \item has end.</code> | ● has end |
| <code>\end{itemize}</code> | |

注意暂停不知晓覆盖计数器。

⁸同样也有`\unpause`命令。

Pause: Table Example

- Row increment in a table:

| Class | A | B | C | D |
|-------|---|---|---|---|
| X | 1 | 2 | 3 | 4 |
| Y | 3 | 4 | 5 | 6 |
| Z | 5 | 6 | 7 | 8 |

- Source code:

```
\rowcolors[]{}{blue!20}{blue!10}
\begin{tabular}{l!{\vrule}cccc}
Class & A & B & C & D \\ \hline
X & 1 & 2 & 3 & 4 \pause \\
Y & 3 & 4 & 5 & 6 \pause \\
Z & 5 & 6 & 7 & 8
\end{tabular}
```

第 74~78 张

3、暂停：表格示例

暂停：表格示例

- 表格中的逐行显示:

| Class | A | B | C | D |
|-------|---|---|---|---|
| X | 1 | 2 | 3 | 4 |
| Y | 3 | 4 | 5 | 6 |
| Z | 5 | 6 | 7 | 8 |

- 源代码:

```
\rowcolors[]{}{blue!20}{blue!10}
\begin{tabular}{l!{\vrule}cccc}
Class & A & B & C & D \\ \hline
X & 1 & 2 & 3 & 4 \pause \\
Y & 3 & 4 & 5 & 6 \pause \\
Z & 5 & 6 & 7 & 8
\end{tabular}
```

Onslide for Stepwise Viewing

- `\onslide<n->stuff` shows stuff on the given slides.
- Example: Column increment in a table:

| Class | A | B | C | D |
|-------|---|---|---|---|
| X | 1 | 2 | 3 | 4 |
| Y | 3 | 4 | 5 | 6 |
| Z | 5 | 6 | 7 | 8 |

- Source code:

```
\rowcolors[]{}{blue!20}{blue!10}
\begin{tabular}{l!{\vrule}c<{\onslide<2->}c<{\onslide<3->} %
c<{\onslide<4->}c<{\onslide}c}
Class & A & B & C & D \\
X & 1 & 2 & 3 & 4 \\
Y & 3 & 4 & 5 & 6 \\
Z & 5 & 6 & 7 & 8
\end{tabular}
```

4、Onslide

逐步显示中的Onslide

- `\onslide<n->stuff` 在给定的幻灯片上显示填充(stuff)。
- 例子：表格中的逐显示：

| Class | A | B | C | D |
|-------|---|---|---|---|
| X | 1 | 2 | 3 | 4 |
| Y | 3 | 4 | 5 | 6 |
| Z | 5 | 6 | 7 | 8 |

- 源代码：

```
\rowcolors[]{}{blue!20}{blue!10}
\begin{tabular}{l!{\vrule}c<{\onslide<2->}c<{\onslide<3->} %
c<{\onslide<4->}c<{\onslide}c}
Class & A & B & C & D \\
X & 1 & 2 & 3 & 4 \\
Y & 3 & 4 & 5 & 6 \\
Z & 5 & 6 & 7 & 8
\end{tabular}
```

Beamer v3.0 Guide

Overlays

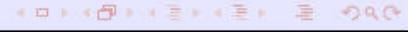
Item I

Item I for Stepwise Viewing

\item<n-> for incremental overlays with overlay counters.

```
\begin{itemize}
\item<2-> Every thing
\item<3-> that has
\item<4-> beginning
\item<5-> has end.
\end{itemize}
```

What if more items are *inserted*?



第 85~90 张

5、Item I

逐步显示中的Item I

\item<n-> 用于带有覆盖计数器的逐步显示。

```
\begin{itemize}
\item<2-> Every thing
\item<3-> that has
\item<4-> beginning
\item<5-> has end
\end{itemize}
```

嵌入更多的items将会是怎样？

Item II for Stepwise Viewing

<+> for incremental overlays w/o overlay counters.

```
\begin{itemize}[<+>]
\item Every thing
\item that has
\item beginning
\item has end.
\end{itemize}
```

- Everything
- that has
- beginning
- has end.

Note that \item<+> can be used instead of global setting of \begin{itemize}[<+>].

逐步显示中的 Item II

<+> 用于增加(overlays) w/o 覆盖计数器。

```
\begin{itemize}[<+>]
\item Every thing
\item that has
\item beginning
\item has end.
\end{itemize}
```

- Everything
- that has
- beginning
- has end

注意 \item<+> 可用于替代的整个\begin{itemize}[<+>]设置。

Beamer v3.0 Guide

Overlays

Item III

Item III for Stepwise Viewing

\item<n1-n2> for fine control of overlays.

```
\begin{itemize}
\item<1-> Every thing
\item<3-4> that has
\item<4> beginning
\item<2-5> has end.
\end{itemize}
```

• Everything
• that has
• beginning
• has end.

