论文编辑排版工具LaTeX入门

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中国科学技术大学图书馆信息咨询部

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目录

基础知识：TEX

- TEX由著名的计算机科学家Donald E. Knuth在1978年开发.
- TEX支持宏,开发者可将若干底层命令组合为一个新的宏，实现高一级抽象的功能，方便用户使用.
- Plain TEX由Donald E. Knuth本人设计，仅包含了一些很基础的宏来处理简单的排版.
- TEX系统是公认的数学公式排版最好的系统.
- 大部分TEX系统是免费的.

基础知识：LaTeX

- LaTeX是计算机科学家Leslie Lamport于1984年开发的基于TeX的宏集.
- LaTeX扩展了TeX的功能,实现了内容与格式分离, 作者不需要自己设计命令和宏, 可以在短时间内生成高质量的文档.
- 对于生成复杂的数学公式, LaTeX表现的更为出色.
- 1994年LaTeX 2_ε完善之后, 现在已经成为广泛用于数学, 物理, 计算机等领域科技论文排版标准.

基础知识: $\mathcal{A}\mathcal{M}\mathcal{S}$TEX, $\mathcal{A}\mathcal{M}\mathcal{S}$LATEX

- $\mathcal{A}\mathcal{M}\mathcal{S}$TEX是美国数学学会提供的, 在Plain TEX基础上开发的TEX宏集.
- 排版数学公式的功能通过amsmath宏包在 LATEX中实现.
- $\mathcal{A}\mathcal{M}\mathcal{S}$LATEX包括amsmath和amscls.
- amsmath宏包主要用于排版数学符号和公式.
- amscls提供了美国数学学会要求的论文和书籍格式.

基础知识: TEX系统

- **TEX Live**是由 TUG(TEXUserGroup) 发布的, 可以在 UNIX, Linux, MacOS 和 Windows 等不同的操作系统平台下安装使用, 相当稳定可靠, 并且支持中文编辑.

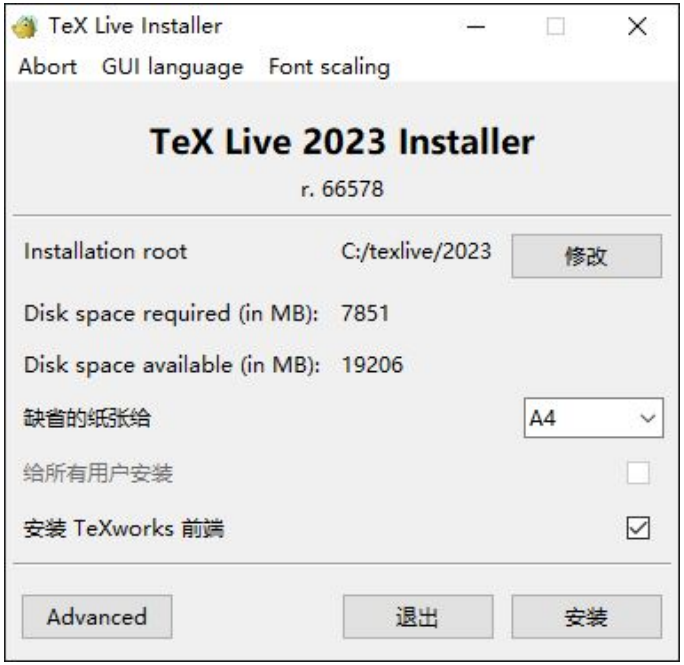
  (https://tug.org/texlive/)

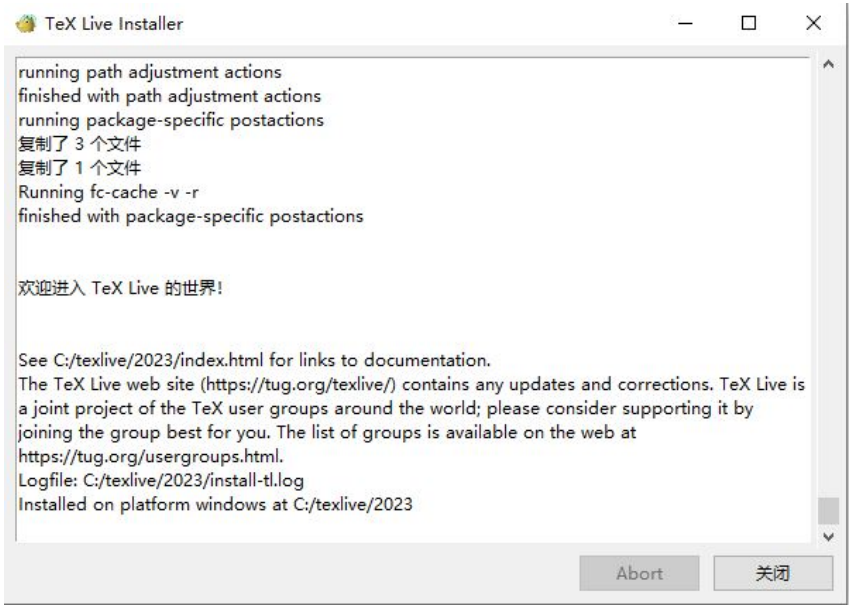
- **MiKTEX**适用于 Windows 操作系统. (https://miktex.org)

- **MacTEX**适用于 Mac OS 操作系统.

  (https://tug.org/mactex/)

TeX Live下载安装

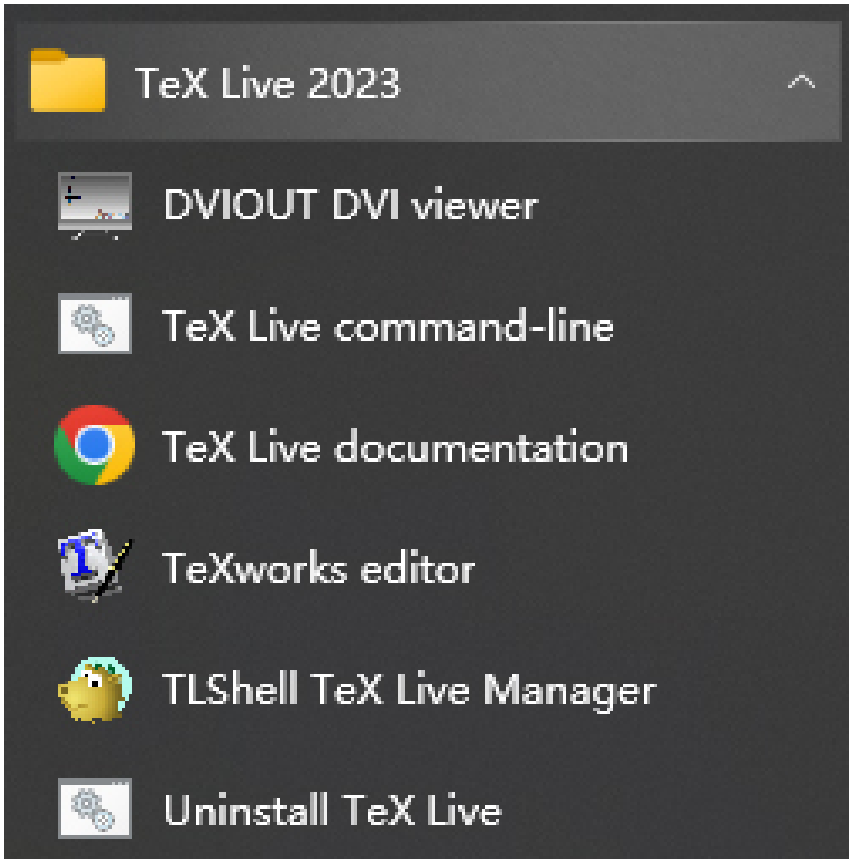




科大镜像下载地址:

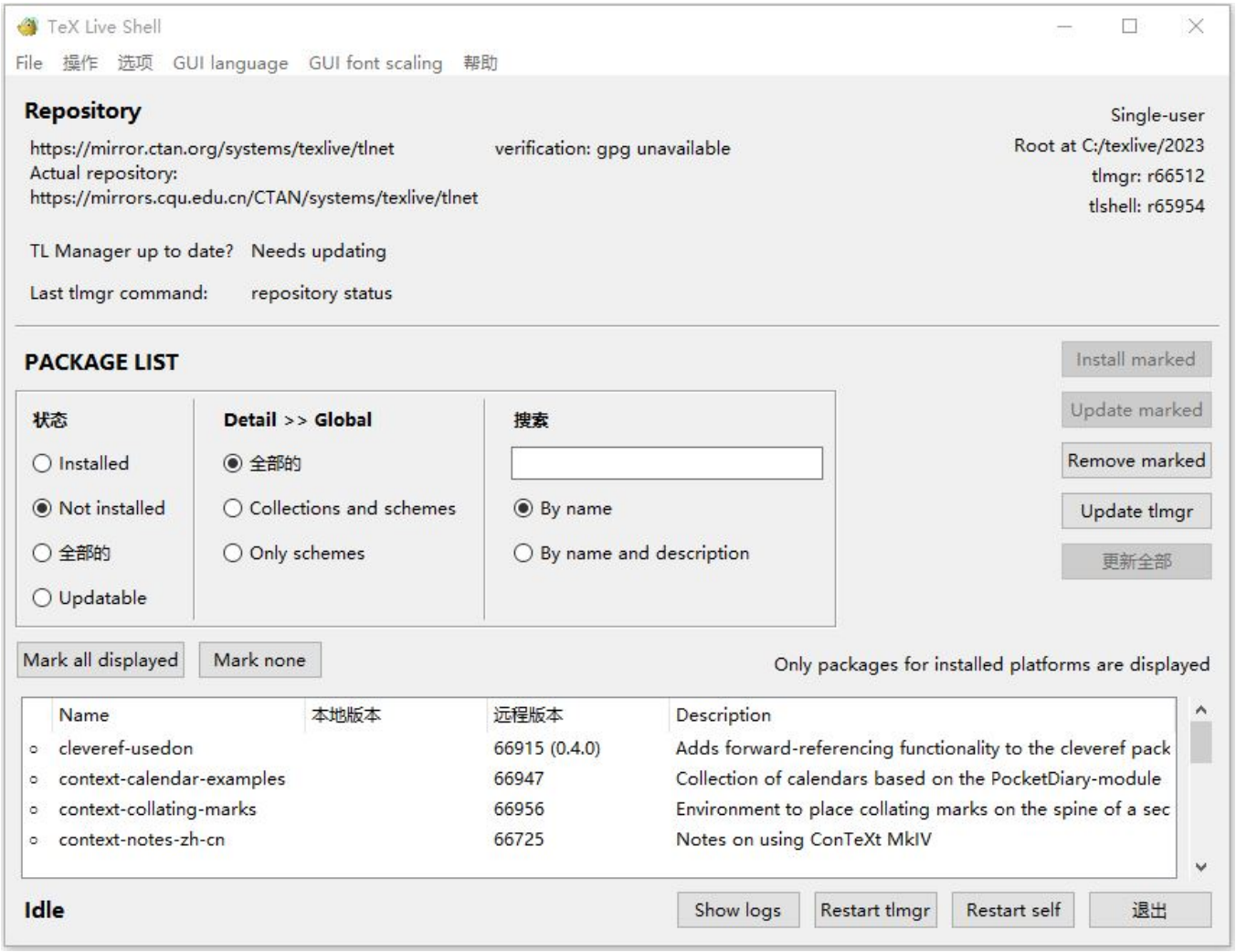
http://mirrors.ustc.edu.cn/CTAN/systems/texlive/

TeX Live包含项目



- DVI文件查看器
- TeX Live 命令行窗口
- TeX Live 文档查看器
- LaTeX文档编辑器
- TeX Live包管理器
- 卸载TeX Live

