



# **LATEX Beamer Theme “Juelich”**

## **Tutorial for the JSC Guest Student Programme**

September 25, 2019 | The GSP Organizers | Jülich Supercomputing Centre

# How to use the Jülich Theme

## Parts of this Mini-Tutorial

- Part 1: Examples
- Part 2: Jülich Colors
- Part 3: Localization
- Part 4: Tweaks
- Part 5: Handouts



## Part I: Examples

# L<sup>A</sup>T<sub>E</sub>X-Beamer Features

The following slides show how Latex-Beamer constructs work within the template.

- Lists, numbered lists
- Plain slides, background images
- Theorems, proofs
- Definitions, examples
- Blocks, alert blocks
- Highlight options
- Formulae
- Verbatim environments

# Lots of lists

## Another Subtitle

- using the pause command:
  - First item.

# Lots of lists

## Another Subtitle

- using the pause command:
  - First item.
  - Second item.
- using overlay specifications:
- using the general uncover command:

# Lots of lists

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- using the pause command:
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- using overlay specifications:
  - 1 First numbered item.
- using the general uncover command:

# Lots of lists

## Another Subtitle

- using the pause command:
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  - Second item.
- using overlay specifications:
  - 1 First numbered item.
  - 2 Second numbered item.
    - 3rd level item!
- using the general uncover command:

# Lots of lists

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  - First item.
  - Second item.

# Plain Frames

- The next slide shows a plain frame.
- To use plain frames add the [plain] parameter to your \begin{frame} statement.

## How to use plain frames

```
\begin{frame}[plain]
  \frametitle{Plain Frame}
  \begin{center}
    Here is my tiny text on a plain frame.
  \end{center}
\end{frame}
```

# Plain Frame

Enough space for your **big ideas.**

(or holiday pictures)

# Background Images

## On Standard Frames

- The next slide shows an image, embedded into the background of the frame layout.
- The background image is automatically cropped to the frame dimensions.

### How to install a background image

```
\setbeamertemplate{background}{\includegraphics[width=\paperwidth]{placeholder}}
\begin{frame}
    \frametitle{An image in the background}
    \centering
    Some text in front of the background image.
\end{frame}
\setbeamertemplate{background}{}  

```

# An image in the background

Some text in front of the background image.

# Block Constructs

theorem, proof

## Theorem

*There is no largest prime number.*

## Proof.

- 1 Suppose  $p$  were the largest prime number.
  
  
  
  
  
- 4 Thus  $q + 1$  is also prime and greater than  $p$ .



# Block Constructs

theorem, proof

## Theorem

*There is no largest prime number.*

## Proof.

- 1 Suppose  $p$  were the largest prime number.
- 2 Let  $q$  be the product of the first  $p$  numbers.
  
- 4 Thus  $q + 1$  is also prime and greater than  $p$ .



# Block Constructs

theorem, proof

## Theorem

*There is no largest prime number.*

## Proof.

- 1 Suppose  $p$  were the largest prime number.
- 2 Let  $q$  be the product of the first  $p$  numbers.
- 3 Then  $q + 1$  is not divisible by any of them.
- 4 Thus  $q + 1$  is also prime and greater than  $p$ .



# Block Constructs

definition, example

## Definition

A **prime number** is a number that has exactly two divisors.

## Example

- 2 is prime (two divisors: 1 and 2).
- 3 is prime (two divisors: 1 and 3).
- 4 is not prime (**three** divisors: 1, 2, and 4).

# Block Constructs

block, alertblock

## Simple Block

Just some text.

## Alert Block

This block seems to be pretty important.

# Highlight important information

Use “Jülich” colors to attract attention

## Use \emph{()}

This text is \emph{important}.

This text is important.

## Use \alert{()}

This text is \alert{really} important!

This text is **really** important!

