

Subject

Title

Subtitle

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Versicherung

über selbstständiges Erarbeiten dieses Berichtes

Hiermit bestätigen wir, dass wir die folgende Arbeit unter Berücksichtigung der zur Verfügung gestellten Aufgabenstellung sowie dem Arbeitsmaterial unter Angabe aller verwendeten Quellen selbstständig erarbeitet haben.

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 label to reference it.

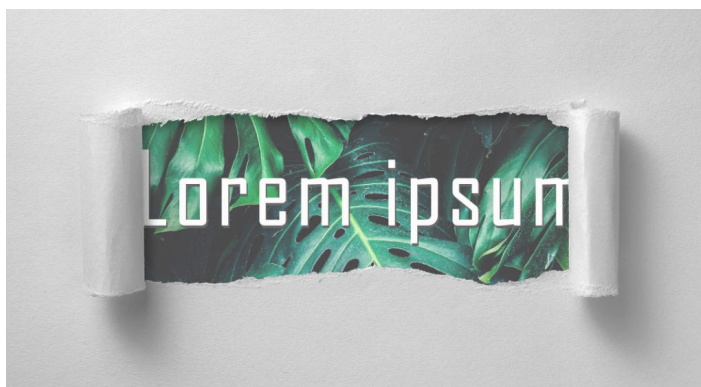


Fig. 1.1: just a random image

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

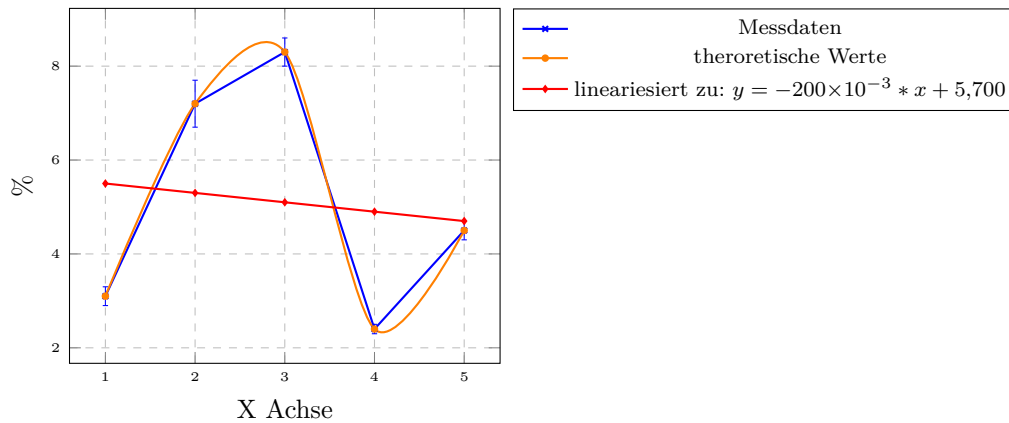


Fig. 1.2: a nice plot

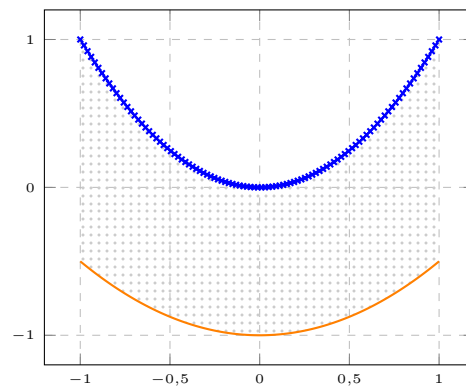


Fig. 1.3: a area plot

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.

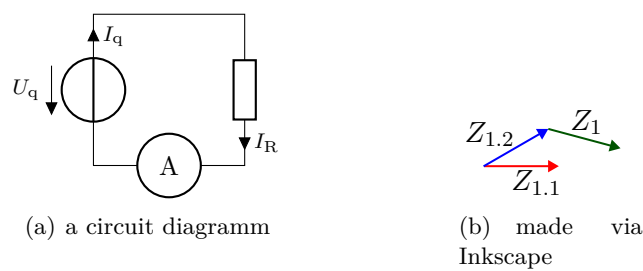


Fig. 1.4: using two figures

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.

$$200\,\mathrm{kg} \tag{1.1}$$

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:

$$200\,\mathrm{mm} \cdot 2\,\mathrm{MV} \tag{1.2}$$

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

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

$$1\,\mu\mathrm{m} \tag{1.4}$$

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

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

1.4 Using formulas

a numbered 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?

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

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

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

1.5 formatting 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 controll:

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

2 attachment

Messprotokoll oder so

As you can see its also posible 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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