This Is a Very Good Title That Illustrates What This Great Piece of Work Is All About and That Gives an Impression of What a Long Title Looks Like

Wissenschaftliche Arbeit zur Erlangung des Grades
Bachelor/Master of Science (B.Sc./M.Sc.)

vorgelegt von
First name second name

Matrikelnummer
XXXXXX

Unter der wissenschaftlichen Leitung von
Prof. Dr.-Ing. habil. Jens-Uwe Repke

Unter der wissenschaftlichen Betreuung von
My advisor, M.Sc.

Berlin, December 2018

Eidesstattliche Erklärung/Affidavit

Hiermit erkläre ich an Eides statt, dass ich die vorliegende Arbeit selbstständig und eigenhändig sowie ausschließlich unter Verwendung der aufgeführten Quellen und Hilfsmittel angefertigt habe.

_____

First name second name
Berlin, 23. Dezember 2018

I hereby confirm that I prepared this thesis independently and by exclusive reliance on literature or tools indicated herein.

_____

First name second name
Berlin, 23rd December, 2018

Danksagung/Acknowledgements

Ein paar nette Worte / Some nice words...

Zusammenfassung/Abstract

Deutsch

Dies hier ist ein Blindtext zum Testen von Textausgaben. Wer diesen Text liest, ist selbst schuld. Der Text gibt lediglich den Grauwert der Schrift an. Ist das wirklich so? Ist es gleichgültig, ob ich schreibe: „Dies ist ein Blindtext" oder „Huardest gefburn"? Kjift – mitnichten! Ein Blindtext bietet mir wichtige Informationen. An ihm messe ich die Lesbarkeit einer Schrift, ihre Anmutung, wie harmonisch die Figuren zueinander stehen und prüfe, wie breit oder schmal sie läuft. Ein Blindtext sollte möglichst viele verschiedene Buchstaben enthalten und in der Originalsprache gesetzt sein. Er muss keinen Sinn ergeben, sollte aber lesbar sein. Fremdsprachige Texte wie „Lorem ipsum" dienen nicht dem eigentlichen Zweck, da sie eine falsche Anmutung vermitteln. Dies hier ist ein Blindtext zum Testen von Textausgaben. Wer diesen Text liest, ist selbst schuld. Der Text gibt lediglich den Grauwert der Schrift an. Ist das wirklich so? Ist es gleichgültig, ob ich schreibe: „Dies ist ein Blindtext" oder „Huardest gefburn"? Kjift – mitnichten! Ein Blindtext bietet mir wichtige Informationen. An ihm messe ich die Lesbarkeit einer Schrift, ihre Anmutung, wie harmonisch die Figuren zueinander stehen und prüfe, wie breit oder schmal sie läuft. Ein Blindtext sollte möglichst viele verschiedene Buchstaben enthalten und in der Originalsprache gesetzt sein. Er muss keinen Sinn ergeben, sollte aber lesbar sein. Fremdsprachige Texte wie „Lorem ipsum" dienen nicht dem eigentlichen Zweck, da sie eine falsche Anmutung vermitteln.

English

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Contents

Contents

List of Figures

List of Tables

Symbolverzeichnis

Griechische Symbole

Symbol	Beschreibung	Einheit
α	Non-randomness factor in NRTL-Modell	–
α	Parameter in Gleichung für Verdampfungsenthalpie	$\mathrm{J\,mol^{-1}}$
α	Trennfaktor für binäre VLEs	–
Δ	Differenz	verschieden
Λ	Parameter in Wilson-Modell	–

Indizes

Symbol	Beschreibung
i	Index für Komponenten
j	Index für Komponenten
k	Index der Strukturgruppe

Konstanten

Symbol	Beschreibung	Einheit
R	Universelle Gaskonstante = 8,314 46	$\mathrm{J\,mol^{-1}\,K^{-1}}$