# Math Environment

Use your  $\text{\LaTeX}$  formulae inside your slides without hassle

$$\iiint_V \operatorname{div} \vec{F} dV = \iint_S \vec{F} \cdot d\vec{S}$$

$$\prod_{k=1}^n k = n! , \quad \sum_{k=1}^n k = \frac{n(n+1)}{2} , \quad \int_0^{2\pi} \sin t dt = 0$$

$$p(x) = \sum_{i=0}^n f_i q_i(x) \quad \text{with} \quad q_i(x) = \prod_{\substack{k=0 \\ k \neq i}}^n \frac{x - x_k}{x_i - x_k} .$$

$$\iint_S (U \operatorname{grad} W) \cdot d\vec{S} = \iiint_V (\operatorname{grad} U \cdot \operatorname{grad} W + U \Delta W) dV$$

# Verbatim Environment

## Code Snippets

- Slides containing \verb statements must be defined fragile

```
\begin{frame}[fragile]
\frametitle{Hello World in Intercal}
\begin{verbatim}
DO ,1 <- #13
PLEASE DO ,1 SUB #1 <- #234
DO ,1 SUB #2 <- #112
DO ,1 SUB #3 <- #112
DO ,1 SUB #4 <- #0
DO ,1 SUB #5 <- #64
DO ,1 SUB #6 <- #194
DO ,1 SUB #7 <- #48
PLEASE DO ,1 SUB #8 <- #22
DO ,1 SUB #9 <- #248
DO ,1 SUB #10 <- #168
DO ,1 SUB #11 <- #24
DO ,1 SUB #12 <- #16
DO ,1 SUB #13 <- #214
PLEASE READ OUT ,1
PLEASE GIVE UP
\end{verbatim}
\end{frame}
```

# Hello World in Intercal

```
DO ,1 <- #13
PLEASE DO ,1 SUB #1 <- #234
DO ,1 SUB #2 <- #112
DO ,1 SUB #3 <- #112
DO ,1 SUB #4 <- #0
DO ,1 SUB #5 <- #64
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DO ,1 SUB #11 <- #24
DO ,1 SUB #12 <- #16
DO ,1 SUB #13 <- #214
PLEASE READ OUT ,1
PLEASE GIVE UP
```

