ustcthesis 使用说明

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版本历史

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| | |

1 简介

ustcthesis 是用于排版中国科学技术大学本科和研究生学位论文的 LATEX 模板,按照《中国科学技术大学研究生学位论文撰写手册》和《关于本科毕业论文(设计)格式和统一封面的通知》的要求编写。

其前身是中国科学技术大学本科论文模板(作者 XPS,最后维护 ywg)和中国科学技术大学研究生论文模板(作者 Liuqs,主要维护 Liuqs、Guolicai)。后来两模板进行了整合梳理,由 ywg 维护。2015 年,seisman 和 zepinglee 基于 ctex 2.0 重新编写了模板。2017 年,随着学校发布了新版的《撰写手册》,本模板也更新到 v3.0。

ustcthesis 的下载地址:

^{*}zepinglee AT gmail.com

[†]seisman.info AT gmail.com

• 主要地址: https://github.com/ustctug/ustcthesis/releases

• 学校镜像: https://git.ustclug.org/ustctug/ustcthesis/tags

• 研究生院网站: http://gradschool.ustc.edu.cn/ylb/xw.html

2 编译方法

2.1 文件组成

本模板的主要文件如表 1:

| 类别 | 文件 | 说明 |
|------|--------------------|---------------------------|
| 模板文件 | ustcthesis.dtx | 模板原始代码文件,用户无需使用 |
| | ustcthesis.cls | 文档类文件 |
| | ustcextra.sty | 模板的附加宏包 |
| | ustcauthoryear.bst | author-year 风格的参考文献格式 |
| | ustcnumerical.bst | numerical 风格的参考文献格式 |
| | figures/ustc_*.pdf | 校名和校徽图片 |
| 生成文件 | ustcthesis.pdf | (你正在阅读的) 模板使用说明 |
| 示例文档 | main.tex | 主文档 |
| | chapters/∗.tex | 示例文档的各个章节 |
| | figures/ | 放置图片的目录 |
| | bib/tex.bib | BibT _E X 示例数据库 |
| 其他 | README.md | 基本说明 |
| | .latexmkrc | latexmk 的配置文件 |
| | Makefile | GNU make 的配置文件 |

表 1: 模板的文件组成

示例文档包括了常用的 LATEX 命令,建议新手从此入手,用自己的内容进行替换。 文件 ustcthesis.dtx 是模板的原始代码文件,其可以自动生成文档类文件 ustcthesis.cls 和模板使用说明文件 ustcthesis.pdf。原始模板文件仅供模板开发者使用,一般用户无需使用。

2.2 依赖宏包

ustcthesis 直接依赖的宏包有: amssymb, caption, calc, ctex, etoolbox, fancyhdr, geometry, hyperref, natbib, pifont, titletoc, tikz, upgreek, xparse

注意 ctex 必须为 2.0 以上版本,所以要求 TeX Live、MacTeX、MikTeX 的版本不低于 2015 年的发行版。

2.3 开始编译

1. GNU make

Linux/Mac 用户,可以直接使用 GNU make 工具,这是最简单的方法。编译论文 main. pdf:

make

编译说明文档 ustcthesis.pdf:

make doc

另外还可以用 make clean 清理辅助文件。

2. latexmk

Windows 用户可能无法使用 GNU make,使用 latexmk 也是一个比较简单的方法,配置文件由 .latexmkrc 给出,其参数设置为 -xelatex,用户编译论文只需使用命令:

latexmk main

编译说明文档:

latexmk ustcthesis.dtx

清理辅助文件可以用 latexmk -c 。图形界面用户应参考编辑器的使用说明。

3. 手动编译

手动编译是最繁琐的方法,用户可能需要运行多遍,以确保论文的交叉引用等信息全 部正确。

编译论文 main.pdf:

xelatex main

bibtex main # BibTeX

xelatex main

xelatex main

编译说明文档 ustcthesis.pdf:

xelatex ustcthesis.dtx

makeindex -s gind.ist ustcthesis.idx

makeindex -s gglo.ist -o ustcthesis.gls ustcthesis.glo

xelatex ustcthesis.dtx

xelatex ustcthesis.dtx

3 论文参数设置

3.1 文档类参数

ustcthesis 提供了若干选项,应在论文开始时设置,如:

\documentclass[doctor,english,pdf]{ustcthesis}

全部的选项见表 2

| 必需参数 | bachelor master doctor | 本科论文 硕士论文 博士论文 |
|------|------------------------------|----------------------|
| 可选参数 | professional | 专业学位 |
| | chinese | 中文,默认 |
| | english | English |
| | print | 用于双面打印纸质论文, 默认 |
| | pdf | 单面打印,并保留超链接颜色 |
| | super | 角标数字式参考文献引用标注,默认 |
| | numbers | 数字式参考文献引用标注 |
| | authoryear | 著者-出版年制参考文献 |

表 2: 文档类参数

除了本模板的定义的选项,用户还可以使用其他参数,比如 fontset=fandol, 这些参数都将传给 ctexbook。

3.2 中文字体

ustcthesis 只以 xeCJK 的方式提供中文支持,不支持 CJK 方式,所以用户必须使用 UTF-8 编码保存源文件,并且用 xelatex 命令进行编译。

默认情况下,本模板可以利用 ctex 宏包的功能自动检测用户的操作系统类型,并选择合适的中文字库。默认配置的策略如表 3:

| 操作系统 | 中文字库 |
|---------------------|-----------|
| macOS | 华文字库 |
| Windows Vista 及以后版本 | 中易字库+微软雅黑 |
| Windows XP 及以前版本 | 中易字库 |
| 其他 | Fandol 字库 |

表 3: 默认字体配置

用户也可以在调用文档类时加入选项 $fontset=\langle font \rangle$ 来显式地指定加载的字库,参见 ctex、fontspec 宏包。

3.3 英文字体

模板中使用了三种英文,包括衬线字体 Times New Roman、无衬线字体 Arial 和等宽字体 Courier New。Windows 和 Mac 下自带这三种英文字体,Linux 下则需要从其他地方复制字体到本机。

4 论文内容

本科论文的内容按如下顺序排列:

封面 中文封面、英文封面、原创性声明及授权使用说明

front matter 致谢、目录、中文摘要、英文摘要

main matter 正文章节、参考文献

appendix 附录

硕博论文的内容按如下顺序排列:

封面 中文封面、英文封面、原创性声明及授权使用说明

front matter 中文摘要、英文摘要、目录、图表及代码目录、符号说明

main matter 正文章节、参考文献

appendix 附录

back matter 致谢、已发表论文列表

示例文档 main.tex 中的致谢、目录等章节的顺序,是按照研究生论文的格式组织内容的,本科生需要手动调整顺序。

如果使用文档类选项 print (默认), "原创性声明"页则会加在封面后;若为 pdf,则没有声明页。

4.1 封面

"封面"的名字让人有些混淆,它既可以指由印刷厂统一制作的硬皮封面(cover),也可以指书打开后的第一页(title page)。在这里指的是后者,所以本模板从 title page 开始。

封面由 \maketitle 命令生成, 其中的各项信息使用 \ $\langle info \rangle$ } 的方式填写, 本模板提供的命令如表 4, 其中带 en 前缀的命令是设置英文封面的命令:

| 命令 | 命令 (英文) | 说明 |
|---------------|-----------------|--------------|
| \title | \entitle | 论文标题 |
| \author | \enauthor | 作者姓名 |
| \major | \enmajor | 学科专业 |
| \supervisor | \ensupervisor | 导师姓名 |
| \cosupervisor | \encosupervisor | 副导师姓名 |
| \date | \endate | 完成时间 (默认为今天) |
| \secrettext | \ensecrettext | 密级信息(默认不保密) |