Lateinische Symbole

Symbol	Beschreibung	Einheit
A	Parameter in Antoine-Gleichung	–

A	Porter-Parameter	–
B	Parameter in Antoine-Gleichung	K
B	Zweiter Virialkoeffizient (Leiden-Form)	$\text{m}^3\,\text{mol}^{-1}$
B'	Zweiter Virialkoeffizient (Berlin-Form)	Pa^{-1}

Dimensionslose Kennzahlen

Symbol	Beschreibung	Definition
Re	Reynoldszahl	$\frac{wd\rho}{\eta}$

Operatoren

Symbol	Beschreibung	Definition
∇	Nabla-Operator	$\left[\frac{\partial}{\partial x_1}, \cdots, \frac{\partial}{\partial x_n}\right]^T$
rot	Rotationsoperator	$\text{rot}\ \vec{g} = \nabla \times \vec{g}$

Superskripts

Symbol	Beschreibung
E	Exzess
III	Phase/Zustand 3
II	Phase/Zustand 2
I	Phase/Zustand 1

Subskripts

Symbol	Beschreibung
0	Reinstoff
0	zu Beginn der Reaktion
c	Kritisch

Abkürzungsverzeichnis

ab   **A**ctive **b**ounds

DAE   **D**ifferential-**a**lgebraic **e**quation (system)

SUNDIALS **Su**ite of **n**onlinear and **di**fferential-**al**gebraic equation **s**olvers

1 Guidelines

1.1 First Steps

- **carefully read this whole chapter**

- check whether you can compile this document without errors (this should always be the case as long as all necessary packages are installed)

- change the necessary entries in meta.tex (i.e. your name, matriculation number, etc.)

- add your own .bib file for your references or use the present one

- check whether biblatex and makeindex were set up correctly and are operational (see Sections 1.2.7 and 1.2.9)

- set the language of the document (see Section 1.8)

- remove the guidelines chapter from this document by deleting it and removing it from the 0_Text.tex file in the folder 03_Content

- start writing your thesis - good luck!

1.2 Template Structure

This section describes the use of this template. Questions remaining unanswered can be forwarded to Christian Hoffmann (c.hoffmann@tu-berlin.de).

1.2.1 Main Features

- can be used in German and English

- simple generation of list of symbols for latin, greek, etc. with the no-mentbl package

- simple generation of list of abbreviations with the acronym package

- includes DOI/ISBN/URL automatically in references

- includes bibliography via biblatex and biber

1.2.2 Main Document

- is called main.tex

- this document must be executed in LaTeX

1.2.3 01_Document_administration

In this folder, the following files are located:

a) a_Packages.tex

- contains all packages, which are loaded
- packags are sorted based on their application

b) b_Commands.tex

- contains further commands regarding formating and look of the document
- also sorted

c) c_Meta.tex

- contains meta information regarding author, etc.
- contains a boolean variable to select whether it is a dissertation or a bachelor/master thesis

d) d_NomenclatureCommands.tex

  - defines structure of the list of symbols

  - optional argument defines the class of a symbol (latin, greek, ...)

  - for the generation of the list of symbols, makeindex is used. A short instruction how to run makeindex correctly in texmaker is given below

e) e_Header_Footer.tex

  - defines headers and footer

1.2.4 02_Prematter

In this folder, the following files are located:

a) a_Cover.tex

  - creates the cover page

  - loads either a_Cover_BA_MA.tex (cover of a bachelor/master thesis) or a_Cover_Diss.tex (cover of a dissertation), depending on the value of type set in c_Meta.tex

b) b_Declaration.tex

  - declaration that the thesis was written honestly

c) c_Acknowledgements.tex

  - thank important people

d) d_Summary.tex

  - summarize your thesis in German and English

e) e_Nomenclature.tex

  - enter all symbols and explain them

  - examples are provided

f) f_Abbreviations.tex

- enter all abbreviations and explain them

- examples are provided

1.2.5 02a_Dissertation_files

This folder contains files that are only needed for dissertations. Bachelor/-Master theses do not have to consider them. However, if you want to dedicate your thesis to someone, you can of course include this file. In this folder, the following files are located:

