

Subject

Title

Subtitle

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~~01.10.2020~~
January 21, 2021

Declaration of Authorship

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Max Mustermann

Mira Musterfrau

Abstract

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1 Examples

red text and blue text

different subscripts: R_t R_t

using Units: $R = 200\text{ m}\Omega + 345.675 \times 10^{-3}\text{ V/m} - 5\text{ s/m}^2$

some information[Phy20]

german number: 3,5 english number: 3.5

1.1 using images

Images can just be imported and used in a float environment with a caption and a lable to reference it.

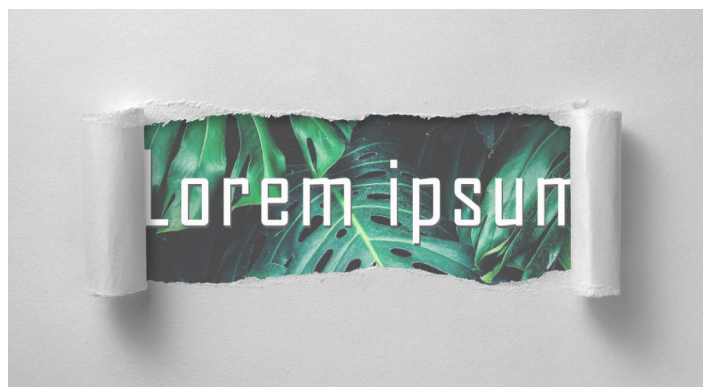


Fig. 1.1: just a random image

Plots can be created directly with latex. It is recommended to do this in subfiles and just import the finished PDF pages. This speed us compilertimes by a lot. You should not change the size of precompiled images to keep fontsizes consistent.

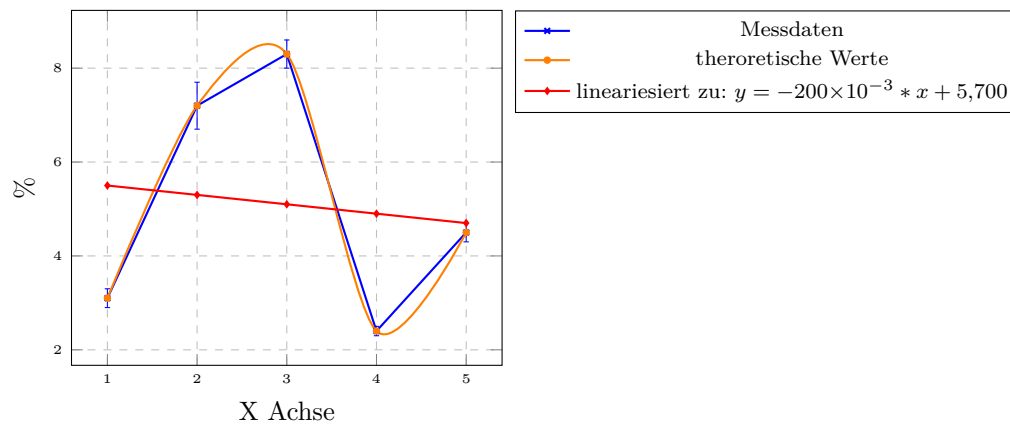


Fig. 1.2: a nice plot

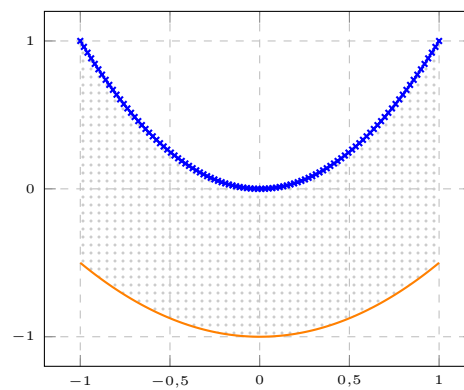


Fig. 1.3: a area plot

Circuit diagrams can also be created using a package called `circuitikz`. It is also recommended to get familiar with Inkscape which has a very good export to latex feature, as you can see in Figure 1.4(b).