表 4: 用来定义封面项目

4.2 摘要等环境

abstract 对于特殊的章节, ustcthesis 还提供了相应的环境, 如表 5。

enabstract notation acknowledgements publications

| 环境 | 说明 |
|------------------|------|
| abstract | 中文摘要 |
| enabstract | 英文摘要 |
| notation | 符号 |
| acknowledgements | 致谢 |
| publications | 发表成果 |

表 5: 特殊章节的环境

\keywords \enkeywords 其中,摘要的关键词应使用 \keywords 和 \enkeywords 命令,并包含在摘要环境中;

\keywords{

4.3 目录和图表

\begin{abstract}

\end{abstract}

\tableofcontents

生成目录、插图和表格的索引命令分别如表 6:

}

\listoffigures
\listoftables

L'sT_EX 的图表索引,是通过 \caption 命令完成的,因此它们必须出现在浮动环境中,否则不被计数。如果不想让某个表格或者图片出现在索引里面,那么应使用命令 \caption*,这个命令不会给表格编号,也就是出来的只有标题文字而没有"表 xx","图 xx"。

\note 本模板还提供了\note{ $\langle text \rangle$ }命令,用于在图表中添加注释。

| 命令 | 说明 |
|-------------------|------|
| \tableofcontents | 目录 |
| \listoffigures | 图目录 |
| \listoftables | 表目录 |
| \listofalgorithms | 算法目录 |

表 6: 各种目录的环境

| 符号 | 命令 |
|---------|---------|
| 常数 e | \eu |
| 复数单位 i | \iu |
| 微分符号d | \diff |
| arg max | \argmax |
| arg min | \argmin |

表 7: 模板定义的数学符号

4.4 数学

模板中定义了一些使用正体的数学符号(表7)。

ustcextra.sty 定义了数学定理格式 ustcplain(默认使用)以及一些常用的环境,如表 8。

| theorem | assertion | axiom | corollary | lemma |
|-------------|------------|---------|-----------|-------|
| 定理 | 断言 | 公理 | 推论 | 引理 |
| proposition | definition | example | remark | proof |
| 命题 | 定义 | 例 | 注 | 证明 |

表 8: 数学定理相关的环境

注意 proof 环境与其它不同的是,其第二个参数会完全取代"证明"标题,并且会在末尾加一个 \qed。

\newtheorem

用户可以使用 \newtheorem 命令来分别定义新的数学环境,比如定义并使用"传说"环境:

```
\newtheorem{legend}{     }
\begin{legend}
```

\newtheoremstyle

用户还可以用 \newtheoremstyle 定义环境的格式,具体参见 amsthm 宏包。

4.5 参考文献

参考文献和引用标注支持的风格见表 9, 默认为角标数字式,

| 参考文献列表 | 引用标注 | 参数 |
|---------|--------|------------|
| 顺序编码制 | 角标数字 | super |
| | 数字 | numbers |
| 著者-出版年制 | 著者-出版年 | authoryear |

表 9: 参考文献列表和引用标注风格

如果要使用其他风格,可以在载入文档类时加入相应的参数:

```
\documentclass[doctor,authoryear]{ustcthesis}
```

在使用著者-出版年制时,需要将中文参考文献按照拼音或者笔画排序,然而 Unicode 中的汉字是根据康熙字典排序的,而且由于 BibT_EX 功能的局限性,我们无法根据著者姓名读取拼音,所以只能手动处理:在 bib 数据库中设置对应条目的 key 域为著者姓名拼音,如:

```
@book{capital,
  author = {      and      },
  key = {ma3 ke4 si1 en1 ge2 si1},
  ...
```

BibT_EX 默认情况下可以自动识别文献语言,并自动处理文献类型和载体类型标识,但是在少数情况下需要用户手动指定,如:

```
@article{citekey,
  language = {japanese},
  mark = {M},
  medium = {CD},
  ...
```

可选的语言有 english, chinese, japanese, russian, 目前对日语和俄语的支持较为有限。

在使用 BibT_EX 时,默认会将标题域的第一个字母大写,其余小写。对于一些需要强制大写的专有名词(如人名"Riemann"),可以在 bib 数据库中将其用大括号括起来,比如:

```
@book{forster,
...
title = {Lectures on {Riemann} surfaces},
...
```

A 代码实现

A.1 声明选项

```
1 (*class)
2\newif\if@ustc@doctor
3 \newif\if@ustc@master
4 \newif\if@ustc@bachelor
5\newif\if@ustc@professional
6 \newif\if@ustc@english
7\newif\if@ustc@numerical
8\newif\if@ustc@super
9\newif\if@ustc@pdf
{\tt 10 \setminus DeclareOption \{ doctor \} \{ \setminus @ustc@doctortrue \setminus @ustc@masterfalse \setminus @ustc@bachelorfalse \} } \\
11 \DeclareOption{master}{\@ustc@doctorfalse\@ustc@mastertrue\@ustc@bachelorfalse}
12 \DeclareOption{bachelor}{\@ustc@doctorfalse\@ustc@masterfalse\@ustc@bachelortrue}
13 \DeclareOption{professional}{\@ustc@professionaltrue}
14 \DeclareOption{chinese}{\@ustc@englishfalse}
15 \DeclareOption{english}{\@ustc@englishtrue}
16 \DeclareOption{print}{\@ustc@pdffalse}
17 \DeclareOption{pdf}{\@ustc@pdftrue}
18 \DeclareOption{super}{\@ustc@numericaltrue\@ustc@supertrue}
19 \DeclareOption{numbers}{\@ustc@numericaltrue\@ustc@superfalse}
20 \DeclareOption{authoryear}{\@ustc@numericalfalse}
21 \DeclareOption*{\PassOptionsToClass{\CurrentOption}{ctexbook}}
22 \ExecuteOptions{doctor, chinese, print, super}
23 \ProcessOptions\relax
24 \newif\if@ustc@addtocspace
25 \if@ustc@bachelor
26
      \@ustc@addtocspacetrue
27\fi
28 \if@ustc@english
29 \PassOptionsToClass{scheme=plain}{ctexbook}
30∖fi
31 \if@ustc@pdf
32 \PassOptionsToClass{oneside}{book}
```

默认情况下 fontspec 会将 \mathrm 的字体更改为 Times New Roman,而 \mathnormal 依然为 Computer Modern,比 Times New Roman 要细,所以设置 fontspec 不处理数学字体 34\PassOptionsToPackage{no-math}{fontspec}

```
载入 ctexbook 文档类,注意要求 ctex 为 2.0 以及更高的版本。 35 \LoadClass[UTF8, a4paper, openany, zihao=-4]{ctexbook}[2015/05/14] 36 \RequirePackage{etoolbox}
```

```
检测 ctexbook 版本,如果版本过低会报错
37 \@ifclasslater{ctexbook}{2015/05/14}{}{%
      \ClassError{ustcthesis}{%
38
39
          Requiring ctex 2.0 or later version!\MessageBreak
          Please update the package using your\MessageBreak
40
          TeX package manager or from CTAN
41
      }{%
42
43
          See ustcthesis.pdf for more detailed update guide.
44
      }
45 }
      设置西文字体
A.2
    设置西文字体,中文字体已经由 ctex 自动设置,
46\setmainfont{Times New Roman}
47\setsansfont{Arial}
48 \setmonofont{Courier New}
A.3
      超链接与书签
49 \RequirePackage{hyperref}
50 \hypersetup{
      bookmarksopen=true,
      bookmarksnumbered=true,
52
      bookmarksopenlevel=1,
      CJKbookmarks=true,
54
55
      pdfborder=0 0 0,
      unicode=true,
56
      linktoc=all,
58 }
如果为 pdf 样式,设置 hyperlink 颜色
59 \if@ustc@pdf
      \hypersetup{
60
          colorlinks=true,
61
          allcolors=blue,
62
      }
63
64\fi
设置 pdf 的信息
65 \AtBeginDocument{
      \hypersetup{
66
          pdftitle={\ustc@title},
67
          pdfauthor={\ustc@author}
68
      }
69
```

