# The nputhesis class\*

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# 第1节 简介

# 第2节 使用方法

# 2.1 加载文类

加载 nputhesis 文档类

\documentclass[twoside, UTF8, phd, AutoFakeBold]{nputhesis}

 $<sup>^{\</sup>ast} This \ document \ corresponds \ to \ nputhesis \ v1.0.0, \ dated \ 2020/06/16.$ 

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这里使用 AutoFakeBold 为外封面的字体加黑. 在 TeXLive 2019 之前的版本中, 启用该选项将导致 =xelatex= 编译生成的 =pdf= 文件内容复制时显示为乱码, 进而导致查重报告显示为乱码. 解决方法有以下三种:

- 1. 升级 TeXLive 到 2019 版.
- 2. 使用 Adobe 字体. 首先自行下载安装 Adobe 字体, 然后在 tex 源文件导言区重新定义相关字体.

```
\documentclass[twoside, UTF8, phd, dbr, AutoFakeBold]{nputhesis}
% 导言区
\renewcommand{\songti}{\CJKfontspec{Adobe Song Std L}} % adobe 宋体
\renewcommand{\kaishu}{\CJKfontspec{Adobe Kaiti Std R}} % adobe 楷体
\renewcommand{\heiti}{\CJKfontspec{Adobe Heiti Std R}} % adobe 黑体
\renewcommand{\fangsong}{\CJKfontspec{Adobe Fangsong Std R}} % adobe 仿宋
% other command
\begin{document}
正文
\end{document}
```

3. 去掉 AutoFakeBold 选项. 这样会导致外封面字体不能加黑.

若需生成盲评版本,添加选项 dbr 即可,如

```
\documentclass[twoside, UTF8, phd, dbr, AutoFakeBold]{nputhesis}
```

关于 \dbr 命令的使用请参考 2.4 节, 2.9 节以及 4.3 节.

# 2.2 加载常用宏包

```
\usepackage{lipsum}
```

# 2.3 参考文献

推荐使用 biblatex 处理参考文献. 参考文献格式使用 gb7714-2015, 其详细信息请参考 https://github.com/hushidong/biblatex-gb7714-2015. 宏包 biblatex-gb7714-2015 已包含在 TeXLive 和 MikTeX 中. 使用如下命令载入 biblatex 宏包即可.

上面的选项 gbnamefmt 需要使用 v1.0k 以上版本的 biblatex-gb7714-2015. 如果宏包版本不能满足,可以注释掉选项 gbnamefmt=givenahead.

然后使用 addbibresource 添加参考文献文件 myrefs.bib.

```
\addbibresource{myrefs.bib}
```

### 2.4 变量设置

设置学校编号,分类号,题目,姓名等信息

```
\schoolno{10699}
\classno{0242}
\secretlevel{公开}
\authorno{0000999999}
\title[\LaTeX\ Template of NPU Thesis]{西工大硕博学位论文 \LaTeX 模板}
\author[\dbr{San Zhang}]{\dbr{张三}}
\major[Philosophy in Mathematics]{数学}
\supervisor[\dbr{Si Li}]{\dbr{李四}}
\applydate[April 2046]{2046~年~4~月}
\support{本文研究得到某某基金(编号:XXXXXXXX)资助。}
```

### 2.5 开始文档

使用 makecover 生成封面:包括外封面和内封面,然后用 frontmatter 分割封面和正文部分.

```
\begin{document}
\makecover
\frontmatter
```

# 2.6 摘要部分

中文摘要

```
\begin{abstract}
本模板基本实现了西北工业大学硕博论文格式要求: 封皮,页眉页脚,章节标题格式,参考文献格式等.
\begin{keywords}
学位论文, \LaTeX\ 模板,西工大
\end{keywords}
\end{abstract}
```

### 英文摘要

```
\begin{Abstract}
We implement the class |nputhesis| for the thesis of NWPU.
\begin{Keywords}
   Thesis Template, \LaTeX, NPU
\end{Keywords}
\end{Abstract}
```

### 2.7 目录和符号表

```
\tableofcontents
\printnomenclature
```

正文中使用 \nomenclature{<sym>}{<text explanation>} 向符号表中添加内容.

# 2.8 正文部分

使用 mainmatter 开始正文.

```
\mainmatter
```

正文结构

表 1 数值误差和收敛险	î
--------------	---

$\overline{}$	L <sup>2</sup> 误差	收敛阶
4	8.1060e-03	0.00
8	2.0489e-03	1.98
16	5.3476e-04	1.94
32	1.5625e-04	1.77

```
\chapter{绪论}
\section{\TeX 和 \LaTeX 介绍}
\section{nputhesis 简介}
\chapter{基础知识}
\section{基本命令}
\section{宏包}
```

### 2.8.1 图与表

表格可以使用 nputabu 环境. 列模式除了常规的 c, r 和 1 外, 还可以使用 'nputhesis.cls' 中定义的列模式 C, R 和 L, 它们表示等列宽模式下的居中, 居右和居左.