a) a_Dedication.tex

- you can dedicate your thesis to someone

b) b_Publications.tex

- states all publications that were written in preparation of the dissertation

1.2.6 03_Content

In this folder, the following files are located:

a) 0_Text.tex

- loads all single chapters

b) X_iii.tex

- contains the single chapters

- can be split further if deemed necessary

1.2.7 04_Literature

In this folder, the following files are located:

a) Bibliography.bib

- contains the literature

- uses biblatex for the generation of the bibliography

- to make this work, biblatex (instead of bibtex) must be used

- in texmaker, change the command in the preferences for bib(la)tex to (hot key standard is still F11)

  ```
  "C:/path_to/biber.exe" %
  ```

- for other LaTeXeditors, please see its respective documentation to find out how to use biblatex there

- if your write your thesis on a Mac or a Linux distribution, the procedure is propably different. If you find out the right instructions, please forward us a brief summary (c.hoffmann@tu-berlin.de)

1.2.8 05_Appendix

In this folder, the following files are located:

a) 0_Appendix.tex

- inclues all single appendix chapters

b) X_Appendix.tex

- contains the Xth appendix

c) a_CodeLanguageSpecifications

- can be used to define a set of keywords and comment commands for a certain programming language

- if you want to apprehend your code in your thesis, you can either copy the code to a lstlistings environment (see example in Appendix/1_Appendix.tex) or even include your files

- more information can be found in the lstlistings documentation

1.2.9 Makeindex

- to compile the file correctly, makeindex and biblatex are used

- command line for makeindex (integrated in texmaker, hot key standard: F12):

```
"C:/path_to/makeindex.exe" %.nlo -s mynomentbl.ist -o %.nls
```

- the necessary .ist file is located in the folder

- check your tex editor documentation to find out how to run makeindex in another software

- if your write your thesis on a Mac or a Linux distribution, the procedure is propably different. If you find out the right instructions, please forward us a brief summary (c.hoffmann@tu-berlin.de)

1.2.10 Compatibility with PDF/A

Dissertations are stored as PDF/A at the university library. To ensure compatibility of this template with PDF/A, the pdfx package is used with the option a-1b. The compiled PDF was successfully validated with Callas[1], as recommended by the university library[2]. The output is shown in Fig. 1.1.

---

[1] https://conversion.ub.tu-berlin.de/, December 2018
[2] https://www.ub.tu-berlin.de/fileadmin/pdf/Verlag/UV_pdfaDE.pdf, December 2018

Fig. 1.1: *PDF/A validation on* https://conversion.ub.tu-berlin.de/.

1.3 General Information

a) the current „Prüfungsordnung" overrides the following rules if they contradict the „Prüfungsordnung".

b) a Master's thesis is a scientific-technical documentation that must satisfy requirements regarding structure and form. It should be precisely formulated and well-written, i.e. no ortographic or grammar mistakes, etc.

c) the thesis should be logically strucured.

d) the thesis should present its scientific-technical content while remaining comprehensible. Hence, the author should repeatedly put him- or herself into the position of the reader and evaluate the thesis in this regard.

e) the Figure, i.e. picture, diagram, photo, is preferred to long explanations.

f) results must be tractable. Hence, the applied methods, assumptions, boundary conditions, experiments, and computer codes must be pointed out and explained in sufficient detail.

g) calculations should be documented. This is of course difficult for large models. In this case, the code should be attached to the printed or digital appendix.

h) the thesis should focus on the central themes and aspects. Other information should be referenced appropriately, but does not have to be repeated extensively.

1.4 Form

a) the thesis must be written in German or English.

b) sentences should be comprehensible. Germans tend to formulate complex phrases with many subclauses. This should be avoided.

c) physical units must always be given and stated in SI units. Units must not be stated in brackets:

- *WRONG:* Pressure P [Pa]

- *RIGHT:* Pressure P in Pa

The only correct use of squre brackets is shown here for the voltage: [U] = V, i.e. the unit of the voltage is volt.

d) a list of symbols and a list of abbreviations must be included. This is done with the nomentbl and the acronym package in this template. Furthermore, symbols should be explained in the text after their first appearence.

e) Figures, Tables, and Equations must be numerated and must be referenced in the text. This is automatically done using the caption package (see section 1.9) and the `\ref` command. For example, a Figure is named Figure chapter.Num (Fig. 2.1). The numeration is done automatically in this template.

