Example of Bilingual LaTeX Document
双语 LaTeX 文档案例

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Abstract 摘要

This is an example of a bilingual LaTeX document class. This document class is mainly based on paracol package, which are able to write left and right bilingual documents. Use BibTeX to process references, insert hyperlinks using hyperref package, insert mathematical formulas using $\mathcal{AMS}$-TeX Kit, we are able to write professional and beautiful LaTeX documents.

Key Words: Bilingual LaTeX Document

这是一篇双语LaTeX文档类的案例。该文档类主要基于paracol宏包，能够实现左右双语对照文档的编写。借助 LaTeX 的BibTeX处理参考文献，hyperref宏包插入超链接，$\mathcal{AMS}$-TeX套件处理数学公式等特性，能够编写专业精美的 LaTeX 文档。

关键词： 双语 LaTeX 文档

1   Getting Started 开始使用

1.1   Installtion 安装

You can directly use the document class by free installation, that is, put `bilidoc.cls` file in your document directory. If you use this document class frequently, you can add the document class to your TeX Live[1] or CTeX[2].

你可以通过免安装的方式直接使用该文档类，即将`bilidoc.cls`文件放到你的文档目录即可。如果你经常使用该文档类，你可以将该文档类添加到你的TeX Live或者CTeX中。

1.2   A Minimal Example 一个最小示例

Now you can start using the document class, Here is a minimal example of `bilidoc`.

现在你就可以开始使用该文档类了，下面是`bilidoc`的一个最小示例。

```
\documentclass{bilidoc}
\title{Document Title}
\author{Author Name}
\date{\today}
\begin{document}
   \maketitle
   <Abstract>
   \section{Introduction 介绍}
   ...
   \bibliographystyle{plainnat}
   \bibliography{bibfile.bib}
   \begin{appendix}
      \section{A Minamal Example}
      ...
   \end{appendix}
\end{document}
```

1.3   Options 选项

You can provide some options to `bilidoc`, these options will be loaded into `ctexart`, because `bilidoc` is based on `ctexart` and no new options are defined in `bilidoc`.

使用`bilidoc`可以提供一些选项，这些选项都会被加载到`ctexart`中，因为`bilidoc`基于`ctexart`，而且`bilidoc`没有定义新的选项。

2   Commands and Environments 命令与环境

2.1   Abstract Environment 摘要环境

bilidoc provides a bilingual abstract environment, its basic usage is:

bilidoc提供了双语摘要环境，其基本用法为：

```
\begin{Abstract}{<English Key Words>}{<中文关键词>}[<Width of 1st Column>]
   <English Abstract>
   \switchcolumn
   <中文摘要>
\end{Abstract}
```

The parameters in curly brackets are required parameters, and the parameters in square brackets are optional parameters. `<Widthof1st Column>` represents the width of the first column, that is, the width of the English abstract content. If this parameter is omitted, the first column width will take its default value `0.60\linewidth`.

花括号中的参数为必选参数，方括号中的参数为可选参数。`<Widthof1stColumn>`代表首列的宽度，即英文摘要内容的宽度，若省略该参数，则首列宽度取其默认值`0.60\linewidth`。

2.2   ParaColumn Environment 双栏环境

The double-column environment `ParaColumn` divides the page into two columns, and the contents of the two columns do not interfere with each other even when the document changes pages. This feature allows us to write bilingual translation documents. The basic usage of `ParaColumn` environment is:

双栏环境`ParaColumn`将页面分为两栏，两栏的内容互不干扰，即使是在换页的情况下，这种特性允许我们编写双语对照翻译的文档。`ParaColumn`环境的基本用法为：

```
\begin{ParaColumn}[<Width of 1st Column>]
   First Paragraph in English.
   \switchcolumn
   中文第一段。
   \switchcolumn*
   Second Paragraph in English.
   \switchcolumn
   中文第二段。
\end{Abstract}
```

Same as `Abstract` environment, `<Widthof1stColumn>` represents the width of the first column, that is, the width of the English content. If this parameter is omitted, the first column width will take its default value `0.60\linewidth`.

The difference between the command with a '*' `\switchcolumn*` and `\switchcolumn`, is when we use `\switchcolumn*` to switch from one column to another column, The content after the command will be aligned at the bottom of the content before the command, thus we can achieve the effect of aligning the top of each paragraph separately.

与`Abstract`环境相同的是，`<Widthof1stColumn>`代表首列的宽度，即英文内容的宽度，若省略该参数，则首列宽度取其默认值`0.60\linewidth`。

带'*'号的命令 `\switchcolumn*` 与命令`\switchcolumn`不同的是，当我们使用`\switchcolumn*`从一列切换到另一列时，该命令之后的内容将在该命令之前的内容的最底部对齐，即可实现每一小段顶部分别对齐的效果。

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[1]See https://www.jianshu.com/p/cfdb8af40a9a

[2]See https://blog.csdn.net/u013587021/article/details/52903785

The `\switchcolumn*` command has an optional parameter before and after the'*' sign. The former can specify which column to switch to, and it is indicated by a number starting from 0. The latter can add a column text that spans two columns. Generally, you can put commands such as `\section` and `\subsection` here to generate the title of the general column. You can also put the environment such as pictures and tables here, but you should put pictures and table codes in Separate files, and then use the `\input` command to import, otherwise unexpected results may occur.

`\switchcolumn*`命令的'*' 号的前后各有一个可选参数，前者可以指定具体切换到哪一列，用从 0 开始的数字表示，后者可以添加跨越两栏的通栏文本，一般可以将`\section`和`\subsection`等命令放到此处以产生通栏的标题，也可将图片和表格等环境放到此处，但你应该将图片和表格代码放到单独的文件，然后用`\input`命令导入，否则可能会出现意想不到的结果。

```
\switchcolumn[0]*[\section{Getting Started 开始使用}]
```

The `ParaColumn` environment may also start with a spanning text by specifying it as the optional argument of `\begin{ParaColumn}`.

`ParaColumn`环境同样可以完成这种功能，只需在`\begin{ParaColumn}`命令后添加相应的可选参数。

```
\begin{ParaColumn}[\section{Getting Started 开始使用}]
   ...
\end{ParaColumn}
```

2.3 CrossColumnText Command 跨栏命令

As mentioned earlier, the `\switchcolumn*` command can achieve the function of hurdling, but you cannot add equations here, otherwise an error will occur. In order to add a hurdle equation, you can use the `\CrossColumnText` command, which can also generate equation titles, tables and pictures.