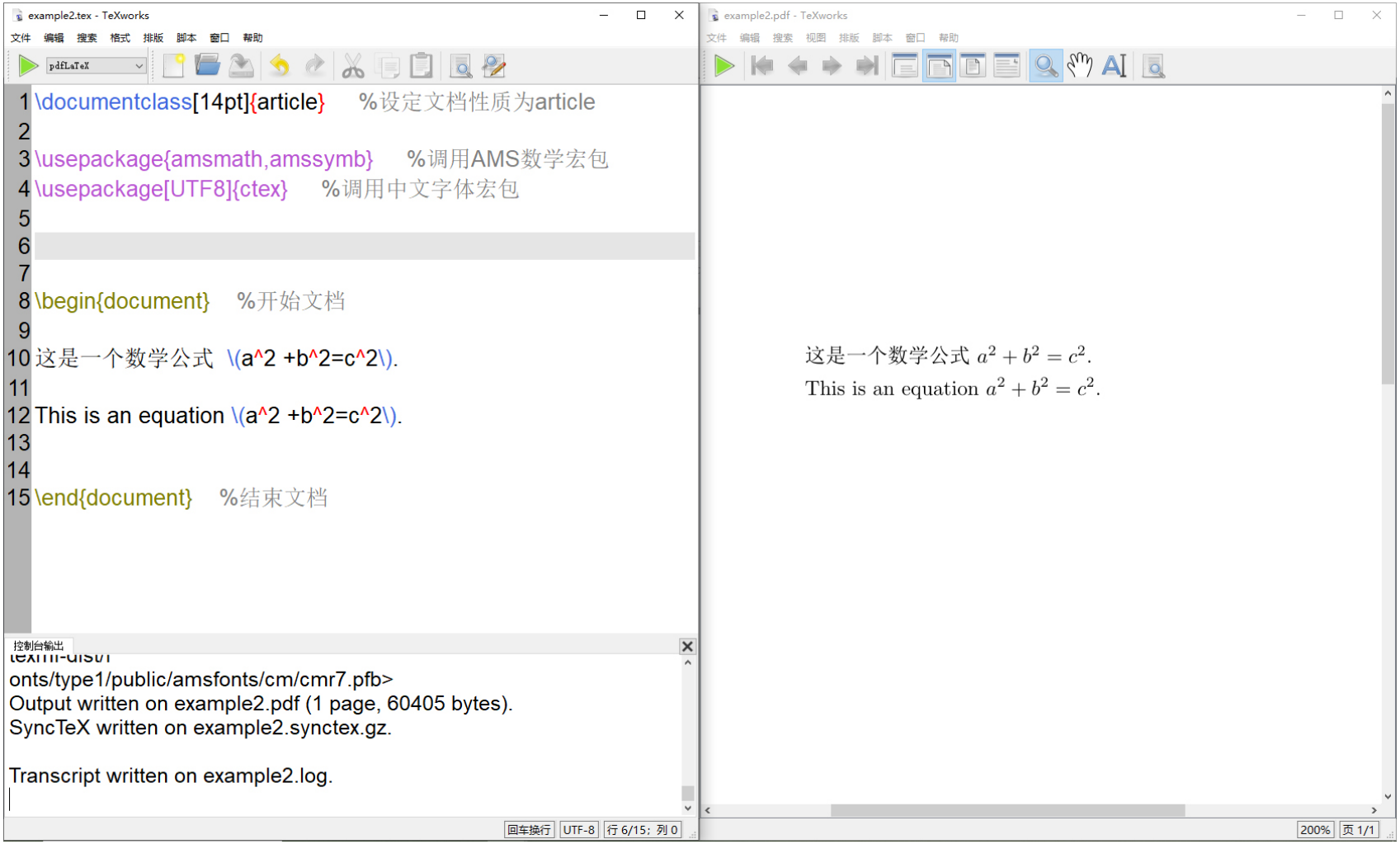
TeX Live包含项目



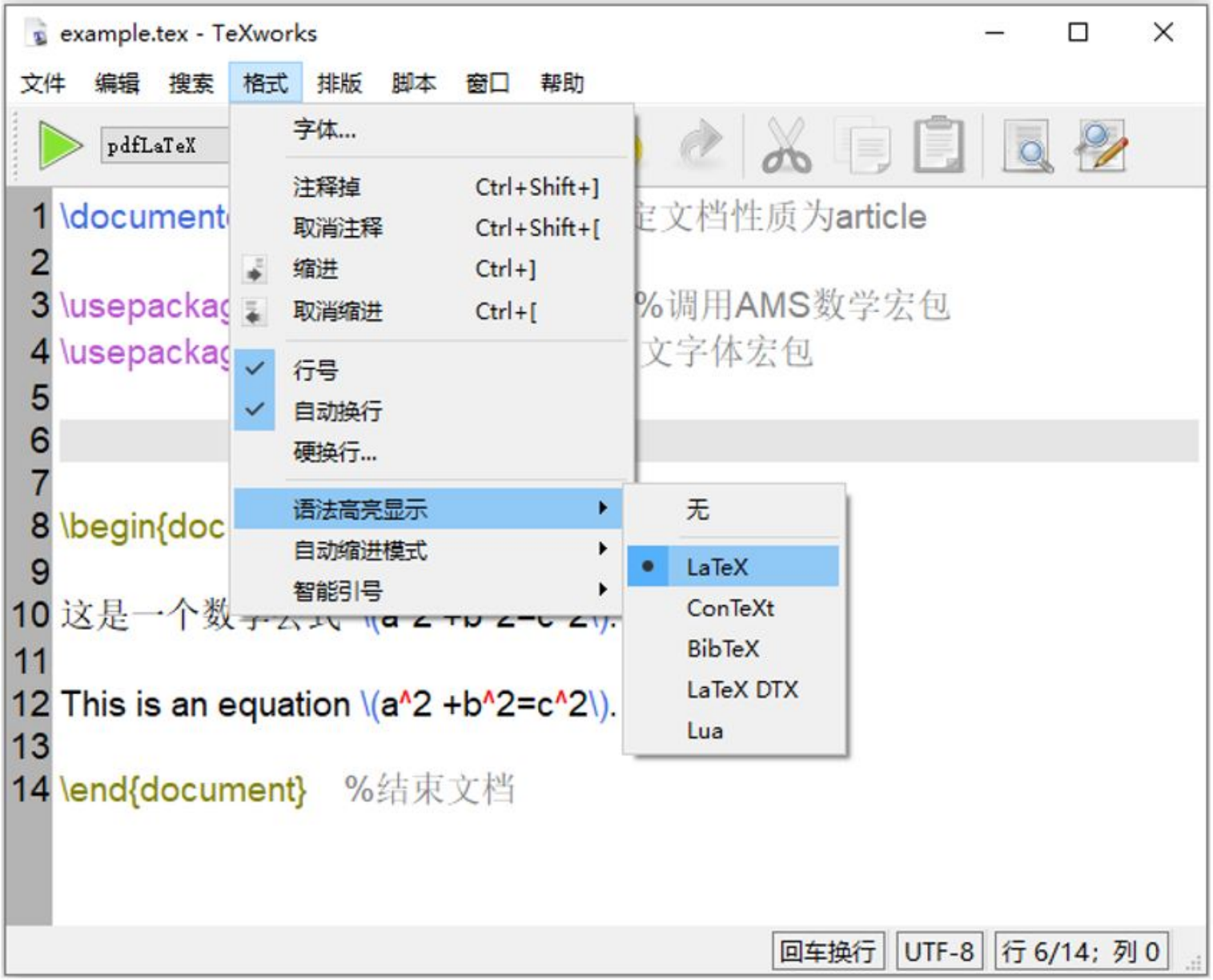
TEX编辑器

- TeXworks–TEX套装自带的编辑器，界面简单清爽，可跨平台使用
- TeXStudio–开源免费编辑器,界面集成度好
- TeXmaker–开源免费编辑器
- WinEdt–收费软件，CTEX套装自带编辑器
- 通用编辑器(需手动配置)：Vim，Emacs，Sublime，Atom 等

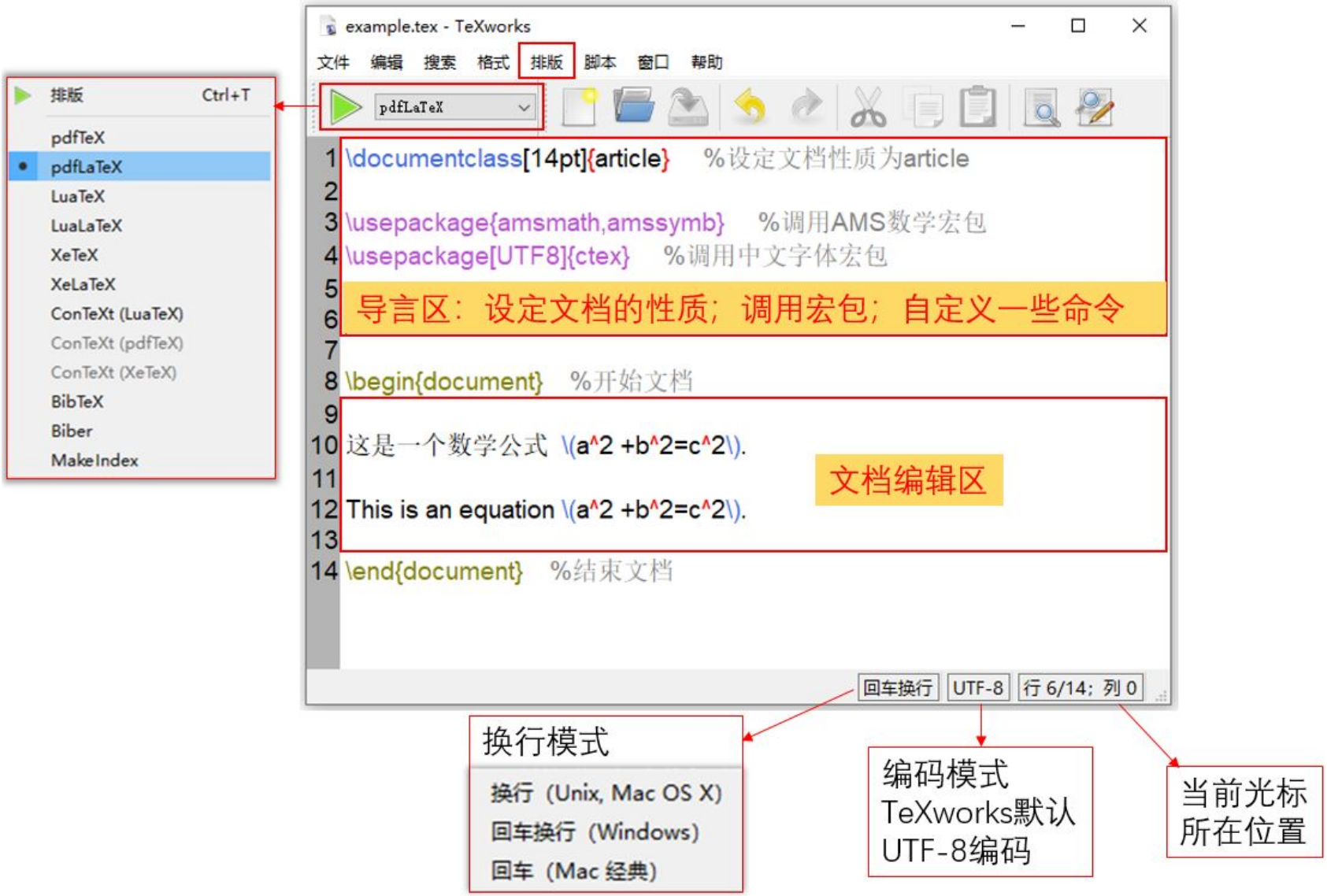
TeXworks编辑器



TeXworks编辑器



TeXworks编辑器



基本命令

1. 命令都以 \ 开头
2. \documentclass[ ]{ } 设置文档属性
3. \usepackage{ } 调用宏包
4. 文档内容放在 \begin{document} ...\end{document}之内
5. 一切内容皆在环境之中，有 \begin{ } 必有 \end{ }，
   有 { 必有 }

基本命令

1. 命令都以 \ 开头
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5. 一切内容皆在环境之中，有 \begin{ } 必有 \end{ }，有 { 必有 }

```
\begin{enumerate}
  \item 命令都以 $\backslash$ 开头
  \item $\backslash$documentclass[ ]\{ \} 设置文档属性
  \item $\backslash$usepackage\{ \} 调用宏包
  \item 文档内容放在 $\backslash$begin\{document\} ...$\backslash$end\{document\}之内
  \item 一切内容皆在环境之中，有 $\backslash$begin\{ \} 必有 $\backslash$end\{ \}，有 \{ 必有 \}
\end{enumerate}
```

如何利用LaTeX编辑论文

学术论文的结构

标题内容:

- 标题
- 作者
- 单位
- 摘要

正文内容:

- 章节, 段落
- 数学公式
- 图表
- 参考文献

标题内容

标题	`\title{This is Title}`
作者	`\author{San Zhang, Si Li}`
通讯作者	`\thanks{Corresponding author:li@ustc.edu.cn}`
单位	`\address{USTC, Hefei 230026, China.}`
日期	`\date{\today}`

摘要

```
\begin{abstract}
 This is abstract. This is abstract.
\end{abstract}
```

输出标题 \maketitle

对于不同的文档类，单位地址表达方式会有不同，如 \address{ }，\institute{ }，\affiliation{ } 等。

也可以调用宏包\usepackage{authblk}，设置通讯作者\thanks{email地址}和联系地址\affil{地址}。

标题内容

test.tex - TeXworks

```latex
\documentclass{article}  %设定文档性质为article
\usepackage{amsmath,amssymb}  %调用AMS数学宏包
\usepackage{authblk}  %调用地址宏包

\begin{document}

\title{This is Title} %标题
\author[1]{San Zhang} %作者
\author[2]{Li Si\thanks{Corresponding author:li@ustc.edu.cn}}
%通讯作者
\affil[1]{USTC, Hefei 230026, China.}%单位
\affil[2]{USTC, Hefei 230027, China.}
\date{\today} %日期

\maketitle

\begin{abstract} %摘要
This is abstract. This is abstract. This is abstract. This is
abstract. This is abstract. This is abstract. This is abstract. This
is abstract. This is abstract. This is abstract. This is abstract.
This is abstract.
\end{abstract}


%\tableofcontents %生成目录

```

test.pdf - TeXworks

This is Title

San Zhang[1] and Li Si*[2]

[1]USTC, Hefei 230026, China.
[2]USTC, Hefei 230027, China.

November 17, 2023

Abstract

This is abstract. This is abstract. This is abstract. This is abstract. This is abstract. This is abstract. This is abstract. This is abstract. This is abstract. This is abstract. This is abstract. This is abstract.

equation This is an equation $a^2 + b^2 = c^2$.

123 Some multipartite quantum states can be generated in a sequential manner which may be implemented by various physical setups like microwave and optical cavity QED, trapped ions, and quantum dots etc. We analyze the general N to M ($N \leq M$) qubits Universal Quantum Cloning Machine (UQCM) within a sequential generation scheme. We show that the N to M sequential UQCM is available. The case of d-level quantum states sequential cloning is also presented.

*Corresponding author:li@ustc.edu.cn

章节, 段落

部分	`\part{ }`	可选的最高层
章	`\chapter{ }`	文档类最高层
节	`\section{ }`	学术论文最高层,默认编号
小节	`\subsection{ }`	默认编号
小小节	`\subsubsection{ }`	默认编号，不编目录
段	`\paragraph{ }`	默认不编号，不编目录
小段	`\subparagraph{ }`	默认不编号，不编目录

章节，段落

部分	\part{ }	可选的最高层
章	\chapter{ }	文档类最高层
节	\section{ }	学术论文最高层,默认编号
小节	\subsection{ }	默认编号
小小节	\subsubsection{ }	默认编号，不编目录
段	\paragraph{ }	默认不编号，不编目录
小段	\subparagraph{ }	默认不编号，不编目录

生成目录 \tableofcontents 需连续编译两次

除\part外，只有在上一层章节存在时才能使用下一章节，否则编号会出现错误.

章节，段落

sectiontest.tex - TeXworks

文件 编辑 搜索 格式 排版 脚本 窗口 帮助

pdfLaTeX

```latex
\documentclass[aps]{revtex4}
\usepackage{amsmath,amssymb}
\usepackage{latexsym}

\begin{document}

\tableofcontents %生成目录

\section{Introduction} %节

This is Introduction. This is Introduction. This is Introduction. This is Introduction. This is Introduction. This is Introduction. This is Introduction. This is Introduction. This is Introduction.

\section{Main Text} %节

This is text. This is text. This is text. This is text.

This is text. This is text. This is text. This is text. This is text. This is text. This is text. This is text. This is text. This is text. This is text. This is text. This is text. This is text.

\subsection{Formula} %小结

\subsubsection{Equation}  %小小节

This is an equation $a^2+b^2=c^2$.
\end{document}
```

回车换行 UTF-8 行 7/25；列 18

sectiontest.pdf - TeXworks

文件 编辑 搜索 视图 排版 脚本 窗口 帮助

1

Contents

I. INTRODUCTION

This is Introduction. This is Introduction. This is Introduction. This is Introduction. This is Introduction. This is Introduction. This is Introduction. This is Introduction. This is Introduction.

II. MAIN TEXT

This is text. This is text. This is text. This is text.
This is text. This is text. This is text. This is text. This is text. This is text. This is text. This is text. This is text. This is text. This is text. This is text. This is text. This is text.

A. Formula

1. Equation

This is an equation $a^2 + b^2 = c^2$.