In addition, Figures and Tables must also be explained and discussed in the text.

f) Figures should be chosen to support readabiliy and comprehension. The most important details and relevant labels, especially, must be *readable*.

g) extensive Tables or Figures that are repeatedly referenced in the text should be put in the appendix.

h) information or data not generated by the author must always be referenced, see information on citations below.

1.5 Format

The format is fixed by this document. Of course, loading additional packages is possible, but aspects, such as font or font size, must remain unchanged.

Although we do not recommend it, writing the thesis in Microsoft Word or others is possible. In this case, the supplied Word template should be used.

1.6 Appearence

a) the format of the page numbering is already specified and may not be changed.

b) there is a maximum of four indenture levels in the text and a maximum of three levels in the table of contents.

c) the sections of the appendix are numerated alphabetically in capital Latin letters. This is already specified in this template.

d) important aspects can be emphasized with *italics*, **bold writing**, or using the *emphasize command*. Underlining words should be avoided.

e) paragraphs should not start in the last two lines of a page („Schusterjunge") or end in the first two lines of a page („Hurenkind"). This is done using the nowidow package.

1.7 References and Bibliography

Citations/references are used to

- document and justify one's own statements,

- differ between one's own statements and those made by others,

- help the reader to assess the origin of a statement

All information not generated by the author must be marked with a short reference, which is accompanied by the extensive reference in the bibliography. It is not important if this information appers directly or indirectly in the text.
We either use the authoryear or the numerical short citation. The most important rule is: The references must be complete and follow a consistent format. This is more important than following a specific citation style. If possible, the doi/ISBN of an article/book should be part of the citation. This is also included automatically in this template.

In the following, a few examples for the authoryear short reference are stated. For more information, the reader is referred to the documentation of the biblatex package. Biblatex is used because it is compatible with UTF-8. Hence, Umlaute, such as ä, do not have to be rewritten as was the case in bibtex. Example: (Müller, 2018), see .bib file.

- (Coker, 2007), Coker (2007)

- (Abrams and Prausnitz, 1975), Abrams and Prausnitz (1975)

- (NIST Chemistry Webbook, 2017), NIST Chemistry Webbook (2017)

- (Cuda, 2012), Cuda (2012)

These commands are used as

- Abrams and Prausnitz (1975) stated that thermodynamics are great.

- Thermodynamics are great (Abrams and Prausnitz, 1975).

1.8 Language: English or German?

The language of this document is set with the babel package. The order of the loaded languages determines the default language. Usually, ngerman is default (and hence the *second*) language. The babel package automatically sets the right names for Tables and Figures and provides the correct hyphenation. In case the thesis is written in English, the order of the languages when loading the babel package must be changed.

The language of the list of symbols is chosen via the option german. This also affects the entry in the table of contents. If the thesis is written in English, the option german can be removed.

The list of abbreviations must be changed in the respective file f_abbreviations.tex as there is no package option available. The entry in the table of contents is changed in the same file.

If the language is English, it is recommended to change the output decimal marker for SI units (siunitx package) to a dot. This can be changed in the a_Packages.tex file where the siunitx package is loaded.

1.9 Templates

1.9.1 Units

Units are very important. However, there are some rules when typesetting units. First of all, they are never written in italics. They should also have the right space between them. For this purpose, the siunitx package is suggested.
Units can be written as $R = 8{,}314\,\mathrm{J\,mol^{-1}\,K^{-1}}$.

1.9.2 Figures

A template for a Figure is given in Fig. 1.2. Use the protected space ~ between Fig. and `\ref`. Figure 1.2 should not be abbreviated at the beginning of a sentence.