如下代码生成的表格见表 1.

```
\begin{table}
 \caption{数值误差和收敛阶}
 \begin{nputabu}{CCC}
   \toprule
   $N$ & $L^2$ 误差 & 收敛阶 \\
   \midrule
   4 & 8.1060e-03 & 0.00
                                \\
      & 2.0489e-03 & 1.98
& 5.3476e-04 & 1.94
   8
                                //
   16
                                 //
       & 1.5625e-04
                      & 1.77
   \bottomrule
 \end{nputabu}
\end{table}
```

# 2.9 参考文献, 附录等

```
\backmatter
% 以下两种参考文献格式,根据实际宏包使用情况添加
\printbibliography % biblatex 输出参考文件方式
% \bibliographystyle{gbt7714-2005} % 传统输出参考文献方式
                            % 传统输出参考文献方式
% \bibliography{ref}
%\Appendix %如果有多个附录,可重复使用该命令,自动按字母编号.
\Thanks
         % 致谢
\Work
\papersection % 以下填写发表论文情况
\begin{npulist}
 \item {\bf \dbr{S. Zhang}}, \dbr{S. Li}. NPU 硕博学位论文
   \LaTeX\ 模板[D]. 2019.
\end{npulist}
\researchsection % 以下填写参加科研情况
\begin{npulist}
```

```
\item NPU \LaTeX 模板. 编号: 000000000, 参与.\item NPU \LaTeX 模板. 编号: 000000001, 参与.\item NPU \LaTeX 模板. 编号: 000000002, 参与.\end{npulist}
```

### 2.10 结束文档

```
\statement
\end{document}
```

### 2.11 完整的例子

```
1 (*sample)
2 \documentclass[twoside, UTF8, phd, AutoFakeBold]{nputhesis}
3 \usepackage{lipsum}
 4 \usepackage{hyperref} % 可以保证生成的 pdf 显示逻辑页码
5 \usepackage{filecontents}
6 \usepackage[backend=biber,
             style=gb7714-2015, maxbibnames=3,minbibnames=3,
             gbnamefmt=givenahead,
8
             doi=false,
             url=false,
            ]{biblatex}
12 \begin{filecontents}{myrefs.bib}
13 @Book{Knuth1986,
14 Title
                           = \{The \setminus TeX book\},\
15 Author
                          = {Donald~Ervin Knuth},
16 Publisher
                           = {Addison-Wesley},
17 Year
                           = {1986}
18 }
19
20 @Book{Lamport1994,
                           = {A Document Preparation System},
21 Title
   Author
                           = {Leslie Lamport},
   Publisher
                           = {Addison-Wesley},
                           = {1994}
24
   Year
25 }
27 @Book{Liu2013,
                           = \{ \Delta X \lambda \}
28 Title
29 Author
                          = {刘海洋},
                           = {电子工业出版社},
30 Publisher
                           = {2013}
31 Year
32 }
33 \end{filecontents}
34 \addbibresource{myrefs.bib}
35 \schoolno{10699}
36 \classno{0242}
37 \secretlevel{公开}
38 \authorno{0000999999}
39 \title[\LaTeX\ Template of NPU Thesis]{西工大硕博学位论文 \LaTeX 模板}
40 \author[\dbr{San Zhang}]{\dbr{张三}}
41 \major[Philosophy in Mathematics]{数学}
42 \supervisor[\dbr{Si Li}]{\dbr{李四}}
43 \applydate[April 2046] {2046~年~4~月}
44\support{本文研究得到某某基金(编号:XXXXXXX)资助。}
45 \begin{document}
46 \makecover
47 \frontmatter
49 \begin{abstract}
50 本模板基本实现了西北工业大学硕博论文格式要求: 封皮, 页眉页脚,
51 章节标题格式,参考文献格式等.
52 \begin{keywords}
```

6

```
学位论文, \LaTeX\ 模板, 西工大
   \end{keywords}
55 \end{abstract}
56 \begin{Abstract}
57 We implement the class |nputhesis| for the thesis of NWPU.
   \begin{Keywords}
     Thesis Template, \LaTeX, NPU
   \end{Keywords}
61 \end{Abstract}
63 \tableofcontents
64 \printnomenclature
65
66 \mainmatter
68 \chapter{绪论}
69 \section{\TeX 和 \LaTeX 介绍}
70 \TeX \parencite{Knuth1986} 和 \LaTeX \cite{Lamport1994, Liu2013}的介绍.
71 \section{nputhesis 简介}
72 \chapter{基础知识}
73 \section{基本命令}
74\section{宏包}
76\section{图表}
77 \begin{table}
    \caption{数值误差和收敛阶}
79 \begin{nputabu}{CCC}
     \toprule
                         & 收敛阶 \\
     $N$ & $L^2$ 误差
81
     \midrule
82
     4 & 8.1060e-03 & 0.00 \\
83
     8 & 2.0489e-03 & 1.98
                                     \\
84
   16 & 5.3476e-04 & 1.94
                                     //
85
    32 & 1.5625e-04 & 1.77
                                     \\
     \bottomrule
88 \end{nputabu}
89 \end{table}
90 \backmatter
                            % biblatex 输出参考文件方式
92 \printbibliography
94 \Appendix % 编号附录
96 \Appendix* % 不编号附录
98 \Thanks
            %致谢
100 \Work
101 \papersection % 以下填写发表论文情况
103 \begin{npulist}
104 \item {\bf \dbr{S. Zhang}}, \dbr{S. Li}. NPU 硕博学位论文
     \LaTeX\ 模板[D]. 2019.
106 \end{npulist}
108 \researchsection % 以下填写参加科研情况
109 \begin{npulist}
110 \item NPU \LaTeX 模板. 编号: 000000000, 参与.
111 \end{npulist}
112 \statement
113 \end{document}
114 (/sample)
```

第3节 安装 7

# 第3节 安装

从 github 下载的压缩包已所有文件, 直接解压即可使用. 下面介绍从 dtx 文件生成相关文件的过程.

# 3.1 编译 nputhesis.dtx

运行如下命令即可得到所有文件

```
xelatex nputhesis.dtx
```

但是这样生成文档 nputhesis.pdf 中没有索引等信息,因此需要进行多次编译.下面给出生成 pdf 文件的两种方式.