82.82% 页 1/1

数学公式

$$\sqrt[n]{\frac{x^2+\sqrt{2}}{x+y}}$$

$$\sum_{n=0}^{N} a_n$$

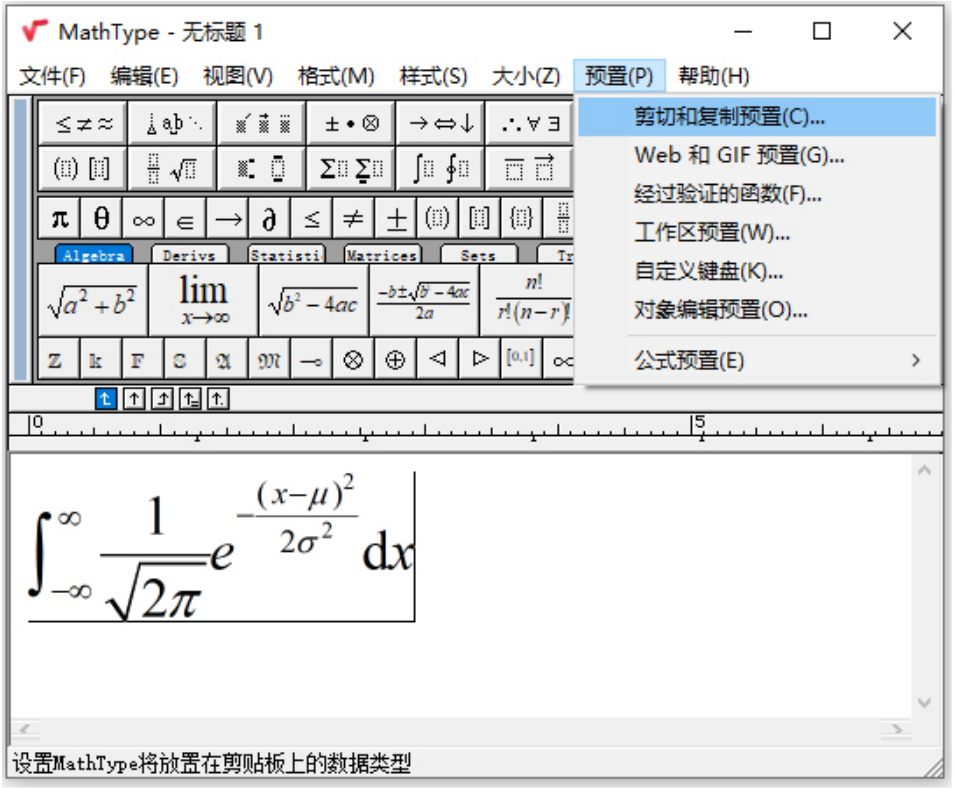
$$A = \begin{pmatrix} a_{11} & a_{12} & a_{13} \\ 0 & a_{22} & a_{23} \\ 0 & 0 & a_{33} \end{pmatrix}$$

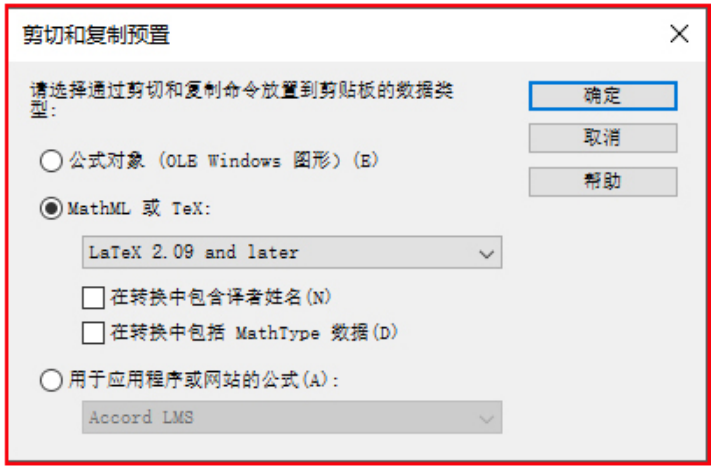
$$\int_{-\infty}^{\infty} \frac{1}{\sqrt{2\pi}} e^{-\frac{(x-\mu)^2}{2\sigma^2}} \mathrm{d}x$$

TIPS:

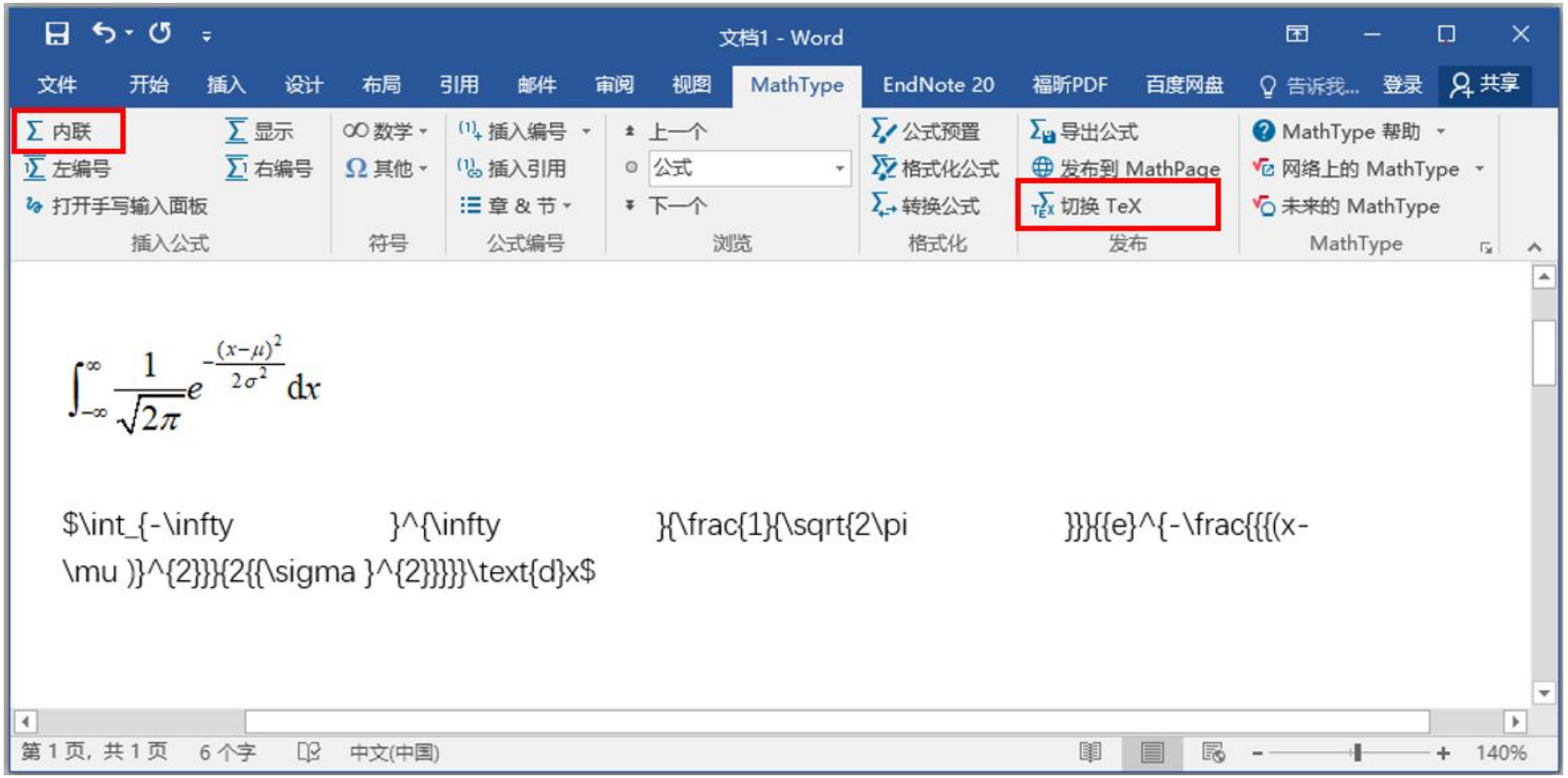
1. 在TeX Live command-line中运行texdoc symbols 查看符号表
2. MathType可以编辑并导出LaTeX公式

数学公式—用MathType





数学公式—用MathType



$$\int_{-\infty}^{\infty}\frac{1}{\sqrt{2\pi}}e^{-\frac{(x-\mu)^2}{2\sigma^2}}\mathrm{d}x$$

$\int_{-\infty }^{\infty }{\frac{1}{\sqrt{2\pi }}}{e}^{-\frac{{{(x-\mu)}^{2}}}{2{{\sigma }^{2}}}}\text{d}x$

数学公式–无编号

- **行内数学公式：夹杂在行文段落中的公式**

交换律可以表示为 $a+b=b+a$ 或 $b+a=a+b$.

```
交换律可以表示为 $a+b=b+a$ 或 \(b+a=a+b\).
```

- **行间数学公式：单独占据整行居中展示出来的公式**

交换律可以表示为

$$a+b=b+a,$$

或

$$b+a=a+b.$$

```
交换律可以表示为 $$a+b=b+a,$$ 或 \[b+a=a+b.\]
```

行间数学公式–自动编号

1, 单行公式, equation环境

```
\begin{equation}
 a+b=b+a  \label{jhl}
\end{equation}
```

$$a+b=b+a \tag{1}$$

行间数学公式–自动编号

2, 单行公式分行显示, align环境,

```
\begin{align}
 x = & a+b+c      \notag \\
     & +d+e+f     \notag \\
     & +g+h       \label{longeq}
\end{align}
```

$$
\begin{aligned}
x =& a+b+c \\
&+d+e+f \\
&+g+h
\end{aligned}
\tag{2}
$$

行间数学公式–自动编号

3, 多行公式按关系符对齐, eqnarray环境

```
\begin{eqnarray}
 x &=& a+b    \label{meq1} \\
 y &=& d+e+f \label{meq2} \\
 z &=& g+h    \label{meq3}
\end{eqnarray}
```

$$
\begin{eqnarray}
x &=& a+b \quad (3) \\
y &=& d+e+f \quad (4) \\
z &=& g+h \quad (5)
\end{eqnarray}
$$

行间数学公式–自动编号

4, 编辑多个子公式, subequations环境

```
\begin{subequations}
 \begin{equation}
  a+b = b+a,  \label{jhl1}
 \end{equation}
 \begin{equation}
  ab=ba.      \label{jhl2}
 \end{equation}
\end{subequations}
```

$$a + b = b + a, \tag{6a}$$

$$ab = ba. \tag{6b}$$

行间数学公式–自动编号

5, 公式组, cases环境,

```
\begin{equation}   \label{zu}
 \text{交换律}
 \begin{cases}
  a+b = b+a,   &\text{加法} \\
  ab = ba,     &\text{乘法}
 \end{cases}
\end{equation}
```

$$\text{交换律}\begin{cases} a+b=b+a, & \text{加法} \\ ab=ba, & \text{乘法} \end{cases} \tag{7}$$

引用公式

```
\ref{标签名}
```

公式\ref{jhl2}是乘法交换律. \\公式\ref{zu}是交换律公式组.

引用公式

```
\ref{标签名}
```

```
公式\ref{jhl2}是乘法交换律. \\公式\ref{zu}是交换律公式组.
```

公式6b是乘法交换律.
公式7是交换律公式组.

引用公式

```
\ref{标签名}
```

```
公式\ref{jhl2}是乘法交换律. \\公式\ref{zu}是交换律公式组.
```

```
\usepackage{amsmath}

\eqref{标签名}
```

```
公式\eqref{jhl2}是乘法交换律. \\公式\eqref{zu}是交换律公式组.
```

公式6b是乘法交换律.
公式7是交换律公式组.

引用公式

```
\ref{标签名}
```

```
公式\ref{jhl2}是乘法交换律. \\公式\ref{zu}是交换律公式组.
```

公式6b是乘法交换律.
公式7是交换律公式组.

```
\usepackage{amsmath}

\eqref{标签名}
```

```
公式\eqref{jhl2}是乘法交换律. \\公式\eqref{zu}是交换律公式组.
```

公式(6b)是乘法交换律.
公式 (7) 是交换律公式组.

数学公式

- 调用数学宏包\usepackage{amsmath,amssymb,latexsym}
- 可借助MathType编辑数学公式
- 行间公式须在特定环境中运行，
  如\begin{equation} ... \end {equation}等
- 行间公式按出现顺序自动编号，使用\label{标签名}命名
- 使用\ref 或\eqref 引用公式

插入表格

```
\begin{tabular}{lcr}
  \hline
  a & bc & def  \\
  \hline
  bc & def & a  \\
  \hline
\end{tabular}
```

a	bc	def
bc	def	a

插入表格

```
\begin{tabular}{|lcr}
  \hline
  a & bc & def  \\
  \hline
  bc & def & a  \\
  \hline
\end{tabular}
```

```
\begin{tabular}{|r|r|r|}
  \hline
  a & bc & def  \\
  \hline
  bc & def & a  \\
  \hline
\end{tabular}
```

a	bc	def
bc	def	a

a	bc	def
bc	def	a

插入表格

调用booktabs宏包，插入三线表

```
\usepackage{booktabs}  %调用宏包

\begin{table}[htbp]
\small
\caption{三线表}  %添加说明内容
\label{sanxianbiao}  %添加标签
\begin{tabular}{lccr}
  \toprule
  左 & 中 & 中 & 右 \\
  \midrule
  bc & def & dkj & a \\
  hdk & jjf & sfh & lalg\\
  \bottomrule
\end{tabular}
\end{table}
```

表 1: 三线表

左	中	中	右
bc	def	dkj	a
hdk	jjf	sfh	lalg

插入表格

表 2: 带短线的三线表

Number	Low-pressure spinel phase			High-pressure tetragonal phase		
	Raman modes $\omega_0(cm^{-1})$	$d\omega/dP$ (cm^{-1}/GPa)	γ	HP observed modes $\omega_0(cm^{-1})$	$d\omega/dP$ (cm^{-1}/GPa)	γ
1	193	0.51	0.51			
2	480	2.56	1.06			
3						
4	524	2.44	0.92			
5	612	3.4	1.13	549	1.97	0.74
6	684	1.28	0.42	709	2.16	0.65

插入表格

```
\usepackage{multirow,booktabs} %调用宏包

\begin{table}[htbp]
  \scriptsize
  \centering
  \caption{带短线的三线表}
  \label{sanxianbiao2}
    \begin{tabular}[b]{*{7}{c}}
    \toprule
    \multirow{2}*{Number} &
    \multicolumn{3}{c}{Low-pressure spinel phase} &
    \multicolumn{3}{c}{High-pressure tetragonal phase} \\
    \cmidrule(lr){2-4}  \cmidrule(lr){5-7}
    & \multicolumn{1}{p{4em}}{\tiny Raman modes $ \omega_0(cm^{-1})$} &
    \multicolumn{1}{p{5em}}{\tiny $d\omega/dP $ $ (cm^{-1}/GPa)$} &
    \multicolumn{1}{c}{$\gamma$} &
    \multicolumn{1}{p{4em}}{\tiny HP observed modes $ \omega_0(cm^{-1})$} &
    \multicolumn{1}{p{5em}}{\tiny $d\omega/dP $ $ (cm^{-1}/GPa)$} &
    \multicolumn{1}{c}{$\gamma$} \\
    \midrule
    1 & 193   & 0.51  & 0.51  &      &      &  \\
    2 & 480   & 2.56  & 1.06  &      &      &  \\
    3 &      &      &      &      &      &  \\
    4 & 524   & 2.44  & 0.92  &      &      &  \\
    5 & 612   & 3.4   & 1.13  & 549   & 1.97  & 0.74 \\
    6 & 684   & 1.28  & 0.42  & 709   & 2.16  & 0.65 \\
    \bottomrule
    \end{tabular}
\end{table}
```

插入表格

Excel2LaTeX – Convert Excel spreadsheets to LaTeX tables

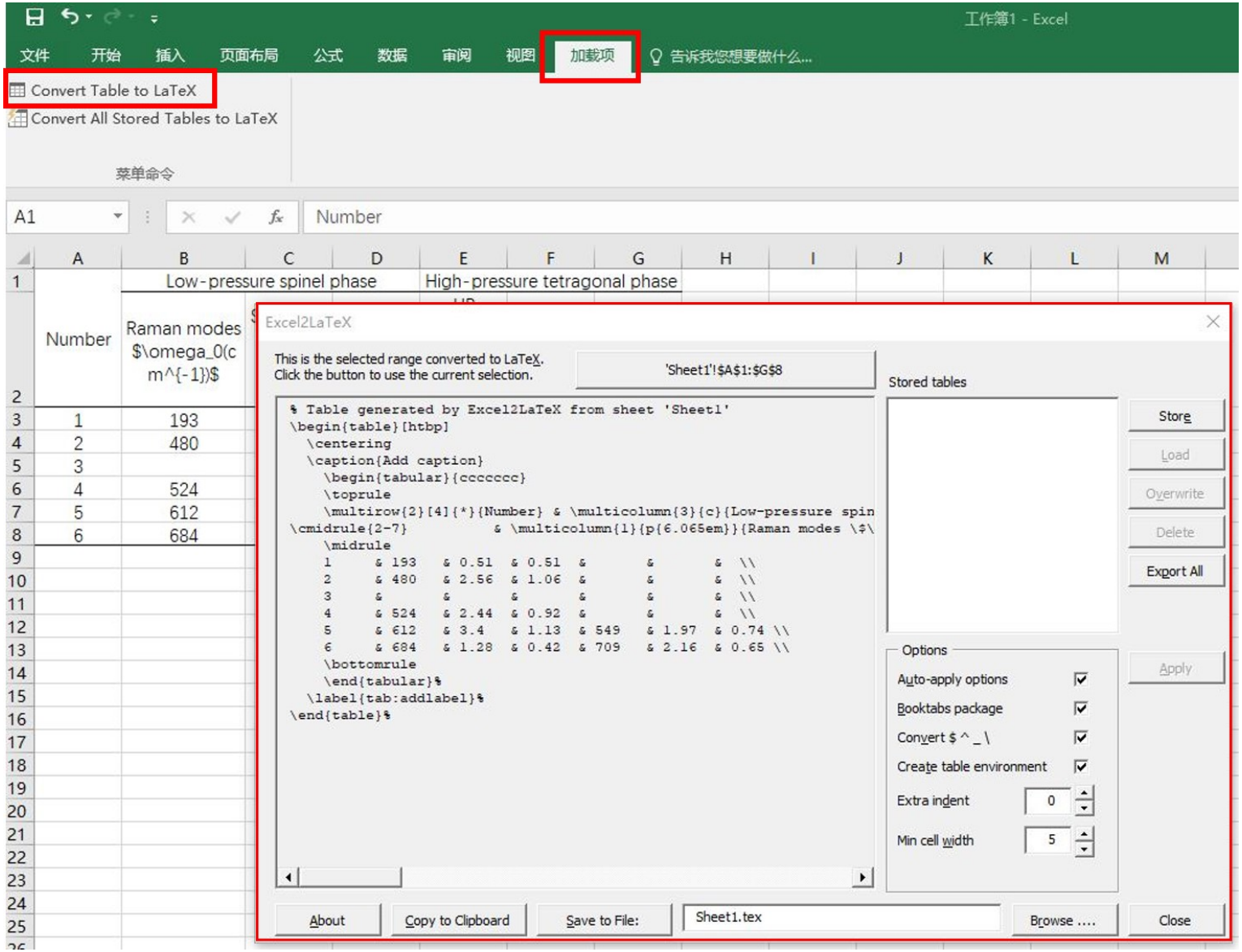
Making tables in LaTeX can be tedious, especially if some columns are calculated. This converter allows you to write a table in Excel instead, and export the current selection as LaTeX markup which can be pasted into an existing LaTeX document, or exported to a file and included via the `\input` command.

