

**Subject**

**Title**

**Subtitle**

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## Declaration of Authorship

We hereby certify that the work we are submitting is entirely of our own making except where otherwise indicated. We are aware of regulations concerning plagiarism, including disciplinary actions that may result from it. Any use of the works of any other author, in any form, is properly acknowledged at their point of use.

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Max Mustermann

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Mira Musterfrau

## Abstract

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# Contents

<b>Abstract</b>	<b>III</b>
<b>1 Examples</b>	<b>1</b>
1.1 using images . . . . .	1
1.2 demo nested listing . . . . .	2
1.3 using Units . . . . .	3
1.4 Using formulas . . . . .	3
1.5 formating code . . . . .	3
1.6 CSV files . . . . .	4
1.7 seperating the document . . . . .	4
<b>2 attachment</b>	<b>5</b>
Messprotokoll . . . . .	5
<b>Bibliography</b>	<b>6</b>
<b>List of Figures</b>	<b>6</b>
<b>List of Tables</b>	<b>6</b>

# 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.

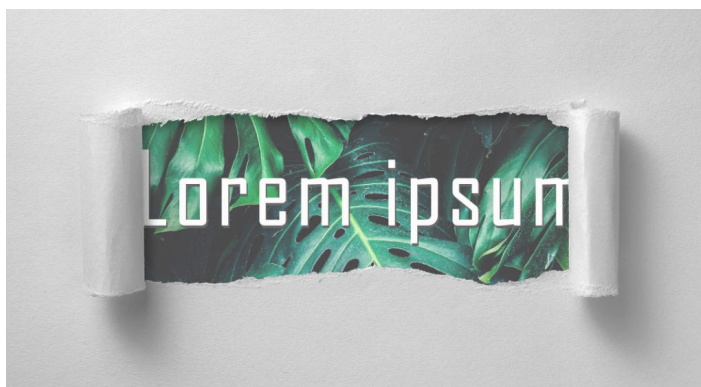


Fig. 1.1: just a random image

Plots can be created directly with latex. It is recommended to do this in subfiles and just import the finished PDF pages. This speeds up compilation times by a lot. You should not change the size of precompiled images to keep font sizes consistent.

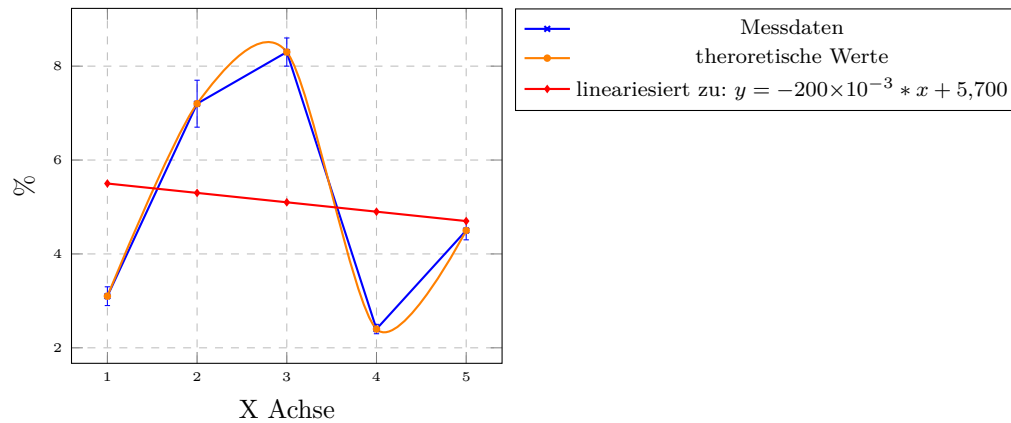


Fig. 1.2: a nice plot

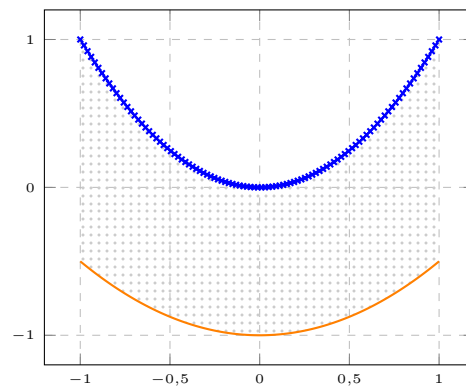


Fig. 1.3: a area plot

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.

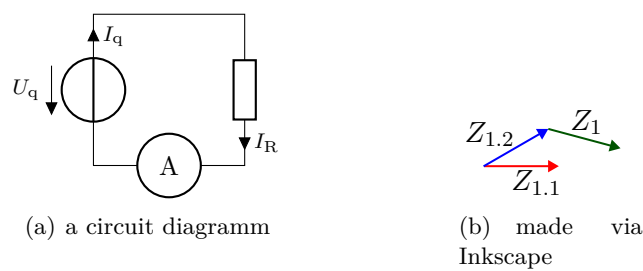


Fig. 1.4: using two figures

## 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.

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

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:

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

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

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

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

## 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?

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

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

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

## 1.5 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 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

## 1.7 seperating the document

This was inputed from anothe file!!



## **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](https://docs.f1.hs-hannover.de/dl_fachgebiete/labore.php?id_fachgebiet=4) (visited on 03/23/2020).

## List of Figures

1.1	just a random image . . . . .	1
1.2	centering . . . . .	2
1.3	a area plot . . . . .	2
1.4	using two figures . . . . .	2

## List of Tables

1.1	a nice list of numbers . . . . .	4
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