# Background Images

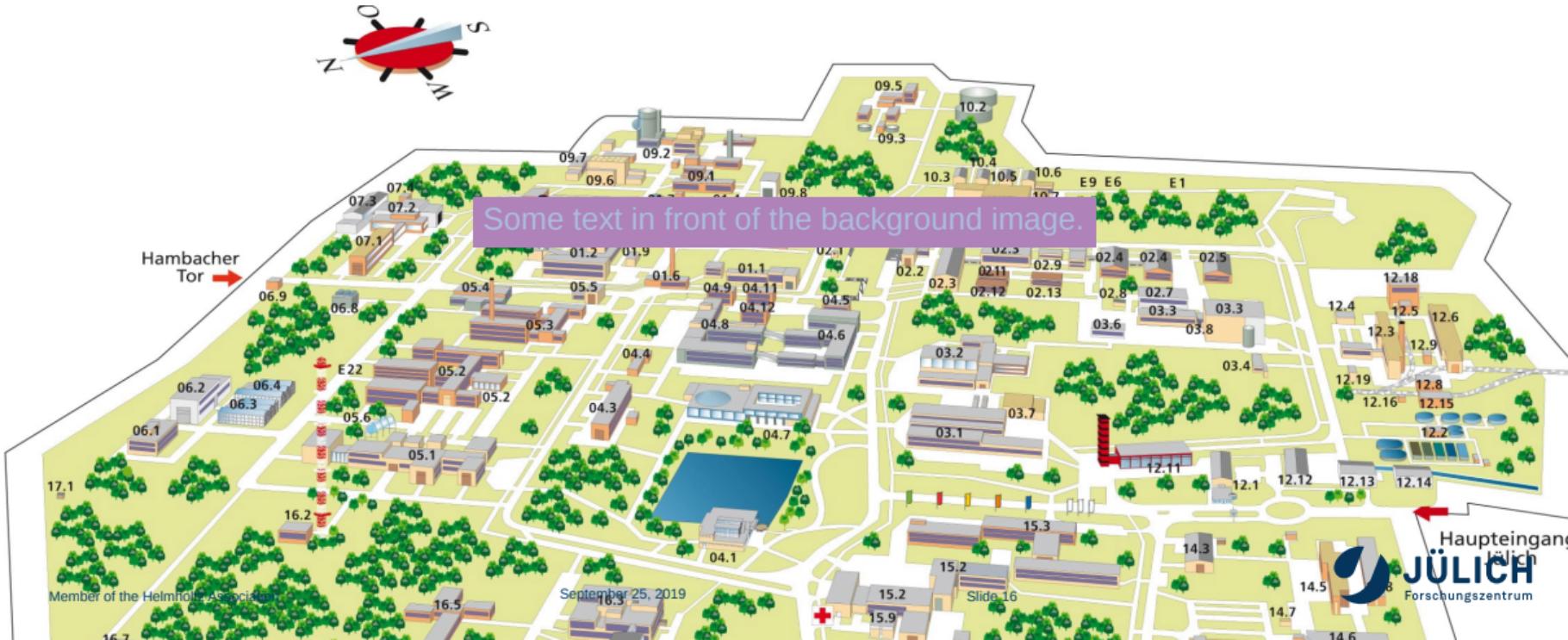
## On Standard Frames

- The next slide shows an image, embedded into the background of the frame layout.
- The background image is automatically cropped to the frame dimensions.

### How to install a background image

```
\setbeamertemplate{background}{\includegraphics[width=\paperwidth]{background}}
\begin{frame}
Some text in front of the background image.
\end{frame}
\setbeamertemplate{background}{}
```

# Jülich Campus in the background



# Background Images

## On Plain Frames

- Use background canvas instead of background to flood fill a plain slide
- Again, the image is cropped to the frame boundaries

### How to install a background canvas image

```
\setbeamertemplate{background canvas}{\includegraphics[width=\paperwidth]{background}}
\begin{frame}[plain]
\end{frame}
\setbeamertemplate{background canvas}{}  

```



## Example Block

Just some text.

### Redefine commands with fancy colors

```
\renewcommand{\emph}[1]{\textcolor{blue}{#1}}
```

Gives a nice blue text with every \emph{} command.

# Columns

To structure information use columns

I am column one

- items as usual
- another item

I am column two

...

Use \begin{columns}[t] to align at the top

I am column one

- items as usual
- another item

I am column two

...

# Columns

You can also use uneven distributions

I am column one

- items as usual

I am column two

...

# Columns

Do not use more than 3 columns

I am column one

...

