



TECHNISCHE
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WIEN

DISSERTATION

Awesome Science

ausgeführt am Atominstitut



der Technische Universität Wien
Fakultät für Physik

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“The Setesh guard’s nose drips.”
TEAL’C

Abstract

Short and sweet...

Zusammenfassung

Kurz und bündig...

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1. Chapter 1

List of class options:

***** General settings *****

1. 'a4paper' or 'a5paper'
2. '11pt', '12pt'(default) or '10pt' however font size 10pt is NOT recommended
3. 'print': Use 'print' for print version with appropriate margins and page layout. Leaving the options field blank will activate Online version.
4. 'signed': Use 'signed' to add section on titlepage to be signed by the supervisor. Works only with the print option!
5. 'declaration': adds a page with an declaration after the titlepage, to be signed by the author Works only with the print option!
6. 'final': option some packages might need for the finalized document
7. 'place': insert place and date on the title page
8. 'index': For index at the end of the thesis
9. 'abstract': To generate only the title page and abstract page with dissertation title and name for submission somewhere
10. 'chapter': This option enables only the specified chapter and its references Useful for review and corrections.
11. 'titlepage2': This option loads the alternative titlepage titlepage_alternative instead of titlepage_official. This intended to have two designs available and quickly switch between them.

***** Draftmode settings *****

12. 'draftclassic': For draft mode without loading any images (same as draft in scrbook) and notes
13. 'draft': Special draft mode with line numbers, images, and water mark with timestamp and custom text. Position of the text can also be modified.
14. 'nolinenumbers': disable line numbers in draft mode !!!When toggled auxiliary

files must be deleted.

15. ‘todonotesoff’: manually disable todonotes (has to be loaded after draft options)
Add notes with follwing commands in the draft mode:

```
\mynote{text} -> green note on the side pointing to the location
\sidenote{text} -> blue note on the side
\needref{text} -> blue note on the side pointing to the location
\urgentnote{text} -> red note on the side pointing to the location
\inlinenote{text} -> orange inline note
\missingfigure[figwidth=length]{text} -> dummy picture
```

In the index section a list of todonotes is printed. !!!You must not use underscore in the missingfigure argument. !!!Line numbers and todo notes are not really compatible.

16. ‘bibdebug’: debug mode for BibLaTeX

***** Custom Page Margins *****

17. ‘custommargin’: Use ‘custommargin’ in options to activate custom page margins, which can be defined in the preamble.tex. Custom margin will override print/online margin setup.

***** Choosing the Fonts in Class Options *****

18. ‘times’: Times font with math support
19. ‘fourier’: Utopia Font with Fourier Math font (Font has to be installed) It’s a free font.
20. ‘customfont’: Use ‘customfont’ option in the document class and load the package in the preamble.tex

default or leave empty: ‘Latin Modern’ font will be loaded.

***** Bibliography settings *****

21. ‘biblatex’: use the package BibLaTeX instead of natbib packages
22. ‘bibsections’: list references by parts/chapters/sections (settings in header)
23. ‘bibtex’: use BibTeX as backend for BibLaTeX to sort references from .bib file (by default Biber is used)
24. ‘bibtex8’: use BibTeX8 (UTF-8 support) as backend for BibLaTeX to sort references from .bib file (by default Biber is used)

***** Choosing the Bibliography style *****

- 25. ‘authoryear’: For author-year citation eg., Krishna (2013)
- 26. ‘numbered’: (Default Option) For numbered and sorted citation e.g., [1,5,2]
- 27. ‘custombib’: Define your own bibliography style in the ‘preamble.tex’ file.

`\RequirePackage}[square, sort, numbers, authoryear]{natbib}`

. This can be also used to load biblatex instead of natbib

The equation from [1, 2] and [3]

$$\langle n \rangle_{\text{BE}} = \frac{1}{e^{\beta(\epsilon - \mu)} - 1}, \quad (1.1)$$

was inserted with by using the short-cut `\cmd` + `n`, which gives a labelled "eqn" environment.

2. Chapter 2

Pgf plots...

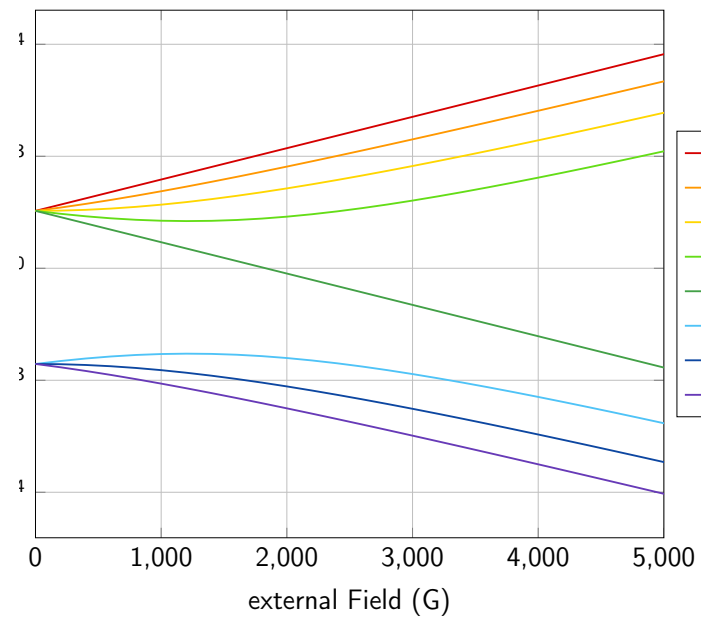


Figure 2.1.: ZEEMAN splitting of the ^{87}Rb ground state $5^2\text{S}_{1/2}$.

3. Chapter 3

Tikz sketches and diagrams...

Appendix

A. Appendix A

Here is some source code added with the lstlisting package. With

`\vdots`

you can insert vertical dots to truncate code.

A.1. main.cpp

```
/*+++++
+           Awesome source code           +
+           TU Wien 2018                  +
+           Thomas Weigner                 +
+           weigner.thomas@gmail.com       +
+           main.cpp                      +
+           vers 3.4.1                    +
+++++*/

#include <header.h>
//---main program
int main(){
//---declare stuff and initialize things
:
//-----generating polynom for vertical transport
Poly polArray[5];           //Creating a polynom object array with the default constructor
double vMax = 2.0;          //maximal velocity
:
:
```

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Acknowledgements

Thanks to ...

References

- [1] Albert Einstein. “Quantentheorie des einatomigen idealen Gases (zweite Abhandlung)”. In: *Sitzungsberichte der Preussischen Akademie der Wissenschaften* 1 (1924), pp. 261–267.
- [2] Albert Einstein. “Quantentheorie des einatomigen idealen Gases (erste Abhandlung)”. In: *Sitzungsberichte der Preussischen Akademie der Wissenschaften* 2 (1925), pp. 245–257.
- [3] Louis V. de Broglie. “The wave nature of the electron”. In: *Nobel lectures, Physics 1922-1941* (1929), pp. 244–256.