前面提到，`\switchcolumn*`命令可以实现跨栏的功能，但不能在此处添加公式，否则会产生错误。为了添加跨栏公式，可以使用`\CrossColumnText`命令，该命令同样可以产生跨栏的标题、表格和图片等内容。

```
\CrossColumnText{
   \begin{align}
      ...
   \end{align}
}
```

2.4 BiliTable Environment 双语表格环境

The bilingual table environment `BiliTable` can generate a table with bilingual titles, see Table 1, its basic usage is:

双语表格环境`BiliTable`可以得到带双语标题的表格，见表 1所示，其基本用法为：

```
\begin{BiliTable}[<Options>][<FloatPlacement>]{<English Figure Name>}{<中文图名>}
   % <Table Content>
   \begin{tabular}[<Vertical Alignment>]{<Column Format>}
      ...
   \end{tabular}
\end{BiliTable}
```

The optional parameter `Options` controls the direction, hurdles, floating options and labels of the `BiliTable` environment, different options are separated by commas. The following describes the options

可选参数`Options`控制`BiliTable`环境的方向、跨栏、浮动选项以及标签，不同选项间用英文逗号隔开。下面描述了`BiliTable`环境

Table 1: Properties of Skabo clay
表 1: Skabo 黏土的物理特性

Properties	value	Properties	value
Water content, percent	43.1 (39.4-47.8)	Activity	0.63
Liquid limit	52	Salt content, g/L	25 (24.2-28.8)
Plastic limit	24	Organic content, percent	0.32
Plastic index	28	S_u/p	0.25
Clay fraction $< 2\mu$,percent	45	Sensitivity	5

defined by the `BiliTable` environment, The option on the right is its default value.

定义的选项，右侧选项为其默认值。

`orientation = <vertical|horizontal|v|h>`   `vertical`

The `orientation` option is used to control the direction of the table. When the `orientation` option is `horizontal`, a single-page horizontal table will be generated.

orientation选项用于控制表格的方向，当orientation选项为horizontal时,将生成单页的横向表格。

`crosscolumn = <true|false>`   `false`

The `crosscolumn` option is used to generate a cross-column table, which is equivalent to the `table*` environment.

crosscolumn选项用于产生跨栏表格，相当于table*环境。

`label = <name>`

The `label` option is used to create label for the table, which is equivalent to defining `\label{name}`. You can use `\ref{name}` to reference the table from other places.

label选项用于产生标签，相当于定义了\label{name}命令，可从其它地方使用\ref{name}引用该表格。

The optional parameter `FloatPlacement` is used to control the floating options of the float table, and its default value is `htbp`, the `H` option provided by the `float` package is used to create a non-floating table.

可选参数FloatPlacement用于控制浮动体的浮动选项，其默认值为htbp，float宏包提供的H选项用于产生不浮动的表格。

`FloatPlacement = [!]<`*subset of* `htbp>` *or* `<H>`   `htbp`

```
\begin{BiliTable}[crosscolumn=true,label=table:bilingual-table-example][htb]{Properties of
    Skabo clay}{Skabo 黏土的物理特性}
  \begin{tabular}{ll|ll}
    \Xhline{1pt}
    Properties & value & Properties & value \\
    \Xcline{1-4}{0.7pt}
    Water content, percent & 43.1 (39.4-47.8) & Activity & 0.63 \\
    Liquid limit & 52 & Salt content, g/L & 25 (24.2-28.8) \\
    Plastic limit & 24 & Organic content, percent & 0.32 \\
    Plastic index & 28 & $S_u/p$ & 0.25 \\
    Clay fraction $<2\mu$ ,percent & 45 & Sensitivity & 5\\
    \Xhline{1pt}
  \end{tabular}
\end{BiliTable}
```

The following `listing` is an example of the `BiliTable` environment, and the output result is shown in Table 1.

下面的listing是BiliTable环境的一个示例，输出结果见表 1所示。

2.5 BiliFigure Environment 双语图形环境

The bilingual figure environment `BiliFigure` can generate a figure with bilingual titles, see Fig. 1, its basic usage is:

双语图形环境`BiliFigure`可以得到带双语标题的图形，如图 1所示，其基本用法为：

```
\begin{BiliFigure}[<Options>][<FloatPlacement>]{<English Figure Name>}{<中文图名>}
  % <Figure Content>
  \includegraphics[<Options>]{<Figure File Name>}
\end{BiliFigure}
```
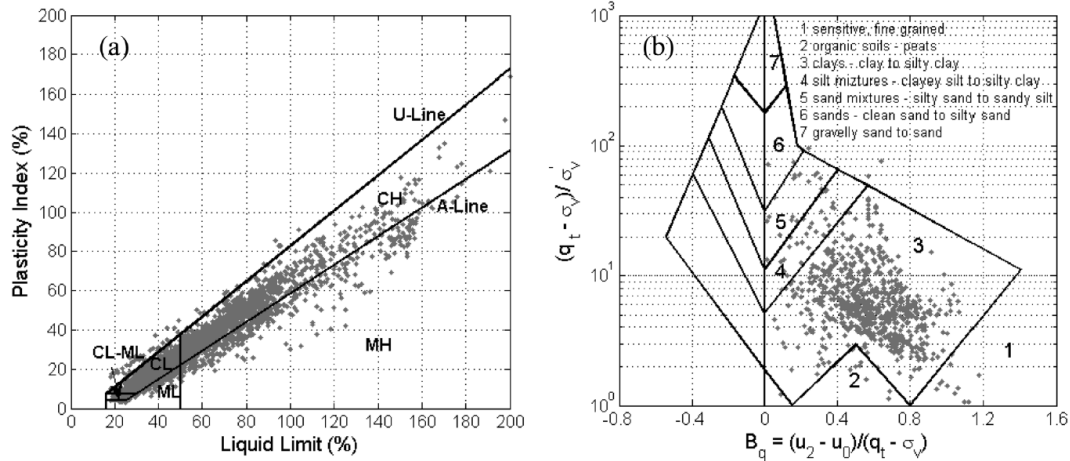

Figure 1: (a) Plasticity chart; (b) CPTU soil classification chart
图 1：（a）可塑性图；（b）CPTU 土壤分类图

The usage of the optional parameters of the bilingual picture `BiliFigure` environment `Options` and the `BiliTable` environment are basically the same, so I won't repeat them here.

The following `listing` is an example of the `BiliFigure` environment, and the output result is shown in Fig. 1.