Sources	/support/excel2latex
Documentation	README.md
Repository	https://github.com/krlmlr/Excel2LaTeX
Version	3.5.0
Licenses	The LaTeX Project Public License 1.3
Maintainer	Chelsea Hughes Kirill Müller Andrew Hawryluk (inactive) Joachim Marder (inactive) George Pearson (inactive)
Topics	Foreign import

Download the contents of this package in one zip archive (102.9k).

下载网址：https://www.ctan.org/pkg/excel2latex

插入表格


工作簿1 - Excel
文件
开始
插入
页面布局
公式
数据
审阅
视图
加载项
告诉我您想要做什么...
Convert Table to LaTeX
Convert All Stored Tables to LaTeX
菜单命令
A1
Number
Low-pressure spinel phase
High-pressure tetragonal phase
Number
Raman modes $\omega_0(cm^{-1})$
1 193
2 480
3
4 524
5 612
6 684
Excel2LaTeX
This is the selected range converted to LaTeX.
Click the button to use the current selection.
'Sheet1'!$A$1:$G$8
% Table generated by Excel2LaTeX from sheet 'Sheet1'
\begin{table}[htbp]
\centering
\caption{Add caption}
\begin{tabular}{ccccccc}
\toprule
\multirow{2}{*}{Number} & \multicolumn{3}{c}{Low-pressure spin
\cmidrule{2-7} & \multicolumn{1}{p{6.065em}}{Raman modes \$\
\midrule
1 & 193 & 0.51 & 0.51 & & & \\
2 & 480 & 2.56 & 1.06 & & & \\
3 & & & & & & \\
4 & 524 & 2.44 & 0.92 & & & \\
5 & 612 & 3.4 & 1.13 & 549 & 1.97 & 0.74 \\
6 & 684 & 1.28 & 0.42 & 709 & 2.16 & 0.65 \\
\bottomrule
\end{tabular}%
\label{tab:addlabel}%
\end{table}%
Stored tables
Store
Load
Overwrite
Delete
Export All
Options
Auto-apply options
Booktabs package
Convert $ ^ _ \
Create table environment
Extra indent
0
Min cell width
5
Apply
About
Copy to Clipboard
Save to File:
Sheet1.tex
Browse ....
Close

插入图片

- 插入图片的格式: eps, pdf, png, jpg . . .
- 建立图片文件夹, 并与.tex文件放在同一个目录下
- 调用宏包 \usepackage{graphics,graphicx}
- 设置图片路径 \graphicspath{{pic/}}
- 插入图片命令 \includegraphics[设置图片大小]{图片文件名}

插入图片

```
\usepackage{graphicx}  %在导言区调用graphicx宏包
\graphicspath{{pic/}}  %导言区设置图片路径

\begin{figure}[h]  %在当前位置插入,可选项htbp.
\centering   %居中对齐
\includegraphics[width=3cm,height=2cm]{yu.jpg}
\caption{插入文件名为yu.jpg的图片}\label{yujinxiang}
\end{figure}
```

图 1: 插入文件名为yu.jpg的图片

插入图片

图 2: 插入多行多列图片，共用一个caption

插入图片–用minipage插入多行多列图片

```
\begin{figure}

  \begin{minipage}{2.3cm}
  \includegraphics[width=2.4cm,height=1.6cm]{yu}
  \includegraphics[width=2.4cm,height=1.6cm]{duo}
  \end{minipage}

  \begin{minipage}{2.3cm}
  \includegraphics[width=2.4cm,height=1.6cm]{lotus}
  \includegraphics[width=2.4cm,height=1.6cm]{sun}
  \end{minipage}

  \begin{minipage}{2.3cm}
  \includegraphics[width=2.4cm,height=1.6cm]{glory}
  \includegraphics[width=2.4cm,height=1.6cm]{moli}
  \end{minipage}

  \caption{插入多行多列图片, 共用一个caption}
  \label{fivepic2}

\end{figure}
```

插入图片

用subfigure实现多张图片并排插入，且子图有文字说明

```
\usepackage{subfigure}  %导言曲调用subfigure宏包

\begin{figure}[h]
  \centering

  \subfigure[\scriptsize郁金香]{    \label{yujinxiang1} \includegraphics[width=1.5cm,height=1cm]{yu.jpg}}
  \subfigure[\scriptsize多肉植物]{ \label{duorou1}      \includegraphics[width=1.5cm,height=1cm]{duo.jpg}}
  \subfigure[\scriptsize荷花]{      \label{lotus1}       \includegraphics[width=1.5cm,height=1cm]{lotus.jpg}}

  \caption{\footnotesize并排插入图片}
  \label{tripic}
\end{figure}
```

(a) 郁金香

(b) 多肉植物

(c) 荷花

图 3: 并排插入图片

插入图片

```
\begin{figure}
 \begin{tabular}{*{3}{p{1.5cm}}}
 \subfigure[\scriptsize郁金香]{     \label{yu2}    \includegraphics[width=1.8cm,height=1.2cm]{yu}} &
 \subfigure[\scriptsize多肉植物]{  \label{duo2}   \includegraphics[width=1.8cm,height=1.2cm]{duo}} &
 \subfigure[\scriptsize荷花]{       \label{lo2}     \includegraphics[width=1.8cm,height=1.2cm]{lotus}} \\
 \subfigure[\scriptsize向日葵]{    \label{sun2}   \includegraphics[width=1.8cm,height=1.2cm]{sun}} &
 \subfigure[\scriptsize牵牛花]{    \label{mor2}   \includegraphics[width=1.8cm,height=1.2cm]{glory}}
 \end{tabular}
 \caption{\footnotesize插入多行多列图片}
 \label{fivepic}
\end{figure}
```

(a) 郁金香 (b) 多肉植物 (c) 荷花

(d) 向日葵 (e) 牵牛花

图 4: 插入多行多列图片

文字绕排图片

```latex
\documentclass[16pt]{article}
\usepackage[UTF8]{ctexcap}
\usepackage{graphicx,wrapfig}
\graphicspath{{pic/}}
\title{郁金香}
\date{\today}

\begin{document}
\maketitle

\begin{wrapfigure}{r}{4cm}
  \centering
  \includegraphics[width=3cm]{yu}
  \caption{文字绕排图片}
  \label{raopaifig}
\end{wrapfigure}

郁金香（学名：Tulipa gesneriana L.）是百合科郁金香属的多年生草本植物，具球茎。英文名为“Garden tulip”或“Didier's tulip”。 郁金香被广泛认为原产于土耳其， 是土耳其、荷兰、匈牙利等国的国花。

叶3-5枚，条状披针形至卵状披针状，花单朵顶生，大型而艳丽，花被片红色或杂有白色和黄色，有时为白色或黄色，长5-7厘米，宽2-4厘米，6枚雄蕊等长，花丝无毛，无花柱，柱头增大呈鸡冠状，花期4-5月。

\begin{wraptable}{l}{5cm}
   \centering
   \caption{文字绕排表格}
   \label{raopaitable}
   \vspace{5pt}
   \begin{tabular}{|l|c|r|}
     \hline
     a & bc & def \\
     \hline
     bc & def & a \\
    \hline
  \end{tabular}
\end{wraptable}

Knuth设计了一个名叫 PlainTeX的基本格式，以与低层次的原始TeX呼应。这种格式是用TeX处理文本时相当基本的部分，以致于我们有时都分不清到底哪条指令是真正的处理程序TeX的原始命令，哪条是 PlainTeX格式的。大多数声称只使用TeX的人，实际上指的是只用 PlainTeX。
```

郁金香

2023 年 11 月 21 日

郁金香（学名：Tulipa gesneriana L.）是百合科郁金香属的多年生草本植物，具球茎。英文名为“Garden tulip”或“Didier's tulip”。郁金香被广泛认为原产于土耳其，是土耳其、荷兰、匈牙利等国的国花。

叶3-5枚，条状披针形至卵状披针状，花单朵顶生，大型而艳丽，花被片红色或杂有白色和黄色，有时为白色或黄色，长5-7厘米，宽2-4厘米，6枚雄蕊等长，花丝无毛，无花柱，柱头增大呈鸡冠状，花期4-5月。

图 1: 文字绕排图片

表 1: 文字绕排表格

a	bc	def
bc	def	a

Knuth设计了一个名叫 PlainTeX的基本格式，以与低层次的原始TeX呼应。这种格式是用TeX处理文本时相当基本的部分，以致于我们有时都分不清到底哪条指令是真正的处理程序TeX的原始命令，哪条是 PlainTeX格式的。大多数声称只使用TeX的人，实际上指的是只用 PlainTeX。

PlainTeX的重点还只是在于如何排版的层次上，而不是从一位作者的观点出发。对它的深层功能的进一步发掘，需要相当丰富的编程技巧。因此它的应用就局限于高级排版和程序设计人员。

引用图表

用\ref{标签名}引用图表

图 \ref{yujinxiang}是郁金香，图 \ref{duorou1} 是多肉植物，图 \ref{mor2}是牵牛花.

表 \ref{sanxianbiao2}是复杂三线表.

引用图表

用\ref{标签名}引用图表

图 \ref{yujinxiang}是郁金香，图 \ref{duorou1} 是多肉植物，图 \ref{mor2}是牵牛花.

表 \ref{sanxianbiao2}是复杂三线表.

图 1 是郁金香，图 3(b)是多肉植物，图 4(e) 是牵牛花.

表 2 是复杂三线表.

参考文献

- 在 LaTeX中直接列出参考文献
- BibTeX辅助 LaTeX参考文献写作

参考文献–在正文中直接列出参考文献

```
引用测试\cite{Bar}引用测试\cite{Woo,Bar}.

\begin{thebibliography}{99}
\bibitem{Woo} W.K. Wootters,et.al.,Nature 299,802(1982)
\bibitem{Bar} H. Barnum,et.al.,Phys.Rev.Lett. 76,2818(1996)
\end{thebibliography}
```

参考文献–在正文中直接列出参考文献

```
引用测试\cite{Bar}引用测试\cite{Woo,Bar}.

\begin{thebibliography}{99}
\bibitem{Woo} W.K. Wootters,et.al.,Nature 299,802(1982)
\bibitem{Bar} H. Barnum,et.al.,Phys.Rev.Lett. 76,2818(1996)
\end{thebibliography}
```

引用测试 [2] 引用测试 [1, 2].

[1] W.K. Wootters,et. al.,Nature 299,802(1982)

[2] H. Barnum,et.al.,Phys.Rev.Lett. 76,2818(1996)

参考文献–在正文中直接列出参考文献

在文后直接列出参考文献问题所在:

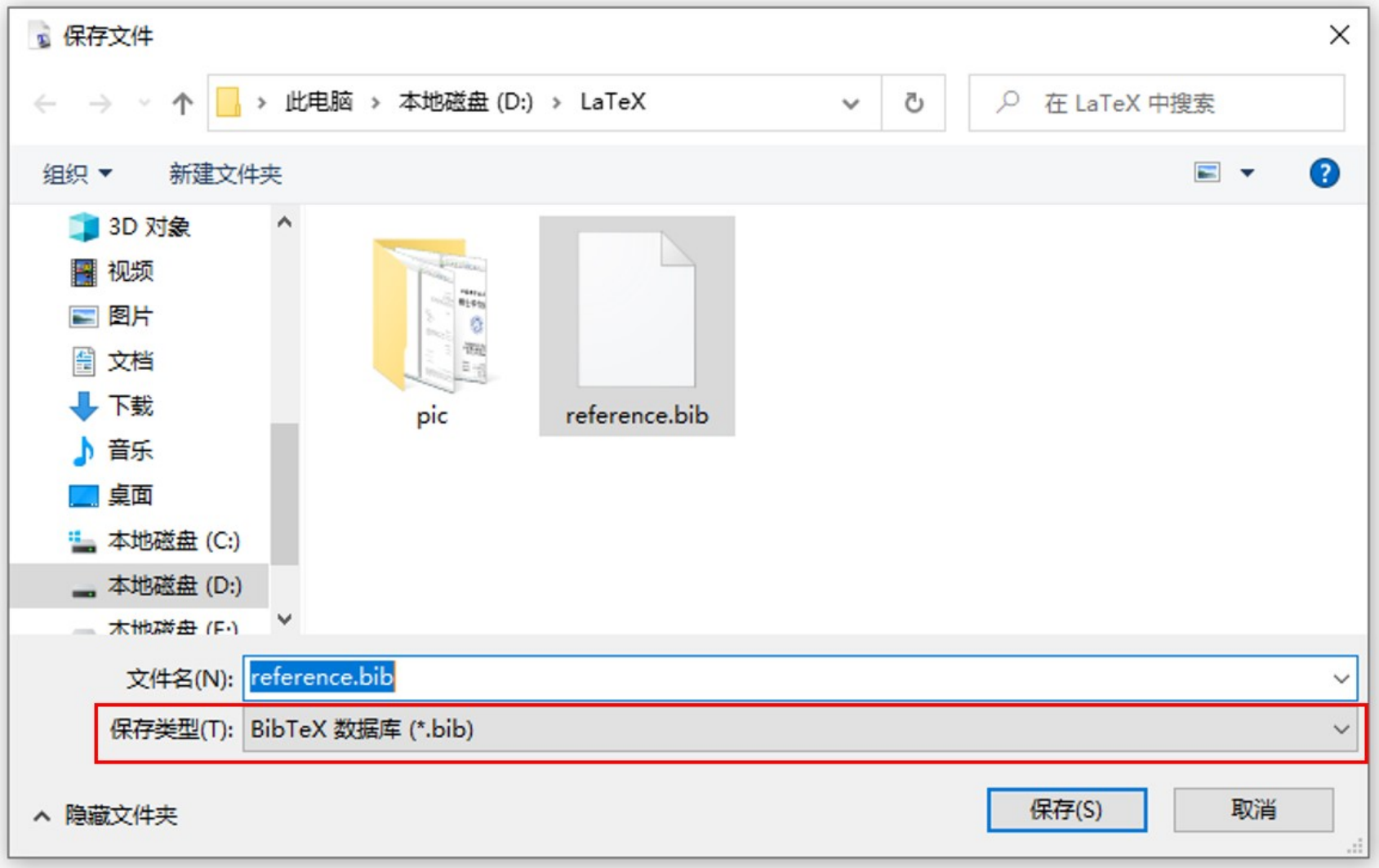
- 需手动逐条输入参考文献
- 需手动调整参考文献顺序
- 需手动调整参考文献格式