I am column two

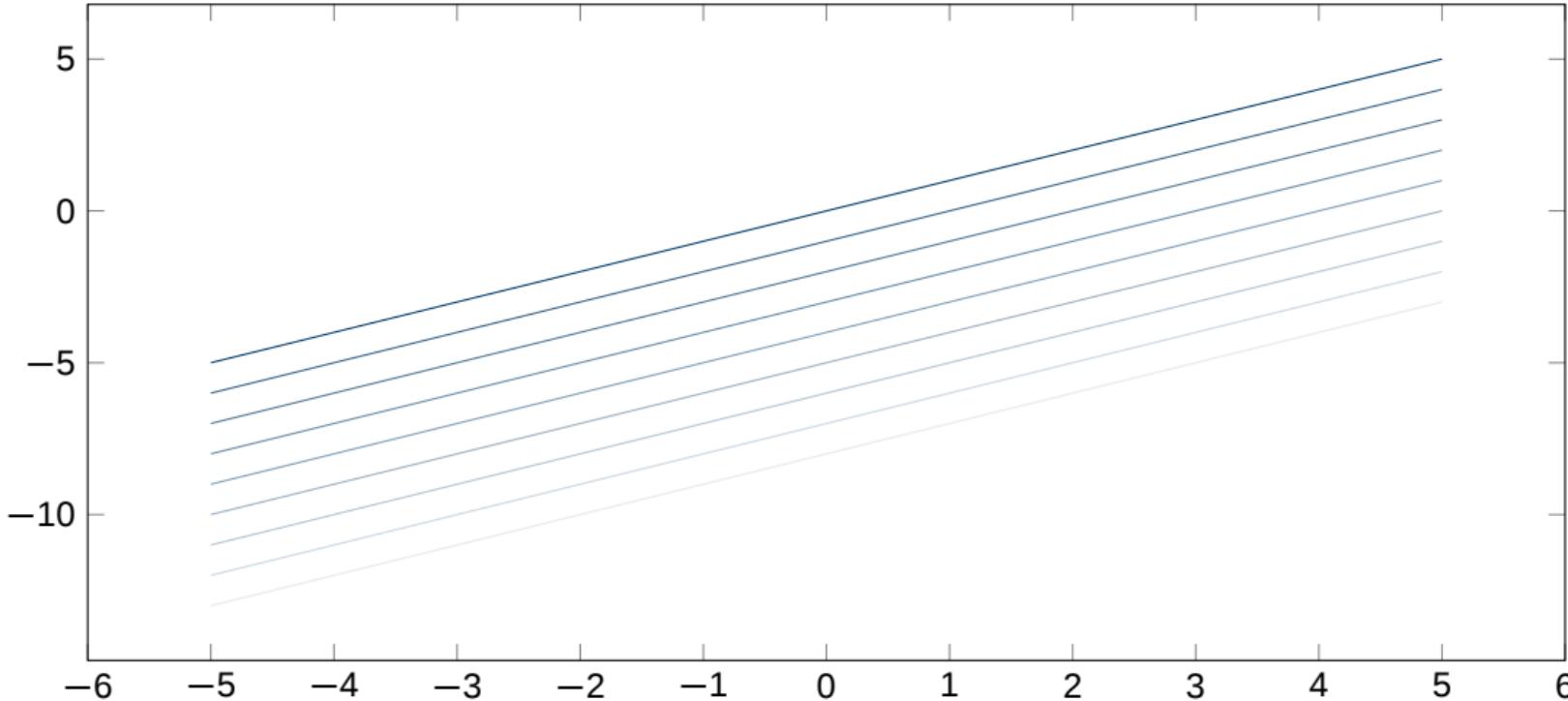
...

I am column three

...