双语图片`BiliFigure`环境的可选参数`Options`与`BiliTable`环境的用法基本相同，这里不再赘述。

下面的`listing`是`BiliFigure`环境的一个示例，输出结果见图 1所示。

```
\begin{BiliFigure}[crosscolumn=true,label=figure:bilingual-figure-example][htb]{(a) Plasticity
    chart; (b) CPTU soil classification chart}{（a）可塑性图；（b）CPTU土壤分类图}
  \includegraphics[width=0.80\linewidth]{figures/figure-1.png}
\end{BiliFigure}
```

In addition to inserting a single picture like Fig. 1, we can also use the `\subfigure` command provided by the `subfigure` package to insert side-by-side subfigures, see Fig. 2, its basic usage is:

除了像图 1那样插入单张图片，我们还可以使用`subfigure`宏包的`\subfigure`命令插入并排的子图，如图 2所示，其基本用法为：

```
\begin{BiliFigure}[<Options>][<FloatPlacement>]{<English Figure Name>}{<中文图名>}
  \subfigure[<Subfigure Name>]{
    \includegraphics[<Options>]{<Subfigure File Name>}
    \label{<Subfigure Label>}
  }
  \subfigure[<Subfigure Name>]{
    \includegraphics[<Options>]{<Subfigure File Name>}
    \label{<Subfigure Label>}
  }
```
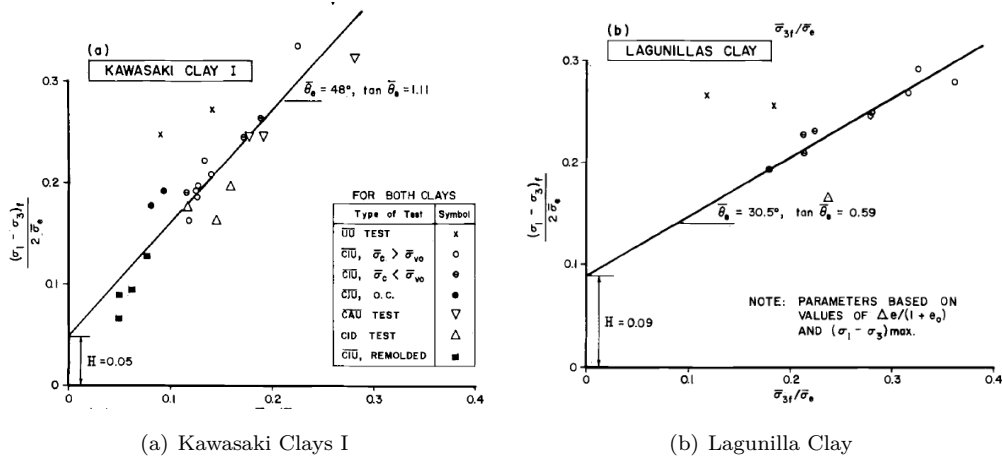
```
\end{BiliFigure}
```


(a) Kawasaki Clays I   (b) Lagunilla Clay

Figure 2: Hvorslev Parameters

图 2: Hvorslev 参数

The following `listing` is an example of `subfigure`, and the output result is shown in Fig. 2.

下面的`listing`是`subfigure`的一个示例，输出结果见图 2所示。

```
\begin{BiliFigure}[label=figure:bilingual-subfigure-example][htb]{Hvorslev Parameters}{
    Hvorslev参数}
   \subfigure[Kawasaki Clays I]{
       \includegraphics[width=0.36\textwidth]{figures/figure-2a.png}
       \label{figure:2a}
   }
   \subfigure[Lagunilla Clay]{
       \includegraphics[width=0.36\textwidth]{figures/figure-2b.png}
       \label{figure:2b}
   }
\end{BiliFigure}
```

2.6 Side-by-Side Charts Command 图表横排命令

The horizontal chart command `\sidebyside` can typeset horizontal charts, see Fig. 3 and Fig. 4, its basic usage is:

图表横排命令`\sidebyside`可以排版横向并排的图表，如图图 3和图 4所示，其基本用法为：

```
\sidebyside[<Options>]
   {<Width of 1st Chart>}{<1st Chart Definition>}
   {<Width of 2nd Chart>}{<2nd Chart Definition>}
   [<Width of 3rd Chart>][<3rd Chart Definition>]
   [<Width of 4th Chart>][<4th Chart Definition>]
```

The optional parameter `Options` of the `sidebyside` command provides `verticalalignment`, `crosscolumn` and `float` option. The usage of `crosscolumn` and `float` option is the same as that of the `BiliTable` and `BiliFigure` environment.

`\sidebyside`命令的可选参数`Options`提供了`verticalalignment`、`crosscolumn`和`float`选项。`crosscolumn`以及`float`选项与`BiliTable`和`BiliFigure`环境对应选项的
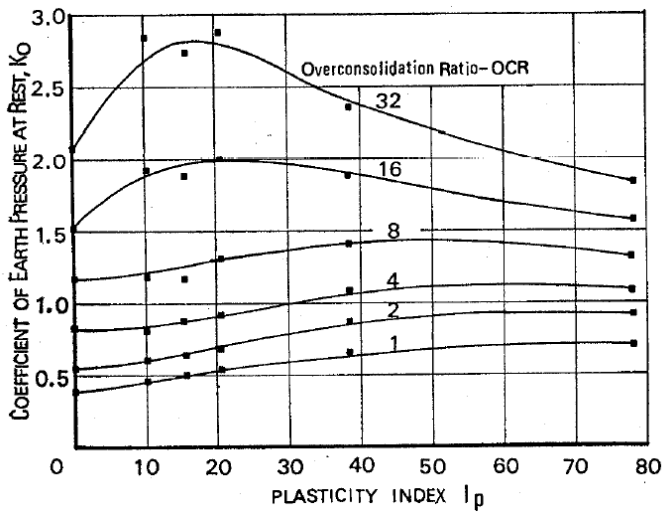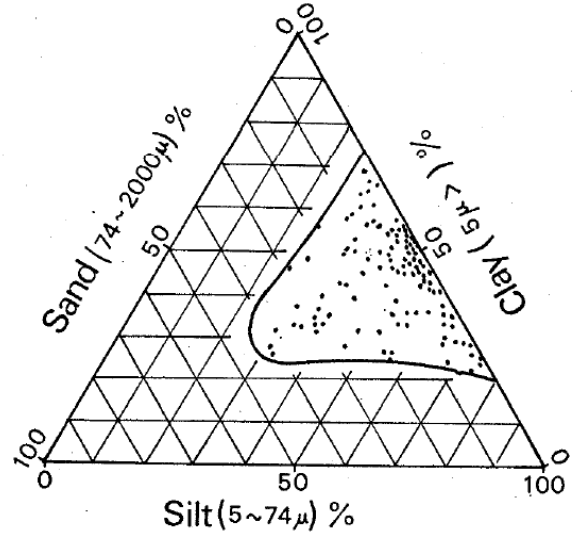
Figure 3: Relationship between K_0, I_p and OCR

