titlehead

Hochschule Hannover
University of Applied Sciences and Arts
-
Fakultät I
Elektro- und Informationstechnik

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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Contents

1 Examples

red text and blue text
different subscripts: R_t R_t
using Units: $R = 200\,\mathrm{m\Omega} + 345.675{\times}10^{-3}\,\mathrm{V/m} - 5\,\mathrm{s/m^2}$
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 enviroment with a caption and a lable 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.

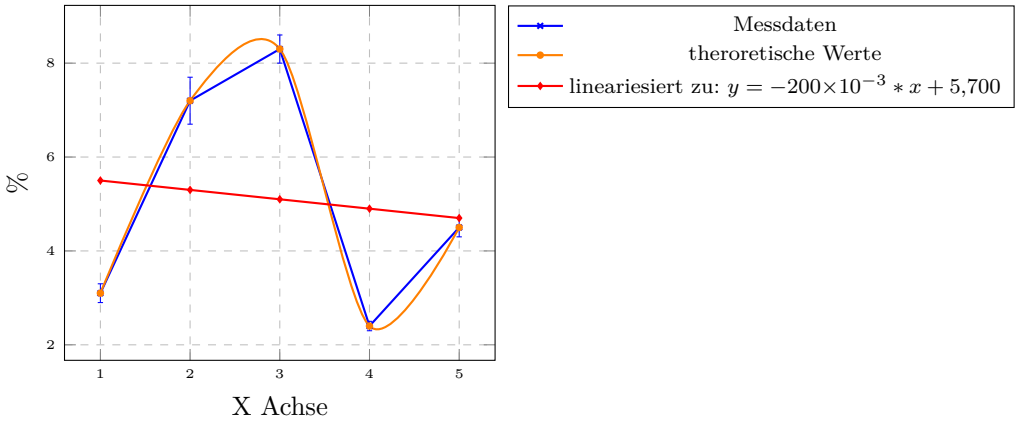


Fig. 1.2: a nice plot

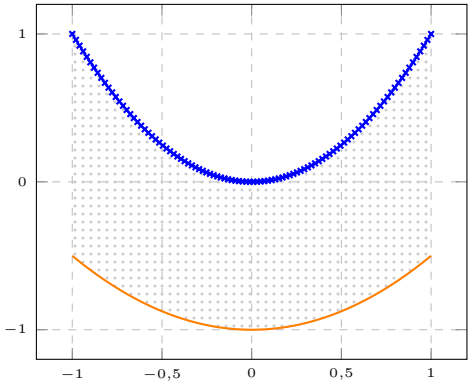
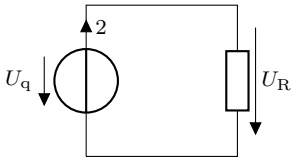
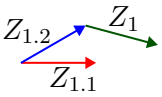


Fig. 1.3: a area plot

Circuit diagramms can also be created using a package called circuitikz . It is also recomendet to get formiliar with Inkscape which has a very good export to latex feature.



(a) a circuit diagramm



(b) made via Inkscape

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.

$$200\,\Omega \tag{1.1}$$

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

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

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

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

$$124\,\frac{\mathrm{km}}{\mathrm{s}^2} \tag{1.4}$$

$$400{\times}10^{-6}\,\mathrm{lm} \tag{1.5}$$

1.4 Using formulas

a numberd formula:

$$0,5 = \frac{1}{3} \tag{1.6}$$

Equation 1.6 is nice, but how about multiple lines:

$$\begin{aligned} x &= x^2 + 3 \\ \Leftrightarrow 0 &= x^2 - x + 3 \end{aligned} \tag{1.7}$$

and how could you align formulas?

$$x_1 = 6 \qquad \mid \text{mit } x \in \mathbb{N} \tag{1.8}$$

$$x_2 = 33 + \left|\frac{1}{4}\right| \qquad \mid x_1 + 3 \tag{1.9}$$

$$= 33,25 \qquad \mid \text{don't number everything}$$

$$x_3 = 10^{22} \tag{1.10}$$

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 manualy 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

Bibliography

[Phy20] Fachschaft Physik. *Laboranleitung für das Physiklabor*. GER. Mar. 1, 2020.

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