参考文献–BibTEX辅助参考文献写作

- 建立BibTEX参考文献库
- 参考文献库管理助手–JabRef
- 引用文献库中的文献
- BibTEX中参考文献的收集

参考文献–建立BibTeX参考文献库

TeXworks中创建新文件，保存为扩展名为.bib的文件



参考文献–建立BibTeX参考文献库

reference.bib - TeXworks

文件 编辑 搜索 格式 排版 脚本 窗口 帮助

pdfLaTeX

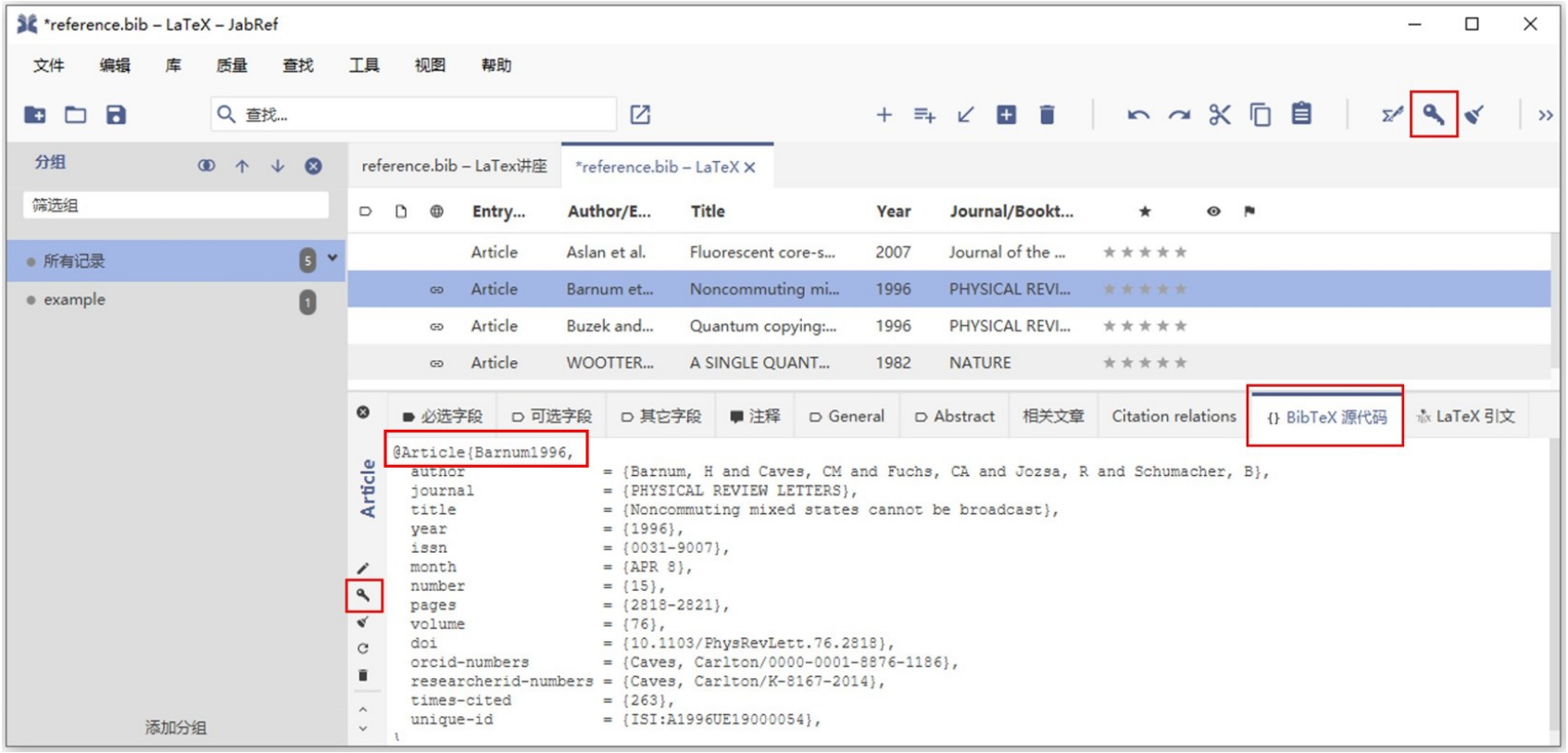
```bibtex
% Encoding: UTF-8

@Article{aslan2007fluorescent,
  author   = {Aslan, Kadir and Wu, Meng and Lakowicz, Joseph R and Geddes, Chris D},
  journal  = {Journal of the American Chemical Society},
  title    = {Fluorescent core-shell Ag@ SiO2 nanocomposites for metal-enhanced fluorescence and single nanoparticle sensing platforms},
  year     = {2007},
  number   = {6},
  pages    = {1524--1525},
  volume   = {129},
  groups   = {example},
  publisher = {ACS Publications},
}

@Article{Barnum1996,
  author          = {Barnum, H and Caves, CM and Fuchs, CA and Jozsa, R and Schumacher, B},
  journal         = {PHYSICAL REVIEW LETTERS},
  title           = {Noncommuting mixed states cannot be broadcast},
  year            = {1996},
  issn            = {0031-9007},
  month           = {APR 8},
  number          = {15},
  pages           = {2818-2821},
  volume          = {76},
  doi             = {10.1103/PhysRevLett.76.2818},
```

回车换行 UTF-8 行 1/71; 列 0

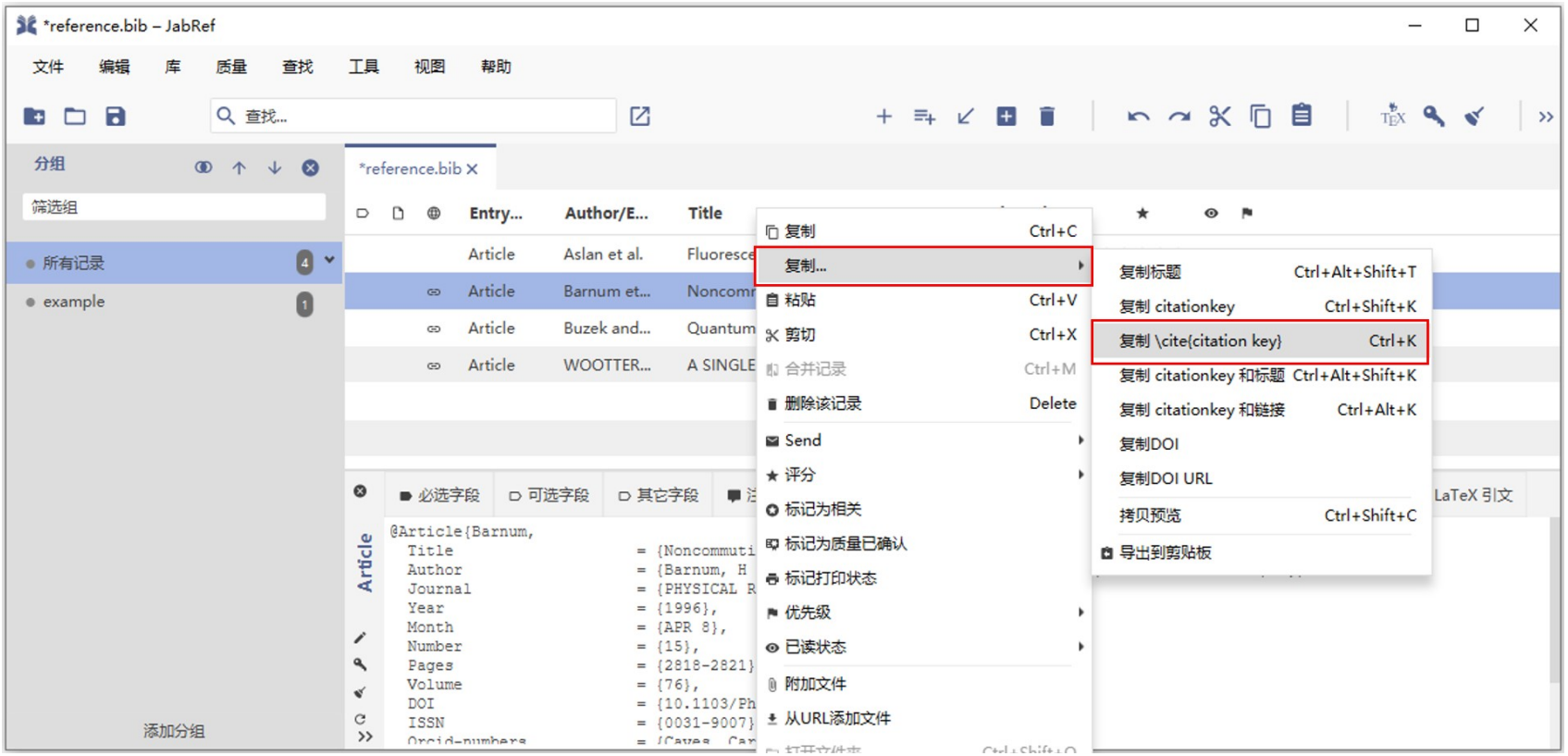
BibTeX参考文献库管理助手–JabRef



下载地址：https://www.jabref.org/

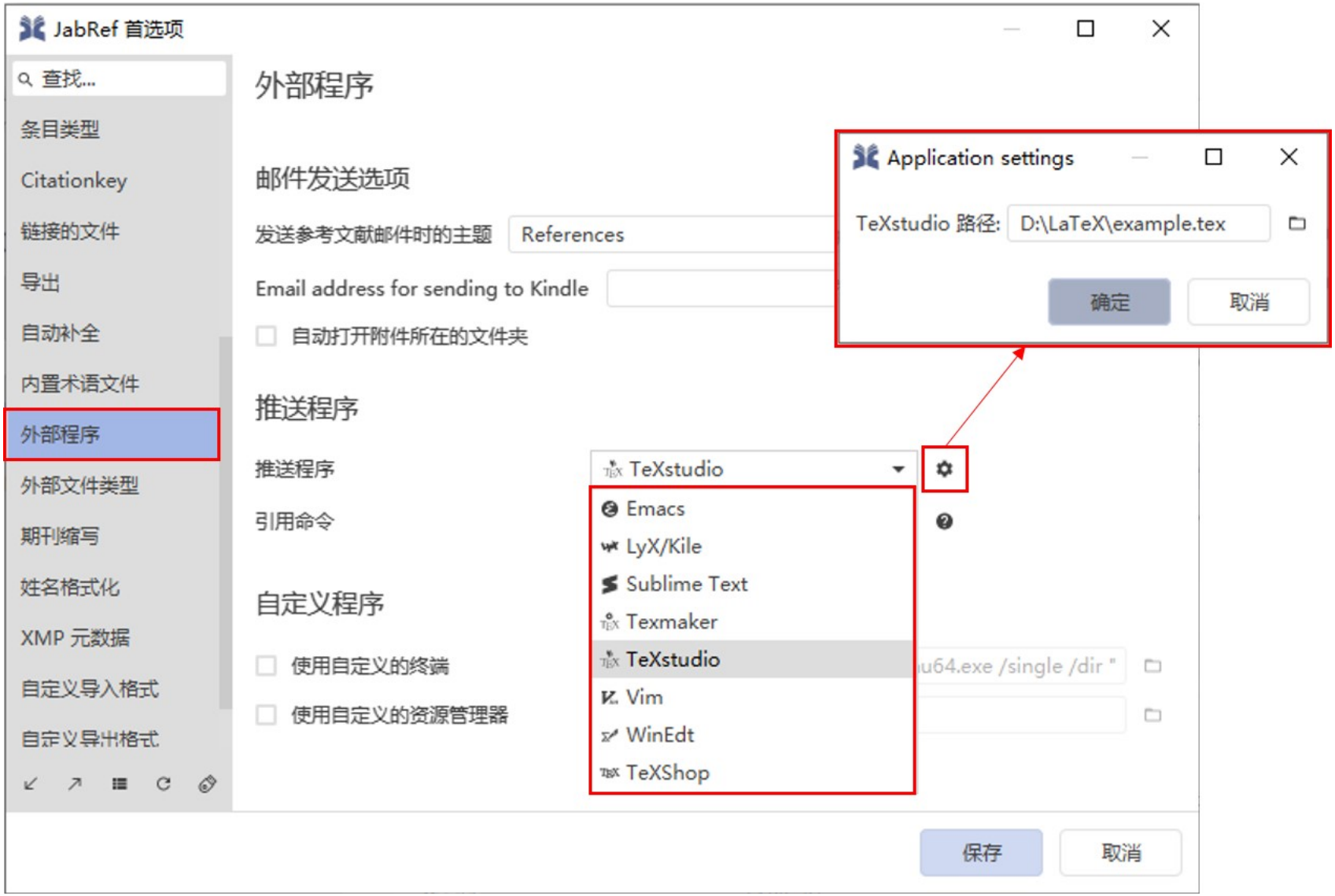
如何利用JabRef引用参考文献

打开JabRef → 选中参考文献 → 右键 → 点击“复制\cite{citation key}” → 粘贴到文中相应位置



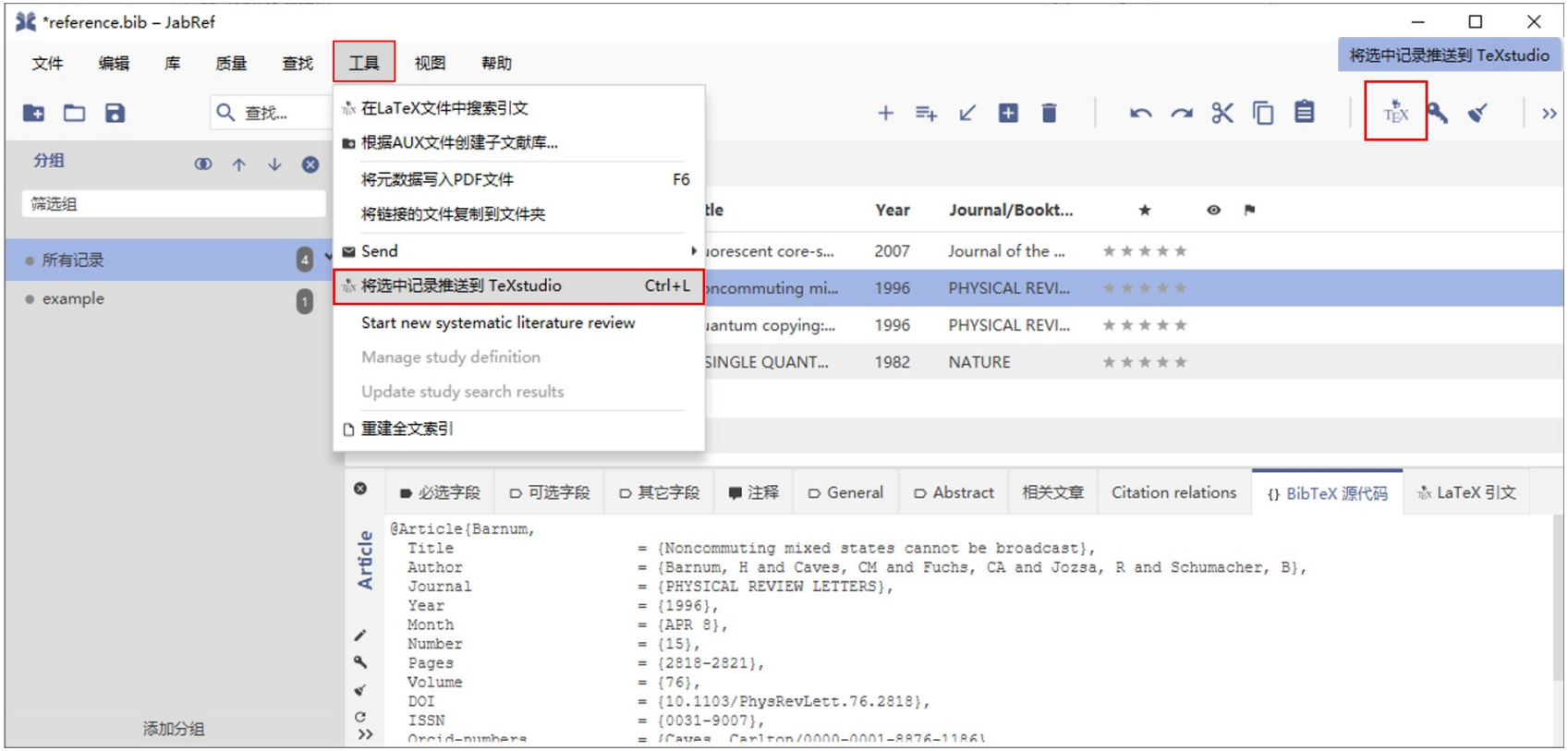
如何利用JabRef引用参考文献

JabRef关联外部程序



如何利用JabRef引用参考文献

将光标放在需插入参考文献位置 → 在JabRef中选中参考文献 → 点击“工具” → 点击“将选中记录推送到 TeXstudio”