图 3: K_0,I_p 和 OCR 之间的关系

Figure 4: Trianguler classification chart

图 4: 三角分类图

用法相同。

```
verticalalignment = <top|center|bottom|t|c|b>
```

bottom

verticalalignment controls the vertical alignment of the horizontal chart.

verticalalignment控制横排图表的垂直对齐方式。

The following `listing` is an example of `sidebyside` command, and the output result is shown in Fig. 3 and Fig. 4.

下面的`listing`是`sidebyside`命令的一个示例，输出结果见图 3和图 4所示。

```
\sidebyside[crosscolumn=false][htb]{0.50\linewidth}{
    \begin{BiliFigure}[label=figure:side-by-side-charts-example-1][H]{Relationship between $K
        _0$, $I_p$ and OCR}{$K_0$,$I_p$和OCR之间的关系}
        \includegraphics[width=\linewidth]{figures/figure-3}
    \end{BiliFigure}
}{0.45\linewidth}{
    \begin{BiliFigure}[label=figure:side-by-side-charts-example-2][H]{Trianguler classification
        chart}{三角分类图}
        \includegraphics[width=\linewidth]{figures/figure-4}
    \end{BiliFigure}
}
```

2.7 End-by-End Charts Command 图表竖排命令

The vertical chart command `\endbyend` can typeset vertical charts, see Fig. 5 and Fig. 6, its basic usage is:

图表竖排命令`\endbyend`可以排版竖向并排的图表，如图 5和图 6所示，其基本用法为：

```
\endbyend[<Options>][<FloatPlacement>]{<Width>}
    {<1st Chart Definition>}
    {<2nd Chart Definition>}
    [<3rd Chart Definition>]
```
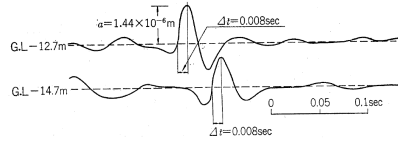
```
[<4th Chart Definition>]
```


Figure 5: An example of shear wave velocity measurement
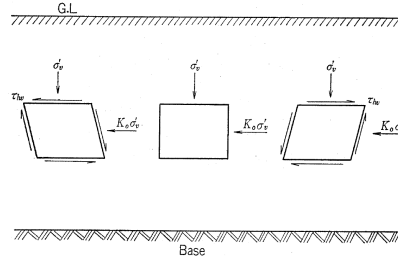
图 5: 剪切波速度测量示例

Figure 6: Conceptual field loading condition

图 6: 概念性的场地加载条件

The optional parameter `Options` of the `sidebyside` command provides `crosscolumn` and `float` option. Its usage is the same as that of the corresponding options of `BiliTable` and `BiliFigure`. The parameter `{<Width>}` is the width of the vertical chart environment.

The following `listing` is an example of `sidebyside` command, and the output result is shown in Fig. 5 and Fig. 6.

\endbyend命令的可选参数Options提供了crosscolumn和float选项。它们的用法与BiliTable和BiliFigure环境对应选项的用法相同。参数{<Width>}为整个竖排环境的宽度。

下面的listing是sidebyside命令的一个示例，输出结果见图 5和图 6所示。

```
\endbyend[crosscolumn=false][htb]{\linewidth}{
    \begin{BiliFigure}[label=figure:end-by-end-charts-example-1][H]{An example of shear wave
        velocity measurement}{剪切波速度测量示例}
        \includegraphics[width=0.3\linewidth]{figures/figure-5.png}
    \end{BiliFigure}
}{
    \begin{BiliFigure}[label=figure:end-by-end-charts-example-2][H]{Conceptual field loading
        condition}{概念性的场地加载条件}
        \includegraphics[width=0.3\linewidth]{figures/figure-6.png}
    \end{BiliFigure}
}
```

There is an interesting question worth discussing here. Since we nested the `BiliFigure` environment in the `\endbyend` command, it involves the setting of two widths. The `\linewidth` in the outer `\endbyend` command means that we have created a box with the width of `\linewidth`, and the content defined later will be typeset in this box, The horizontal alignment of the chart in the `\endbyend` command defaults to center alignment, so the final typesetting result is like Fig. 5 and Fig. 6 as shown. If we change the width in the outer

这里有一个有趣的问题值得讨论。由于我们在\endbyend命令中嵌套使用了BiliFigure环境，于是涉及到了两个宽度的设置问题。外层\endbyend命令中的\linewidth表示我们创建了一个宽度为\linewidth的盒子，之后定义的内容都将在这里盒子中进行排版，\endbyend命令中图表的水平对齐方式默认为居中对齐，因此

\endbyend command to 0.5\linewidth, then we will find that the final typesetting result will be centered in the left half.

Let's look at the width of the inner `BiliFigure` environment again. It is worth noting that the value of \linewidth here is different from the name of \linewidth of the outer \endbyend command. \linewidth is actually the width of the environment where the command is located. For the outer \endbyend command, \linewidth is the width of the `document` environment, which is the width of the heart of the document, and for the inner `BiliFigure` environment, \linewidth is the width of the box created by the \endbyend command, which is the width value of the outer \endbyend command. If we change the width options of the outer \endbyend command and the inner `BiliFigure` environment to 0.5\linewidth, then we will find the width of the picture finally created by the `BiliFigure` environment becomes approximately 0.25\linewidth.

最终的排版结果如图 5和图 6所示。如果我们将外层\endbyend命令中的宽度改为0.5\linewidth，这时我们会发现最终的排版结果将在左半区域居中对齐。

我们再来看一下内层BiliFigure环境中的宽度。值得注意的是，这里的\linewidth在数值与外层\endbyend命令的\linewidth并不相同。\linewidth为命令所处环境的宽度，对于外层\endbyend命令，\linewidth为document环境的宽度，也就是文档版心的宽度，而对于内层BiliFigure环境，\linewidth为由\endbyend命令创建的盒子的宽度，也就是外层\endbyend命令的宽度值。如果我们将外层\endbyend命令和内层BiliFigure环境的宽度选项均改为0.5\linewidth，那么我们会发现最终由BiliFigure环境创建的图片宽度变成了大约为0.25\linewidth。

2.8 Combination of Side-by-Side and End-by-End Charts 横排与竖排图表的组合

If we need to typeset charts with more complicated position, such as one picture on the left and two pictures on the right, the \sidebyside command and \endbyend command obviously cannot satisfy us, at this time we can combine the two commands to achieve our purpose.