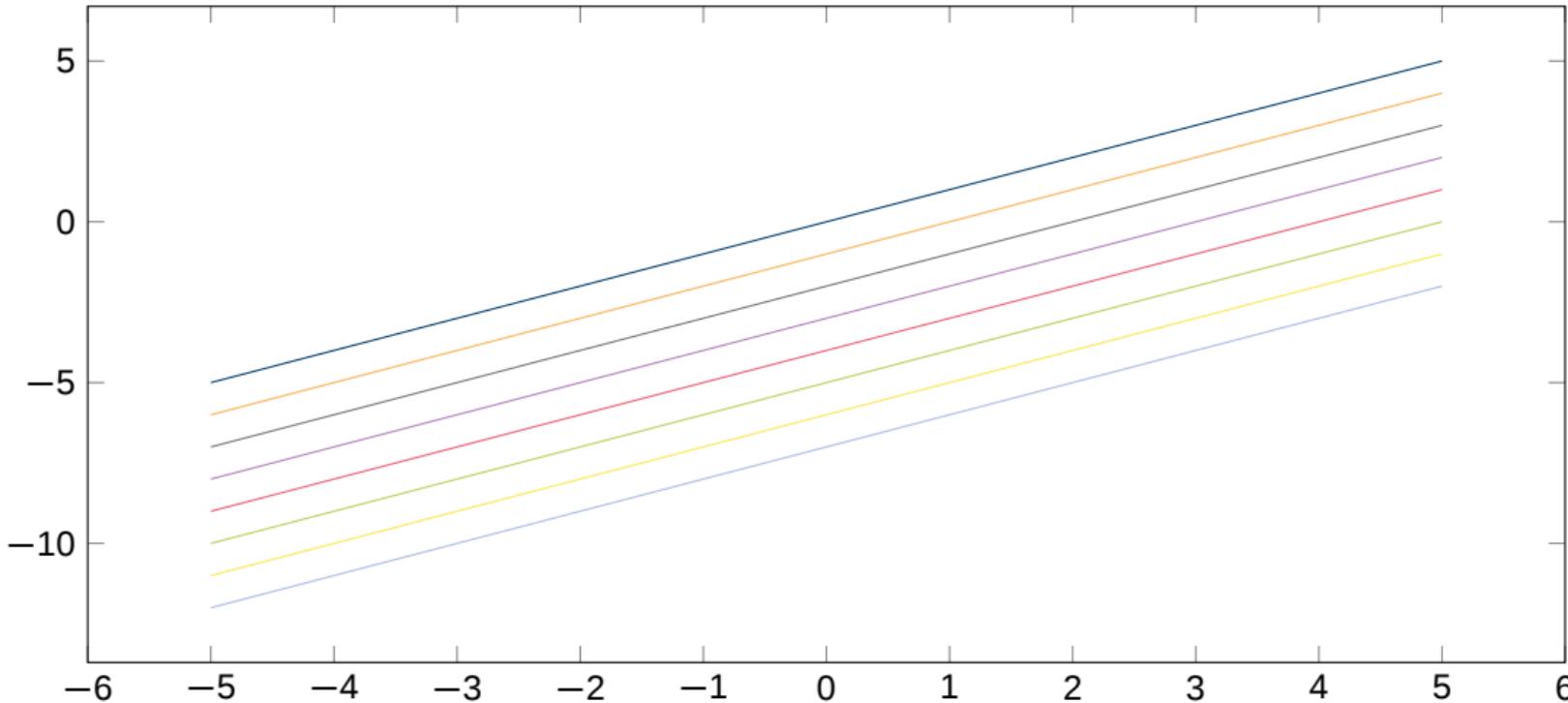
# Use Pgfplots for Plotting

Large, simple plot



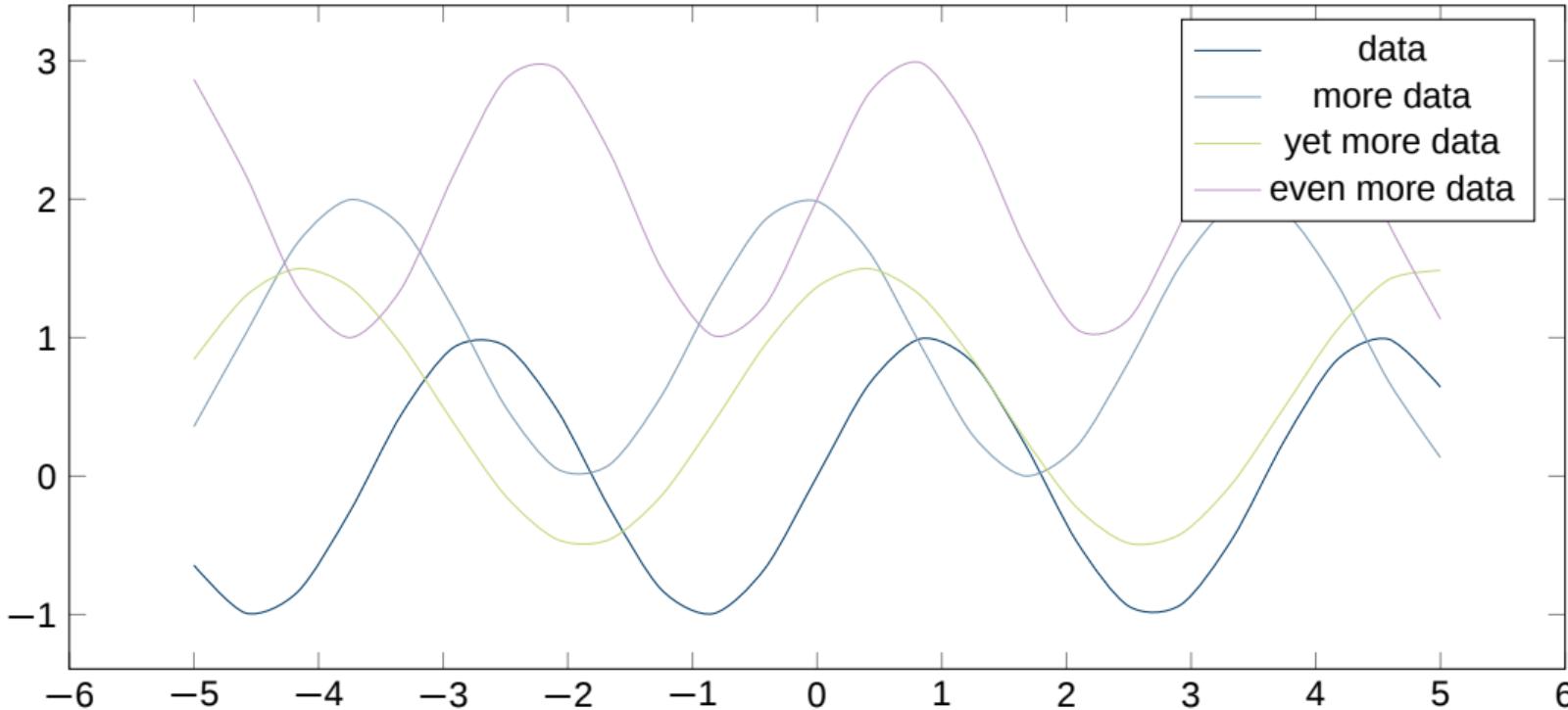
# Use Pgfplots for Plotting

## Different Cycle List



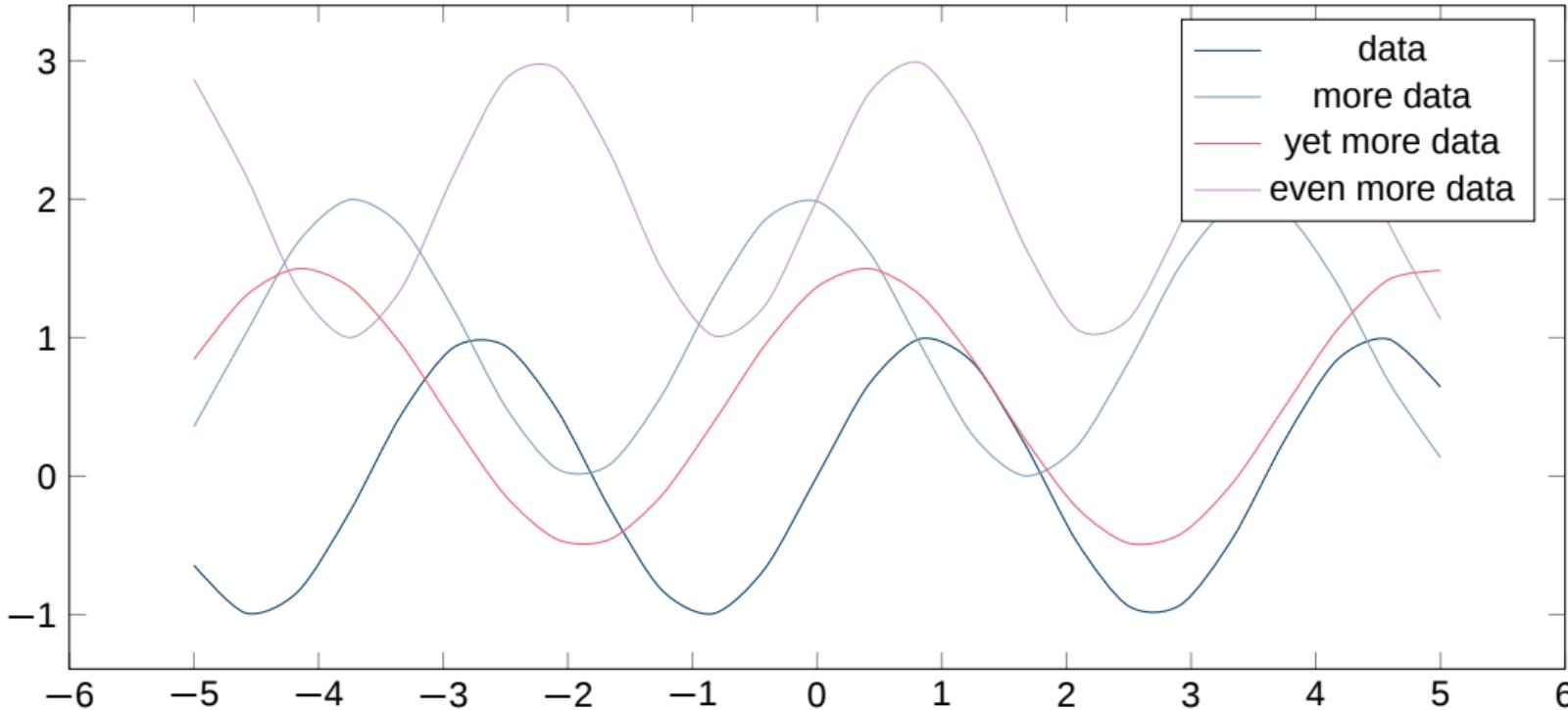
# Use Pgfplots for Plotting

## Highlighting a curve



# Use Pgfplots for Plotting

## Highlighting a curve



# More Plots

## More Information

Take a look at the  pgfplots gallery.

# Present Data In Tables

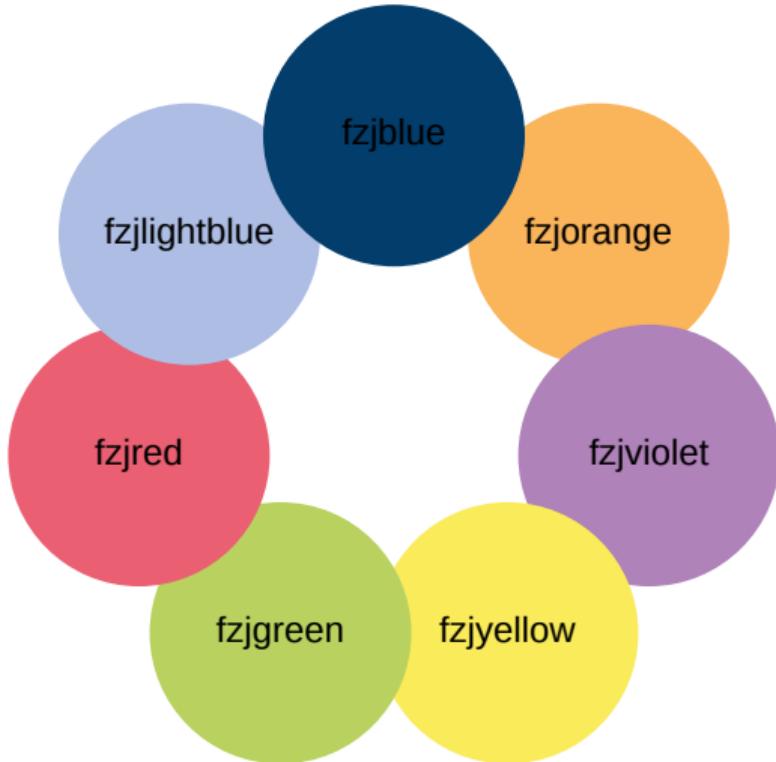