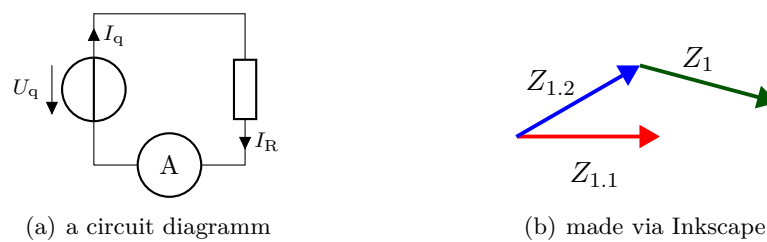


Fig. 1.4: using two figures

1.2 demo nested listing

- hallo
 - temp
 - temp

· temp

1.3 using Units

For this the `siunitx` package is used. It provides Macros for all units.

$$200 \text{ kg} \tag{1.1}$$

The space between a number and it's unit should be a protected half-space, which can be created in latex using `\,`. In the classfile `siunits` is set up to use a separate macro for each subunit, even for size-modifiers:

$$200 \text{ mm} \cdot 2 \text{ MV} \tag{1.2}$$

Siunits also allows for reformatting of numbers as well as units. Use the `\SI` and `\si` macros for that:

$$e = 160.218 \times 10^{-21} \text{ C} \mid 2 \text{ nF} \tag{1.3}$$

$$1 \text{ }\mu\text{m} \tag{1.4}$$

$$124 \frac{\text{km}}{\text{s}^2} \tag{1.5}$$

$$400 \times 10^{-6} \text{ lm} \tag{1.6}$$

1.4 Using formulas

a numberd formula:

$$0,5 = \frac{1}{3} \tag{1.7}$$

Equation 1.7 is nice, but how about multiple lines:

$$\begin{aligned} x &= x^2 + 3 \\ \Leftrightarrow 0 &= x^2 - x + 3 \end{aligned} \tag{1.8}$$

and how could you align formulas?

$$x_1 = 6 \qquad \mid \text{ mit } x \in \mathbb{N} \tag{1.9}$$

$$x_2 = 33 + \left\lfloor \frac{1}{4} \right\rfloor \qquad \mid x_1 + 3 \tag{1.10}$$

$$\begin{aligned} &= 33,25 \qquad \mid \text{ don't number everything} \\ x_3 &= 10^{22} \end{aligned} \tag{1.11}$$

1.5 formating code

use the `listings` package:

```

#include <stdlib.h>
#include <sdtio.h>

int main(void) {
    printf("Hello World");
    return 0;
}

```

1.6 CSV files

import a csv as table:

| A | B | C | D |
|---|---|-----|-----|
| 1 | 0 | 3,1 | 0,2 |
| 2 | 0 | 7,2 | 0,5 |
| 3 | 0 | 8,3 | 0,3 |
| 4 | 0 | 2,4 | 0,1 |
| 5 | 0 | 4,5 | 0,2 |

or do it manually to get more control:

Tab. 1.1: a nice list of numbers

| first row | second row |
|-------------|------------|
| number: 1 m | is not 3,1 |
| number: 2 m | is not 7,2 |
| number: 3 m | is not 8,3 |
| number: 4 m | is not 2,4 |
| number: 5 m | is not 4,5 |

1.7 seperating the document

This was inputed from anothe file!!

2 attachment

Messprotokoll oder so

As you can see its also possible to have some pages sideways. Just keep in mind you might need to adapt the margins

Bibliography

- [Phy20] Fachschaft Physik. *Laboranleitung für das Physiklabor*. GER. Mar. 1, 2020.
URL: https://docs.f1.hs-hannover.de/dl_fachgebiete/labore.php?id_fachgebiet=4 (visited on 03/23/2020).

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