The following `listing` is an example of the combination of sidebyside and \endbyend command, and the output result is shown in Fig. 7~Fig. 9.

如果我们需要排版更复杂位置的图表,比如左侧排一张图,右侧以竖排的方式排两张图,\sidebyside命令和\endbyend命令显然都不能满足我们的需求,这时我们可以将两个命令结合起来以达到我们的目的。

下面的 `listing` 是 \sidebyside 命令和 \endbyend 命令结合使用的一个示例,输出结果见图 7~图 9所示。

```
\sidebyside[crosscolumn=false][htb]{0.52\linewidth}{
   \begin{BiliFigure}[label=figure:combination-of-side-by-side-and-end-by-end-charts-example
       -1][H]{Perfect Sampling of a Normally Consolidated Clay and an Over-consolidated Clay}{
       正常固结土和超固结土的完美采样}
      \includegraphics[width=\linewidth]{figures/figure-7.png}
   \end{BiliFigure}
}{0.44\linewidth}{
   \endbyend[crosscolumn=false][H]{\linewidth}{
      \begin{BiliFigure}[label=figure:combination-of-side-by-side-and-end-by-end-charts-
          example-2][H]{An example of shear wave velocity measurement}{剪切波速度测量示例}
         \includegraphics[width=\linewidth]{figures/figure-5.png}
      \end{BiliFigure}
   }{
      \begin{BiliFigure}[label=figure:combination-of-side-by-side-and-end-by-end-charts-
          example-3][H]{Conceptual field loading condition}{概念性的场地加载条件}
         \includegraphics[width=\linewidth]{figures/figure-6.png}
      \end{BiliFigure}
   }
```
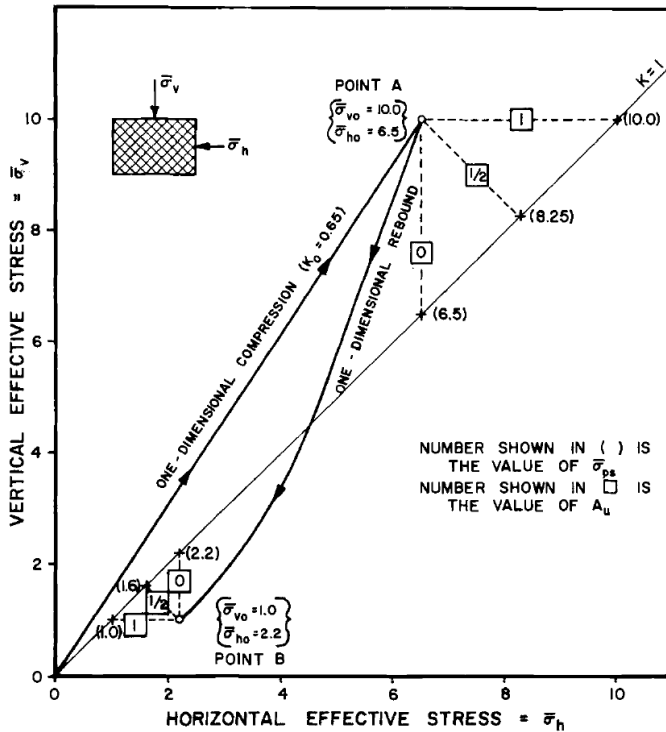
```
}
```


Figure 7: Perfect Sampling of a Normally Consolidated Clay
and an Over-consolidated Clay

图 7: 正常固结土和超固结土的完美采样

Figure 8: An example of shear wave velocity
measurement

图 8: 剪切波速度测量示例

Figure 9: Conceptual field loading condition

图 9: 概念性的场地加载条件

Here we will discuss the `float` parameter of the above command again. since the `\sidebyside` and `\endbyend` commands are based on the paragraph box `minipage` environment, floating environments cannot be created in the box, the `float` The parameter can only be set to the H option provided by the `float` package.

For the above case, due to the nesting problem of the `\sidebyside` and `\endbyend` commands, only the `float` parameter of the outer command can be set on your own, the `float` parameter of the inner command can only be set to the H option provided by the `float` package.

这里我们再来讨论上述命令的`float`参数。由于`\sidebyside`和`\endbyend`命令基于段落盒子`minipage`环境，盒子中不能创建浮动环境，因此该命令中图表定义中的`float`参数只能设置为`float`宏包提供的H选项。

对于上面所述的案列，由于涉及到了`\sidebyside`和`\endbyend`命令的嵌套问题，只有外层命令的`float`参数可以自行设置，内层命令的`float`参数都只能设置为`float`宏包提供的H选项。

2.9 Cross Reference 交叉引用

This document class has defined `\cnautoref` and `\enautoref` commands so that we can freely switch the cross-reference format in English and Chinese language environments. `\cnautoref` and `\enautoref` commands accept `label` from `figure`, `subfigure`, `table`, `appendix` and `equation`, and automatically generate the corresponding
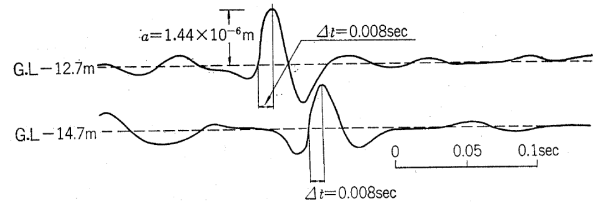
本文档类定义了`\cnautoref`命令以及`\enautoref`命令，以便我们能在英文和中文两种语言环境中自由切换交叉引用的格式。`\cnautoref`命令和`\enautoref`命令接受来自`figure`、`subfigure`、`table`、`appendix`以

application format, for example, Fig. 1, Fig. 2(a), Table 1 et al.

及equation的label，自动生成对应的应用格式，例如图 1、图 2(a)、表 1等。

2.10   Reference 参考文献

For detailed usage of references, please refer to natbib package or gbt7714 package.