### 3.1.1 方法一

进入 nputhesis.dtx 所在文件夹, 依次运行下面命令.

```
xelatex nputhesis.dtx
makeindex -s gglo.ist -o nputhesis.gls nputhesis.glo
makeindex -s gind.ist -o nputhesis.ind nputhesis.idx
xelatex nputhesis.dtx
xelatex nputhesis.dtx
del nputhesis.gls nputhesis.glo nputhesis.ind nputhesis.idx
del nputhesis.ilg nputhesis.aux nputhesis.log nputhesis.toc
del nputhesis.hd nputhesis.out
```

### 3.1.2 方法二

使用 latexmk 进行编译. 首先, 进入 nputhesis.dtx 所在文件夹, 创建文件 dtxrc 内容如下:

```
@cus_dep_list = (@cus_dep_list, "glo gls 0 makegls");
sub makegls {
   system("makeindex -s gglo.ist -o $_[0].gls $_[0].glo"); }
$makeindex="makeindex -s gind.ist -o %D %S";
push @generated_exts, 'idx', 'ind', 'glo', 'gls', 'hd';
```

然后在该文件夹运行如下命令即可生成所需文件.

```
latexmk -xelatex nputhesis.dtx -r dtxrc latexmk -c nputhesis.dtx -r dtxrc
```

#### 3.1.3 方法三

在 Windows 环境下直接运行 build.bat 即可.

# 第4节 代码实现

### 4.1 文档选项

使用布尔变量实现文档的选项设置

第4节 代码实现

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```
119 \def\set@npu@phd{\@npu@phdtrue}
120 \def\set@npu@ma{\@npu@phdfalse}
使用 xkeyval 声明文档选项
121 \RequirePackage{xkeyval}
声明选项 blankinfo, 用于控制是否现实空白页标识信息.
122 \DeclareOptionX{blankinfo}[false]{\csname @npu@blankinfo#1\endcsname}
声明选项 thesistype, 可选参数为 phd 和 ma, 用于选择文档类型: 博士论文还是硕士论文.
123 \DeclareOptionX{thesistype}[phd]{\csname set@npu@#1\endcsname}
声明选项 phd 和 ma, 要废齐的选项, 被 thesistype 代替, 请使用 thesistype.
124 \DeclareOptionX{phd}{\@npu@phdtrue}
125 \DeclareOptionX{ma}{\@npu@phdfalse}
声明选项 dbr, 用于生成盲评版本, 参考 \dbr.
126 \DeclareOptionX{dbr}[true]{\csname @npu@dbr#1\endcsname}
该文类基于 book 类实现, 加载 book 文类.
127 \DeclareOptionX*{\PassOptionsToClass{\CurrentOption}{ctexbook}}
128 \ExecuteOptionsX{thesistype=phd}
129 \ExecuteOptionsX{dbr=false}
130 \ProcessOptionsX \relax
131 \LoadClass[heading=true,zihao=-4]{ctexbook}
```

## 4.2 使用的宏包

加载需要的宏包

```
132 \RequirePackage{geometry}
133 \RequirePackage{xcolor}
134 \RequirePackage{fancyhdr}
135 \RequirePackage{titletoc}
136 \RequirePackage{caption}
137 \RequirePackage{ulem}
138 \RequirePackage{amsthm}
139 \RequirePackage{amsmath}
140 \RequirePackage{amsfonts}
141 \RequirePackage{setspace}
142 \RequirePackage{longtable}
143 \RequirePackage{booktabs}
144 \RequirePackage{tabularx}
145 \RequirePackage{multirow}
146 \RequirePackage{graphicx}
147 % \RequirePackage[heading=true,zihao=-4]{ctex}
148 \RequirePackage{ifxetex}
149 \ifxetex
150 \setmainfont{Times New Roman}
151 \fi
```

# 4.3 盲评命令

当 dbr 选项开启,即 dbr=true 时在文件中 \dbr 命令以隐藏作者相关信息,使用命令 \dbr{张三} 将会使用黑框代替'张三'的显示.

```
152 \newcommand\@npu@replace[1]{{%
153   \setlength{\fboxsep}{0pt}%
154   \colorbox{black}{\phantom{#1}}}}
155 \newcommand{\dbr}[1]{\if@npu@dbr \@npu@replace{#1}\relax\else #1\fi}
```

第4节 代码实现

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#### 设置页面版式格式 4.4

```
156 \geometry{paperwidth=210mm,paperheight=297mm,%
    left=2.5cm,right=2.5cm,top=2.54cm,bottom=2.54cm}
158 \topmargin=-10.4mm
159 \headheight=17pt
160 \footskip=8mm
161 \headsep=5mm
页眉设置
162 \pagestyle{fancy}
163 % \renewcommand\chaptermark[1] {\markboth{%
     \if@mainmatter%
        %\ifnum\arabic{chapter}>0%
166 %
          \arabic{chapter}\quad%
167 %
        %\fi%
168 %
      \fi#1}{}}
169 \fancyhf{}
170 \fancyhead[EC] {\songti\zihao{-5}\npu@rightmark}
171 \fancyhead[OC]{\songti\zihao{-5}\leftmark}
172 \fancyfoot[C] {\songti\zihao{5}\thepage}
173 \renewcommand{\headrule}{%
    \hrule width\headwidth height2.8pt \vspace{1pt}%
    \hrule width\headwidth height0.8pt}
176 \fancypagestyle{plain}{\thispagestyle{fancy}}
177 \newcommand{\clearpagestyle}{\clearpage{\pagestyle{empty}\cleardoublepage}}
     设置默认章节标题格式
178 \ifx\ctexset\undefined
    \CTEXsetup[ % name={,}, number={\arabic{chapter}},% use default value
      beforeskip={0pt}, afterskip={20pt}]{chapter}
180
```