70 }

A.4 定义命令

```
\setfontsize 直接设置字体大小的命令,可选设置行距,默认单倍行距。注意:该命令的定义中的空格会
                                             影响最终效果,因而需要在一行内写完命令,见 Issue 42
                                              71 \RequirePackage{xparse}
                                              \label{thm:commandset} $$72 \end{Townstream} {\end{Townstream} {\end{Townstream}} {\end{Townstream} } $$12 \end{Townstream} $$12 \
                     \zhspace 生成整数倍汉字宽度的空格,默认为1
                                              73 \newcommand\zhspace[1][1]{\hspace{#1\ccwd}}
    \ustc@underline 生成空的下划线
                                              74 \newcommand\ustc@underline[2][6em]{%
                                                            76 }
\ustc@define@term 声明"作者姓名"等项目的命令
                                              77 \def\ustc@define@term#1{
                                                            \expandafter\gdef\csname #1\endcsname##1{
                                                                      \expandafter\gdef\csname ustc@#1\endcsname{##1}
                                              79
                                              80
                                              81
                                                            \csname #1\endcsname{}
                                              82 }
                                              83 \ustc@define@term{professionaltype}
                                              84 \ustc@define@term{title}
                                              85 \ustc@define@term{secrettext}
                                              86 \ustc@define@term{author}
                                              87 \ustc@define@term{major}
                                               88 \ustc@define@term{supervisor}
                                              89 \ustc@define@term{cosupervisor}
                                              90 \ustc@define@term{date}
                                              91 \ustc@define@term{enprofessionaltype}
                                              92\ustc@define@term{entitle}
                                              93 \ustc@define@term{ensecrettext}
                                              94\ustc@define@term{enauthor}
                                              95\ustc@define@term{enmajor}
                                              96\ustc@define@term{ensupervisor}
                                              97 \ustc@define@term{encosupervisor}
                                              98 \ustc@define@term{endate}
                                              99 \date{\zhnumsetup{time=Chinese}\zhtoday}
                                             100 \endate{\CTEX@todayold}
```

A.5 设置语言

这里设置了中英文的各种名字。

```
101 \if@ustc@english
    \renewcommand\figurename{Fig.}
    \newcommand\ustc@notesname{\textbf{Notes}: }
103
    \newcommand\ustc@acknowledgementsname{Acknowledgements}
104
    \newcommand\ustc@publicationsname{Publications}
105
    \newcommand\ustc@notationname{Notation}
106
107 \else
    \renewcommand\listfigurename{
108
    \renewcommand\listtablename{
109
    \newcommand\ustc@notesname{\textbf{ } }
110
    \newcommand\ustc@acknowledgementsname{
111
    \newcommand\ustc@publicationsname{
                                                                           }
112
    \newcommand\ustc@notationname{
113
    \def\equationautorefname~#1\null{
                                         ~(#1)\null}%
114
    \def\footnoteautorefname{
115
    \def\itemautorefname~#1\null{
                                  ~#1~
                                          \null}%
116
117
    \def\figureautorefname{ }%
    \def\tableautorefname{ }%
118
    \def\partautorefname~#1\null{ ~#1~
                                            \null}%
119
    \def\appendixautorefname{
120
    \def\chapterautorefname~#1\null{
                                      ~#1~
                                             \null}%
121
    \def\sectionautorefname~#1\null{
                                      ~#1~
                                             \null}%
122
    \def\subsectionautorefname~#1\null{
                                         ~#1~
                                                  \null}%
123
    \def\subsubsectionautorefname~#1\null{
                                                       \null}%
124
    125
    \def\subparagraphautorefname~#1\null{
                                           ~#1~
                                                    \null}%
126
    \def\theoremautorefname{
127
    \def\pageautorefname~#1\null{ ~#1~
                                          \null}%
128
129\fi
```

A.6 页面设置

首先用 geometry 宏包设置纸张和页面。

```
130 \RequirePackage{geometry}
131 \geometry{
132
      paper=a4paper,
      top=2.54cm, bottom=2.54cm,
133
      left=3.17cm, right=3.17cm,
134
      headheight=0.75cm, headsep=0.29cm,
135
      footskip=0.79cm}
136
    再用 fancyhdr 宏包设置页眉页码。
137 \RequirePackage{fancyhdr}
138 \renewcommand{\headrulewidth}{0.4pt}
139 \if@ustc@bachelor
```

```
\fancypagestyle{ustc@headings}{%
140
                \fancyhf{}%
141
                \fancyhead[C]{\setfontsize{9\bp@}
                                                                                                                                                                            }%
142
                \fancyfoot[C]{\setfontsize{9\bp@}\thepage}}%
143
144 \else
          \fancypagestyle{ustc@headings}{%
145
               \fancyhf{}%
146
                \fancyhead[C]{\setfontsize{10.5\bp@}\leftmark}%
147
                \fancyfoot[C]{\setfontsize{10.5\bp@}\thepage}}%
148
149\fi
150 \fancypagestyle{ustc@notation}{\fancyfoot{}}
151 \pagestyle{ustc@headings}
152\patchcmd\chaptermark{#1}{\protect\spacetitle{#1}}{}{}
            空白页不加页眉。
将 frontmatter 的页码改为大写的罗马数字,并调整页面风格。
155 \g@addto@macro\frontmatter{%
          \if@ustc@bachelor
                \pagenumbering{gobble}%
158
          \else
159
                \pagenumbering{Roman}%
160
          \fi}
161 \renewcommand\mainmatter{%
          \if@ustc@bachelor
                \clearpage
163
164
          \else
                \cleardoublepage
166
                \pagenumbering{arabic}%
167
168
           \@mainmattertrue
169 }
170 \renewcommand \chapter{%}
                \if@openright\cleardoublepage\else\clearpage\fi
171
172
                \global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath}\global\ensuremath{\global\ensuremath{\global\ensuremath}\global\ensuremath{\global\ensuremath{\global\ensuremath{\global\ensuremath}\global\ensuremath}\global\ensuremath{\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath{\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ensuremath}\global\ens
173
                \@afterindenttrue
174
                \if@ustc@bachelor
175
                     \if@mainmatter
                          \ctexset{chapter/format = \centering\sffamily\setfontsize{16\bp@}}
176
177
                          \ctexset{chapter/format = \centering\sffamily\setfontsize{18\bp@}}
178
179
                     \if@ustc@addtocspace
```

A.7 章节标题

用 ctex 的接口设置全局的章节标题格式,注意由于 ctex 2.1 以下版本的 bug, chapter 的 nameformat 和 titleformat 的这两行必须置空。

ctex 2.4.3 以下版本的 bug 会导致章节标题前后的距离的实际值偏大,临时的解决方案是手动调整,偏移值为 beforeskip=-31bp, afterskip=-10bp。但是 ctex 2.2 前的 beforeskip 的符号有特殊意义,所以临时解决方案只用于 ctex 2.2 以及以上版本。

首先设置带圈的数字:

```
186 \RequirePackage{pifont}
187 \def\ustc@textcircled#1{%
188 \ifnum\value{#1} >9
189 \ClassError{ustcthesis}%
190 {Too many footnotes in this page.}{Keep footnote less than 10.}
191 \fi
192 \ding{\the\numexpr\value{#1}+191\relax}}
```