level	dof	error1	error2	info	grad(log(dof),log(error2))	quot(error1)
1	4	0.25	0.76	48	0	0
2	16	$6.25 \cdot 10^{-2}$	0.5	25	-0.3	4
3	64	$1.56 \cdot 10^{-2}$	0.29	41	-0.4	4
4	256	$3.91 \cdot 10^{-3}$	0.14	8	-0.5	4
5	1,024	$9.77 \cdot 10^{-4}$	$4.42 \cdot 10^{-2}$	22	-0.85	4
6	4,096	$2.44 \cdot 10^{-4}$	$1.7 \cdot 10^{-2}$	46	-0.69	4
7	16,384	$6.1 \cdot 10^{-5}$	$8.2 \cdot 10^{-3}$	40	-0.52	4
8	65,536	$1.53 \cdot 10^{-5}$	$3.91 \cdot 10^{-3}$	48	-0.54	4
9	$2.62 \cdot 10^5$	$3.81 \cdot 10^{-6}$	$1.95 \cdot 10^{-3}$	33	-0.5	4
10	$1.05 \cdot 10^6$	$9.54 \cdot 10^{-7}$	$9.77 \cdot 10^{-4}$	2	-0.5	4



## Part II: Jülich Colors

# Corporate Colors

You can use predefined colortnames to spice up your slides



# Using Corporate Colors

In text:

- `\textcolor{colorname-text}{text}`  
There is a green word in this sentence.
- `\colorbox{colorname-background}{content}`  
This text is on an orange background.
- `\fcolorbox{colorname-frame}{colorname-background}{content}`  
This colored text is in a colorful framed box.