```
\CTEXsetup[nameformat={\heiti\zihao{3}\bf}]{chapter}
181
    \CTEXsetup[titleformat={\heiti\zihao{3}}]{chapter}
    \CTEXsetup[format={\heiti\zihao{4}}]{section}
184
    \CTEXsetup[format={\heiti\zihao{-4}}]{subsection}
185 \else
    \ctexset{
186
      contentsname = {\npu@contents}
187
188
    % title format of chapter
190
    \ctexset{
      % chapter/name={,},
                                           % use default value in ctex
191
      % chapter/number=\arabic{chapter}, % use default value in ctex
192
      chapter/beforeskip={0pt},
193
      chapter/afterskip={20pt},
      chapter/format={\heiti\zihao{3}\centering}
    }
196
    % title format of section
197
    \ctexset{
198
      section/name={,},
199
      % section/beforeskip={2ex plus .5ex minus .1ex},
      % section/afterskip={1ex plus .1ex},
      section/format={\heiti\zihao{4}}
202
203
    % title format of subsection
204
    \ctexset{
205
      subsection/name={,},
206
      % subsection/beforeskip={2ex plus .5ex minus .1ex},
207
      % subsection/afterskip={1ex plus .1ex},
      subsection/format={\hat{-4}}
209
    }
210
    \ctexset{
211
      subsubsection/name={,},
212
      % subsubsection/beforeskip={1ex plus .3ex minus .1ex},
213
      % subsubsection/afterskip={.5ex plus .1ex},
      subsubsection/format={\heiti\zihao{-4}}
    }
216
```

```
\ctexset{
      paragraph/name={,},
219
       % paragraph/beforeskip={1ex plus .3ex minus .1ex},
220
      % paragraph/afterskip={.5ex plus .1ex},
      paragraph/format={\heiti\zihao{-4}}
221
222
     \ctexset{
223
       subparagraph/name={,},
224
       % subparagraph/beforeskip={1ex plus .3ex minus .1ex},
225
       % subparagraph/afterskip={.5ex plus .1ex},
226
       \verb|subparagraph/format={\hat{-4}}|
227
228
229 \fi
```

# 4.6 目录字体设置

### 4.7 变量设置

定义变量,用于存储包括论文题目,作者,导师等信息.

```
240 \def\title{\@ifnextchar[\@@title{\@@title[]}}
241 \def\author{\@ifnextchar[\@@author{\@@author[]}}
242 \def\major{\@ifnextchar[\@@major{\@@major[]}}
243 \def\supervisor{\@ifnextchar[\@@supervisor{\@@supervisor[]}}
244 \def\applydate{\@ifnextchar[\@@applydate{\@@applydate[]}}
\label{lem:condition} $$245 \det \mathbb{H}_{2}\left(\frac{1}{2}\right)^{245} \left(\frac{1}{2}\right)^{245} \det \mathbb{H}_{2}^{245} \right) $$
\label{lem:condition} $$246 \def\@author(\#1)\#2{\left(\def\@author(\#1)\def\@author(\#2)\right)}$
\label{lem:condition} $$248 \end{condition} $$ \end{condition} $$248 \end{condition} $
250 \def\@title{}\def\@title@en{}
251 \def\@author{}\def\@author@en{}
252 \def\@major{}\def\@major@en{}
253 \def\@supervisor{}\def\@supervisor@en{}
254 \def\@applydate{}\def\@applydate@en{}
255 \def\npu@empty{}
256 \def\schoolno#1{\def\@schoolno{#1}}\def\@schoolno{}
257 \end{flassno} $1{\end{def}\end{def} \end{def} $$ 257 \end{def} $$ \end{def} $$ 257 \end{def} $$ \end{de
{\tt 258 \ def\ ecretlevel \#1} \ def\ @secretlevel \#1}
259 \def\authorno#1{\def\@authorno{#1}}\def\@authorno{}
260 \def\support#1{\def\@support{#1}}\def\@support{}
261 \if@npu@phd
                            \def\npu@degreename@en{Doctor}
263 \else
                              \def\npu@degreename@en{Master}
265 \fi
```

### 4.8 设置字体和行距

```
266 % \renewcommand{\normalsize}{\zihao{-4}}
267 \linespread{1.25}
```

#### 4.9 封面

重新定义 titlepage 环境, 取消页码计数器的更改.