研究生规定章题为两字时中间空两字,三字时空一字,四字时空半字,四字以上不空。 另外,stringstrings 宏包会导致范数命令 \| 被修改,所以用 xstring。

```
193 \RequirePackage{xstring}
194 \newcommand\spacetitle[1]{%
   \StrLen{#1}[\titlelength]%
   \if@ustc@bachelor
197
     \if@mainmatter\relax\else
      \  \in \ \
198
        199
        \fi
200
      \fi
     \fi
202
   \else
203
     \  \in \  \
204
      \  \in \ \
205
        \ifnum\titlelength=4\ziju{0.5}%
206
        \fi
208
      \fi
     \fi
   \fi#1}
```

另外摘要、参考文献等章节在底层也是用 \chapter 实现的。这一部分以后可能重新实现 \chapter。

```
211 \setcounter{secnumdepth}{5}
212 \ctexset{
       chapter = {
213
           format
                        = \centering\sffamily\bfseries\setfontsize{16\bp@},
214
           nameformat = {},
215
           titleformat = \spacetitle,
216
           number
                        = \thechapter,
217
           aftername = \hspace{\ccwd},
218
           beforeskip = -7\bp@, % 24bp - 31bp
219
220
           afterskip
                      = 8\bp@, % 18bp - 10bp
           % fixskip = true, % will be used in future version
221
       },
222
       section = {
223
224
           format
                       = \sffamily\setfontsize{14\bp@},
           aftername = \hspace{\ccwd},
225
           beforeskip = 24 \times 0,
226
           afterskip = 6\bp@,
227
228
       },
       subsection = {
229
           format
                       = \sffamily\setfontsize{13\bp@},
230
           aftername = .\hspace{\ccwd},
231
232
           indent
                       = 2 \ ccwd
           beforeskip = 12\bp@,
233
           afterskip = 6 \neq 0,
234
235
236
       subsubsection = {
           format
                       = \sffamily\setfontsize{12\bp@},
237
           number
                       = \arabic{subsubsection},
238
           aftername = .\hspace{\ccwd},
239
                       = 3 \ ccwd,
240
           indent
           beforeskip = 12 \neq 0,
241
           afterskip = 6 \neq 0,
242
243
244
       paragraph = {
                       = \sffamily\setfontsize{12\bp@},
245
           format
           number
                       = (\arabic{paragraph}),
246
           aftername = \hspace{\ccwd},
248
           indent
                       = 3 \ ccwd,
           beforeskip = \z@,
249
           afterskip = \z@,
250
           runin
                       = false,
251
252
       },
```

```
subparagraph = {
253
           format
                       = \sffamily\setfontsize{12\bp@},
254
           number
                       = \ustc@textcircled{subparagraph},
255
           aftername = \hspace{\ccwd},
256
           indent
                       = 3 \ ccwd
257
           beforeskip = \z@,
258
           afterskip = \z@,
259
260
           runin
                       = false,
       },
261
262 }
     设置本科生的章节标题。
263 \if@ustc@bachelor
       \setcounter{secnumdepth}{4}
265
       \ctexset{
266
           chapter={
               format = \centering\sffamily\setfontsize{16\bp@},
267
               number = \chinese{chapter},
268
           },
270
           section = {
               format = \centering\sffamily\setfontsize{15\bp@},
271
               name = \{ , \},
272
               number = \chinese{section},
274
           },
           subsection = {
                          = \sffamily\setfontsize{14\bp@},
276
               format
                          = \chinese{subsection},
               number
278
               aftername = { },
           subsubsection = {
280
               format
                          = {\rmfamily\setfontsize{12\bp@}},
281
               number
                          = \arabic{subsubsection},
               aftername = \{. \setminus \},
284
               indent
                          = \ccwd,
285
           },
           paragraph = {
286
                          = {\rmfamily\setfontsize{12\bp@}},
               format
                          = \{(,)\},\
288
               name
                          = \arabic{paragraph},
               number
               aftername = \{ \setminus \},
290
                          = 2 \ ccwd,
               indent
292
           },
           subparagraph = {
                          = {},
               format
                          = {},
               name
```

```
indent
296
                      = 2 \ ccwd
         },
298
299\fi
300 \newcounter{ustc@pdfbookmark}
301 \NewDocumentCommand\ustc@chapter{o m}{%
    \if@openright\cleardoublepage\else\clearpage\fi%
    \addtocounter{ustc@pdfbookmark}\@ne
    \IfValueTF{#1}{%
304
305
      \verb|\pdfbookmark[0]{#1}{ustcchapter.\theustc@pdfbookmark}%|
306
307
308
      309
      \chaptermark{#2}%
310
    \chapter*{#2}}
```

A.8 封面

\maketitle 重新定义 \maketitle, 调用 \make@cntitle, \make@entitle 分别生成中、英文封面。若论文选项 print 有效,声明页则会加在封面后,若为 pdf,则没有声明页。

```
312 \renewcommand\maketitle{%
      \newgeometry{
313
           top=3.8cm, bottom=3.8cm,
314
           left=3.2cm, right=3.2cm,
315
           headheight=0cm, headsep=0.8cm,
316
           footskip=0.8cm}
317
      \pagenumbering{gobble}
318
      \pdfbookmark[0]{
                           }{titlepage}
319
      \make@cntitle \cleardoublepage
320
      \pdfbookmark[0]{Title page}{entitlepage}
321
      \make@entitle \cleardoublepage
322
323
      \restoregeometry
      \if@ustc@bachelor\relax\else
324
           \if@ustc@pdf\relax\else%
325
               \pdfbookmark[0]{
                                          }{statement}
326
               \make@statement \cleardoublepage
327
           \fi
328
      \fi
329
330 }
    定义一些常量。
331 \if@ustc@doctor
332 \if@ustc@professional
```

```
\newcommand\ustc@thesisname{
                                                       }%
          335
          336
              \newcommand\ustc@enthesisname{A dissertation for doctor's degree}%
          337
          338 \else
              \if@ustc@master
          339
                \if@ustc@professional
          340
                  \newcommand\ustc@thesisname{
                                                             }
          341
                \else
          342
                  \newcommand\ustc@thesisname{
                                                         }
          343
          344
                \newcommand\ustc@enthesisname{A dissertation for master's degree}
          345
              \else
          346
                \newcommand\ustc@thesisname{
          347
                \newcommand\ustc@enthesisname{A dissertation for bachelor's degree}
          348
          349 \fi
          350\fi
          351 \newcommand\ustc@supervisorline{%
              \ifx\ustc@encosupervisor\@empty%
          352
                Supervisor: \ustc@ensupervisor%
          353
              \else%
          354
                Supervisors: \ustc@ensupervisor, \ustc@encosupervisor%
          355
          356
\vpostext 这里使用 tikz 工具设计封面。\vpostext{\vpos\}{\text\} 命令用来放置居中的文字,有两个
          参数,第一个为距离纸的顶端的距离,第二个为要放置的文字
          357 \RequirePackage{tikz}
          358 \newcommand\vpostext[2]{%
                \tikz[remember picture,overlay]%
          359
          360
                    \node [yshift=-#1] at (current page.north) [below,align=flush center]%
                        {\parbox{\textwidth}{\centering#2}};}
          361
               现在开始设计封面。如果"学科专业"一栏放不下,可以将文字装进一个 \parbox, 比如
          \parbox[t]{5cm}{A VERY LONG TEXT}
          362 \newcommand\make@cntitle{%
                \begin{titlepage}%
          363
                    \tikz[remember picture,overlay]%
          364
                        \node [yshift=-4cm] at (current page.north) [below,align=flush center]%
          365
                            {\parbox{\textwidth}{\raggedleft\fangsong\setfontsize{14\bp@}\ustc@secrettext}};%
          366
                    \vpostext{4cm}{\includegraphics[height=37\bp@]{figures/ustc_logo_text}}%
          367
                    \if@ustc@professional
          368
                      \vpostext{6.3cm}{\sffamily\setfontsize{56\bp@}\ziju{-0.09}\ustc@thesisname}%
          369
                      \vpostext{9cm}{\setfontsize{26\bp@}\ustc@professionaltype}%
          370
```

