

Introduction to Beamer for the Lightboard
Module 1A

Beamer Basics

Beamer

We use **Beamer** instead of PowerPoint to create presentations to be projected on a screen. Since it is based on \LaTeX , it is excellent for presentations with mathematical formulas.

Indeed, we assume the user is already familiar with \LaTeX .

This slide deck uses the `ep-dark` style which provides a particularly simple, clean design featuring white text on a black background. This is ideal for use on the Lightboard.

Keep it clean! Don't put too many words on a slide.

Blocks

This is a block

A **block** structure is useful for highlighting particular information.

Definition

The **definition** environment is a type of block used for definitions. Highlight the word you are defining.

Itemized lists

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- ▶ Items are added one by one until done.

Pauses

The **pause** command

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The **pause** command is a mechanism for building up a slide in pieces.

Only

The **only** command provides more fine control in revealing material on a slide.

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The **only** command provides more fine control in revealing material on a slide. The second sentence was only on the 2nd slide; this sentence will be on slides 3 and all subsequent slides.

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Mathematics

Because Beamer is built in \LaTeX it does mathematics beautifully either inside a sentence, $\sqrt{2} + \cos \theta$, or in display mode:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}.$$

Do it right! Notice this difference between $\cos\theta$ [wrong!] and $\cos \theta$ [yes!].

Aligned equations

The **aligned** environment (in math mode) works well with Beamer and pauses:

$$|z| = \sqrt{z \cdot \bar{z}}$$

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Aligned equations

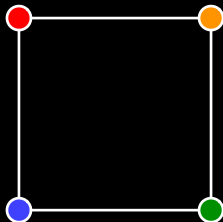
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$$\begin{aligned}\therefore |a + bi| &= \sqrt{(a + bi)(a - bi)} \\ &= \sqrt{a^2 + abi - abi - b^2i^2} \\ &= \sqrt{a^2 + b^2}\end{aligned}$$

Figures

The **graphicx** package provides the **includegraphics** command. Prepare graphics with a drawing program using light colored lines and shapes on a black or transparent background. Save in a standard graphics format.



Math extras

Use the **amsmath** and **amsthm** packages for additional math functionality.

Theorem (Binomial)

Let n be a nonnegative integer. Then

$$(x + y)^n = \sum_{k=0}^n \binom{n}{k} x^k y^{n-k}. \quad \square$$