参考文献的详细用法可参考natbib宏包或gbt7714宏包。

3   Source Code of This Document 本文档的源码

3.1   Main Document File 主文件

Listing 1: bilidoc.tex

```latex
\documentclass{bilidoc}

\title{\textbf{\href{https://github.com/wanghailin08/bilidoc}{Example of Bilingual \LaTeX{}
    Document\\双语\LaTeX{}文档案例}}}
\author{汪海林}
\date{\today}

\begin{document}

\maketitle


\tableofcontents

\newpage

\begin{Abstract}{Bilingual \LaTeX{} Document}{双语\LaTeX{}文档}

  This is an example of a bilingual \href{https://www.latex-project.org/}{\LaTeX{}} document
      class. This document class is mainly based on \href{https://www.ctan.org/pkg/paracol}{
      paracol} package, which are able to write left and right bilingual documents. Use \href{
      http://www.bibtex.org/}{\BibTeX{}} to process references, insert hyperlinks using \href{
      https://www.ctan.org/pkg/hyperref}{hyperref} package, insert mathematical formulas using
       \href{https://www.ctan.org/pkg/amstex}{\AMSTeX} Kit, we are able to write professional
      and beautiful \LaTeX{} documents.

  \switchcolumn

  这是一篇双语\href{https://www.latex-project.org/}{\LaTeX{}}文档类的案例。该文档类主要基于\href{
      https://www.ctan.org/pkg/paracol}{paracol}宏包，能够实现左右双语对照文档的编写。借助\LaTeX{}的\
      href{http://www.bibtex.org/}{\BibTeX{}}处理参考文献，\href{https://www.ctan.org/pkg/
      hyperref}{hyperref}宏包插入超链接，\href{https://www.ctan.org/pkg/amstex}{\AMSTeX}套件处理数
      学公式等特性，能够编写专业精美的\LaTeX{}文档。

\end{Abstract}
```

```
\input{sections/getting-started.tex}
\input{sections/commands-and-environments.tex}
\input{sections/source-code-of-this-document.tex}


\end{document}
```

3.2   Section File 章节文件

Listing 2: getting-started.tex

```
\begin{ParaColumn}[\section{Getting Started 开始使用}]

  \switchcolumn[0]*[\subsection{Installtion 安装}]

  You can directly use the document class by free installation, that is, put \verb"bilidoc.
     cls" file in your document directory. If you use this document class frequently, you can
      add the document class to your \href{http://tug.org/texlive/}{\TeX{} Live}\footnote{See
      \url{https://www.jianshu.com/p/cfdb8af40a9a}} or \href{http://www.ctex.org/}{C\TeX{}}\
      footnote{See \url{https://blog.csdn.net/u013587021/article/details/52903785}}.

  \switchcolumn

  你可以通过免安装的方式直接使用该文档类，即将\verb"bilidoc.cls"文件放到你的文档目录即可。如果你经常使用该文
     档类，你可以将该文档类添加到你的\href{http://tug.org/texlive/}{\TeX{} Live}或者\href{http://
     www.ctex.org/}{C\TeX{}}中。

  \switchcolumn*[\subsection{A Minimal Example 一个最小示例}]

  Now you can start using the document class, Here is a minimal example of \verb"bilidoc".

  \switchcolumn

  现在你就可以开始使用该文档类了，下面是\verb"bilidoc"的一个最小示例。

  \CrossColumnText{
    \input{listings/a-minimal-example.tex}
  }
  \switchcolumn[0]*[\subsection{Options 选项}]

  You can provide some options to \verb"bilidoc", these options will be loaded into \verb"
     ctexart", because \verb"bilidoc" is based on \verb"ctexart" and no new options are
     defined in \verb"bilidoc".

  \switchcolumn

  使用\verb"bilidoc"可以提供一些选项，这些选项都会被加载到\verb"ctexart"中，因为\verb"bilidoc"基于\
     verb"ctexart"，而且\verb"bilidoc"没有定义新的选项。
```

```
\end{ParaColumn}
```

