titlehead

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

Subject

Title

Subtitle

Max Mustermann, Mira Musterfrau

~~01.10.2020~~
March 2, 2021

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.

Max Mustermann

Mira Musterfrau

Abstract

Fusce mauris. Vestibulum luctus nibh at lectus. Sed bibendum, nulla a faucibus semper, leo velit ultricies tellus, ac venenatis arcu wisi vel nisl. Vestibulum diam. Aliquam pellentesque, augue quis sagittis posuere, turpis lacus congue quam, in hendrerit risus eros eget felis. Maecenas eget erat in sapien mattis porttitor. Vestibulum porttitor. Nulla facilisi. Sed a turpis eu lacus commodo facilisis. Morbi fringilla, wisi in dignissim interdum, justo lectus sagittis dui, et vehicula libero dui cursus dui. Mauris tempor ligula sed lacus. Duis cursus enim ut augue. Cras ac magna. Cras nulla. Nulla egestas. Curabitur a leo. Quisque egestas wisi eget nunc. Nam feugiat lacus vel est. Curabitur consectetuer.

Suspendisse vel felis. Ut lorem lorem, interdum eu, tincidunt sit amet, laoreet vitae, arcu. Aenean faucibus pede eu ante. Praesent enim elit, rutrum at, molestie non, nonummy vel, nisl. Ut lectus eros, malesuada sit amet, fermentum eu, sodales cursus, magna. Donec eu purus. Quisque vehicula, urna sed ultricies auctor, pede lorem egestas dui, et convallis elit erat sed nulla. Donec luctus. Curabitur et nunc. Aliquam dolor odio, commodo pretium, ultricies non, pharetra in, velit. Integer arcu est, nonummy in, fermentum faucibus, egestas vel, odio.

Sed commodo posuere pede. Mauris ut est. Ut quis purus. Sed ac odio. Sed vehicula hendrerit sem. Duis non odio. Morbi ut dui. Sed accumsan risus eget odio. In hac habitasse platea dictumst. Pellentesque non elit. Fusce sed justo eu urna porta tincidunt. Mauris felis odio, sollicitudin sed, volutpat a, ornare ac, erat. Morbi quis dolor. Donec pellentesque, erat ac sagittis semper, nunc dui lobortis purus, quis congue purus metus ultricies tellus. Proin et quam. Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos hymenaeos. Praesent sapien turpis, fermentum vel, eleifend faucibus, vehicula eu, lacus.

Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Donec odio elit, dictum in, hendrerit sit amet, egestas sed, leo. Praesent feugiat sapien aliquet odio. Integer vitae justo. Aliquam vestibulum fringilla lorem. Sed neque lectus, consectetuer at, consectetuer sed, eleifend ac, lectus. Nulla facilisi. Pellentesque eget lectus. Proin eu metus. Sed porttitor. In hac habitasse platea dictumst. Suspendisse eu lectus. Ut mi mi, lacinia sit amet, placerat et, mollis vitae, dui. Sed ante tellus, tristique ut, iaculis eu, malesuada ac, dui. Mauris nibh leo, facilisis non, adipiscing quis, ultrices a, dui.

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 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.

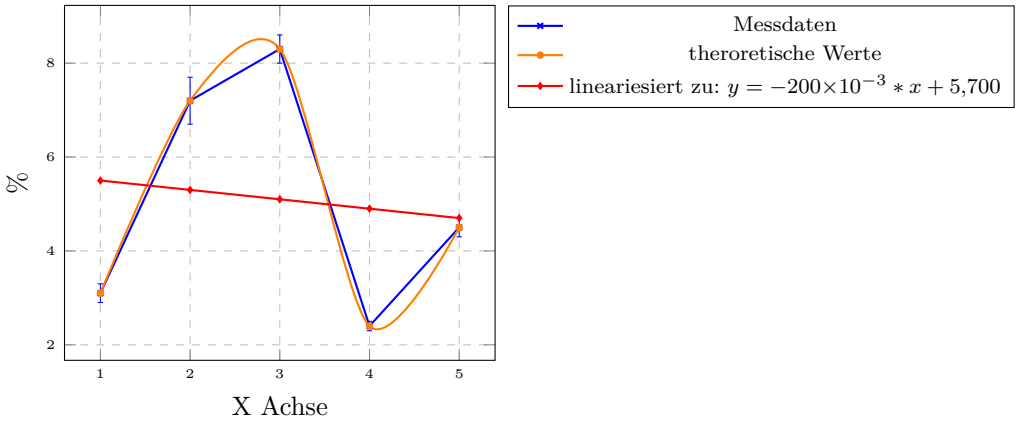


Fig. 1.2: a nice plot

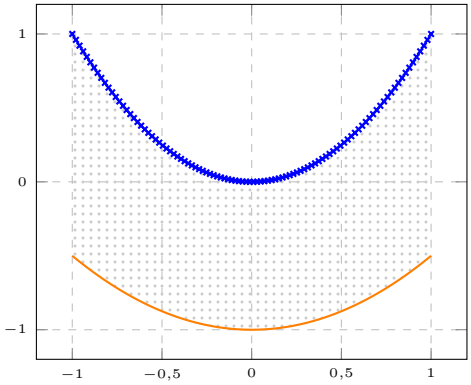
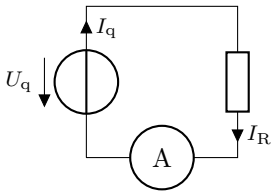


Fig. 1.3: a area plot

Circuit diagramms 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 1.5.



(a) a circuit diagramm

Fig. 1.4: using two figures

Using Inkscape, you can create SVG-vector graphics and import them easily into Latex.

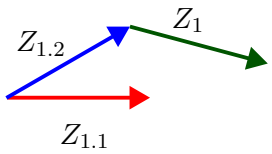


Fig. 1.5: A image created with Inkscape

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:

$$e = 160.218\times10^{-21}\,\mathrm{C} \tag{1.3}$$

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

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

$$400\times10^{-6}\,\mathrm{lm} \tag{1.6}$$

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?

$$x_1 = 6 \quad | \text{ mit } x \in \mathbb{N} \tag{1.9}$$

$$x_2 = 33 + \left|\frac{1}{4}\right| \quad | \; x_1 + 3 \tag{1.10}$$

$$= 33,25 \quad | \text{ don't number everything}$$

$$x_3 = 10^{22} \tag{1.11}$$

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).

List of Figures

List of Tables