引用BibTEX文献库中的参考文献

```
test test test \cite{Wootters} test test test test \cite{Barnum,Wootters}.

\bibliographystyle{unsrt}    %四种文献格式: plain, unsrt, alpha, abbrv
\bibliography{reference}     %调用文献数据库reference.bib
\nocite{Buzek}          %列出未被引用的文献,
%\cite{*}列出所有参考文献
```

引用BibTEX文献库中的参考文献

```
test test test \cite{Wootters} test test test test \cite{Barnum,Wootters}.

\bibliographystyle{unsrt}     %四种文献格式: plain, unsrt, alpha, abbrv
\bibliography{reference}      %调用文献数据库reference.bib
\nocite{Buzek}          %列出未被引用的文献,
%\cite{*}列出所有参考文献
```

---

test test test [1] test test test test [1, 2].

---

[1] WK WOOTTERS and WH ZUREK. A single quantum cannot be cloned. *NATURE*, 299(5886):802–803, 1982.

[2] H Barnum, CM Caves, CA Fuchs, R Jozsa, and B Schumacher. Noncommuting mixed states cannot be broadcast. *PHYSICAL REVIEW LETTERS*, 76(15):2818–2821, APR 8 1996.

[3] V Buzek and M Hillery. Quantum copying: Beyond the no-cloning theorem. *PHYSICAL REVIEW A*, 54(3):1844–1852, SEP 1996.

BibTEX辅助 LATEX参考文献写作注意事项

- .bib文献库必须与 .tex 文件放在同一目录下
- 引用参考文献使用命令

  `\cite{标签名}`

  `\bibliographystyle{风格名}`

  `\bibliography{文件名}`
- 编译次序: pdfLATEX, BibTEX, pdfLATEX, pdfLATEX
- 将编译.tex文件生成的.bbl文件一起投稿

BibTEX辅助 LATEX参考文献写作优点

- 参考文献可重复利用
- 参考文献格式无需手动调整
- 参考文献列表顺序按文中引用次序自动生成

BibTEX中参考文献的收集

(a)建立参考文献库–手动添加参考文献

```
@ARTICLE{标签,
  author =        {作者},
  title =         {标题},
  journal =       {期刊},
  year =          {年},
  volume =        {卷},
  number =        {期},
  pages =         {页码},
  month =         {月},
  note =          {说明},
  abstract =      {摘要},
  keywords =      {关键词},
  source =        {出版社},
}
```

BibTEX中参考文献的收集

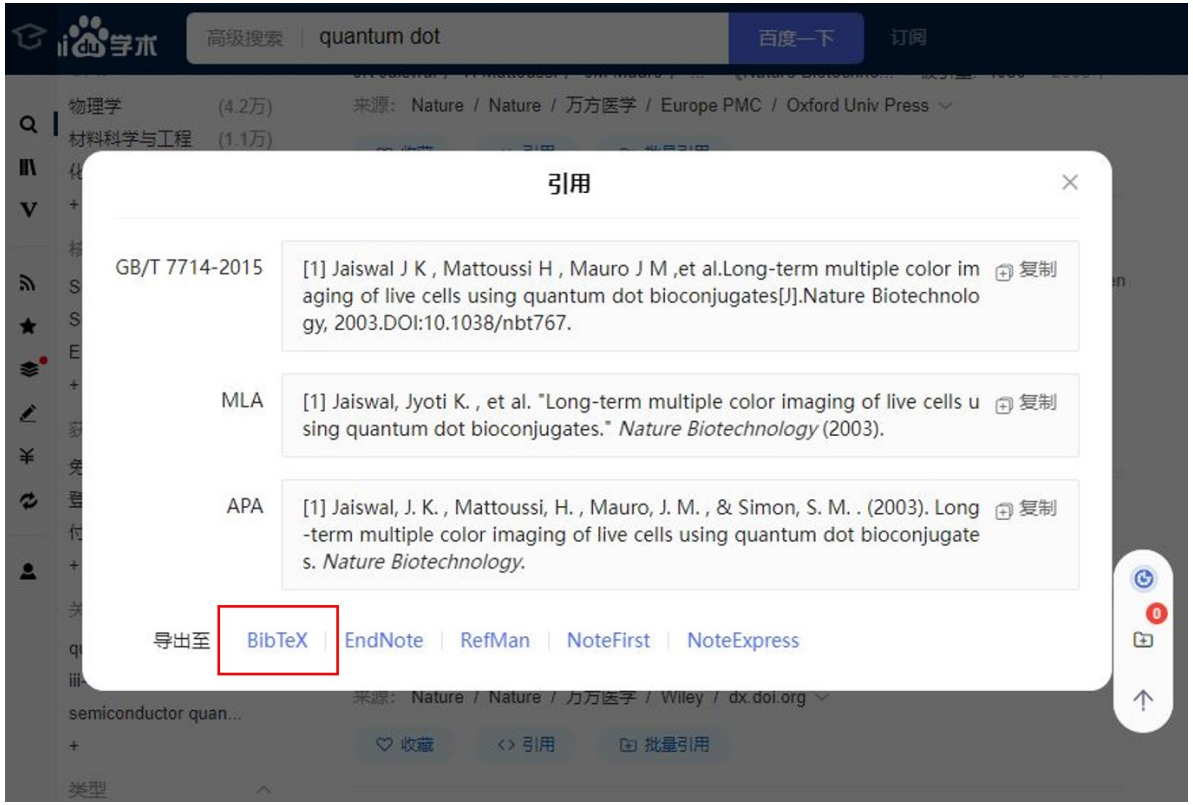
(a)建立参考文献库–手动添加参考文献

```
@ARTICLE{标签,
  author =        {作者},
  title =         {标题},
  journal =       {期刊},
  year =          {年},
  volume =        {卷},
  number =        {期},
  pages =         {页码},
  month =         {月},
  note =          {说明},
  abstract =      {摘要},
  keywords =      {关键词},
  source =        {出版社},
}
```

缺点:
逐项手动输入,
繁琐,
效率低下.