Listing 3: commands-and-environments.tex

```
\begin{ParaColumn}[\section{Commands and Environments 命令与环境}]

   \switchcolumn[0]*[\subsection{Abstract Environment 摘要环境}]

   \verb"bilidoc" provides a bilingual abstract environment, its basic usage is:

   \switchcolumn

   \verb"bilidoc"提供了双语摘要环境，其基本用法为：

   \CrossColumnText{
      \input{listings/abstract.tex}
   }
   \switchcolumn*

The parameters in curly brackets are required parameters, and the parameters in square
      brackets are optional parameters. \verb"<Width of 1st Column>" represents the width of
      the first column, that is, the width of the English abstract content. If this parameter
      is omitted, the first column width will take its default value \verb"0.60\linewidth".

   \switchcolumn

花括号中的参数为必选参数，方括号中的参数为可选参数。\verb"<Width of 1st Column>"代表首列的宽度，即英文摘
      要内容的宽度，若省略该参数，则首列宽度取其默认值\verb"0.60\linewidth"。

   \switchcolumn*[\subsection{ParaColumn Environment 双栏环境}]

The double-column environment \verb"ParaColumn" divides the page into two columns, and the
      contents of the two columns do not interfere with each other even when the document
      changes pages. This feature allows us to write bilingual translation documents. The
      basic usage of \verb"ParaColumn" environment is:

   \switchcolumn

双栏环境\verb"ParaColumn"将页面分为两栏，两栏的内容互不干扰，即使是在换页的情况下，这种特性允许我们编写双
      语对照翻译的文档。\verb"ParaColumn"环境的基本用法为：

   \CrossColumnText{
      \input{listings/paracolumn.tex}
   }
   \switchcolumn*

Same as \verb"Abstract" environment, \verb"<Width of 1st Column>" represents the width of
      the first column, that is, the width of the English content. If this parameter is
      omitted, the first column width will take its default value \verb"0.60\linewidth".
```

```
\switchcolumn

与\verb"Abstract"环境相同的是，\verb"<Width of 1st Column>"代表首列的宽度，即英文内容的宽度，若省略该
    参数，则首列宽度取其默认值\verb"0.60\linewidth"。

\switchcolumn*

The difference between the command with a '*' \verb"\switchcolumn*" and \verb"\switchcolumn
    ", is when we use \verb"\switchcolumn*" to switch from one column to another column,
    The content after the command will be aligned at the bottom of the content before the
    command, thus we can achieve the effect of aligning the top of each paragraph separately
    .

\switchcolumn

带'*'号的命令~\verb"\switchcolumn*"~与命令\verb"\switchcolumn"不同的是，当我们使用\verb"\
    switchcolumn*"从一列切换到另一列时，该命令之后的内容将在该命令之前的内容的最底部对齐，即可实现每一小段
    顶部分别对齐的效果。

\switchcolumn*

The \verb"\switchcolumn*" command has an optional parameter before and after the'*' sign.
    The former can specify which column to switch to, and it is indicated by a number
    starting from 0. The latter can add a column text that spans two columns. Generally, you
     can put commands such as \verb"\section" and \verb"\subsection" here to generate the
    title of the general column. You can also put the environment such as pictures and
    tables here, but you should put pictures and table codes in Separate files, and then use
     the \verb"\input" command to import, otherwise unexpected results may occur.

\switchcolumn

\verb"\switchcolumn*"命令的'*'号的前后各有一个可选参数，前者可以指定具体切换到哪一列，用从0开始的数字表
    示，后者可以添加跨越两栏的通栏文本，一般可以将\verb"\section"和\verb"\subsection"等命令放到此处以产
    生通栏的标题，也可将图片和表格等环境放到此处，但你应该将图片和表格代码放到单独的文件，然后用\verb"\
    input"命令导入，否则可能会出现意想不到的结果。

\CrossColumnText{
    \input{listings/switchcolumn-crosscolumn-example.tex}
}

\switchcolumn*

The \verb"ParaColumn" environment may also start with a spanning text by specifying it as
    the optional argument of \verb"\begin{ParaColumn}".

\switchcolumn

\verb"ParaColumn"环境同样可以完成这种功能，只需在\verb"\begin{ParaColumn}"命令后添加相应的可选参数。
```

```
\CrossColumnText{
    \input{listings/paracolumn-crosscolumn-example.tex}
}

\switchcolumn*[\subsection{CrossColumnText Command 跨栏命令}]

As mentioned earlier, the \verb"\switchcolumn*" command can achieve the function of
    hurdling, but you cannot add equations here, otherwise an error will occur. In order to
    add a hurdle equation, you can use the \verb"\CrossColumnText" command, which can also
    generate equation titles, tables and pictures.

\switchcolumn

前面提到，\verb"\switchcolumn*"命令可以实现跨栏的功能，但不能在此处添加公式，否则会产生错误。为了添加跨栏
    公式，可以使用\verb"\CrossColumnText"命令，该命令同样可以产生跨栏的标题、表格和图片等内容。

\CrossColumnText{
    \input{listings/crosscolumn-command-example.tex}
}

\switchcolumn*[\subsection{BiliTable Environment 双语表格环境}]

The bilingual table environment \verb"BiliTable" can generate a table with bilingual titles
    , see \enautoref{table:bilingual-table-example}, its basic usage is:

\switchcolumn

双语表格环境\verb"BiliTable"可以得到带双语标题的表格，见\cnautoref{table:bilingual-table-example}
    所示，其基本用法为：

\CrossColumnText{
    \input{listings/bilingual-table.tex}
    \input{tables/bilingual-table-example.tex}
}
\switchcolumn*

The optional parameter \verb"Options" controls the direction, hurdles, floating options and
     labels of the \verb"BiliTable" environment, different options are separated by commas.
    The following describes the options defined by the \verb"BiliTable" environment, The
    option on the right is its default value.

\switchcolumn

可选参数\verb"Options"控制\verb"BiliTable"环境的方向、跨栏、浮动选项以及标签，不同选项间用英文逗号隔开。
    下面描述了\verb"BiliTable"环境定义的选项，右侧选项为其默认值。

\CrossColumnText{
    \vspace{3pt}
```

```
    \noindent
    \OptionsShow{orientation}{<vertical|horizontal|v|h>}{vertical}
    \vspace{3pt}
}
\switchcolumn*

The \ColorCode{orientation} option is used to control the direction of the table. When the
    \ColorCode{orientation} option is \verb"horizontal", a single-page horizontal table will
     be generated.

\switchcolumn

\ColorCode{orientation}选项用于控制表格的方向，当\ColorCode{orientation}选项为\verb"horizontal"
    时，将生成单页的横向表格。

\CrossColumnText{
    \vspace{3pt}
    \noindent
    \OptionsShow{crosscolumn}{<true|false>}{false}
    \vspace{3pt}
}
\switchcolumn*

The \ColorCode{crosscolumn} option is used to generate a cross-column table, which is
    equivalent to the \verb"table*" environment.

\switchcolumn

\ColorCode{crosscolumn}选项用于产生跨栏表格，相当于\verb"table*"环境。

\CrossColumnText{
    \vspace{3pt}
    \noindent
    \OptionsShow{label}{<name>}{}
    \vspace{3pt}
}
\switchcolumn*

The \ColorCode{label} option is used to create label for the table, which is equivalent to
    defining \verb"\label{name}". You can use \verb"\ref{name}" to reference the table from
    other places.

\switchcolumn

\ColorCode{label}选项用于产生标签，相当于定义了\verb"\label{name}"命令，可从其它地方使用\verb"\ref{
    name}"引用该表格。

\switchcolumn*
```

```
The optional parameter \verb"FloatPlacement" is used to control the floating options of the
    float table, and its default value is \verb"htbp", the \verb"H" option provided by the
    \verb"float" package is used to create a non-floating table.

\switchcolumn

可选参数\verb"FloatPlacement"用于控制浮动体的浮动选项，其默认值为\verb"htbp"，\verb"float"宏包提供的\
    verb"H"选项用于产生不浮动的表格。

\CrossColumnText{
    \vspace{3pt}
    \noindent
    \OptionsShow{FloatPlacement}{[!]<\emph{subset of} htbp> \emph{or} <H>}{htbp}
    \vspace{3pt}
    \lstinputlisting[language=LaTeX, label=listing:bilingual-table-example]{tables/bilingual
        -table-example.tex}
}
\switchcolumn*

The following \verb"listing" is an example of the \verb"BiliTable" environment, and the
    output result is shown in \enautoref{table:bilingual-table-example}.

\switchcolumn

下面的\verb"listing"是\verb"BiliTable"环境的一个示例，输出结果见\cnautoref{table:bilingual-table-
    example}所示。

\switchcolumn*[\subsection{BiliFigure Environment 双语图形环境}]

The bilingual figure environment \verb"BiliFigure" can generate a figure with bilingual
    titles, see \enautoref{figure:bilingual-figure-example}, its basic usage is:

\switchcolumn

双语图形环境\verb"BiliFigure"可以得到带双语标题的图形，如\cnautoref{figure:bilingual-figure-
    example}所示，其基本用法为：

\CrossColumnText{
    \input{listings/bilingual-figure.tex}
    \input{figures/bilingual-figure-example.tex}
}
\switchcolumn*

The usage of the optional parameters of the bilingual picture \verb"BiliFigure" environment
    \verb"Options" and the \verb"BiliTable" environment are basically the same, so I won't
    repeat them here.

\switchcolumn
```

双语图片\verb"BiliFigure"环境的可选参数\verb"Options"与\verb"BiliTable"环境的用法基本相同，这里不再
赘述。

\switchcolumn*

The following \verb"listing" is an example of the \verb"BiliFigure" environment, and the
output result is shown in \enautoref{figure:bilingual-figure-example}.