```
268 \renewenvironment{titlepage}
```

```
\cleardoublepage
         \if@twocolumn
271
272
           \@restonecoltrue\onecolumn
         \else
           \@restonecolfalse\newpage
274
         \fi
275
         \thispagestyle{empty}%
276
         % \setcounter{page}\z@
277
       ٦%
278
       {\if@restonecol\twocolumn \else \newpage \fi
279
280
定义外封面
281 \def\makeoutercover{
     \begin{titlepage}
282
       \bfseries
283
284
       \linespread{1.25}
       \begin{center}
285
         \hfill% default \bf font
         \heiti\zihao{5}
287
         \newlength{\max@length}
288
         \settowidth{\max@length}{\npu@schoolno\npu@comma 2000000000}
289
         \newlength{\name@length}
290
         \settowidth{\name@length}{\npu@schoolno}
291
         \begin{minipage}{\max@length}
292
           \vskip.5cm
           \renewcommand\arraystretch{1.2}
294
           \begin{tabular}{|c|c|}\hline
295
           \makebox[\name@length][s]{\npu@schoolno}
                                                          & \@schoolno
                                                                            \\ \hline
296
           \makebox[\name@length][s]{\npu@classno}
                                                          & \@classno
                                                                            \\ \hline
297
           \makebox[\name@length][s]{\npu@secretlevel}& \@secretlevel \\ \hline
298
           \makebox[\name@length][s]{\npu@authorno}
                                                          & \@authorno
                                                                           \\ \hline
           \end{tabular}
300
301
         \end{minipage}
         \par\vspace{9cm}
302
         \songti\zihao{2}
303
         \begin{minipage}[t]{2cm}
304
           \hfill\npu@title\\
         \end{minipage}
         %\hbox to 2.5cm{\hfill \npu@title}
         \start
           \begin{minipage}[t]{12cm}
309
              \begin{center}
310
                \heiti\@title
311
              \end{center}
           \end{minipage} }
         \verb|\setbox124=\hbox{|}|
314
           315
              \begin{center}
316
                \left\langle \left\langle \right\rangle \right\rangle 
317
                \left\langle \frac{\pi}{\eta}\right\rangle
318
              \end{center}
           \end{minipage} }
320
         \hskip-0.5cm
321
         \verb|\copy123\kern-\wd123\box124| \\
322
         \zihao{3}
323
         \par\vspace{2.5\baselineskip}
324
         \begin{minipage}{5cm}
           {\kaishu\npu@author} \uline{\hfill\@author\hfill}
326
327
         \end{minipage}
         \par\vspace{2.5\baselineskip}
328
         \settowidth{\name@length}{\npu@applydate}
329
         \begin{minipage}{12.5cm}
330
           \noindent
331
           \makebox[\name@length][s]{\npu@major}%
              {\uline{\hfill{\@major}\hfill}}
```

```
\vspace{0.5\baselineskip}
           \mbox[\name@length][s]{\npu@supervisor}%
             {\uline{\hfill\@supervisor\hfill}} \par
337
           \vspace{0.5\baselineskip}
           \makebox[\name@length][s]{\npu@applydate}%
338
             {\uline{\hfill\@applydate\hfill}}
339
         \end{minipage}
340
         \vspace{2\baselineskip}
341
342
       \end{center}
343
     \end{titlepage}
     \clearpagestyle
344
345 }
定义内封面
346 \def\makeinnercover@zh{%
    \begin{titlepage}
347
       \linespread{1.25}
348
349
       \vspace*{2cm}
350
       \begin{center}
         \settowidth{\name@length}{\zihao{3}\npu@schoolname}
         \divide\name@length by 12
352
         \multiply\name@length by 17
353
         354
         \vskip5mm
355
         \settowidth{\name@length}{\zihao{1}\npu@degree}
356
         \divide\name@length by 12
         <text> \multiply\name@length by 17
         \makebox[\name@length][s]{\zihao{1}\npu@degree}
         \vskip5mm
360
         \centerline{\zihao{4}\npu@degreeclass}
361
         \vskip5cm
362
363
         \zihao{2}
         \begin{minipage}[t]{2.5cm}
           \hfil\npu@title\npu@comma
365
366
         \end{minipage}
         \star{123=\hbox{}}
367
           \begin{minipage}[t]{11cm}
368
             \begin{center}
369
               \@title
             \end{center}
           \end{minipage}}
         \start
373
           \begin{minipage}[t]{11cm}
374
             \begin{center}
375
               \left\langle \frac{\pi}{\eta}\right\rangle
376
               \left\langle \left\langle \right\rangle \right\rangle 
             \end{center}
           \end{minipage}}
379
         \hskip-1cm
380
         \copy123\kern-\wd123\box124
381
         \par\vspace{4cm}
382
383
         \zihao{3}
         \settowidth{\name@length}{\npu@major}
         \begin{minipage}{8cm}
385
           \noindent
           \makebox[\name@length][s]{\npu@author}\npu@comma%
387
             \uline{\hfill\@author\hfill}
                                                \par
388
           \vspace{0.25\baselineskip}
389
           \makebox[\name@length][s]{\npu@major}\npu@comma%
             \uline{\hfill\@major\hfill}
392
           \vspace{0.25\baselineskip}
           \makebox[\name@length][s]{\npu@supervisor}\npu@comma%
393
             \uline{\hfill\@supervisor\hfill}\par
394
           \vspace{1\baselineskip}
395
         \end{minipage}
         \vspace{2\baselineskip}
         \par\makebox[30mm]{\@applydate}\hfill
```

```
\end{center}
    \end{titlepage}
401
    \clearpagestyle
402 }
定义英文封面
403 \def\makeinnercover@en{%
    \begin{titlepage}
      \linespread{1.25}
405
      \vspace*{1.5cm}
406
       \zihao{3}
407
      \begin{center}
408
        {\bf
          %\Large
411
          \@title@en \\
          \vspace{3\baselineskip}
412
          \zihao{-3}
413
414
          By\\
          \ifx\@author@en\npu@empty\quad\else\@author@en\fi\\
415
          \vspace{1\baselineskip}
          Under the Supervision of Professor\\
           \ifx\@supervisor@en\npu@empty\quad\else\@supervisor@en\fi\\}
418
        \Large
419
        \vspace{4\baselineskip}
420
        A Dissertation Submitted to\\
421
        Northwestern Polytechnical University\\
        \vspace{1\baselineskip}
        In Partial Fulfillment of the Requirement\\
424
        for the Degree of \\
425
        \npu@degreename@en\ of \@major@en\\
426
        \vspace{4\baselineskip}
427
        Xi'an, P. R. China\\
428
        \@applydate@en
429
430
      \end{center}
431
    \end{titlepage}
432
    \clearpagestyle
433 }
整合以上封面为一个命令 makecover
434 \% \land 10.0}{2020/06/12}{Change the logical page number in pdf to avoid the repeation of the
435 \def\makecover{%
436
    \pagenumbering{Alph}%
    \makeoutercover%
437
    \setcounter{page}\@ne
    \pagenumbering{roman}%
    \makeinnercover@zh%
    \makeinnercover@en%
441
442 }
正文之前使用罗马数字编号
443 \let\npu@frontmatter\frontmatter
444 \def\frontmatter{\npu@frontmatter\pagenumbering{Roman}}
       选项 blankinfo 的实现
```

重定义 cleardoublepage, 用于实现 blankinfo 选项的功能.