第 97~102 张

逐步显示中的Item III

\item<n1-n2> 用于很好地(fine)控制覆盖。

```
\begin{itemize}
\item<1-> Every thing
\item<3-4> that has
\item<4> beginning
\item<2-5> has end.
\end{itemize}
```

• Everything
• has end

Replace

- Successive `\only<n>{...}`.
(Ex) `\only<1>{GA}\only<2>{MOGA}\only<3>{pMOGA} ⇒ pMOGA`
- `\uncover<n>{...}` shows at given n.
(Ex) `\uncover<5>{I am 5} ⇒`
- `\invisible<n>{...}` hides at given n.
(Ex) `\invisible<8>{Invisible at 8} ⇒ Invisible at 8`
- `\alt<n>{at n}{not at n}` for two alternatives.
(Ex) `\alt<11>{I am 11}{I am not 11} ⇒ I am not 11`
- `\temporal<n>{before}{at n}{after}` for three alternatives.⁹
(Ex) `\temporal<14>{I am 13}{I am 14}{I am 15} ⇒ I am 15`

Slide 15

⁹See also highlighting section.

6、替代

Replace

- 连续地 `\only<n>{...}`。
(示例) `\only<1>{GA}\only<2>{MOGA}\only<3>{pMOGA} ⇒ pMOGA`
- `\uncover<n>{...}` 给定n时显示。
(示例) `\uncover<5>{I am 5})`
- `\invisible<n>{...}` 给定n时隐藏。
(示例) `\invisible<8>{Invisible at 8} ⇒ Invisible at 8`
- `\alt<n>{at n}{not at n}` 用于二择一。
(示例) `\alt<11>{I am 11}{I am not 11} ⇒ I am not 11`
- `\temporal<n>{before}{at n}{after}` 用于三择一⁹。
(示例) `\temporal<14>{I am 13}{I am 14}{I am 15} ⇒ I am 15`

⁹也可以参考highlighting 这节。

More Replaces

In case of subtle differences in the heights of replacements, `overlayarea` and `overprint` environments can be used.

7、更多替代

更多替代

假设替代物在高度上不同，`overlayarea`和`overprint` 环境可用。

Beamer v3.0 Guide

↳ Overlays
↳ More Replace

More Replaces

In case of subtle differences in the heights of replacements, `overlayarea` and `overprint` environments can be used.

- `\only<n>` in `overlayarea` environment:
The development of pMSGA is based on NSGA-II and PGAPack.

第 119 张

更多替代

假设替代物在高度上不同，`overlayarea`和`overprint` 环境可用。

- `\only<n>` 在 `overlayarea` 环境：
pMSGA的发展基于NSGAI^{II} 和 PGAPack.

More Replaces

In case of subtle differences in the heights of replacements, `overlayarea` and `overprint` environments can be used.

- `\only<n>` in `overlayarea` environment:

The main difference is sharing again and new density function.

更多替代

假设替代物在高度上不同，`overlayarea`和`overprint` 环境可用。

- `\only<n>` 在 `overlayarea` 环境:

主要的不同是sharing again和新的density功能。

More Replaces

In case of subtle differences in the heights of replacements, `overlayarea` and `overprint` environments can be used.

- `\only<n>` in `overlayarea` environment:

The main difference is sharing again and new density function.

- `\onslide<n>` in `overprint` environment:

This is a first line.

This is a second, long line.

更多替代

假设替代物在高度上不同，`overlayarea`和`overprint` 环境可用。

- `\only<n>` 在 `overlayarea` 环境:

主要的不同是sharing again和新的density功能。

- `\onslide<n>` 在 `overprint` 环境中:

这是第一行。

这是第二行，更长的一行。

More Replaces

In case of subtle differences in the heights of replacements, `overlayarea` and `overprint` environments can be used.

- `\only<n>` in `overlayarea` environment:
The main difference is sharing again and new density function.
- `\onslide<n>` in `overprint` environment:
The previous two lines are replaced by this one.

第 122 张

更多替代

假设替代物在高度上不同，`overlayarea`和`overprint` 环境可用。

- `\only<n>` 在 `overlayarea` 环境：
主要的不同是sharing again和新的density功能。
- `\onslide<n>` 在 `overprint` 环境中：
用这一行代替前面的两行。

Simple Highlighting

`\item<+-| alert@+>` for automatic highlighting.

```
\begin{itemize}
\item<+-| alert@+> Every thing
\item<+-| alert@+> that has
\item<+-| alert@+> beginning
\item<+-| alert@+> has end.
\end{itemize}
```

- Everything
- that has
- beginning
- has end.

- You can also use `\begin{itemize}[<+-|alert@+>]` instead of individual `\item<+-| alert@+>`.
- You can also use `structure` instead of `alert`.

8、简单高亮

简单高亮

`\item<+-| alert@+>` 用于自动高亮。

```
\begin{itemize}
\item<+-| alert@+> Every thing
\item<+-| alert@+> that has
\item<+-| alert@+> beginning
\item<+-| alert@+> has end.
\end{itemize}
```

- Everything
- that has
- beginning
- has end

- 也可使用 `\begin{itemize}[<+-|alert@+>]` 代替个别的“`\item<+-| alert@+>`”。
- 也可使用 `structure` 代替 `alert`。

Alert for Highlighting

`\item<n->\alert<n>{stuff}` is better than the previous automatic one.

```
\begin{itemize}
\item<2->\alert<2> Every thing
\item<2->\alert<3> that has
\item<2->\alert<4> beginning
\item<2->\alert<5> has end.
\end{itemize}
```

- Everything
- that has
- beginning
- has end.

Note that `\item<2->\alert<2>` is same to `\item<2-| alert@2>`.