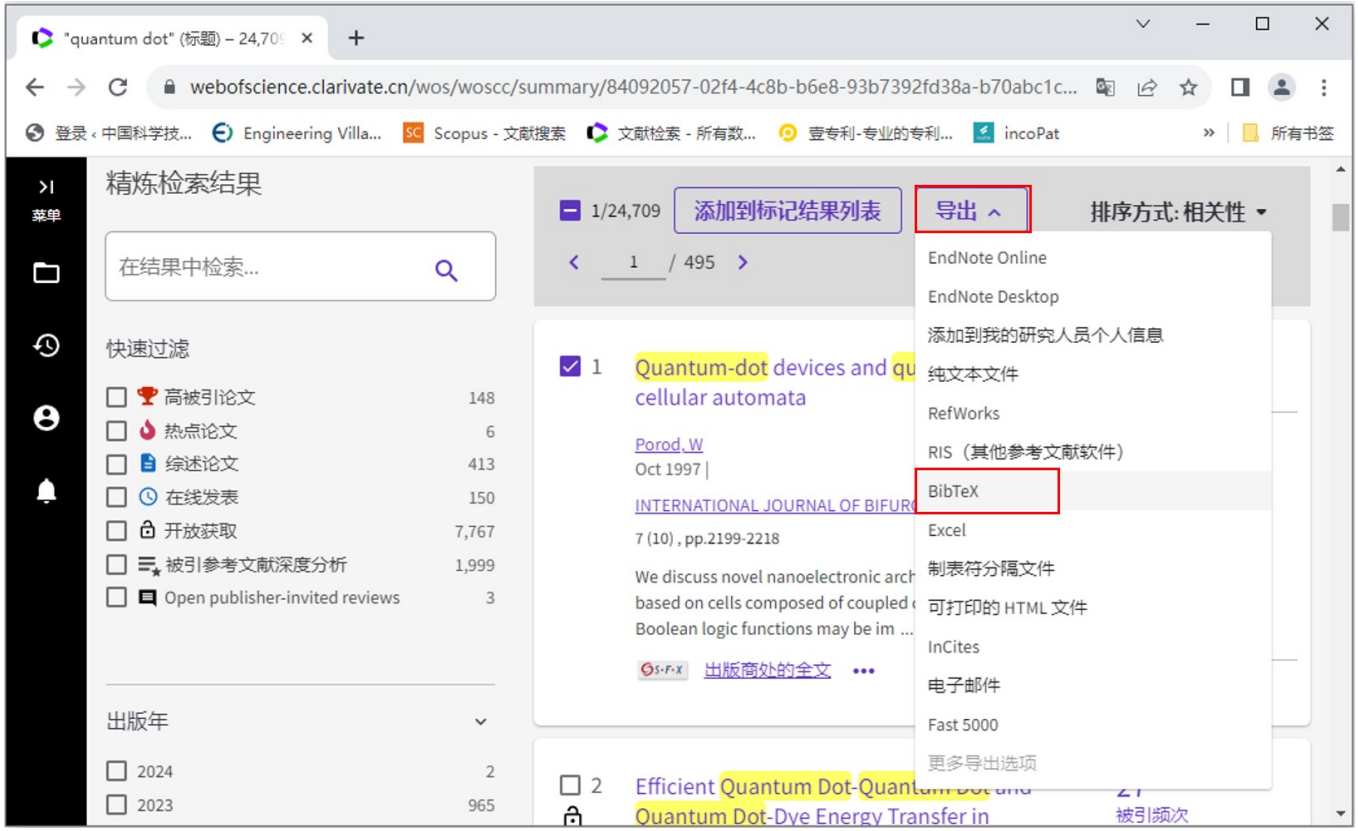
BibTeX中参考文献的收集

(b)建立参考文献库–网上导入



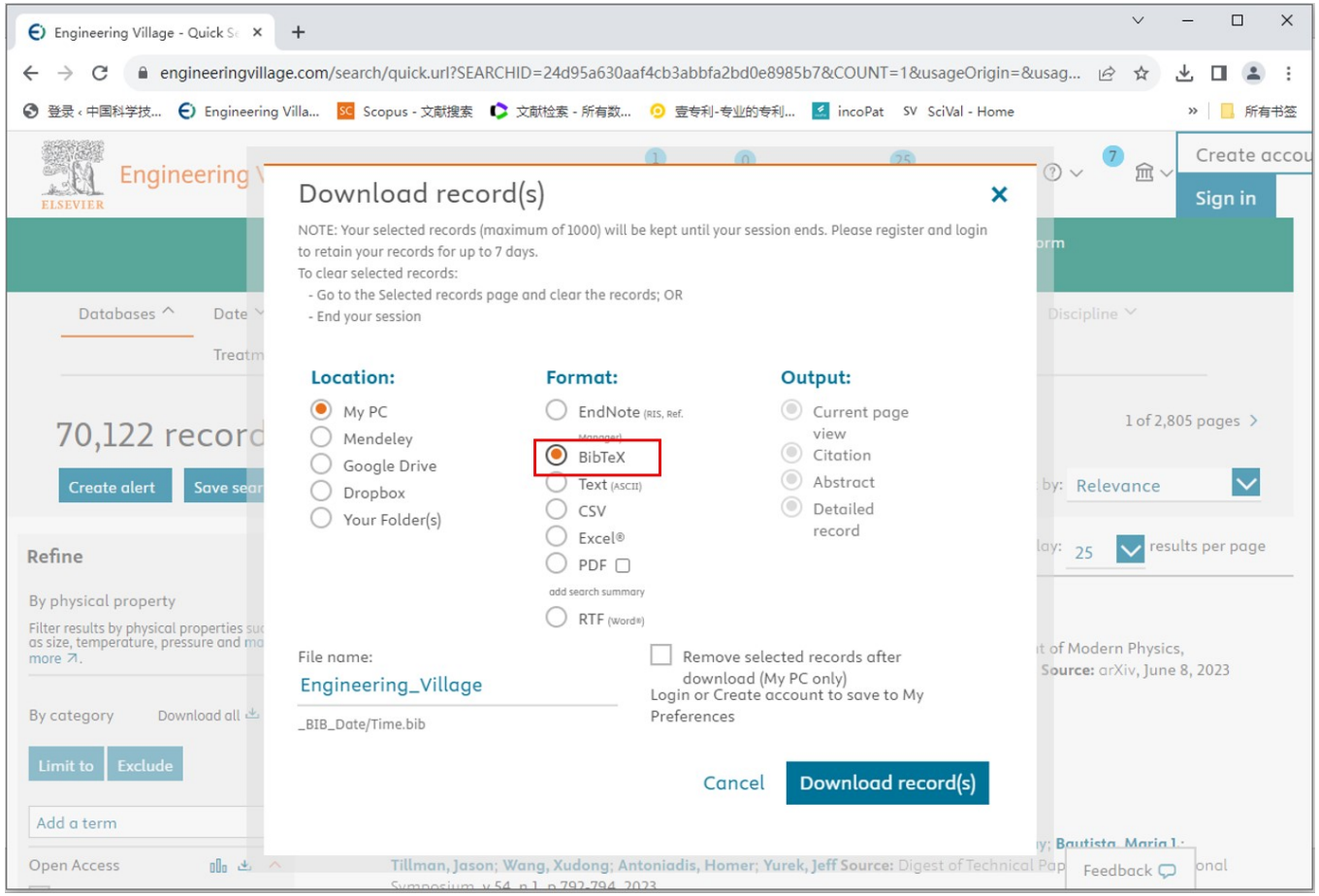
BibTeX中参考文献的收集

(b)建立参考文献库–网上导入



BibTeX中参考文献的收集

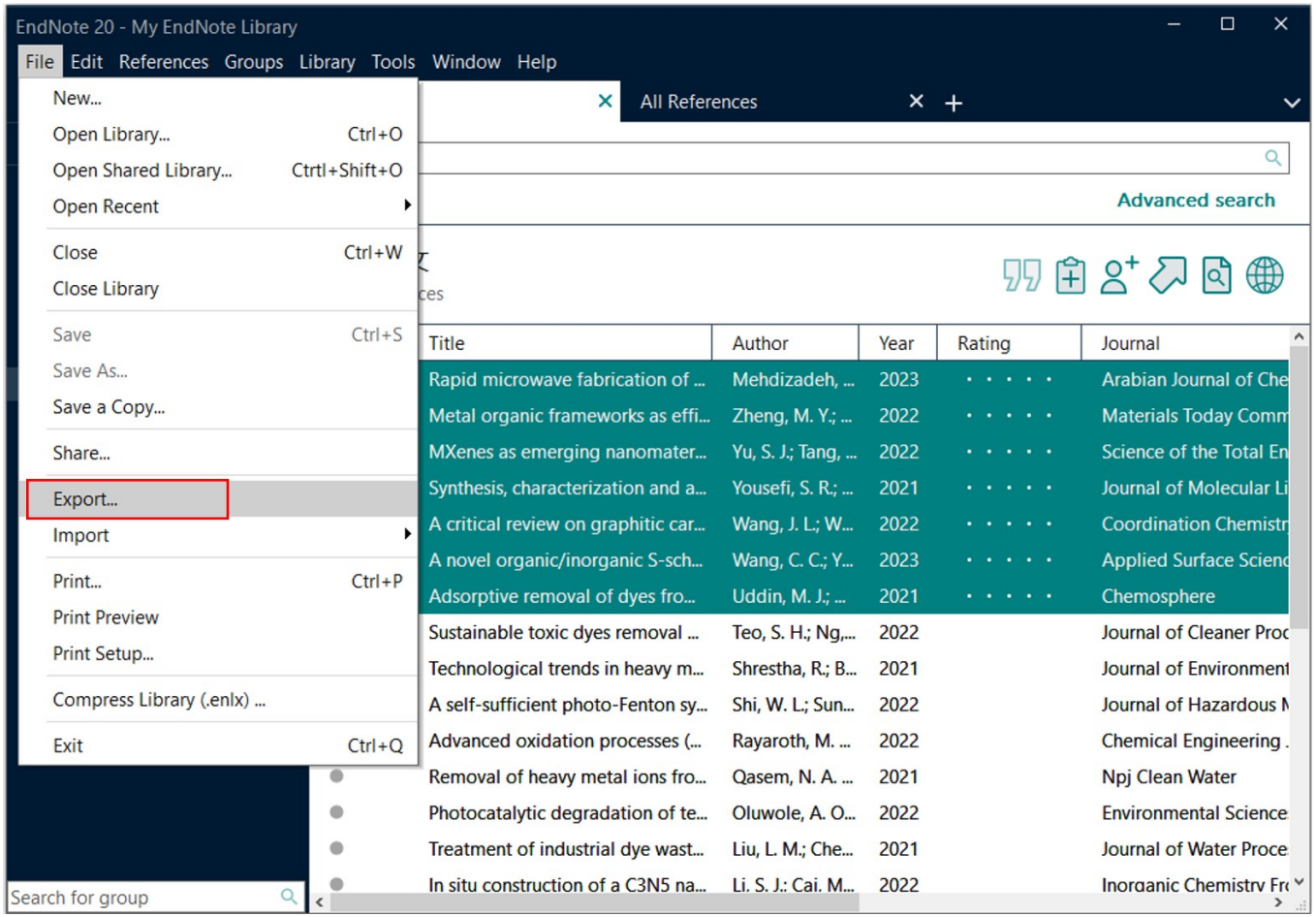
(c)建立参考文献库–网上导入



BibTEX中参考文献的收集

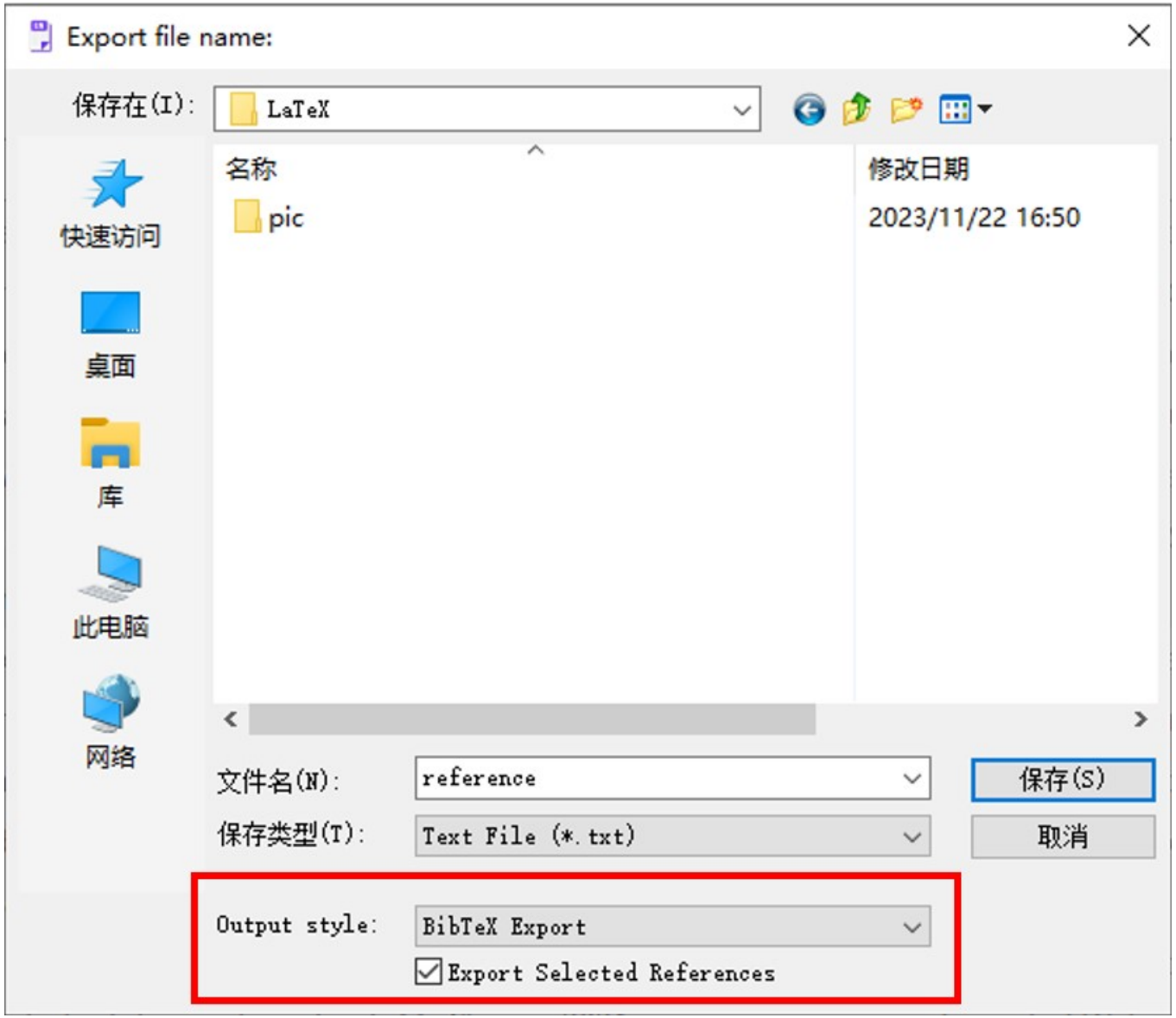
(c)建立参考文献库–EndNote转入

没有提供 bibtex 下载格式的网站，可以先下载成EndNote格式再转入bibtex.



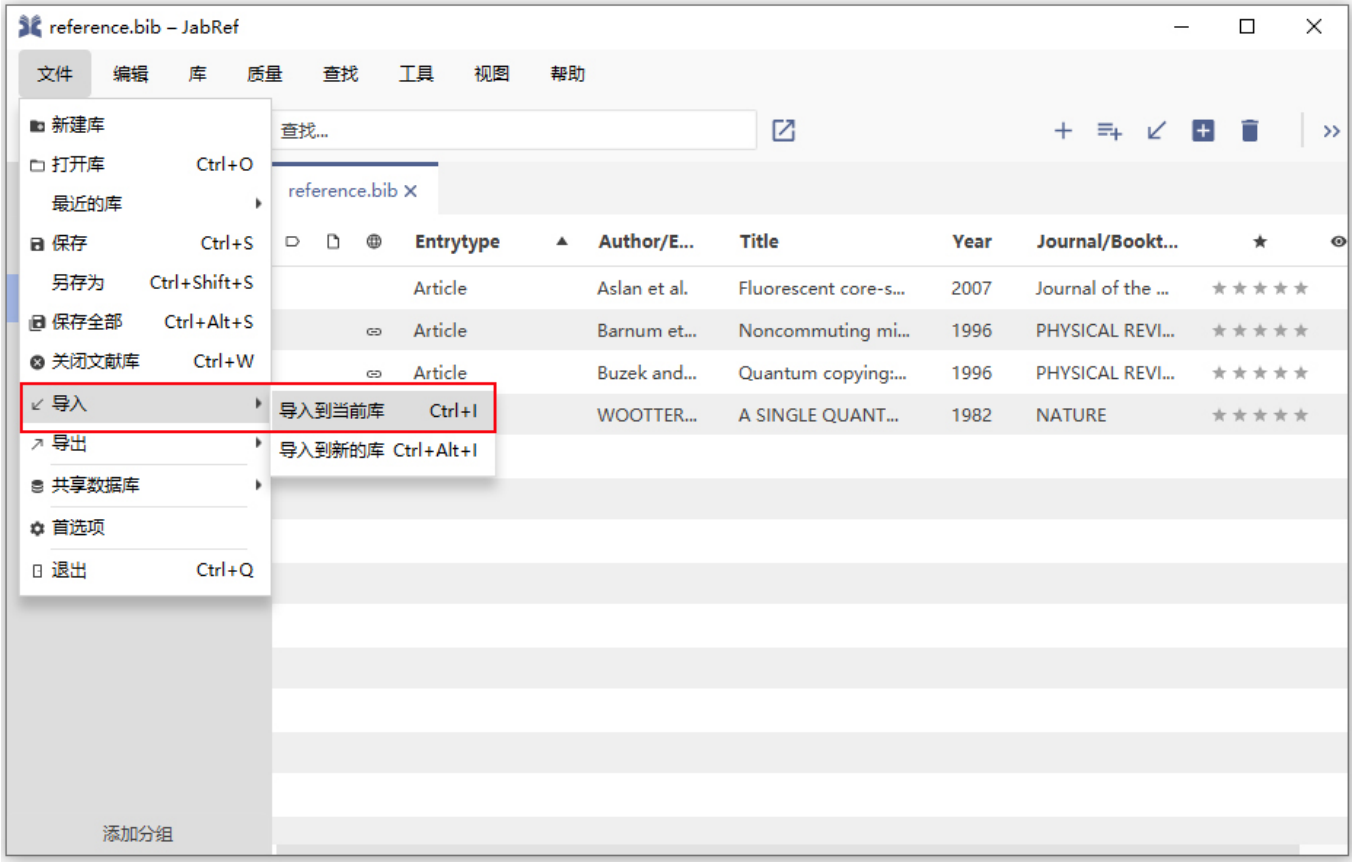
BibTeX中参考文献的收集

(c)建立参考文献库–EndNote转入



BibTeX中参考文献的收集

(c)建立参考文献库–EndNote转入



使用模板快速生成学术论文

各种论文模板–APS

22.tex - TeXworks

文件 编辑 搜索 格式 排版 脚本 窗口 帮助

pdfLaTeX

```
\documentclass[aps,fleqn,leqno][revtex4]
%\documentclass[aps,twocolumn][revtex4]
\usepackage{amsmath,amssymb}
\usepackage{latexsym}
%\usepackage{graphicx}
%\usepackage{subfigure}

\begin{document}
\title{This is Title}
\author{San Zhang, Si Li},
\thanks{Corresponding author:li@ustc.edu.cn}
\address{USTC, Hefei 230026, China.}
\date{\today}

\begin{abstract}
This is abstract. This is abstract. This is abstract. This is abstract.
This is abstract. This is abstract. This is abstract. This is abstract.
This is abstract. This is abstract. This is abstract. This is abstract.
This is abstract. This is abstract. This is abstract.
\end{abstract}

\maketitle

\tableofcontents %

\section{Section}

This is introduction. This is introduction. This is introduction. This is introduction. This is
introduction. This is introduction. This is introduction.

This is introduction. This is introduction. This is introduction. This is introduction. This is
introduction. This is introduction.

\section{section}

\subsection{subsection}

\subsubsection{subsubsection}

this is an equation

\begin{equation}
 cx^2+b^2=c^2
\end{equation}.

test \cite{Wootters} test \cite{Barnum,Wootters}.

\bibliographystyle{unsrt}
\bibliography{reference}
\nocite{Buzek}

\end{document}


%\begin{figure}[htb]
%\centering
%\subfigure[flower1]{
%\label{sub1}
%\includegraphics[width=3cm,height=2cm]{figure.jpg}}
%\subfigure[flower2]{
%\label{sub2}
%\includegraphics[width=3cm,height=2cm]{figure2.jpg}}
%\caption{figure.jpg and figure2.jpg}
```

CRLF UTF-8 行 1/65; 列 30

22.pdf - TeXworks

文件 编辑 搜索 视图 排版 脚本 窗口 帮助

This is Title

San Zhang, Si Li*
USTC, Hefei 230026, China.
(Dated: November 28, 2018)

This is abstract. This is abstract. This is abstract. This is abstract. This is abstract. This is abstract. This is abstract. This is abstract. This is abstract. This is abstract. This is abstract. This is abstract. This is abstract. This is abstract.

Contents

I. SECTION

This is introduction. This is introduction. This is introduction. This is introduction. This is introduction. This is introduction. This is introduction.
This is introduction. This is introduction. This is introduction. This is introduction. This is introduction. This is introduction.

II. SECTION

A. subsection

1. *subsubsection*

this is an equation

$$cx^2 + b^2 = c^2 \tag{1}$$

test [1] test [1, 2].

[1] WK WOOTTERS and WH ZUREK. A single quantum cannot be cloned. *NATURE*, 299(5886):802–803, 1982.
[2] H Barnum, CM Caves, CA Fuchs, R Jozsa, and B Schumacher. Noncommuting mixed states cannot be broadcast. *PHYSICAL REVIEW LETTERS*, 76(15):2818–2821, APR 8 1996.
[3] V Buzek and M Hillery. Quantum copying: Beyond the no-cloning theorem. *PHYSICAL REVIEW A*, 54(3):1844–1852, SEP 1996.

100% 页 1/1

各种论文模板–AMS

amsart-template.tex - TeXworks

```
\documentclass{amsart}

\newtheorem{theorem}{Theorem}[section]
\newtheorem{lemma}[theorem]{Lemma}

\theoremstyle{definition}
\newtheorem{definition}[theorem]{Definition}
\newtheorem{example}[theorem]{Example}
\newtheorem{xca}[theorem]{Exercise}

\theoremstyle{remark}
\newtheorem{remark}[theorem]{Remark}

\numberwithin{equation}{section}

\begin{document}

\title{}

%   Remove any unused author tags.

%   author one information
\author{}
\address{}
\curraddr{}
\email{}
\thanks{}

%   author two information
\author{}
\address{}
\curraddr{}
\email{}
\thanks{}

\subjclass[2010]{Primary }

\keywords{}
```

journal.pdf - TeXworks

AMS JOURNAL SAMPLE

AUTHOR ONE AND AUTHOR TWO

This paper is dedicated to our advisors.

Abstract. This paper is a sample prepared to illustrate the use of the American Mathematical Society's LaTeX document class **amsart** and publication-specific variants of that class for AMS-LaTeX version 2.

THIS IS AN UNNUMBERED FIRST-LEVEL SECTION HEAD

This is an example of an unnumbered first-level heading.

