TECHNISCHE UNIVERSITÄT DARMSTADT

TITLE

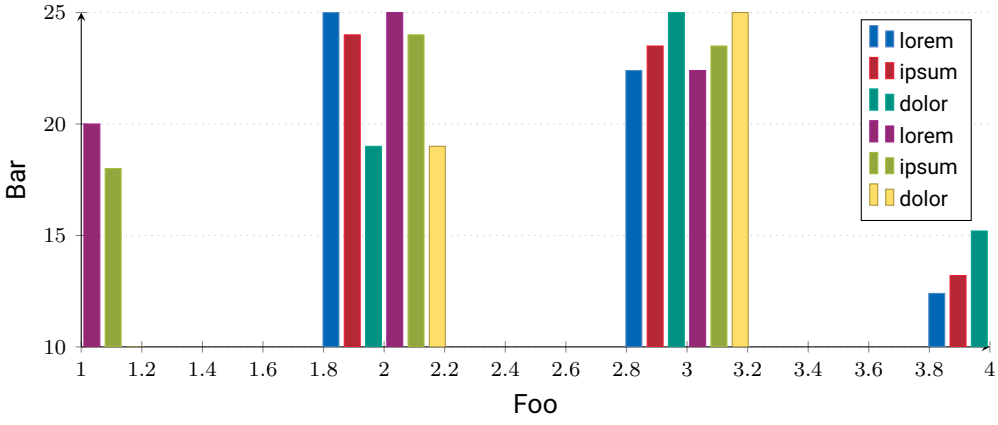
Subtitle

TABLE OF CONTENTS

MOTIVATION

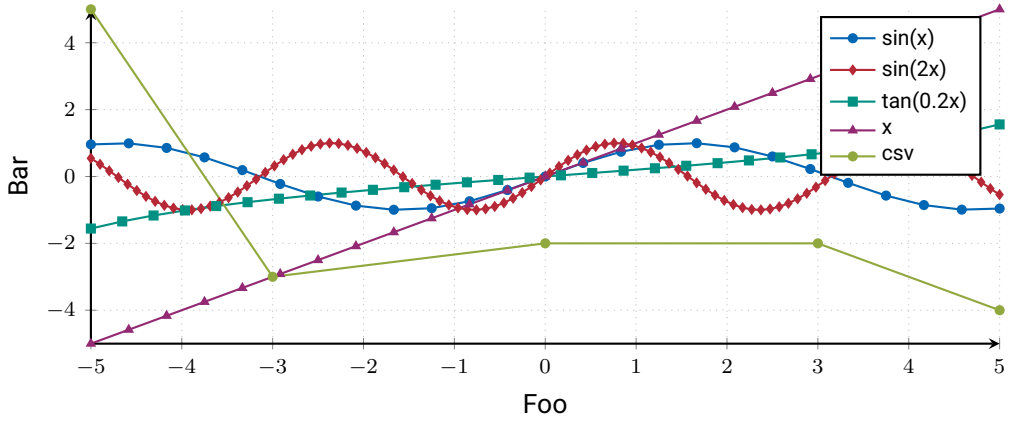
- Start with a motivational slide.
- Why shall the audience care about your presentation?
- Is there some intersting application?
- What is to be expected from the talk?

BAR CHARTS: TUDABARPLOT

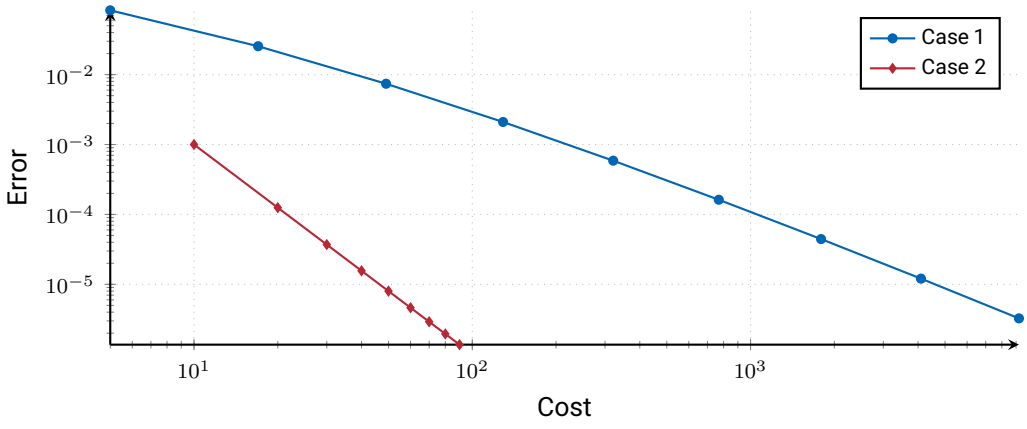


`tudabarplot` uses automatically the TU colors, e.g. `\TUDa-1a`, `\TUDa-1b`, from the corporate guide, `https://www.tu-darmstadt.de/media/medien_stabsstelle_km/services/medien_cd/das_bild_der_tu_darmstadt.pdf`

