Title of the Thesis

Author's name

Masterarbeit in Physik angefertigt im Physikalischen Institut

vorgelegt der Mathematisch-Naturwissenschaftlichen Fakultät der Rheinischen Friedrich-Wilhelms-Universität Bonn

MMM 2018



Acknowledgements

I would like to thank ...

You should probably use \chapter* for acknowledgements at the beginning of a thesis and \chapter for the end.



Contents

1	Introduction	1
Bik	oliography	3
A	Useful information	5
Lis	st of Figures	7
Lis	et of Tables	9



Introduction

The introduction usually gives a few pages of introduction to the whole subject, maybe even starting with the Greeks.

For more information on LaTeX and the packages that are available see for example the books of Kopka [1] and Goossens et al [2].

A lot of useful information on particle physics can be found in the "Particle Data Book" [3].

I have resisted the temptation to put a lot of definitions into the file thesis_defs.sty, as everyone has their own taste as to what scheme they want to use for names. However, a few examples are included to help you get started:

- \bullet cross-sections are measured in pb and integrated luminosity in pb $^{-1}$;
- the K_S^0 is an interesting particle;
- the missing transverse momentum, p_T^{miss} , is often called missing transverse energy, even though it is calculated using a vector sum.

Note that the examples of units assume that you are using the siunity package.

It also is probably a good idea to include a few well formatted references in the thesis skeleton. More detailed suggestions on what citation types to use can be found in the "Thesis Guide" [4]:

- articles in refereed journals [3, 5];
- a book [6];
- a PhD thesis [7] and a Diplom thesis [8];
- a collection of articles [9];
- a conference note [10];
- a preprint [11] (you can also use @online or @booklet for such things);
- something that is only available online [4].

At the end of the introduction it is normal to say briefly what comes in the following chapters.

The line at the beginning of this file is used by TeXstudio etc. to specify which is the master LaTeX file, so that you can compile your thesis directly from this file. The lines at the end of this file are used by AUCTeX directly within emacs to do the same thing. If your thesis is called something other than mythesis, adjust them as appropriate.

Bibliography

- [1] H. Kopka and P. W. Daly, Guide to ETFX, 4th ed., Addison-Wesley, 2004 (cit. on p. 1).
- [2] F. Mittelbach and M. Goossens, *The LTEX Companion*, 2nd ed., Addison-Wesley, 2004 (cit. on p. 1).
- [3] Particle Data Group, K. Nakamura et al., *Review of Particle Physics*, J. Phys. G **37** (2010) 075021, url: http://pdg.lbl.gov (cit. on p. 1).
- [4] I. C. Brock,

 Users Guide to Writing a Thesis in a Physics/Astronomy Institute of the Universität Bonn,

 URL: http://pi.physik.uni-bonn.de/pi_only/thesis.php (cit. on p. 1).
- [5] ATLAS Collaboration, Measurement of the top quark-pair production cross section with ATLAS in pp collisions at $\sqrt{s} = 7$ TeV, Eur. Phys. J. C **71** (2011) 1577, arXiv: 1012.1792 (cit. on p. 1).
- [6] F. Halzen and A. D. Martin, *Quarks and Leptons: An Introductory Course in Modern Particle Physics*, Wiley, 1984, ISBN: 9780471887416 (cit. on p. 1).
- [7] T. Loddenkötter, *Implementation of a kinematic fit of single top-quark production in association with a W boson and its application in a neural-network-based analysis in ATLAS*, BONN-IR-2012-06, PhD Thesis: University of Bonn, 2012, URL: http://hss.ulb.uni-bonn.de/diss_online (cit. on p. 1).
- [8] S. Mergelmeyer, *D*-Photoproduktion mit assoziierten Jets und Vertices bei ZEUS*, BONN-IB-2011-01, Universität Bonn, 2011, URL: http://brock.physik.uni-bonn.de/zeus_pub.php (cit. on p. 1).
- [9] O. S. Brüning et al., eds., LHC Design Report. 1. The LHC Main Ring, CERN-2004-003-V-1, CERN-2004-003, 2004, URL: https://cdsweb.cern.ch/record/782076 (cit. on p. 1).
- [10] ATLAS Collaboration, Determination of the muon reconstruction efficiency in ATLAS at the Z resonance in proton-proton collisons at $\sqrt{s} = 7$ TeV, ATLAS-CONF-2011-008, CERN, 2011 (cit. on p. 1).
- [11] ATLAS Collaboration,

 Expected Performance of the ATLAS Experiment Detector, Trigger and Physics, 2009, arXiv: 0901.0512 (cit. on p. 1).

APPENDIX A

Useful information

In the appendix you usually include extra information that should be documented in your thesis, but not interrupt the flow.

List of Figures

List of Tables