第 131~136 张

9、Alert 用于高亮

Alert 用于高亮

`\item<n->\alert<n>{stuff}` 优于前面所述的自动高亮显示。

```
\begin{itemize}
\item<2->\alert<2> Every thing
\item<2->\alert<3> that has
\item<2->\alert<4> beginning
\item<2->\alert<5> has end.
\end{itemize}
```

- Everything
- that has
- beginning
- has end

注意: `\item<2->\alert<2>` 和 `\item<2-| alert@2>` 相同。

Alternative for Highlighting

- `\alt<n>{\color{col1}..}{\color{col2}..}` for active/inactive highlighting
- Example:
 - Everything
 - that has
 - beginning
 - has end.
- Source code:

```
\begin{itemize}
  \item<2-> \alt<2>{\color{blue} Everything}{\color{gray} Everything}
  \item<2-> \alt<3>{\color{blue} that has}{\color{gray} that has}
  \item<2-> \alt<4>{\color{blue} beginning}{\color{gray} beginning}
  \item<2-> \alt<5>{\color{blue} has end.}{\color{gray} has end.}
\end{itemize}
```

10、二择一(Alertnatiive)用于高亮

二择一(Alternative) 用于高亮

- `\alt<n>{\color{col1}..}{\color{col2}..}` 用于激活/关闭高亮
- 例子:
 - Everything
 - that has
 - beginning
 - has end.

- 源代码:

```
\begin{itemize}
  \item<2-> \alt<2>{\color{blue} Everything}{\color{gray} Everything}
  \item<2-> \alt<3>{\color{blue} that has}{\color{gray} that has}
  \item<2-> \alt<4>{\color{blue} beginning}{\color{gray} beginning}
  \item<2-> \alt<5>{\color{blue} has end.}{\color{gray} has end.}
\end{itemize}
```

Temporal for Highlighting

- `\temporal<n>{before}{on}{after}` for incremental highlighting
- Ready?
 - Everything
 - that has
 - beginning
 - has end.
- Source code:

```
\def\hilite<#1>{%
  \temporal<#1>{\color{gray}}{\color{blue}}%
  {\color{blue!25}}}

...
\begin{itemize}
  \hilite<3> \item Everything
  \hilite<4> \item that has
  \hilite<5> \item beginning
  \hilite<6> \item has end.
\end{itemize}
```

第 143~149 张

11、Temporal 用于高亮

Temporal 用于高亮

- `\temporal<n>{before}{on}{after}` 用于渐进(incremental)设高亮。
- 准备?
 - Everything
 - that has
 - beginning
 - has end.
- 源代码:

```
\def\hilite<#1>{%
  \temporal<#1>{\color{gray}}{\color{blue}}%
  {\color{blue!25}}}

...
\begin{itemize}
  \hilite<3> \item Everything
  \hilite<4> \item that has
  \hilite<5> \item beginning
  \hilite<6> \item has end.
\end{itemize}
```

Other Highlightings

- `\textbf`, `\textit`, `\textsl`, `\textrm`, `\textsf`, and `\color` also understand overlays.
- Example
 - `Everything (\color<3-4>\{olive\}\{Everything\})`
 - `that has`
 - `beginning (\color<5>[rgb]\{.9,.5,.5\}beginning)`
 - `has end.`

12、其它的高亮

其它的高亮(Highlightings)

- `\textbf`, `\textit`, `\textsl`, `\textrm`, `\textsf`, 和 `\color` 也知晓覆盖。
- 例子:
 - `Everything (\color<3-4>\{olive\}\{Everything\})`
 - `that has`
 - `beginning (\color<5>[rgb]\{.9,.5,.5\}beginning)`
 - `has end.`

十、动画(Animation)

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The screenshot shows a Beamer presentation slide. The title bar says 'Beamer v3.0 Guide' with a red background. Below it, a navigation bar has 'Animation' selected, with 'Animations' as the sub-item. The main content area is titled 'Animation' and contains the following bullet points:

- For dynamic presentation Beamer supports *transition*, *overlay*, and *animation*.
- Animation depends on your imagination and L^AT_EX skill.
- Supported animation types
 - Animate + Overlay
 - Animatevalue
 - Timed overlays (auto advancing)
- Use with caution as animation needs *lots* of slides

At the bottom right of the slide are standard Beamer navigation icons.

第 156~158 张

1、动画

动画

- Beamer 支持 *transition*, *overlay* 和 *Animation* 用于制作动态的 presentation。
- 动画依赖于你的想象力和 LATEX 技巧。
- 支持的动画类型：
 - Animate + Overlay
 - Animatevalue
 - Timed overlays (auto advancing)
- 警告：使用动画，必需要有 **大量的** slides。

Animate + Overlay

- `\animate<n>`¹⁰ for automatic stepwise viewing
- Ready?
 - Everything
 - that has
 - beginning
 - has end.
- Source code:

```
\frame{\animate<3-6>\frametitle{Animate + Overlay}%
...
\begin{itemize}[<+->]
\item Everything
\item that has
\item beginning
\item has end.
\end{itemize}
```

¹⁰ Remember that n can be n1-n2, n1-, or etc.