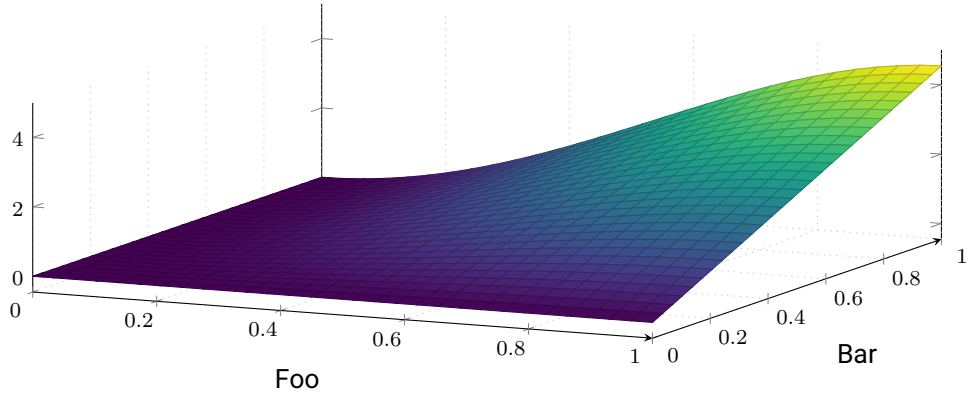
LINE PLOTS



LOG PLOTS



MORE PLOTS: 3D PLOTS



VIDEO

Include videos with the `multimedia` package

ANIMATION

- use `animate` package for animations based on separate images
- seems to work worse than `multimedia`

MORE BULLETS

- Bullet 1
- Bullet 2
  - Bullet with equation $\vec{B} = \mu\vec{H}$
  - Another equation $(a + b)^2 = a^2 + 2ab + b^2$

A block

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

ON COLUMNS

Without column

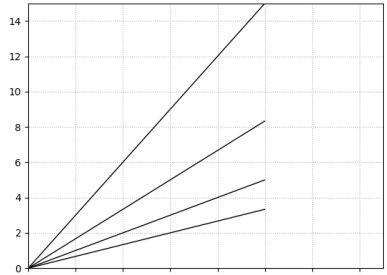
Columns are important...

- ... in beamer, for example
- to align text and images

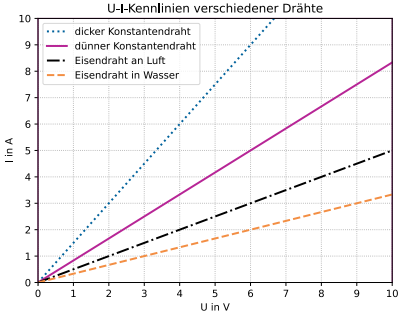
TYPICAL ERRORS

On the following slides we will show some *good* and *bad* design examples.

GRAPHS AND PLOTS



- No axis label, legend and caption
- Graphs are all black
- Axis limits are too high



- Axis label with correct unit, legend and caption
- Different colors and linestyles

IMAGES

TU Darmstadt, Alter Hauptgebäude, source: tu-darmstadt.de

TEXT

- Too much text on a slide is a common mistake and results in the listener being overwhelmed. It quickly becomes very boring and tempts the presenter to simply read the text aloud

- Too much text on a slide
  - → listener overwhelmed
  - → becomes boring
  - → presenter reads text aloud

CONVENTIONS

Avoid this

$$a = \begin{pmatrix} sin\alpha & k * cos(alpha) \\ cos\alpha & k * sin(alpha) \end{pmatrix}$$

Good example

- Given: $k \in \mathbb{R}$, $\alpha \in [0, 2\pi)$.
- Calculate the solution matrix:

$$\mathbf{A} = \begin{pmatrix} \sin(\alpha) & k \cdot \cos(\alpha) \\ \cos(\alpha) & k \cdot \sin(\alpha) \end{pmatrix}$$

- Follow the same conventions that are expected for your written work (see: *Guidelines for written work*). Examples include:
- Matrices are always uppercase, bold and non-italic letters.
- Operators like $\sin$ or $\cos$ or not italic (Use commands: `$\sin$` and `cos`).
- $a * b$ is the convolution of a and b, NOT their product.

CODE – BAD EXAMPLE

Avoid this:

```
public class testClass {
public static void main(String args[]) {
TestObject test1 = new TestObject(1, 5);
if(test1.attribute1 > testparameter){
test1.attribute2 = test1.attribute2 - 1;
} else {
test1.attribute2 = test1.attribute2 - 1;
}
}
```

- No indents for clarity
- Unnecessary information for a presentation
- Difficult to read and understand

CODE – GOOD EXAMPLE

Good code example:

Simple cruise control

```
Car mycar = new Car(positon=1, velocity=5);
IF mycar is too fast THEN
        decrease mycar velocity
ELSE
        increase mycar velocity
```

- Use block to frame important code.
- Use pseudocode for better understanding.
- Only show important code bits that are essential for your presentation.

CITATION

Avoid these

- To calculate the integral many methods can be used (see: [1])
- One method is numerical integration [1]
- An example are Newton-Cotes https://de.wikipedia.org/wiki/Newton-Cotes-Formeln.

Good example

Newton-Cotes Equation [1, Schwarz]

- Different methods for numerical integration exist
- Newton-Cotes formulas can be used to approximate integrals
- Lagrange polynomials can also be used

- Give the most important source per slide/section. Footnotes can be used.
- Use coherent style with information about the source (e.g. author name).
- Add the complete list of sources at the end of your presentation.

CONCLUSION AND OUTLOOK

- What are the main results?
- Take home message.
- What are the next steps?
- Is there some generalization?