In TikZ, pgfplots: use the named colors in any color specification.



## Part III: Localization

# Localization

## How to change the date display to another language

The date will be adjusted automatically. You just have to use the `babel` package with the desired language.

### Date style – Mixed

load package with DE and EN (default):

```
\usepackage[ngerman,english]{babel}
```

choose German:

```
\selectlanguage{ngerman}
```

choose English:

```
\selectlanguage{english}
```

### Date style – German

01. Januar 2018

```
\selectlanguage{ngerman}
```

### Date style – English

January 01, 2018

```
\selectlanguage{english}
```

# Localization/Language

## Change Helmholtz Banner Text

Using the `babel` package with the language option automatically sets the correct labels for the slide counter and Helmholtz banner.

### Helmholtz Banner and Date in German

- Take a look at the date and Helmholtz banner in the lower left corner and the slide name and frame number in the middle
- This slide should show the german version
- Enable options via `\documentclass[english,ngerman]{beamer}`
- Enabled locally via `\selectlanguage{ngerman}` before `\begin{frame}`



## Part IV: Tweaks

# Slide Number Display

How to change the slide number style

Full Display: Current Slide | Overall Number of Slides

```
\setbeamertemplate{frame number}[full]
```

Slide 42 | 524

No Display: empty

```
\setbeamertemplate{frame number}[empty]
```

Default Display: Current Slide

```
\setbeamertemplate{frame number}[default]
```

Slide 42

Translation

If you choose german as language the name **Slide** will be translated to **Folie** automatically (See **this** slide)

# Project Partners

## How to set up partner logos

- Show up to 3 partner logos, on this slide Jara, RWTH, Bonn
- Design your logos with sufficiently large white borders
- pdf $\setminus$ TEX pictures file types: .pdf .png .jpg

### Show logos

```
\setbeamertemplate{footer element1}[logo]{jara}  
\setbeamertemplate{footer element2}[logo]{uni_bonn}  
\setbeamertemplate{footer element3}[logo]{rwth}
```

### Reset back to default settings

```
\setbeamertemplate{footer element1}[default]  
\setbeamertemplate{footer element2}[default]  
\setbeamertemplate{footer element3}[default]
```



## Part V: Handouts

# Create Handouts

## Switch and Setup Render Mode

```
\documentclass[handout]{beamer}  
\mode{  
\pgfpagesuselayout{4 on 1}[a4paper,landscape,border shrink=5mm]}
```

## Define Number of Pages per Sheet

```
\pgfpagesuselayout{2 on 1}[a4paper,border shrink=5mm]  
\pgfpagesuselayout{4 on 1}[a4paper,landscape,border shrink=5mm]  
\pgfpagesuselayout{8 on 1}[a4paper,border shrink=5mm]  
\pgfpagesuselayout{16 on 1}[a4paper,landscape,border shrink=5mm]
```

## Further Reading – See Latex-Beamer manual for details

<http://www.ctan.org/tex-archive/macros/latex/contrib/beamer/doc/beameruserguide.pdf>

# How to Do References

- My talk is interesting [Las82a].
- But this paper shows how it is really done [Las82b].
- Wow, these guys did stupid things [Las20].
- Cite figures in the caption below, or in the text aside.
- Put your references in `references.bib`

# References I

- [Las20] Firstname Lastname.  
Title 3.  
In *Another Book*, pages 42–72. Publisher, 1820.
- [Las82a] Firstname Lastname.  
Title 1.  
In *Book*, 1982.
- [Las82b] Firstname Lastname.  
Title 2.  
*Journal*, 42(2):999–1000, 1982.