```
445 \def\cleardoublepage{\clearpage\if@twoside \ifodd\c@page\else
    \hbox{}
446
     \vspace*{\fill}
447
     \begin{center}\Large
       \if@npu@blankinfo
         \textcolor{gray!60}{This Page Intentionally Left Blank!}
       \fi
451
    \end{center}
452
    \vspace{\fill}
453
    \thispagestyle{empty}
454
```

第4节 代码实现 14

```
455 \newpage
456 \if@twocolumn\hbox{}\newpage\fi\fi\fi}
```

### 4.11 摘要环境

```
定义中英文摘要环境
```

# 4.12 图表标题设置

```
467 \DeclareCaptionFont{song}{\songti\zihao{5}}
468 \captionsetup{labelsep=quad, font=song}
469 \captionsetup[figure]{aboveskip=10pt, belowskip=10pt}
470 \captionsetup[table]{aboveskip=10pt, belowskip=10pt}
471 \renewcommand\thetable{\arabic{chapter}-\arabic{table}}
472 \renewcommand\thefigure{\arabic{chapter}-\arabic{figure}}
473 \renewcommand\theequation{\arabic{chapter}-\arabic{equation}}
```

## 4.13 表格和列表环境

```
474 \let\@ldtabular\tabular
475 \let\end@ldtabular\endtabular
476 \renewenvironment{tabular}{\zihao{5}\@ldtabular}{\end@ldtabular}
477
478 % define nputabu environment which will stretch to textwidth
479 \newcolumntype{L}{>{\raggedright\arraybackslash}X}
480 \newcolumntype{R}{>{\raggedleft\arraybackslash}X}
481 \newcolumntype{C}{>{\centering\arraybackslash}X}
482 % \changes{v1.0.0}{2020/04/21}{Add begingroup and endgroup in env `nputabu''}
483 \newenvironment{nputabu}[1][\zihao{5}]%
484 {\begingroup #1\tabularx{\textwidth}}{\endtabularx\endgroup}
485
486 \newenvironment{npulist}{%
487 \begingroup\renewcommand{\labelenumi}{[\theenumi].}\enumerate}%
488 {\endenumerate\endgroup}
```

### 4.14 特殊章节设置

附录自动以英文字母编号

501 \newcommand\researchsection{\section\*{\npu@work@research}}

### 声明页

```
502 \def\statement{
    \begin{titlepage}
      \linespread{1.5}
504
      \parskip=7pt
505
      \vspace*{0pt}
506
      \songti\zihao{4}
      \centerline{\bf \npu@schoolname}
      \centerline{\bf \npu@p@statement}
510
      \songti\zihao{5}
      \npu@longp@statement\par
511
      512
      \npu@s@signature\npu@comma\underline{\qquad\qquad\qquad} \par
513
      \hskip 3cm \npu@ymd \hfill\hskip 3cm \npu@ymd
514
      \vspace*{30pt}
515
      \hbox to \hsize{\leaders\hbox to 1em{\hss--\hss}\hfill}
516
517
      \vspace*{50pt}
518
      \songti\zihao{4}
519
      \centerline{\bf \npu@schoolname}
520
      \centerline{\bf \npu@c@statement}
521
      \songti\zihao{5}
      \npu@longc@statement\par
523
      \hskip5.5cm
524
      \hfill\npu@a@signature\npu@comma\underline{\qquad\qquad\qquad}\par
525
      \hfill\hskip8.5cm \npu@ymd
526
    \end{titlepage}}
```

## 4.15 默认定理环境

### 定义定理环境

```
528 % ref amsthdoc.pdf
529 \newtheoremstyle{nputheorem}% name
    {Opt}% Space above
530
    {Opt}% Space below
531
    {\itshape}% Body font
532
    {}% Indent amount
    {\bfseries}% Theorem head font
    {}% Punctuation after theorem head
    {.5em}% Space after theorem head
536
    {}% Theorem head spec (can be left empty, meaning 'normal' )
537
538
539 \newtheoremstyle{npuplain}% name
    {Opt}% Space above
    {Opt}% Space below
    {}% Body font
    {}% Indent amount
    {\bfseries}% Theorem head font
544
    {}% Punctuation after theorem head
545
    {.5em}% Space after theorem head
546
    {}% Theorem head spec (can be left empty, meaning 'normal' )
549 \theoremstyle{npuplain} % set default style to npuplain
```

### 4.16 定义符号表

```
550 \RequirePackage{nomencl}  % add symbol notation
551 \RequirePackage{multicol}  % for two column notation
552 % \AtEndPreamble{\makenomenclature}
553 \makenomenclature
554 \renewcommand{\nomname}{\npu@nomname}
555
556 % code come from @egreg
557 % https://tex.stackexchange.com/questions/78764/two-column-nomenclature
558 \@ifundefined{chapter}
```