}%

333

334

\else

\newcommand\ustc@thesisname{

```
\vpostext{16.3cm}{\sffamily\bfseries\setfontsize{26\bp@}\ustc@title}%
             372
                      \else
             373
                        \vpostext{6.3cm}{\sffamily\setfontsize{56\bp@}\ustc@thesisname}%
             374
                        \vpostext{9.8cm}{\includegraphics[height=4.7cm]{figures/ustc logo fig}}%
             375
                        \vpostext{16.3cm}{\sffamily\bfseries\setfontsize{26\bp@}\ustc@title}%
             376
                      ۱fi
             377
                      \tikz[remember picture,overlay]%
             378
                         \node [xshift=4.6cm,yshift=-20.3cm] at (current page.north west)%
             379
                          [below right,align=left] {%
             380
                             \setfontsize{16\bp@}%
             381
                             \begin{tabular}{@{}l@{\hspace{\ccwd}}l@{}}%
             382
             383
                                \textsf{
                                                } & \ustc@author \\%
                                \textsf{
                                                } & \ustc@major \\%
             384
                                \textsf{
                                                } & \ustc@supervisor\quad\ustc@cosupervisor \\%
             385
                                \textsf{
                                                } & \ustc@date%
             386
             387
                             \end{tabular}};%
             388
                  \end{titlepage}}
            由于《规范》对宽度的限制,可能一行里放不下,需要使用\parbox
\make@entitle
             389 \newcommand\make@entitle{%
                  \begin{titlepage}%
             390
             391
                      \tikz[remember picture,overlay]%
                         \node [yshift=-4cm] at (current page.north) [below,align=flush center]%
             392
                             393
                      394
                         University of Science and Technology of China}%
             395
                      396
                      \if@ustc@professional
             397
                        \vpostext{6.2cm}{\setfontsize{16\bp@}\ustc@enprofessionaltype}%
             398
                        \vpostext{8.9cm}{\includegraphics[height=5.1cm]{figures/ustc_logo_fig}}%
             399
                        400
                      \else
             401
                        \vpostext{7.9cm}{\includegraphics[height=5.1cm]{figures/ustc_logo_fig}}%
             402
                        \vpostext{14.2cm}{\sffamily\bfseries\setfontsize{26\bp@}[30\bp@]\ustc@entitle}%
             403
                      ۱fi
             404
                      \tikz[remember picture,overlay]%
             405
                         \node [xshift=4.4cm,yshift=-20.2cm] at (current page.north west)%
             406
             407
                          [below right,align=left] {%
                             \setfontsize{16\bp@}[30\bp@]%
             408
                             \begin{tabular}{@{}l@{}}%
             409
                                Author:
             410
                                             \ustc@enauthor \\%
             411
                                Speciality:
                                             \ustc@enmajor \\%
                                \ustc@supervisorline \\%
             412
                                Finished time: \ustc@endate%
             413
```

\vpostext{10.3cm}{\includegraphics[height=4.7cm]{figures/ustc_logo_fig}}%

371

```
414 \end{tabular}};%
415 \end{titlepage}}
```

A.9 原创性声明

定义原创性声明

```
416 \newcommand{\ustc@declaretext} {
417
418
419
420 }
421 \newcommand{\ustc@authorization}{
422
423
424
425
426
427
428
429
430 }
431 \newcommand\make@statement{}
       \thispagestyle{empty}
432
       \setfontsize{12\bp@}[20\bp@]
433
434
       \vspace*{-0.15cm}
       \begin{center}
435
         \verb|\setfontsize{16\bp@}\textbf{|}
                                                                                  }
436
       \ensuremath{\mbox{\sc center}}
437
       \vskip 0.3cm
438
439
       \ustc@declaretext\par
440
441
442
       \vskip 0.7cm
443
       \begin{tabular}{p{7cm}p{7cm}}
                     \ustc@underline[7.4em]{} &
                                                                \ustc@underline[7.4em]{}
444
       \end{tabular}
445
446
       \vskip 2.6cm
447
       \begin{center}
448
          \set{fontsize{16\bp@}\textbf{}}
                                                                                    }
449
450
       \ensuremath{\mbox{\sc center}}
       \vskip 0.3cm
451
452
453
       \ustc@authorization\par
```

```
\vskip 0.5cm
           454
                  $\square$
                                 \hspace{0.4cm} $\square$
                                                                \ustc@underline[2em]{}
            455
           456
            457
                  \vskip 0.5cm
            458
                  {\renewcommand{\arraystretch}{2.0}
            459
                  \begin{tabular}{p{7cm}p{7cm}}
            460
                              \ustc@underline[7.4em]{} &
                                                                   \ustc@underline[7.4em]{} \\
            461
                              \ustc@underline[7.4em]{} &
                                                                   \ustc@underline[7.4em]{} \\
            462
                  \end{tabular}}
            463
            464 }
            A.10 摘要
 abstract 中文摘要环境
            465 \newenvironment{abstract}{%
                  \if@ustc@bachelor
                      \chapter{
                                           }%
            467
                  \else
            468
            469
                      \ustc@chapter{
                                        }%
            470
                  \fi
               }{}
           471
enabstract 英文摘要环境
           472 \newenvironment{enabstract}{%
                  \if@ustc@bachelor
           473
                                           ]{Abstract}
            474
                      \chapter[
           475
                  \else
                      \ustc@chapter[Abstract]{ABSTRACT}
            476
                  fi}{}
           477
 keywords 中文关键词
           478 \newcommand \keywords [1] {\%}
           479 \par\phantom{empty line}\par\noindent\hangindent=4\ccwd\relax%
           480 \textbf{
                              } #1}
enkeywords 英文关键词
           481 \newcommand\enkeywords [1] \{%
            482 \par\phantom{empty}\par\noindent\hangindent=5.3em\relax%
```

A.11 目录

483 \textbf{Key Words}: #1}

\tableofcontents 为了在 PDF 书签中加入目录, 重新定义 \tableofcontents

```
484 \renewcommand\tableofcontents{%

485     \cleardoublepage%

486     \if@ustc@bachelor\pagenumbering{arabic}\fi

487     \ustc@chapter{\contentsname}%

488     \@starttoc{toc}}
```

目录一般由正文第 1 章(或绪论、引言)开始,列至三级标题(如 2.2.2)即可,目录之前的内容及目录本身不列入目录内。一级标题顶格书写,二级标题缩进一字,三级标题缩进两字。由于 ctex 新引入了 tocline,导致 chatper 的前标题空白多了 0.3em。下面用 titletoc 宏包设置每级目录的格式

```
489 \RequirePackage{titletoc}
490 \verb|\newcommand\ustc@leaders{\titlerule*[0.5pc]{$\cdot$}}|
491 \if@ustc@bachelor
      \titlecontents{chapter}
493
          [\z@]
494
          {\text{setfontsize}\{12\bp@\}[20\bp@]}
          {\contentspush{\thecontentslabel\hskip\ccwd\relax}}
495
496
          {}{\ustc@leaders\contentspage}
497
      \titlecontents{section}
498
          [\ccwd]
          {\text{setfontsize}\{12\bp@\}[20\bp@]}
499
500
          {\contentspush{\thecontentslabel\hskip\ccwd\relax}}
          {}{\ustc@leaders\contentspage}
501
502
      \titlecontents{subsection}
          [2\ccwd]
503
504
          {\text{setfontsize}\{12\bp@\}[20\bp@]}
          {\contentspush{\thecontentslabel }}
505
506
          {}{\ustc@leaders\contentspage}
507 \else
      \titlecontents{chapter}
508
509
          [\z@]
510
          {\addvspace{6\bp@}\setfontsize{14\bp@}[20\bp@]}
511
          {\contentspush{\thecontentslabel\unskip\hskip\ccwd\relax}}
512
          {}{\ustc@leaders\setfontsize{12\bp@}[20\bp@]\contentspage}
      \titlecontents{section}
513
          [\ccwd]
514
          {\text{setfontsize}\{12\bp@\}[20\bp@]}
515
          {\contentspush{\thecontentslabel\hskip\ccwd\relax}}
516
          517
518
      \titlecontents{subsection}
          [2\ccwd]
519
          {\text{0.5}p@}[20\p@]}
520
          {\contentspush{\thecontentslabel\hskip\ccwd\relax}}
```