2、动画(Animate)+覆盖(Overlay)

动画(Animate) + 覆盖(Overlay)

- `\animate<n>`¹⁰ 用于自动逐步显示。
- 准备?
 - Everything
 - that has
 - beginning
 - has end.
- 源代码:

```
\frame{\animate<3-6>\frametitle{Animate + Overlay}%
...
\begin{itemize}[<+->]
\item Everything
\item that has
\item beginning
\item has end.
\end{itemize}
```

¹⁰ 记住: n 可以是 n1-n2, n1-, 或其它。

Beamer v3.0 Guide

└ Animation

 └ Animatevalue

Animatevalue

- `\animate<n>` to animate 'n' slides
- `\animatevalue<n>{name}{start}{end}` for specifying animation effects
 - name: counter or dimension
 - start and end values of the value

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3、Animatevalue

Animatevalue

- `\animate<n>` 用于驱动/animate) 'n' slides
- `\animatevalue<n>{name}{start}{end}` 用于指定动画效果。
 - name::: 计数器或元(dimension)
 - start和end: value的开始和结束值(values)

Flying Animation

- `\animate` and `\animatevalue` are used.
- This animation consumes 31 pages!
- Ready to explore?

Flying in from right!

Flying in from left!

4、飞行动画

飞行动画

- 使用了`\animate` 和 `\animatevalue`。
- 这个动画消耗(consumes) 31页(pages) !
- 开始浏览?

Flying Animation - Source

```
\newcount\opaqueness
\newdimen\offset
\frame{\frametitle{Flying Animation}%
\animate<2-15,17-30> % Actual animation values. Try <1-31>
\begin{itemize}
\item[]
\animatevalue<1-15>{\opaqueness}{0}{100}%
\animatevalue<1-15>{\offset}{6cm}{0cm}%
\begin{colormixin}{\the\opaqueness!averagebackgroundcolor}
\hspace{\offset} Flying in from {\color{olive} right}!
\end{colormixin}

\item[]
\animatevalue<17-31>{\opaqueness}{0}{100} % Starts at 17, not 16, to give
\animatevalue<17-31>{\offset}{-5cm}{0cm} % one pause!
\begin{colormixin}{\the\opaqueness!averagebackgroundcolor}
\hspace{\offset} Flying in from {\color{olive} left}!
\end{colormixin}
\end{itemize}}
```

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飞行动画—源代码

```
\newcount\opaqueness
\newdimen\offset
\frame{\frametitle{Flying Animation}%
\animate<2-15,17-30> % 动画的实际values。试试<1-31>
\begin{itemize}
\item[]
\animatevalue<1-15>{\opaqueness}{0}{100}%
\animatevalue<1-15>{\offset}{6cm}{0cm}%
\begin{colormixin}{\the\opaqueness!averagebackgroundcolor}
\hspace{\offset} Flying in from {\color{olive} right}!
\end{colormixin}

\item[]
\animatevalue<17-31>{\opaqueness}{0}{100} % 从17给定,不是16。
\animatevalue<17-31>{\offset}{-5cm}{0cm} % 一个暂停 (pause) !
\begin{colormixin}{\the\opaqueness!averagebackgroundcolor}
\hspace{\offset} Flying in from {\color{olive} left}!
\end{colormixin}
\end{itemize}}
```

The screenshot shows a Beamer presentation slide. The title bar says 'Beamer v3.0 Guide'. Below it is a navigation menu with 'Animation' expanded, showing 'Timed Overlays' as the selected item. The main content area has a light yellow background and contains the following text:

- Adobe Reader supports *timed overlays*, often called *auto advancing*.
- Two approaches
 - `\hypersetup{pdfpageduration=time}` from *hyperref* package + overlay macros
 - `\transduration<n>{time}` from *beamer* package + overlay macros
 - See [beamer_pstricks.pdf](#) to see a fancy example.
 - Try to do the same thing using PGF. Easy or not?

At the bottom right of the slide, there is a set of small, semi-transparent navigation icons typical of Beamer presentations.

第 200 张

5、同步覆盖(Time Overlays)

同步覆盖(Timed Overlays)

- Adobe Reader 支持 *同步覆盖*, 常称作 *自动推进(auto advancing)*。
- 两种方法(approaches)
 - 来自于 rom *hyperref* 包的 `\hypersetup{pdfpageduration=time}` + 覆盖宏包(overlay macros)
 - 来自于 *beamer*包的 `\transduration<n>{time}` + 覆盖宏包(overlay macros)
- 参考 [beamer_pstricks.pdf](#) 中的例子。
- 用 PGF照上面的样着做看看。是否容易？

十一、Beamer 的主题样式(Theme)

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Beamer v3.0 Guide

Beamer Themes

Presentation Themes

Presentation Themes

- `\usetheme[option]{name}`: Named to `beamertheme<name>.sty`.
- Old themes: bars, boxes, classic, default, lined, plain, shadow, sidebar, sidebardark, sidebardarktab, sidebartab, split, tree, `treebars`
- New themes (v3.0)
 - W/o navigation bar: default, boxes, Bergen, Madrid, Pittsburgh, Rochester
 - With a tree-like navigation bar: `Antibes`, `JuanLesPins`, `Montpellier`.
 - With a TOC sidebar: `Berkeley`, `PaloAlto`, `Goettingen`, `Marburg`, `Hannover`
 - With a mini frame navigation: `Berlin`, `Ilmenau`, `Dresden`, `Darmstadt`, `Frankfurt`, `Singapore`, `Szeged`
 - With section and subsection titles: `Copenhagen`, `Luebeck`, `Malmoe`, `Warsaw`

[◀ Return to Theme](#)

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1、幻灯片(Presentation)主题样式(Themes)

幻灯片(Presentation)主题样式(Themes)