```
{\def\wilh@nomsection{section}}
    {\def\wilh@nomsection{chapter}}
561
562 \def\thenomenclature{%
    % \newlength{\npu@columnsep@save}
563
    % \setlength{\npu@columnsep@save}{\columnsep}
564
    % \setlength{\columnsep}{20pt}
565
    % \begin{multicols}{2}[%
       \csname\wilh@nomsection\endcsname*{\nomname}
567
       \if@intoc\addcontentsline{toc}{\wilh@nomsection}{\nomname}\fi
568
        \nompreamble % \raggedcolumns
569
    % ]
570
    \left\{ \right\} 
571
      \labelsep=15pt
572
      \labelwidth\nom@tempdim
574
      \leftmargin\labelwidth
      \advance\leftmargin\labelsep
575
      \itemsep\nomitemsep
576
577
      \let\makelabel\nomlabel}%
578 }
579 \def\endthenomenclature{%
    \endlist
    % \end{multicols}
    % \setlength{\columnsep}{\npu@columnsep@save}
    \nompostamble}
      配置变量
584 \def\npu@degreename@zh{\if@npu@phd 博士\else 硕士\fi}
585 \def\npu@comma{~:~}
586 \def\npu@schoolno{学校代码}
587 \def\npu@classno{分类号}
588 \def\npu@secretlevel{密级}
589 \def\npu@authorno{学号}
590 \def\npu@title{题目}
591 \def\npu@author{作者}
592 \def\npu@major{学科、专业}
593 \def\npu@supervisor{指导教师}
594 \def\npu@applydate{申请学位日期}
595 \def\npu@schoolname{西北工业大学}
596 \def\npu@degree{\npu@degreename@zh 学位论文}
597 \def\npu@degreeclass{(学位研究生)}
598 \def\npu@rightmark{西北工业大学\npu@degreename@zh 学位论文}
599 \def\npu@Abstract{Abstract}
600 \def\npu@abstract{摘\quad 要}
601 \def\npu@Keywords{Key words}
602 \def\npu@keywords{关键词}
603 \def\npu@contents{目\quad 录}
604 \def\npu@nomname{符号表}
605 \def\npu@appendix{附\quad 录}
606 \def\npu@thanks{致\quad 谢}
607 \def\npu@work{攻读\npu@degreename@zh 学位期间发表的学术论文和参加科研情况}
608 \def\npu@work@paper{发表学术论文}
609 \def\npu@work@research{参加科研情况}
610 \def\npu@p@statement{学位论文知识产权声明书}
611 \def\npu@c@statement{学位论文原创性声明}
612 \def\npu@ymd{年\qquad 月\qquad 日}
613 \def\npu@a@signature{学位论文作者签名}
614 \def\npu@s@signature{指导教师签名}
615 \long\def\npu@longp@statement{%
616 本人完全了解学校有关保护知识产权的规定,即:研究生在校攻读学位期间论文工作的
617 知识产权单位属于西北工业大学。学校有权保留并向国家有关部门或机构送交论文的复
618 印件和电子版。本人允许论文被查阅和借阅。学校可以将本学位论文的全部或部分内容
619 编入有关数据库进行检索,可以采用影印、缩印或扫描等复制手段保存和汇编本学位论
620 文。同时本人保证,毕业后结合学位论文研究课题再撰写的文章一律注明作者单位为西
621 北工业大学。
622 \par 保密论文待解密后适用本声明。}
623 \long\def\npu@longc@statement{%
```

624 秉承学校严谨的学风和优良的科学道德,本人郑重声明: 所呈交的学位论文,是本人在 625 导师的指导下进行研究工作所取得的成果。尽我所知,除文中已经注明引用的内容和致 626 谢的地方外,本论文不包含任何其他个人或集体已经公开发表或撰写过的研究成果,不 627 包含本人或其他已申请学位或其他用途使用过的成果。对本文的研究做出重要贡献的个 628 人和集体,均已在文中以明确方式表明。

- 629 \par 本人学位论文与资料若有不实,愿意承担一切相关的法律责任。}
- 630 (/class)

版本历史 18

# 版本历史

<b>v0.6.1</b> (2019/12/28)	load this document class to make the font in the cover
General: Add 'nputabu' environment	page as bold font
Add theorem style 'npuplain', and set it to default 1	<b>v1.0.0</b> (2020/02/18 – 2020/04/21)
Delete option workbib 1	General: Add comments on the option "AutoFakeBold"
Modify font size in tabular environment to 'zihao5' $\dots$ 1	in the documents
Replace nputhesis.bst by gbt7714-2005.bst	Add option 'dbr' for double-blind review
<b>v0.6.2</b> (2020/01/10)	Fix bug of command "Appendix" 14
General: Adjust the skip of the chapter title	Initial version use dtx
Make the line under the title longer	Revise the README file
Remark: "AutoFakeBold" option can be used when	

# 代码索引

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。

Symbols	\captionsetup
\\ . 81, 83, 84, 85, 86, 296, 297, 298, 299, 305, 317, 318, 376,	centering
377, 411, 414, 415, 417, 418, 421, 422, 424, 425, 426, 428	\centerline
0,7, 111, 111, 110, 117, 110, 121, 122, 121, 120, 120	\changes
	\chapter 68, 72, 458, 464, 489, 491, 494, 496, 498, 499
\	\chapter \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
	\cite
A	\classno
\addbibresource 34	\cleardoublepage
\addcontentsline 458, 464, 568	\clearpage
\addtocounter 495	\clearpage \tag{clearpage} \ta
\advance 575	\colorbox
\Alph 496	\columnsep
\Appendix 94, 96, 497	\contentspage
\applydate 43,244	\copy
\arabic 165, 166, 179, 192, 471, 472, 473	\csname
\arraybackslash 479, 480, 481	\text{ctexset} \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qqqqq \qqqqqqqqqqqqqqqqqqqqqqqqqqqqq
\arraystretch	\(CTEXsetup\)