Fachgebiet
Dynamik und Betrieb technischer Anlagen

Fig. 1.2: This is the caption of the Figure in the text. Is is placed below *the Figure. It can be longer here and contain additional information, such as references or keys for the graphs. Note that one line captions are justified. A full stop is automatically added after the last sign.*

1.9.3 Tables

A template for a Table is given in Tab. 1.1. Use the protected space ~ between Tab. and `\ref`. Table 1.1 should not be abbreviated at the beginning of a sentence.

Tab. 1.1: This is the caption of the Table in the text. Is is placed above *the table. It can be longer and contain additional information. Vertical lines should be avoided in tables. A full stop is automatically added after the last sign.*

Entry 1	Entry 2	Entry 3
Unit 1	Unit 2	Unit 3
1	2	3
4	5	6

1.9.4 Equations

An exemplary Equation is given in Eq. 1.1. Use the protected space ~ between Eq. and `\ref`. Equation 1.1 should not be abbreviated at the begin-

ning of a sentence.

$$a = b. \tag{1.1}$$

1.9.5 Theorems/Definitions/Algorithms

All of those can be defined using the amsth package in combination with the mdframed package for the frame. Use the protected space ~ between Def. and \ref. An exemplary Definition is given in Def. 1.1. Equation 1.2 can also be referenced.

Other environments, e.g. for algorithms, can easily be added in the b_Commands.tex file and get their own look.

Definition 1.1 (Stiff DAE systems). This is a definition. It defines itself.

$$c = \infty \tag{1.2}$$

1.10 The Sectioning Command for Chapters Supports not only the Heading Text Itself but also a Short Version Whose Use can be Controlled

If your chapters or sections have long titles (which they should not have), you can use an optional argument for chapter or section commands to shorten it in the header. You can even manipulate the chapter or section title. Normally, the use of this option is not necessary.

2 Introduction

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really?

Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this

gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

2.1 New Section

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should

show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference

between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the

selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

2.2 New Section

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look

like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some

nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

3 Theory

4 Methods

5 Results and Discussion

6 Conclusion and Outlook

Bibliography

Abrams, D. S. and J. M. Prausnitz (1975). Statistical thermodynamics of liquid mixtures: A new expression for the excess Gibbs energy of partly or completely miscible systems. *AIChE Journal* 21, 116–128. DOI: 10.1002/aic.690210115 (cit. on p. 10).

Coker, A. K., ed. (2007). *Ludwig's Applied Process Design for Chemical and Petrochemical Plants*. Gulf Professional Publishing. ISBN: 9780080469706 (cit. on p. 10).

Cuda, P. (2012). Exergoeconomic Analysis and Optimization of Organic Rankine Cycles. Dissertation. University of Ontario Institute of Technology. DOI: 10.1016/j.energy.2012.01.064 (cit. on p. 10).

Müller, D. (2018). Übertriebene Parameterschätzung. *Chemie Ingenieur Technik* 10, 1–2 (cit. on p. 10).

NIST Chemistry Webbook (2017). *Benzene - Phase Change Data*. URL: http://webbook.nist.gov/cgi/cbook.cgi?ID=C71432&Units=SI&Mask=4%5C#Thermo-Phase (last access 05/23/2016) (cit. on p. 10).

A Anhang 1

Code A.1: *Code example for AMPL.*

```
1  reset;  # all blue words are keywords in this language
2          # they are defined in the file 05_Appendix/
             a_CodeLanguageSpecifications.tex
3
4  model simulation.mod;
5  data simulation.dat;
6  include initial.dat;
7  option ipoptoptions "halt_on_ampl_error yes";
8
9  let e0_param := 4;
10
11 solve;
```

B Anhang 2

Code B.1: Code example for Matlab.

```matlab
1   clc
2   clear
3   close all
4
5   e0_param = 4;
6
7   j=0;
8   for i=1:e0_params % this loop is incredibly smart
9       if 1==2
10          j=j+1;
11      else
12          j=j-1;
13      end
14  end
```