- `\usetheme[option]{name}`: 指定Beamer主题样式<name>.sty.
- 旧主题样式: bars, boxes, classic, default, lined, plain, shadow, sidebar, sidebardark, sidebardarktab, sidebartab, split, tree, `treebars`。
- 新主题样式 (v3.0)
 - W/o导航条: default, boxes, Bergen, Madrid, Pittsburgh, Rochester
 - 带树形导航条: `Antibes`, `JuanLesPins`, `Montpellier`。
 - 带目录(TOC)的侧边导航条: `Berkeley`, `PaloAlto`, `Goettingen`, `Marburg`, `Hannover`。
 - 带微型frame导航条: `Berlin`, `Ilmenau`, `Dresden`, `Darmstadt`, `Frankfurt`, `Singapore`, `Szeged`。
 - 带节小节标题: `Copenhagen`, `Luebeck`, `Malmoe`, `Warsaw`。



Beamer v3.0 Guide

Beamer Themes

Color Themes

Color Themes

- `\usecolortheme[option]{name}`: Named to `beamercolortheme<name>.sty`.
- Four basic color themes:
 - Default and special-purpose themes: default, structure (e.g., `\usecolortheme[named=SeaGreen]{structure}`).
 - Complete color themes: albatross, beetle, crane, dove, fly, seagull
 - Inner color themes: lily, orchid
 - Outer color themes: whale, seahorse
- `\setbeamercolor{beamer_element}{color}` for color setup of Beamer elements
(Ex) `\setbeamercolor{frametitle}{fg=blue, bg=yellow}`

[◀ Return to Theme](#)

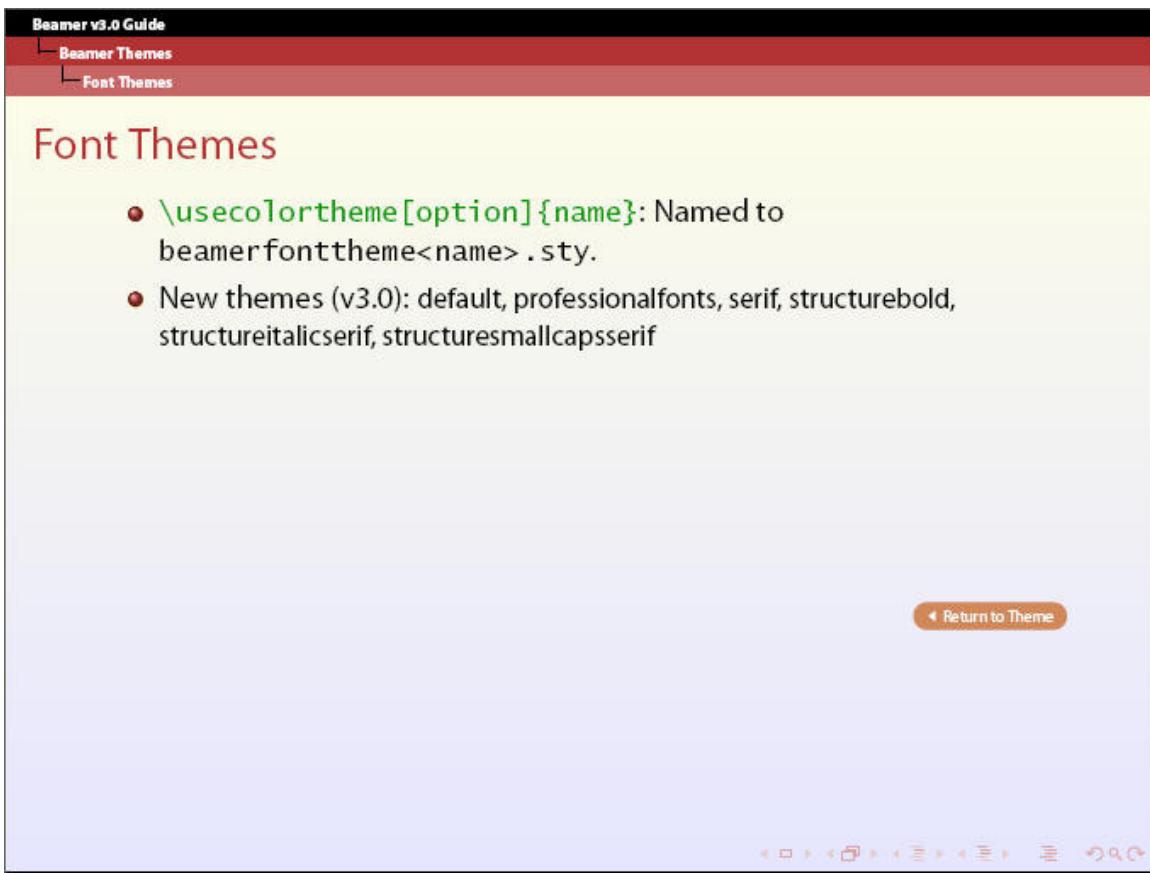
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2、颜色(Color)主题样式(Themes)

颜色主题

- `\usecolortheme[option]{name}`: 指定 `beamercolortheme<name>.sty`.
- 四种基本的颜色主题样式:
 - Default and special-purpose themes: default, structure (e.g., `\usecolortheme[named=SeaGreen]{structure}`).
 - Complete color themes: albatross, beetle, crane, dove, fly, seagull.
 - 内部颜色主题: lily, orchid.
 - 外部颜色主题: whale, seahorse.
- `\setbeamercolor{beamer_element}{color}` 用于 Beamer 元素颜色的设置。
(例子) `\setbeamercolor{frametitle}{fg=blue, bg=yellow}`

[◀ Return to Theme](#)



The screenshot shows a Beamer presentation slide titled "Font Themes". The navigation bar at the top includes "Beamer v3.0 Guide", "Beamer Themes", and "Font Themes". The main content area contains two bullet points:

- `\usecolortheme[option]{name}`: Named to `beamerfonttheme<name>.sty`.
- New themes (v3.0): default, professionalfonts, serif, structurebold, structureitalicserif, structuresmallcapsserif

A "Return to Theme" button is located in the bottom right corner.