523\fi

同时设置图、表的目录格式

524 \titlecontents{figure}

- 525 [\ccwd]
- 526 {\addvspace{6\bp@}\setfontsize{12\bp@}}
- 527 {\thecontentslabel\hspace*{0.5em}}
- 528 {}{\ustc@leaders\contentspage}
- 529 \titlecontents{table}
- 530 [\ccwd]
- 531 {\addvspace{6\bp@}\setfontsize{12\bp@}}
- 532 {\thecontentslabel\hspace*{0.5em}}
- 533 {}{\ustc@leaders\contentspage}

\listoffigures 为了让图目录另页起,重新定义 \listoffigures

- 534 \renewcommand\listoffigures{%
- \if@ustc@bachelor\clearpage\else\cleardoublepage\fi
- 536 \ustc@chapter{\listfigurename}%
- 537 \@starttoc{lof}}

\listoftables 表目录同样

- 538 \renewcommand\listoftables{%
- 539 \if@ustc@bachelor\clearpage\else\cleardoublepage\fi
- 540 \ustc@chapter{\listtablename}%
- 541 \@starttoc{lot}}

为了让本科生的目录每章之间多空一行,重新定义\mainmatter,\backmatter,\appendix

542 \if@ustc@bachelor

- 543 \g@addto@macro\frontmatter{\@ustc@addtocspacefalse}%
- 544 \g@addto@macro\mainmatter{\@ustc@addtocspacetrue}%
- 545 \g@addto@macro\backmatter{\@ustc@addtocspacefalse}%
- 546 \g@addto@macro\appendix{\@ustc@addtocspacefalse}%
- 547∖fi

A.12 符号说明

notation 标题字体字号等同论文正文,说明部分: 宋体 10.5 磅,行距 16 磅,段前段后 0 磅。

$548 \verb| newenvironment{notation}{ \{} \%$

- 549 \if@ustc@bachelor\clearpage\else\cleardoublepage\fi
- 550 \thispagestyle{ustc@notation}
- 551 \ctexset{chapter/format = \centering\rmfamily\setfontsize{12\bp@}}
- 552 \ustc@chapter{\ustc@notationname}
- 553 \setfontsize{10.5\bp@}[16\bp@]
- 554 \setlength{\itemsep}{\z@}}{}

A.13 正文

例

正文字号 12bp, 研究生行距 20bp, 本科生行距 22bp; 其他命令的行距设置为对应的比

```
555 \newdimen\bp@ \bp@=1bp
556 \if@ustc@bachelor
                    \renewcommand\normalsize{%
557
                                   \ensuremath{\tt @setfontsize normalsize{12\bp@}{22\bp@}}
558
                                   \abovedisplayskip 12\bp@ \@plus3\bp@ \@minus7\bp@
559
                                   \abovedisplayshortskip \z@ \@plus3\bp@
560
                                   \belowdisplayshortskip 6.5\bp@ \@plus3.5\bp@ \@minus3\bp@
561
                                   \belowdisplayskip \abovedisplayskip
562
                                   \let\@listi\@listI}
563
                     \normalsize
564
                     \renewcommand\small{%
565
                                   \ensuremath{\texttt{0.5}\bp@}{19.25\bp@}%
566
                                   \abovedisplayskip 10.5\bp@ \@plus3\bp@ \@minus6\bp@
567
                                   \abovedisplayshortskip \z@ \@plus3\bp@
568
                                   \belowdisplayshortskip 6.5\bp@ \@plus3.5\bp@ \@minus3\bp@
569
                                   \def\@listi{\leftmargin\leftmargini
570
                                                                                            \topsep 9\bp@ \@plus3\bp@ \@minus5\bp@
571
                                                                                            \parsep 4.5\bp@ \@plus2\bp@ \@minus\bp@
572
                                                                                           \itemsep \parsep}%
573
                                   \belowdisplayskip \abovedisplayskip
574
                    }
575
                     \renewcommand\footnotesize{%
576
                                   \ensuremath{\tt @setfontsize\footnotesize{9\bp@}{16.5\bp@}}
577
                                   578
                                   \abovedisplayshortskip \z@ \@plus3\bp@
579
                                   \below displays hortskip 6\bp@ \egplus 3\bp@ \egminus 3\bp@
580
                                   \def\@listi{\leftmargin\leftmargini
581
                                                                                           \topsep 6\top@ \eqlus2\top@ \eqlus2\top@ \eqlus2\top@
582
                                                                                            \parsep 3\bp@ \@plus2\bp@ \@minus\bp@
583
                                                                                           \itemsep \parsep}%
584
                                   \belowdisplayskip \abovedisplayskip
585
                    }
586
                      \renewcommand\scriptsize{\@setfontsize\scriptsize{7.5\bp@}{13.75\bp@}}
587
                     588
                      \label{large} $$\operatorname{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\large}{\command\l
589
                      \renewcommand\Large{\@setfontsize\Large{18\bp@}{33\bp@}}
590
                      \renewcommand\LARGE{\@setfontsize\LARGE{22\bp@}{40.33\bp@}}
591
                     \ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ens
                    \label{local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-local-command-huge-loca
593
594 \else
```

```
595
          \renewcommand\normalsize{%
                 \ensuremath{\texttt{@setfontsize}}normalsize{12\bp@}{20\bp@}%
596
                 \abovedisplayskip 12\bp@ \eplus3\bp@ \eminus7\bp@
597
                 \abovedisplayshortskip \z@ \@plus3\bp@
598
                 \belowdisplayshortskip 6.5\bp@ \@plus3.5\bp@ \@minus3\bp@
599
                 \belowdisplayskip \abovedisplayskip
600
                 \let\@listi\@listI}
601
          \normalsize
602
          \renewcommand\small{%
603
                 \ensuremath{\texttt{0.5}\bp@}{17.5\bp@}%
604
                 \abovedisplayskip 10.5\bp@ \@plus3\bp@ \@minus6\bp@
605
                 \abovedisplayshortskip \z@ \@plus3\bp@
606
                 \belowdisplayshortskip 6.5\bp@ \@plus3.5\bp@ \@minus3\bp@
607
                 \def\@listi{\leftmargin\leftmargini
608
                                            \topsep 9\top@ \eqnus3\top@ \eqnus5\top@
609
                                            \parsep 4.5\bp@ \@plus2\bp@ \@minus\bp@
610
611
                                            \itemsep \parsep}%
                 \belowdisplayskip \abovedisplayskip
612
         }
613
          \renewcommand\footnotesize{%
614
                 \@setfontsize\footnotesize{9\bp@}{15\bp@}
615
                 616
                 \abovedisplayshortskip \z@ \@plus3\bp@
617
                 \belowdisplayshortskip 6\bp@ \@plus3\bp@ \@minus3\bp@
618
                 \def\@listi{\leftmargin\leftmargini
619
                                            \topsep 6\bp@ \@plus2\bp@ \@minus2\bp@
620
                                            \parsep 3\bp@ \@plus2\bp@ \@minus\bp@
621
                                             \itemsep \parsep}%
622
                 \belowdisplayskip \abovedisplayskip
623
          }
624
          \renewcommand\scriptsize{\@setfontsize\scriptsize{7.5\bp@}{12.5\bp@}}
625
          \mbox{renewcommand}\tiny{\entropy{6.5\bp@}{10.83\bp@}}
626
          \ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ens
627
          \renewcommand\Large{\@setfontsize\Large{18\bp@}{30\bp@}}
628
          \mbox{renewcommand}\LARGE{\@setfontsize}\LARGE{22\bp@}{36.67\bp@}}
629
          \label{local-continuous} $$\operatorname{\normal-def}_{\normal-def} \end{24\bp@}{40\bp@}}$
630
         \ensuremath{\mbox{\mbox{\mbox{$1$}}} \ensuremath{\mbox{\mbox{\mbox{\mbox{$43.33$}}}}
631
632\fi
633 \setlength{\parindent}{2\ccwd}
634\setlength{\parskip}{\z@}
```