THIS IS A SPECIAL SECTION HEAD

This is an example of a special section head[1].

1. THIS IS A NUMBERED FIRST-LEVEL SECTION HEAD

This is an example of a numbered first-level heading.

1.1. **This is a numbered second-level section head.** This is an example of a numbered second-level heading.

This is an unnumbered second-level section head. This is an example of an unnumbered second-level heading.

1.1.1. *This is a numbered third-level section head.* This is an example of a numbered third-level heading.

This is an unnumbered third-level section head. This is an example of an unnumbered third-level heading.

Lemma 1.1. *Let $f, g \in A(X)$ and let E, F be cozero sets in X.*

(1) *If f is E-regular and $F \subseteq E$, then f is F-regular.*
(2) *If f is E-regular and F-regular, then f is $E \cup F$-regular.*
(3) *If $f(x) \geq c > 0$ for all $x \in E$, then f is E-regular.*

The following is an example of a proof.

Date: January 1, 2001 and, in revised form, June 22, 2001.
2000 *Mathematics Subject Classification.* Primary 54C40, 14E20; Secondary 46E25, 20C20.
Key words and phrases. Differential geometry, algebraic geometry.
The first author was supported in part by NSF Grant #000000.
Support information for the second author.
[1]Here is an example of a footnote. Notice that this footnote text is running on so that it can stand as an example of how a footnote with separate paragraphs should be written.
And here is the beginning of the second paragraph.

1

各种论文模板–SCIENCE

scifile.tex - TeXworks

```latex

\documentclass[12pt]{article}

% Users of the {thebibliography} environment or BibTeX should use the
% scicite.sty package, downloadable from *Science* at
% http://www.sciencemag.org/authors/preparing-manuscripts-using-latex
% This package should properly format in-text
% reference calls and reference-list numbers.

\usepackage{scicite}

\usepackage{times}

% The preamble here sets up a lot of new/revised commands and
% environments.  It's annoying, but please do *not* try to strip these
% out into a separate .sty file (which could lead to the loss of some
% information when we convert the file to other formats).  Instead, keep
% them in the preamble of your main LaTeX source file.


% The following parameters seem to provide a reasonable page setup.

\topmargin 0.0cm
\oddsidemargin 0.2cm
\textwidth 16cm
\textheight 21cm
\footskip 1.0cm


%The next command sets up an environment for the abstract to your paper.

\newenvironment{sciabstract}{%
\begin{quote} \bf}
{\end{quote}}



% Include your paper's title here
```

scifile.pdf - TeXworks

A simple *Science* Template

John Smith,[1*] Jane Doe,[1] Joe Scientist[2]

[1]Department of Chemistry, University of Wherever,
An Unknown Address, Wherever, ST 00000, USA
[2]Another Unknown Address, Palookaville, ST 99999, USA

*To whom correspondence should be addressed; E-mail: jsmith@wherever.edu.

This document presents a number of hints about how to set up your *Science* paper in LaTeX . We provide a template file, `scifile.tex`, that you can use to set up the LaTeX source for your article. An example of the style is the special `{sciabstract}` environment used to set up the abstract you see here.

Introduction

In this file, we present some tips and sample mark-up to assure your LaTeX file of the smoothest possible journey from review manuscript to published *Science* paper. We focus here particularly on issues related to style files, citation, and math, tables, and figures, as those tend to be the biggest sticking points. Please use the source file for this document, `scifile.tex`, as a template for your manuscript, cutting and pasting your content into the file at the appropriate places.

Science's publication workflow relies on Microsoft Word. To translate LaTeX files into Word, we use an intermediate MS-DOS routine (?) that converts the TeX source into HTML. The routine is generally robust, but it works best if the source document is clean LaTeX without a

1

各种论文模板–IEEE

bare_jrnl_new_sample4.tex - TeXworks

```latex
\documentclass[lettersize,journal]{IEEEtran}
\usepackage{amsmath,amsfonts}
\usepackage{algorithmic}
\usepackage{algorithm}
\usepackage{array}
\usepackage[caption=false,font=normalsize,labelfont=sf,textfont=sf]{subfig}
\usepackage{textcomp}
\usepackage{stfloats}
\usepackage{url}
\usepackage{verbatim}
\usepackage{graphicx}
\usepackage{cite}
\hyphenation{op-tical net-works semi-conduc-tor IEEE-Xplore}
% updated with editorial comments 8/9/2021

\begin{document}

\title{A Sample Article Using IEEEtran.cls\\ for IEEE Journals and Transactions}

\author{IEEE Publication Technology,~\IEEEmembership{Staff,~IEEE,}
        % <-this % stops a space
\thanks{This paper was produced by the IEEE Publication Technology Group. They are in Piscataway, NJ.}% <-this % stops a space
\thanks{Manuscript received April 19, 2021; revised August 16, 2021.}}

% The paper headers
\markboth{Journal of \LaTeX\ Class Files,~Vol.~14, No.~8, August~2021}%
{Shell \MakeLowercase{\textit{et al.}}: A Sample Article Using IEEEtran.cls for IEEE Journals}

\IEEEpubid{0000--0000/00\$00.00~\copyright~2021 IEEE}
% Remember, if you use this you must call \IEEEpubidadjcol in the second
% column for its text to clear the IEEEpubid mark.

\maketitle

\begin{abstract}
This document describes the most common article elements and how to use the IEEEtran class with \LaTeX \ to produce files that are suitable for submission to the IEEE.  IEEEtran
```

bare_jrnl_new_sample4.pdf - TeXworks

JOURNAL OF LATEX CLASS FILES, VOL. 14, NO. 8, AUGUST 2021 1

A Sample Article Using IEEEtran.cls for IEEE Journals and Transactions

IEEE Publication Technology, *Staff, IEEE,*

***Abstract*—This document describes the most common article elements and how to use the IEEEtran class with LaTeX to produce files that are suitable for submission to the IEEE. IEEEtran can produce conference, journal, and technical note (correspondence) papers with a suitable choice of class options.**

***Index Terms*—Article submission, IEEE, IEEEtran, journal, LaTeX, paper, template, typesetting.**

I. Introduction

THIS file is intended to serve as a "sample article file" for IEEE journal papers produced under LaTeX using IEEEtran.cls version 1.8b and later. The most common elements are covered in the simplified and updated instructions in "New_IEEEtran_how-to.pdf". For less common elements you can refer back to the original "IEEEtran_HOWTO.pdf". It is assumed that the reader has a basic working knowledge of LaTeX. Those who are new to LaTeX are encouraged to read Tobias Oetiker's "The Not So Short Introduction to LaTeX," available at: http://tug.ctan.org/info/lshort/english/lshort.pdf which provides an overview of working with LaTeX.

II. The Design, Intent, and Limitations of the Templates

The templates are intended to **approximate the final look and page length of the articles/papers. They are NOT intended to be the final produced work that is displayed in print or on IEEEXplore®**. They will help to give the authors an approximation of the number of pages that will be in the final version. The structure of the LaTeX files, as designed, enable easy conversion to XML for the composition systems used by the IEEE. The XML files are used to produce the final print/IEEEXplore pdf and then converted to HTML for IEEEXplore.

III. Where to Get LaTeX Help — User Groups

The following online groups are helpful to beginning and experienced LaTeX users. A search through their archives can provide many answers to common questions.

http://www.latex-community.org/
https://tex.stackexchange.com/

IV. Other Resources

See [?], [?], [?], [?], [?] for resources on formatting math into text and additional help in working with LaTeX.

V. Text

For some of the remainer of this sample we will use dummy text to fill out paragraphs rather than use live text that may violate a copyright.

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Rum rem ditinti sciendunt volupiciendi sequiae nonsect oreniatur, volores sition ressimil inus solut ea volum harumqui to see(??) mint aut quat eos explis ad quodi debis deliqui aspel earcius.

$$x = \sum_{i=0}^{n} 2iQ. \tag{1}$$

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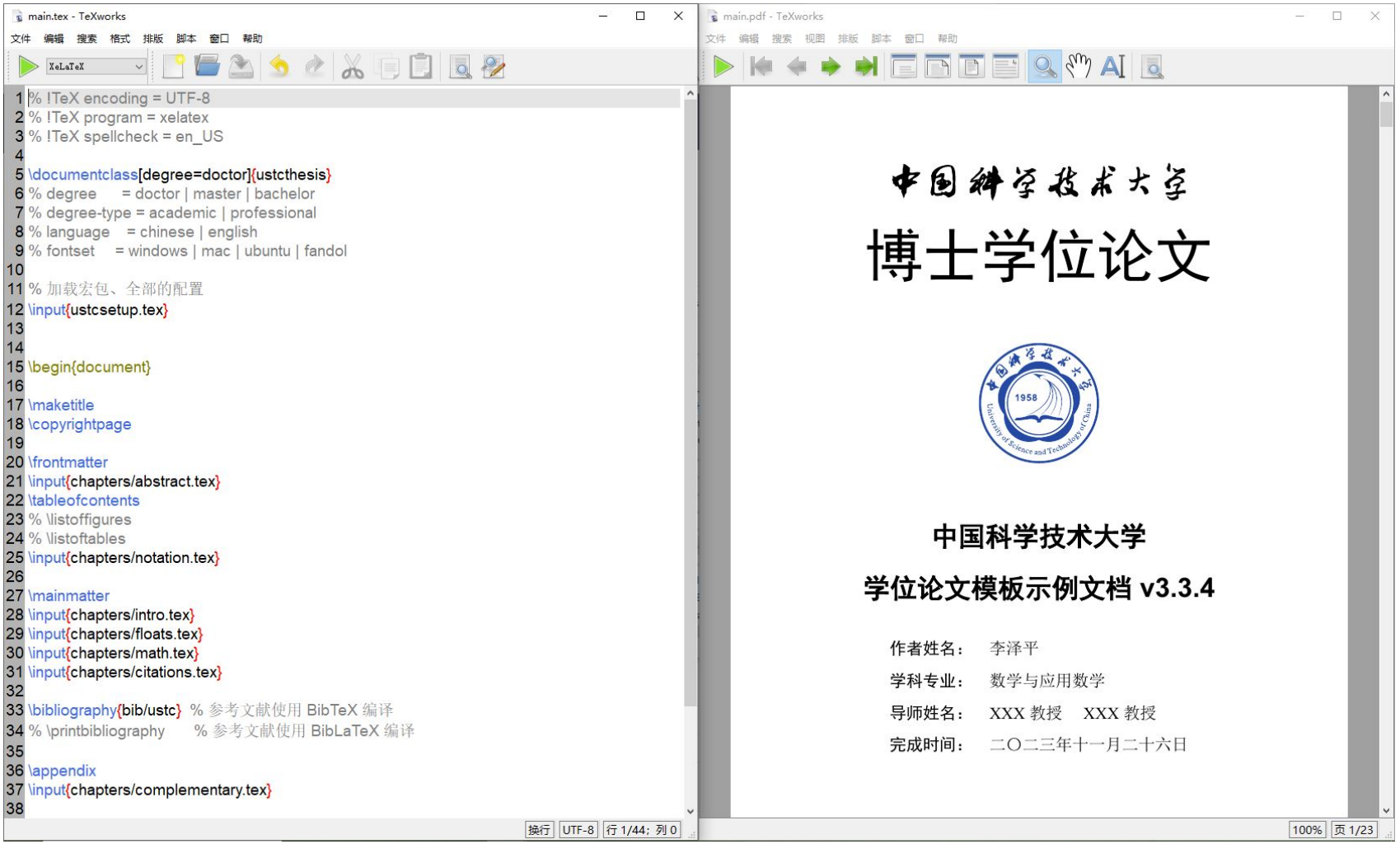

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AMS-LaTeX

Prerequisites

- A working TeX system
  TeX is not an AMS product. See the AMS TeX Resources page for sources.
- A current working LaTeX system, dated December 2000 or later
  LaTeX is not an AMS product. See the LaTeX Project home page for information if you do not already have LaTeX.

Download AMS-LaTeX

Important note: If you are working on a system based on a TeX Live (or MiKTeX or MacTeX) distribution later than 2005, AMS-LaTeX will be included as part of the LaTeX "required" collection, and you should not have to download or install it separately.

There are two components to AMS-LaTeX: the document classes, and amsmath. They can be obtained separately if needed.

- amscls2.zip
- amsmath, from CTAN

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ACM Author Gateway
Proceedings

Home > ACM Proceedings > Production Information > LaTeX Article Template

Preparing Your Article with LaTeX

Introduction

The ACM article template allows authors to use LaTeX or Microsoft Word to prepare high-quality articles for publication in the ACM Digital Library. An important concept for authors to understand is the separation of content and style. The input format - whether Word or LaTeX - is intentionally simple in appearance, making creation and editing simpler, as well as reviewing. Authors provide metadata - through LaTeX commands - \title{}, \section{} and so on - and associating styles with content in a Word document - "this is a paragraph, this is a subtitle," and so on. TAPS takes Word or LaTeX documents as input, and produces well-formatted, high-quality PDF and HTML5 documents for publication. For more information on TAPS, please review our TAPS Workflow page.

The article creation process can be summed up in a few steps.

INFORMATION FOR AUTHORS

Production Information

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- TAPS Production Workflow
  - TAPS Workflow Demo Video
- Preparing Your Article with Microsoft Word
  - MS Word Author Template Demo

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HOME > AUTHOR PORTAL > PREPARING MANUSCRIPTS USING LATEX

Preparing Manuscripts Using LaTeX

For quickest processing of your paper and for automated population of the manuscript's record during the submission process, we prefer to receive final manuscripts from authors in Word docx format. If you wish to use LaTeX, please observe the guidelines on this page in setting up your paper. Make sure that your PDF files are legible on the computer screen to avoid delays in processing.

Initial submission: To prepare your manuscript in LaTeX, please follow the **LaTeX source guidelines** below. Generate PDF files for the main text and Supplementary Materials, and upload them in the "Manuscript" and "Supplementary Materials" sections of the "Article" and "Related Documents" tabs. The figures should be included in the PDF files; do not upload them separately at this stage (see the section on Figures in the **LaTeX source guidelines** below).

Revision: To prepare your manuscript in LaTeX, please follow the **LaTeX source guidelines** below. Generate PDF files for the main text and Supplementary Materials, and upload them in the "Manuscript" and "Supplementary Materials" sections of the "Article" and "Related Documents" tabs. At this stage, the main text file should **not** include figures but **should** include their captions (see the section on Figures in the **LaTeX source guidelines** below). The Supplementary Materials pdf file **should** include figures. Upload the main text figures in the "Figures" section of the "Article" tab. In addition, in the "Auxiliary Supplementary Materials and Other Supporting Files" section of the "Related Documents" tab, please upload a zip or .tar.gz archive of your LaTeX files for the **main text**, consisting of everything required to compile the paper—including .tex, .sty, .bib, etc. files—and all of the output files, such as .aux and .bbl.

LaTeX source guidelines

- **Use LaTeX2e.** Manuscripts should be marked up in LaTeX2e, not LaTeX 2.09 or any earlier release.

总结

- .tex文件名不能有中文字符
- 内容是否放入相应环境中
- 编译所需宏包是否调用
- 有交叉引用内容的至少连续编译两次
- 及时编译，及时发现问题，及时修改错误

学习资源

- https://ctan.org/ "Comprehensive TeX Archive Network"为世界上最主要的TeX资源集散网站, 搜集了关于TeX的各种文件与软件等等.
- http://www.tug.org/ "TeX User Group" 是1980年成立的TEX用户组织,可以下载软件,寻求帮助, 参加讨论等.
- http://www.ctex.org/ 可以下载CTEX中文套装,WinEdt编辑器.
- 书籍: 《LATEX入门》刘海洋著.

感谢聆听