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3、字体(Font)主题样式(Themes)

字体主题样式

- `\usecolortheme[option]{name}`: 指定 `beamerfonttheme<name>.sty`。
- 新主题样式 (v3.0): default, professionalfonts, serif, structurebold, structureitalicserif, structuresmallcapsserif。

[◀ Return to Theme](#)

十二、混杂特性(Misc features)

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The screenshot shows a Beamer presentation slide titled "Hyperlinks and Buttons". The navigation bar at the top includes "Beamer v3.0 Guide", "Misc Features", and "Hyperlinks and Buttons". The main content area contains a bulleted list of features:

- Beamer provides additional options for hyperlinks and buttons.
- `\hyperlink{targetname}{\beamergotobutton{text}}` to create link.
- `\hypertarget{targetname}{text}` to create target.
- Some useful buttons are `\beamerbutton`, `\beamergotobutton`, and `\beamerrreturnbutton`.
- To go to the last slide, click [▶ here](#).

At the bottom right of the slide are standard Beamer navigation icons.

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1、超级链接(Hyperlinks)和按钮(Buttons)

超级链接(Hyperlinks)和按钮(Buttons)

- Beamer提供了附加的选项用于超级链接(hyperlinks)和按钮(buttons)。
- `\hyperlink{targetname}{\beamergotobutton{text}}` 用于产生超级链接。
- `\hypertarget{targetname}{text}` 用于产生链接目标(target)。
- 一些有用的按钮是 `\beamerbutton`, `\beamergotobutton`, 和 `\beamerrreturnbutton`。
- 前往最后一张幻灯片, 单击 [▶ here](#) .

The screenshot shows a Beamer presentation slide titled "Notes". The top navigation bar includes "Beamer v3.0 Guide", "Misc Features", and "Notes". The main content area contains a bulleted list:

- To add notes to PDF screen, \documentclass[notes]{beamer}.
- To make only notes, \documentclass[notesonly]{beamer}.
- Notes addition by adding \note[options]{...} after \frame{...}.
- This slide has notes. Want to see them?

At the bottom right of the slide, there is a set of Beamer navigation icons.

第 205~207 张

2、注释(Notes)

注释 (Notes)

- 为PDF screen添加注释(notes), \documentclass[notes]{beamer}。
- 仅产生(make only)注释(notes), \documentclass[notesonly]{beamer}。
- 通过在\frame{...}后添加\note[options]{...}产生注释。
- 这张幻灯片带有注释，想看看吗？

Beamer v3.0 Guide

- Misc Features
 - Notes
 - Notes

2004-11-04

Notes

- To add notes to PDF output, documentclass [option] [beamer].
- To make only notes, documentclass [option] [beamer].
- Note addition by adding \beamertemplate{[option]}{...} after \frame{...}.
- This slide has notes. Want to see them?

- Can you see me?
- Two note options for note are **itemize** and **enumerate**.
- **\beamertemplatenoteplain** for plain note page!

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Beamer v3.0 Guide

- Misc Features
 - Notes
 - Notes

2004-11-04

Notes

- To add notes to PDF output, documentclass [option] [beamer].
- To make only notes, documentclass [option] [beamer].
- Note addition by adding \beamertemplate{[option]}{...} after \frame{...}.
- This slide has notes. Want to see them?

- 看见我了吗？
- 用于注释的两个注释选项是**itemize**和**enumerate**。
- **\beamertemplatenoteplain** 用于简单的(plain)注释页(note page)！

Beamer v3.0 Guide
Misc Features
Merge for “trans” Output

Merge for “trans” Output

- Beamer screen size = 128mm x 96mm
- Merge transparency output on letter paper for printing!

```
\documentclass{article} %
\usepackage{pdfpages}
\begin{document}
\includepdf[nup=2x2,landscape,delta=5mm 5mm,%
            scale=0.95,pages={1-18}]{trans.pdf}
\end{document}
```

- To return, click [here](#).

第 209 张

3、Merge 用于“trans”输出

Merge for “trans” Output

- Beamer屏幕尺寸= 128mm x 96mm
- Merge transparency 输出on信纸for打印！

```
\documentclass{article} %
\usepackage{pdfpages}
\begin{document}
\includepdf[nup=2x2,landscape,delta=5mm 5mm,%
            scale=0.95,pages={1-18}]{trans.pdf}
\end{document}
```

- 返回, 单击 [here](#).

Movie

- Beamer provides `multimedia` package.¹¹
- `\movie[options]{poster}{file_name}`
 - `poster`: Poster for the movie (empty, text, or image).
 - `file_name`: AVI or MPG.
 - Works with `pdflatex` and `dvips/ps2pdf` routes.
- Some useful options
 - `autoplay`, `loop`, `repeat`, `palindrome`
 - `borderwidth`, `showcontrols`, `externalviewer`



- Example: `clock.avi`

¹¹New in Version 2.2. Can be used independently.