A.14 数学

定义新的数学符号:

```
635 \RequirePackage{upgreek}
636 \renewcommand\pi{\uppi}

小于等于号要使用倾斜的形式。
637 \RequirePackage{amssymb}
638 \renewcommand\le{\leqs\lant}
639 \renewcommand\leq{\leqs\lant}
640 \renewcommand\ge{\geqs\lant}
641 \renewcommand\geq{\geqs\lant}
```

IMEX 在使用 10pt 选项时有 DeclareMathSizes}{\@xpt}{\@xpt}{7}{5}}, 这里按照相同的比例设置 10.5 bp。

642 \DeclareMathSizes{10.5bp}{10.5bp}{7.35bp}{5.25bp}

A.15 图、表

下面这组命令使浮动对象的缺省值稍微宽松一点,从而防止幅度对象占据过多的文本页面,也可以防止在很大空白的浮动页上放置很小的图形。

This macro holds the maximum proportion (as a decimal number) of a text page or column that can be occupied by floats at the top. (Original: .7)

```
643 \renewcommand{\topfraction}{.85}
```

This macro holds the maximum proportion (as a decimal number) of a text page or column that can be occupied by floats at the bottom. (Original: .3)

```
644 \renewcommand{\bottomfraction}{.65}
```

This macro holds the minimum proportion (as a decimal number) of a text page or column that must be occupied by text. (Original: .2)

```
645 \renewcommand\textfraction{.15}
```

This macro holds the minimum proportion (as a decimal number) of a page or column that must be occupied by floating objects before a 'float page' is produced. (Original: .5)

用 caption 宏包设置图、表的格式注意计算 belowskip 必须用 calc 宏包修正。

```
647 \RequirePackage{caption}
648 \RequirePackage{calc}
649 \DeclareCaptionLabelSeparator{zhspace}{\hspace{\ccwd}}
650 \captionsetup{
651    format = hang,
652    font = small,
653    labelsep = zhspace,
654 }
655 \if@ustc@bachelor\else
656    \captionsetup{font+=bf}
657 \fi
```

```
658 \captionsetup[figure]{
                                    position = bottom,
                   659
                                    aboveskip = 6bp,
                   660
                   661
                                    belowskip = {12bp-\intextsep},
                   662 }
                   663 \captionsetup[table]{
                                    position = top,
                   664
                                    aboveskip = 6bp,
                   665
                                    belowskip = 6bp,
                   666
                   667 }
                               使表的字号略小。
                   668% \BeforeBeginEnvironment{tabular}{\small}
                   669% \AtBeginEnvironment{longtable}{\small}
\note 新定义了 \note 来生成图标的附注。如果用 \caption 生成图标的附注会导致图标的序号有
                   误;如果用\bicaption会导致表注无法置于表后,而且对齐方式不对。
                   670 \newcommand \note [1] {%}
                   671
                                    \captionsetup{position = bottom, font = small}
                                    \caption*{\hangindent=2\ccwd\relax\ustc@notesname\rmfamily#1}}
                   A.16 脚注
                               脚注用带圈的数字:
                   673 \renewcommand{\thefootnote}{\ustc@textcircled{footnote}}
                                脚注线长为版心宽度的四分之一:
                   674 \renewcommand\footnoterule{%
                             \kern-3\p@
                              \hrule\@width.25\textwidth
                              \kern2.6\p@}
                               注文缩进两字:
                   678 \renewcommand \@makefntext[1] {%
                              \parindent 2\ccwd%
                   679
                              \noindent
                   680
                              \begin{tabular}{ll} \beg
                   A.17 参考文献
                                定义接口切换引用文献的标注法,可用\citestyle调用 super \authoryear 或 numbers。
                   682 \if@ustc@numerical
                   683 \PassOptionsToPackage{sort&compress}{natbib}
                   684∖fi
```

```
685 \RequirePackage{natbib}
                                            686 \newcommand \bibstyle@super{\bibpunct{[]}{]}{,}{s}{,}{\textsuperscript{,}}}}
                                            687 \mbox{ newcommand bibstyle@numbers { bibpunct { [} { ]} { ,} { n} { ,} { ,} } 
                                            688 \label{lem:commandbibstyle} $$ \end{area} in which is tyle @authoryear {\bibpunct{()}{)}{;}{a}{,}{,}} $$
\ustcbibstyle 定义接口切换参考文献表的风格,可选 authoryear 和 numerical,这个仅用于 chapterbib。
                                            689 \def\tmp@numerical{numerical}
                                            690 \def\tmp@authoryear{authoryear}
                                            691 \newcommand\ustcbibstyle[1]{%
                                                         \label{lem:lemp_gbt} $$ \end{time} $$ \end
                                            692
                                                         \ifx\tmp@gbt\tmp@numerical%
                                            693
                                                               \bibliographystyle{ustcnumerical}%
                                            694
                                            695
                                                               \ifx\tmp@gbt\tmp@authoryear%
                                            696
                                                                     \bibliographystyle{ustcauthoryear}%
                                            697
                                                               \else%
                                            698
                                                                     \PackageError{ustcthesis}{Unknown argument #1.}
                                            699
                                                                     {It should be `numerical' or `authoryear'.}
                                            700
                                                               \fi%
                                            701
                                                         \fi%
                                            702
                                            703 }
                                                          处理宏包选项。
                                            704 \if@ustc@bachelor
                                           705
                                                         \if@ustc@super
                                                               \citestyle{super}
                                            706
                                                         \else
                                            707
                                                              \citestyle{numbers}
                                            708
                                            709
                                                         \bibliographystyle{ustcbachelor}%
                                            710
                                            711 \else
                                                        \if@ustc@numerical
                                            712
                                            713
                                                               \if@ustc@super
                                                                     \citestyle{super}
                                            714
                                                               \else
                                            715
                                                                    \citestyle{numbers}
                                            716
                                                               \fi
                                           717
                                                               \bibliographystyle{ustcnumerical}%
                                           718
                                                         \else
                                            719
                                                               \citestyle{authoryear}
                                            720
                                                               \bibliographystyle{ustcauthoryear}%
                                            721
                                                       \fi
                                            722
                                            723\fi
```