\AtEndPreamble	\CurrentOption
\author	(Currentoption
\authorno	D
В	\dbr
\backmatter 90	\DeclareCaptionFont 467
\baselineskip 324, 328, 334, 337,	\DeclareOptionX 122, 123, 124, 125, 126, 127
341, 389, 392, 395, 397, 412, 416, 420, 423, 427, 460, 466	\def 119, 120, 230, 240, 241, 242, 243, 244, 245,
\begin 12, 45, 49, 52, 56, 58, 77, 79, 103, 109, 282,	246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256,
285, 292, 295, 304, 309, 310, 315, 316, 325, 330, 347,	257, 258, 259, 260, 262, 264, 281, 346, 403, 435, 444,
350, 364, 368, 369, 374, 375, 385, 404, 408, 448, 503, 566	445, 490, 491, 494, 495, 497, 498, 502, 559, 560, 562,
\begingroup	579, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593,
\bf	594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604,
\bfseries 283,534,544	605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 623
\bottomrule 87	\divide 352, 357
\box	\documentclass2
С	E
\caption	\else 155, 185, 263, 273, 279, 415, 418, 445, 584

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\end 33, 54, 55, 60, 61, 88, 89, 106, 111, 113, 300,	L
301, 306, 312, 313, 319, 320, 327, 340, 342, 343, 366,	\labelenumi
371, 372, 378, 379, 396, 399, 400, 430, 431, 452, 527, 581	\labelsep 572,575
\endcsname 122, 123, 126, 567	\labelwidth 573,574
\endenumerate 488	\Large 410, 419, 448
\endgroup 484, 488	\LaTeX
\endlist 580	\leaders 516
\endtabular 475	\leftmargin 574, 575
\endtabularx 484	\leftmark 171
\endthenomenclature 579	\let
\enumerate 487	\linespread 267, 284, 348, 405, 504
\ExecuteOptionsX	\list
F	\LoadClass
\fancyfoot 172	\long
\fancyhead	M
\fancyhf	\mainmatter 66
\fancypagestyle	\major
\fboxsep	\makebox
\fi	297, 298, 299, 332, 335, 338, 354, 359, 387, 390, 393, 398
167, 168, 229, 265, 275, 279, 415, 418, 451, 456, 568, 584	\makecover 46, 435
\fill 447, 453	\makelabel 577
\footskip 160	\makenomenclature 552, 553
\frontmatter 47,443,444	\makeoutercover
	\markboth 163
G	\midrule 82
\geometry 156	\multiply
Н	N
\hbox 307, 308, 314, 367, 373, 446, 456, 516	\newcolumntype
\headheight 159	\newcommand 152, 155, 177, 499, 500, 501
\headrule 173	\newcounter 492
\headsep 161	\newif 116, 117, 118
\headwidth 174,175	\newlength 288, 290, 563
\heiti 181, 182, 183, 184, 195, 202, 209, 215, 221, 227, 287, 311	\newpage 274, 279, 455, 456
\hfil 365	\newtheoremstyle 529,539
\hfill 286, 305, 307, 317, 318, 326, 333, 336,	\noindent 331,386
339, 376, 377, 388, 391, 394, 398, 512, 514, 516, 525, 526	\nomitemsep 576
\hline	\nomlabel 577
\hrule 174, 175	\nomname 554, 567, 568
\hsize	\nompostamble 583
\hskip	\nompreamble 569
\hspace	\normalsize 266
\hss	0
I	\onecolumn 272
\ifnum	
\ifodd 445	P
\ifx 178, 415, 418	\pagenumbering 436, 439, 444
\ifxetex	\pagestyle 162, 177
\item 104,110	\papersection
\itemsep 576	\par
\itshape 532	388, 391, 394, 398, 460, 466, 511, 513, 523, 525, 622, 629
K	\parelin  \text{parelin}
\kaishu	\parskip
\mu_mu_mu_mu	/r σρροβοτοπριοσταρρ

代码索引 20

\printbibliography 92	\@major 247, 252, 333, 39
\printnomenclature 64	\@major@en 247, 252, 420
\ProcessOptionsX	\@ne 436
	\@npu@phdfalse 120,120
Q	\@npu@phdtrue 119,12
\qquad 512, 513, 525, 612	\@npu@replace 152, 150
166,	\@restonecolfalse 274
235, 238, 317, 318, 376, 377, 415, 418, 600, 603, 605, 606	\@restonecoltrue 27
n.	\@schoolno 256, 290
R	\@secretlevel 258,298
\raggedcolumns	\@supervisor 248, 253, 336, 394
\raggedleft	\@supervisor@en 248, 253, 418
\raggedright	\@support
\relax	\@title 245, 250, 311, 370
\renewcommand 163, 173, 266, 294, 471, 472, 473, 487, 554	\@title@en 245, 250, 41
\renewenvironment	\c@page 44
\RequirePackage 121, 132, 133, 134, 135, 136, 137, 138,	\end@ldtabular
139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 550, 551	\if@intoc 560
\researchsection 108,501	\if@mainmatter 16
S	\if@npu@blankinfo
\schoolno	\if@npu@dbr 118, 15
	\if@npu@phd 116, 261, 58
\secdef	\if@restonecol 27
\secretlevel	\if@twocolumn
\section	\if@twoside
\setbox	\makeinnercover@en
\setcounter	\makeinnercover@zh
\setlength	\max@length
\setmainfont	\name@length
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