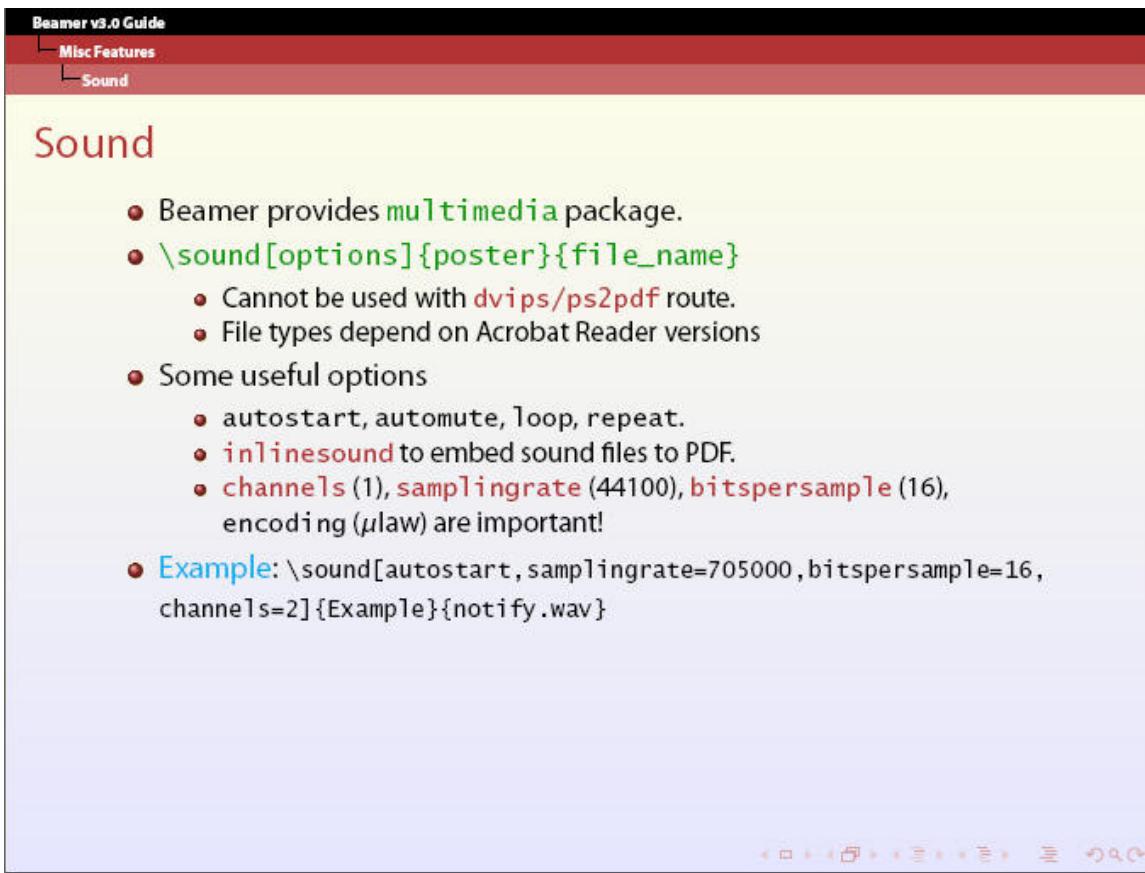
4、电影(Movie)

电影

- Beamer提供`multimedia` 宏包¹¹。
- `\movie[options]{poster}{file_name}`
 - `poster`: Poster用于电影(empty、文本、或图像)。
 - `file name`: AVI或MPG。
 - 对`pdflatex`和`dvips/ps2pdf` 起作用。
- 其它有用的选项
 - `autoplay`, `loop`, `repeat`, `palindrome`
 - `borderwidth`, `showcontrols`, `externalviewer`

- 例子: `clock.avi`

¹¹在 2.2 版本中为新特性。可独立使用。



The screenshot shows a Beamer presentation slide titled "Sound". The navigation bar at the top includes "Beamer v3.0 Guide", "Misc Features", and "Sound". The main content area contains a bulleted list about Beamer's multimedia features and the \sound command. It also includes a code example and a note about inlinesound.

```
\begin{frame}{Sound}
\section{Sound}
\begin{itemize}
- Beamer provides \multimedia package.
- \sound[options]{poster}{file\_name}
- Cannot be used with dvips/ps2pdf route.
- File types depend on Acrobat Reader versions
- Some useful options
- autostart, automute, loop, repeat.
- inlinesound to embed sound files to PDF.
- channels (1), samplingrate (44100), bitspersample (16), encoding ( $\mu$ law) are important!
- Example: \sound[autostart,samplingrate=705000,bitspersample=16,channels=2]{Example}{notify.wav}

```

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5、声音(Sound)

声音(Sound)

- Beamer提供multimedia宏包。
- \sound[options]{poster}{file_name}
 - 不能使用dvips/ps2pdf route。
 - 文件类型依赖于Acrobat Reader版本。
- 一些有用的选项
 - autostart, automute, loop, repeat。
 - inlinesound 用于把声音文件插入到PDF中。
 - channels (1), samplingrate (44100), bitspersample (16), 编码(μ law)是重要的！
- 例子: \sound[autostart,samplingrate=705000,bitspersample=16,channels=2]{Example}{notify.wav}

