BEAMER

An Introduction

Ryan Siskind

NCSU

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Outline

1. Introduction
   - Overview of the Beamer Class
   - Basic Setup
2. Creating a Slideshow
   - Themes and Colors
   - Titles
   - Sections
3. Overlays
4. Graphics
   - Figures
   - Movies

History of Beamer

"I originally created BEAMER *mainly in my spare time as a small private collection of macros to make using the* `seminar` *class easier. The first full version was for my PhD defense presentation in February 2003. A month later, I put the package on CTAN at the request of some colleagues. After that, things somehow got out of hand."*
-Till Tantau, 2004

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4. No external programs needed other than what you already use for LaTeX
5. Font manipulation, movie files, fun stuff, etc.

CTAN

BEAMER is hosted at

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1. Files (BEAMER, pgf, xcolor);
2. Instructions for installation;
3. BEAMER examples.

Installation

1. Go to http://latex-beamer.sourceforge.net/ or http://sourceforge.net/projects/latex-beamer/
2. Choose to download the “LaTeX-Beamer Class”
3. Download the latest version of `latex-beamer`, `pgf`, and `xcolor`

Important Note

The Beamer user guide is found in the `latex-beamer` file and is ÜBER helpful.

More Installation

For a permanent installation:

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2. In the `texmf` directory, create the sub-sub-sub-directories;
   - `texmf/tex/latex/beamer`,
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   - `texmf/tex/latex/xcolor`
3. Place all UNZIPPED files from the packages you already downloaded into these new directories.
4. Rebuild the TEXfile database by running the command `texhash`, `mktexlsr`, or via menu options (if available)

My First Slide

```
\documentclass{beamer}

\begin{document}

  \begin{frame}
    Hello World!
  \end{frame}

\end{document}
```

Presenting in Style

Themes dictate colors, information bars, and layout of presentation. This presentation uses the theme `\usetheme{CambridgeUS}`

- Themes, p135-148;
- Templates, p149-158;
- Colors, p162-175.

Frame Titles

...and Subtitles

2 ways to create titles and subtitles for a frame:

1. `\begin{frame}{`*Frame Title*`}{`*Frame Subtitle*`}`
2. `\frametitle{`*Frame Title*`}\framesubtitle{`*Frame Subtitle*`}`

Sectioning

Notice the sections and subsections at the top of each slide.

- `\section[`*Short Section Name*`]{`*Long Section Name*`}`
- `\subsection[`*Short Subsection Name*`]{`*Long Subsection Name*`}`

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"Short names" go into slide headers;
"Long names" go into outlines.

All sections and subsections automatically added to slideshow outline!

Looooooong Slides

BEAMER does not automatically put what doesn't fit from one slide onto another slide.

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- you can use the frame option
  `\begin{frame}[allowframebreaks]`

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+ You don't have to worry about the length of your slides.
+ Slide title is continued on each subsequent slide from the original frame.
- Most overlay options are not usable.

Why and How Overlays Are Used

- Much like the transitions in PowerPoint
- Allows different information to be shown at different times on same slide
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  If you want information to show up only in the second and fourth sets: `<2,4>`

The Overlay Feature

For Lists

```
\begin{enumerate}
  \item<1-> First item;
  \item<2-> Second item;\\
  ...
  \item<3-> Last item.
\end{enumerate}
```

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1. First item;

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1. First item;
2. Second item;

   ...
3. Last item.

The Overlay Feature

For Non-Lists

You must use `\uncover<`*Transparency numbers*`>`

An Algorithm For Finding Primes Numbers.

```
\uncover<1->{int main (void)} \uncover<1->{\{}
\uncover<1->{std::vector<bool> is_prime (100,
true);} \uncover<1->{ for (int i = 2; i < 100; i++)}
\uncover<2->{{ if (is_prime[i])}} \uncover<2->{
\{} \uncover<3->{ std::cout << i << " ";}
\uncover<3->{ for (int j = i; j < 100;}
\uncover<3->{ is_prime [j] = false, j+=i);}
\uncover<2->{ \}} \uncover<1->{ return 0;}
\uncover<1->{\}}
```

```
int main (void) {
std::vector<bool> is_prime (100, true);
 for (int i = 2; i < 100; i++)




    return 0;
}
```

```
int main (void) {
std::vector<bool> is_prime (100, true);
 for (int i = 2; i < 100; i++)
 if (is_prime[i])
{


 }  return 0;
}
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std::vector<bool> is_prime (100, true);
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 for (int j = i; j < 100;
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 }  return 0;
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 is_prime [j] = false, j+=i);
 }  return 0;
}
```

Using Verbatim

To use any sort of verbatim text, you must declare the frame as *fragile*:

```
\begin{frame}[fragile]
```

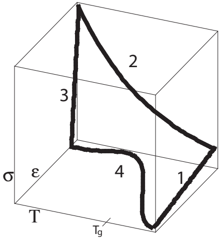
Ordering the Overlays

```
\begin{enumerate}
  \item \uncover<2,6>
  {Start at $T>T_g$ and deform}

  \item \uncover<3,6>
  {Cool below $T_g$}

  \item \uncover<4,6>
  {Release applied strain}

  \item \uncover<5,6>
  {Heat above $T_g$ and recovery}
\end{enumerate}
```



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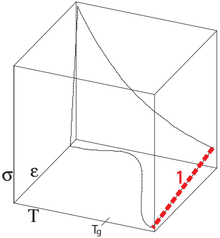

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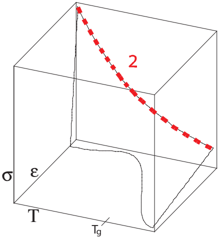

2. Cool below T_g

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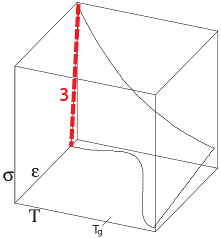

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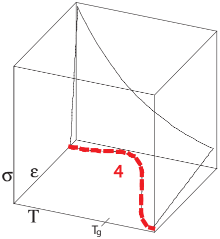

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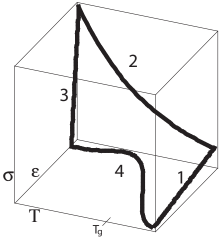

1. Start at $T > T_g$ and deform
2. Cool below T_g
3. Release applied strain
4. Heat above T_g and recovery

Overlaying Figures

In general, `\includegraphics<`*set(s) to show graphic*`}`
To overlay the figures on top of each other, use the command `\llap`

```
\llap{\includegraphics<1,6>[height=1.3in]{./figures/SMPThermoMechCycle}}%
\llap{\includegraphics<2>[height=1.3in]{./figures/ExpFig1}}%
\llap{\includegraphics<3>[height=1.3in]{./figures/ExpFig2}}%
\llap{\includegraphics<4>[height=1.3in]{./figures/ExpFig3}}%
\llap{\includegraphics<5>[height=1.3in]{./figures/ExpFig4}}
```

Inserting Figures

.eps or .ps files

Only when using `latex` and `dvips`

.pdf, .jpg, .jpeg or .png files

Only when using `pdflatex`

You Can Do Movies Too!

```
\usepackage{multimedia}
```

Thank You!

rdsiskin@ncsu.edu