下面修改 natbib 的引用格式,主要是将页码写在上标位置。Numerical 模式的 \citet 的

```
页码:
724 \patchcmd{\NAT@citexnum}{%
   \@ifnum{\NAT@ctype=\z@}{%
     if*#2*\else\NAT@cmt#2\fi
727
   \NAT@mbox{\NAT@@close}%
729 }{%
   \NAT@mbox{\NAT@@close}%
730
    \ensuremath{\mbox{0ifnum}{\NAT@ctype=\z@}{\%}}
     \if*#2*\else\textsuperscript{#2}\fi
733 }{}%
734 }{}{}
    Numerical 模式的 \citep 的页码:
735 \renewcommand \NAT@citesuper[3] { \ \ }
736 \text{if}*#2*\else#2\NAT@spacechar\fi
737 \unskip\kern\p@\textsuperscript{\NAT@@open#1\NAT@@close\if*#3*\else#3\fi}%
     \left( \frac{1}{fi}\right)
739 \renewcommand\NAT@citenum%
      740
         #1\NAT@@close\if*#3*\else\textsuperscript{#3}\fi\else#1\fi\endgroup}
741
    Author-year 模式的 \citet 的页码:
742 \patchcmd{\NAT@citex}{%
743 \if*#2*\else\NAT@cmt#2\fi
   \if\relax\NAT@date\relax\else\NAT@@close\fi
744
745 }{%
746
   \if\relax\NAT@date\relax\else\NAT@@close\fi
747 \if*#2*\else\textsuperscript{#2}\fi
748 }{}{}
    Author-year 模式的 \citep 的页码:
749 \renewcommand\NAT@cite%
      750
         \#1\NAT@@close\if*\#3*\else\textsuperscript{\#3}\fi\else\#1\fi\endgroup}
751
752 \patchcmd{\NAT@citexnum}{%}
   \ifx\NAT@last@yr\relax
     \def@NAT@last@yr{\@citea}%
   \else
755
     756
757
   \fi
758 }{%
759 \def@NAT@last@yr{--\NAT@penalty}%
760 }{}{}
```

参考文献列表宋体 10.5 磅, 行距 20 磅, 续行缩进两字

```
761 \renewcommand\bibfont{\setfontsize{10.5bp}[20bp]}
           762 \text{setlength{bibsep}{z@}}
           763 \sting{bibhang}{2 \cwd}
           764 \renewcommand \@biblabel[1] { [#1] \hfill}
              将 URL 设置为保持原样,并增加可断行的位置。
           765 \urlstyle{same}
           766 \g@addto@macro\UrlBreaks{%
              768
              \do\u\do\v\do\x\do\y\do\z\%
           769
              770
              \do\U\do\V\do\X\do\Y\do\Z\%
           772
              773
           774 }
   \bibsection 为了将参考文献加入目录和 pdf 书签, 重新定义了 natbib 的 bibsection
           775 \renewcommand\bibsection{%
               \@mainmatterfalse
           776
           777
               \chapter{\bibname}%
               \@mainmattertrue
           778
           779 }
           A.18 附录
acknowledgements 定义了一个满足要求的致谢环境:
           780 \newenvironment{acknowledgements}{%
```

\if@ustc@bachelor

\ustc@chapter{\ustc@acknowledgementsname}% 782

783

\chapter{\ustc@acknowledgementsname}% 784

785 \fi

786 }{}

publications 发表成果环境:

787 \newenvironment{publications}{\chapter{\ustc@publicationsname}}{}

788 (/class)

命令索引

意大利体的数字表示描述对应索引项的页码; 带下划线的数字表示定义对应索引项的 代码行号; 罗马字体的数字表示使用对应索引项的代码行号。

30

Symbols \@afterindenttrue 173

| \@biblabel 764 | \9 773 | \bibstyle@super 686 |
|-------------------------------------|---|---|
| \@chapter 184 | | \bottomfraction 644 |
| \@citea 754 | 202 200 | \bp@ 142, 143, 147, |
| \@ifclasslater 37 | \ | 148, 176, 178, 181, 214, |
| \@ifnum 725,731 | A | 219, 220, 224, 226, 227, |
| \@listI 563,601 | \A 770 | 230, 233, 234, 237, 241, |
| \@listi 563, | | 242, 245, 254, 267, 271, |
| 570, 581, 601, 608, 619 | \a 767 | 276, 281, 287, 366, 367, |
| \@mainmatterfalse 776 | \abovedisplayshortskip | 369, 370, 372, 374, 376, |
| \@mainmattertrue \dots $168,778$ | 560, | 381, 393, 394, 396, 398, |
| \@makefnmark 681 | 568, 579, 598, 606, 617 | 400, 403, 408, 433, 436, |
| \@makefntext 678 | \abovedisplayskip 559, | 449, 494, 499, 504, 510, |
| \@schapter 184 | 562, 567, 574, 578, 585, | 512, 515, 517, 520, 522, |
| \@starttoc 488,537,541 | 597,600,605,612,616,623 | 526, 531, 551, 553, 555, |
| \@topnum 172 | abstract (environment) . $6,\underline{465}$ | 558, 559, 560, 561, 566, |
| \@ustc@addtocspacefalse . | acknowledgements (environ- | 567, 568, 569, 571, 572, |
| 543, 545, 546 | ment) 6, <u>780</u> | 577, 578, 579, 580, 582, |
| \@ustc@addtocspacetrue $26,544$ | \addtocontents 181 | 583, 587, 588, 589, 590, |
| \c @ustc@bachelorfalse . $10, 11$ | \addvspace 181,510,526,531 | 591, 592, 593, 596, 597, |
| \@ustc@bachelortrue 12 | \appendix 546 | 598, 599, 604, 605, 606, |
| \@ustc@doctorfalse 11,12 | \appendixautorefname 120 | 607, 609, 610, 615, 616, |
| \@ustc@doctortrue 10 | \arabic 238, 246, 282, 289 | 617,618,620,621,625, |
| \@ustc@englishfalse 14 | \arraystretch 459 | 626,627,628,629,630,631 |
| \@ustc@englishtrue 15 | \AtBeginEnvironment 669 | |
| \@ustc@masterfalse 10,12 | - | C |
| \@ustc@mastertrue 11 | В | \C 770 |
| \@ustc@numericalfalse 20 | \B 770 | \c 767 |
| \@ustc@numericaltrue . 18,19 | \b | \c@page 153 |
| \@ustc@pdffalse 16 | \backmatter 545 | \caption 672 |
| \@ustc@pdftrue 17 | \BeforeBeginEnvironment . 668 | \captionsetup |
| \@ustc@professionaltrue 13 | \belowdisplayshortskip | 650, 656, 658, 663, 671 |
| \@ustc@superfalse 19 | 561, | \ccwd 73,218, |
| \@ustc@supertrue 18 | 569, 580, 599, 607, 618 | 225, 231, 232, 239, 240, |
| \@width 676 | \belowdisplayskip 562, | 247, 248, 256, 257, 284, |
| (6.122.1) | 574, 585, 600, 612, 623 | 291, 296, 382, 479, 495, |
| Numbers | \bibfont 761 | 498, 500, 503, 511, 514, |
| \0 773 | \bibhang $\dots 763$ | 516, 519, 521, 525, 530, |
| \1 773 | | |
| | \bibliographystyle | 633, 649, 672, 679, 681, 763 |
| \2 773 | \bibliographystyle 694,697,710,718,721 | 633,649,672,679,681,763 \cdot 490 |
| \2 773 \3 773 | | |
| | 694, 697, 710, 718, 721 | \cdot 490 |
| \3 773 | $\begin{array}{cccccccccccccccccccccccccccccccccccc$ | $\label{eq:cdot} $$ \cdot \dots 490 $$ \chapter \dots 170,$ |
| \3 | $\begin{array}{cccccccccccccccccccccccccccccccccccc$ | \cdot |
| \3 | $\begin{array}{ccccc} & 694, 697, 710, 718, 721 \\ \text{\ \ bibname} & & $ | \cdot |

| \ClassError 38,189 | \f 767 | \if@openright 171,302 |
|---|--|---|
| \cleardoublepage | \fancyfoot 143, 148, 150 | \if@twocolumn 154 |
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