Footer Design

- To add logo, `\logo{stuff}` in the preamble.
 - The logo will place in the right bottom corner.
 - How to change it? – See below!
- To redesign the footer, apply the following code:

```
\usefootemplate{\vbox{%
\tinycolouredline{structure!25}%
{\color{white}\textbf{\insertshortauthor\hfill}%
\insertshortinstitute}%
\tinycolouredline{structure}%
{\color{white}\textbf{\insertshorttitle}\hfill}%
}}
```

6、标识(Logo)和页脚(Footer)

页脚设计

- 添加标识，在导言区用`\logo{stuff}`。
 - 标识将放在右下角。
 - 如何改变？ – 请看下面！
- To重新设计页脚，请应用下面的代码：

```
\usefootemplate{\vbox{%
\tinycolouredline{structure!25}%
{\color{white}\textbf{\insertshortauthor\hfill}%
\insertshortinstitute}%
\tinycolouredline{structure}%
{\color{white}\textbf{\insertshorttitle}\hfill}%
}}
```

Emulations of Other Packages

- You can use **FoilTEX**, **(HA)Prosper**, **Seminar**, or **TEXPower** slides **within** Beamer.
- Not perfect, but you can *easily* import your slides written from the above four classes.
- Prosper example:

```
\usepackage{beamerprosper} % Required
...
\overlays{8}{%
\begin{slide}{Prosper Emulation Example}
\begin{itemize}
\item Backward writing is easy and simple:
  \fromSlide{8}{\color{green} P}%
  \fromSlide{7}{\color{blue} R}%
  \fromSlide{6}{\color{magenta} O}%
  \fromSlide{5}{\color{cyan} S}%
  \fromSlide{4}{\color{yellow} P}%
  \fromSlide{3}{\color{olive} E}%
  \fromSlide{2}{\color{red} R}%
\end{itemize}
\end{slide} }%
```

7、效仿(Emulations)

效仿(Emulations)其它的宏包

- 可以在Beamer中使用**FoilTEX**, **(HA)Prosper**, **Seminar**, 或**TEXPower**幻灯片。
- 虽不完美，但很容易导入用上述classes 制作的幻灯片。
- Prosper的例子：

```
\usepackage{beamerprosper} % Required
...
\overlays{8}{%
\begin{slide}{Prosper Emulation Example}
\begin{itemize}
\item Backward writing is easy and simple:
  \fromSlide{8}{\color{green} P}%
  \fromSlide{7}{\color{blue} R}%
  \fromSlide{6}{\color{magenta} O}%
  \fromSlide{5}{\color{cyan} S}%
  \fromSlide{4}{\color{yellow} P}%
  \fromSlide{3}{\color{olive} E}%
  \fromSlide{2}{\color{red} R}%
\end{itemize}
\end{slide} }%
```

Prosper Result

- This slide is written with **Prosper syntax!**
- Backward writing is easy and simple:
PROSPER

8、Prosper 的效果(Result)

Prosper的效果(Result)

- 这张幻灯片是用**Prosper syntax**写成的！
- 由后向前写很容易简单：
PROSPER

The screenshot shows a Beamer presentation slide. The title bar says "Beamer v3.0 Guide" and has a navigation menu with "Misc Features" and "Hangul". The main content area is titled "Hangul" in red. It contains a bulleted list of instructions and notes about using LaTeX to typeset Hangul. The text is in English with some Korean text and code snippets in red. At the bottom right of the slide, there is a set of small, semi-transparent navigation icons.

- If you installed H^AL^ET_X, load `\usepackage{hfont}`.
 - `\textgfs{...}` ⇒ 아름다운 한글 그리고 金杞朱
 - Click [here](#) to return.
- Note: Hangul bookmarks and Hangul search in PDF are only supported by `dvipdfm(x)`. But Beamer does not support `dvipdfm(x)`.
- Beamer option `[cjk]` is supported.
- `\usepackage[utf8]{inputenc}` is supported.

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9、韓文(Hangul)

韓文(Hangul)

- 如果你安装了H^AL^ET_X, 加载`\usepackage{hfont}`.
 - `\textgfs{...}` ⇒ 아름다운 한글 그리고 金杞朱
 - 点击 [here](#) 返回。
- 注意：在PDF中韩文(Hangul)书签(bookmarks)和韩文搜索只被`dvipdfm(x)`支持，但是Beamer不支持`dvipdfm(x)`。
- Beamer选项`[cjk]`是支持的。
- `\usepackage[utf8]{inputenc}`是支持的。

Other Macros

- To remove navigation symbols,
`\usenavigationsymbolstemplate{}`.

10、其它宏包

其它宏包(Macros)

- 去掉导航记符号(symbols),
`\usenavigationsymbolstemplate{ }.`

十三、最后一张幻灯片 (Last Slide)



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最后一张幻灯片

最后一张幻灯片

- 这张幻灯片是你单击按钮后跳转过来的。
- 返回, 单击 [here](#).

十四、参考书目 (Reference)

Reference

- Ki-Joo Kim, *Ki-Joo's L^AT_EX Documents*
(<http://www.geocities.com/kijoo2000/>).
- Michael Wiedmann, *Screen Presentation Tools* (<http://www.miwie.org/presentations/presentations.html>).

参考书目(Reference)

- KiJoo Kim, *KiJoo's L^AT_EX Documents*
(<http://www.geocities.com/kijoo2000/>).
- Michael Wiedmann, *Screen Presentation Tools*
(<http://www.miwie.org/presentations/presentations.html>).