\switchcolumn

下面的\verb"listing"是\verb"BiliFigure"环境的一个示例，输出结果见\cnautoref{figure:bilingual-
figure-example}所示。

\CrossColumnText{
    \lstinputlisting[language=LaTeX, label=listing:bilingual-figure-example]{figures/
        bilingual-figure-example.tex}
}
\switchcolumn*

In addition to inserting a single picture like \enautoref{figure:bilingual-figure-example},
    we can also use the \verb"\subfigure" command provided by the \verb"subfigure" package
    to insert side-by-side subfigures, see \enautoref{figure:bilingual-subfigure-example},
    its basic usage is:

\switchcolumn

除了像\cnautoref{figure:bilingual-figure-example}那样插入单张图片，我们还可以使用\verb"subfigure"
宏包的\verb"\subfigure"命令插入并排的子图，如\cnautoref{figure:bilingual-subfigure-example}所
示，其基本用法为：

\CrossColumnText{
    \input{listings/bilingual-subfigure.tex}
    \input{figures/bilingual-subfigure-example.tex}
}
\switchcolumn*

The following \verb"listing" is an example of \verb"subfigure", and the output result is
    shown in \enautoref{figure:bilingual-subfigure-example}.

\switchcolumn

下面的\verb"listing"是\verb"subfigure"的一个示例，输出结果见\cnautoref{figure:bilingual-
subfigure-example}所示。

\CrossColumnText{
    \lstinputlisting[language=LaTeX, label=listing:bilingual-subfigure-example]{figures/
        bilingual-subfigure-example.tex}
}
\switchcolumn*[\subsection{Side-by-Side Charts Command 图表横排命令}]

```
The horizontal chart command \verb"\sidebyside" can typeset horizontal charts, see \
    enautoref{figure:side-by-side-charts-example-1} and \enautoref{figure:side-by-side-
    charts-example-2}, its basic usage is:

\switchcolumn

图表横排命令\verb"\sidebyside"可以排版横向并排的图表，如图\cnautoref{figure:side-by-side-charts-
    example-1}和\cnautoref{figure:side-by-side-charts-example-2}所示，其基本用法为：

\CrossColumnText{
    \input{listings/side-by-side-charts.tex}
    \input{figures/side-by-side-charts-example.tex}
}
\switchcolumn*

The optional parameter \verb"Options" of the \verb"sidebyside" command provides \ColorCode{
    verticalalignment}, \ColorCode{crosscolumn} and \ColorCode{float} option. The usage of \
    ColorCode{crosscolumn} and \ColorCode{float} option is the same as that of the \verb"
    BiliTable" and \verb"BiliFigure" environment.

\switchcolumn

\verb"\sidebyside"命令的可选参数\verb"Options"提供了\ColorCode{verticalalignment}、\ColorCode{
    crosscolumn}和\ColorCode{float}选项。\ColorCode{crosscolumn}以及\ColorCode{float}选项与\
    verb"BiliTable"和\verb"BiliFigure"环境对应选项的用法相同。

\CrossColumnText{
    \vspace{3pt}
    \noindent
    \OptionsShow{verticalalignment}{<top|center|bottom|t|c|b>}{bottom}
    \vspace{3pt}
}
\switchcolumn*

\ColorCode{verticalalignment} controls the vertical alignment of the horizontal chart.

\switchcolumn

\ColorCode{verticalalignment}控制横排图表的垂直对齐方式。

\switchcolumn*

The following \verb"listing" is an example of \verb"sidebyside" command, and the output
    result is shown in \enautoref{figure:side-by-side-charts-example-1} and \enautoref{
    figure:side-by-side-charts-example-2}.

\switchcolumn
```

```latex
下面的\verb"listing"是\verb"sidebyside"命令的一个示例，输出结果见\cnautoref{figure:side-by-side-
    charts-example-1}和\cnautoref{figure:side-by-side-charts-example-2}所示。

\CrossColumnText{
    \lstinputlisting[language=LaTeX, label=listing:side-by-side-charts-example]{figures/side
        -by-side-charts-example.tex}
}
\switchcolumn*[\subsection{End-by-End Charts Command 图表竖排命令}]

The vertical chart command \verb"\endbyend" can typeset vertical charts, see \enautoref{
    figure:end-by-end-charts-example-1} and \enautoref{figure:end-by-end-charts-example-2},
    its basic usage is:

\switchcolumn

图表竖排命令\verb"\endbyend"可以排版竖向并排的图表，如\cnautoref{figure:end-by-end-charts-example
    -1}和\cnautoref{figure:end-by-end-charts-example-2}所示，其基本用法为：

\CrossColumnText{
    \input{listings/end-by-end-charts.tex}
    \input{figures/end-by-end-charts-example.tex}
}
\switchcolumn*

The optional parameter \verb"Options" of the \verb"sidebyside" command provides \ColorCode{
    crosscolumn} and \ColorCode{float} option. Its usage is the same as that of the
    corresponding options of \verb"BiliTable" and \verb"BiliFigure". The parameter \verb"{<
    Width>}" is the width of the vertical chart environment.

\switchcolumn

\verb"\endbyend"命令的可选参数\verb"Options"提供了\ColorCode{crosscolumn}和\ColorCode{float}选
    项。它们的用法与\verb"BiliTable"和\verb"BiliFigure"环境对应选项的用法相同。参数\verb"{<Width>}"
    为整个竖排环境的宽度。

\switchcolumn*

The following \verb"listing" is an example of \verb"sidebyside" command, and the output
    result is shown in \enautoref{figure:end-by-end-charts-example-1} and \enautoref{figure:
    end-by-end-charts-example-2}.

\switchcolumn

下面的\verb"listing"是\verb"sidebyside"命令的一个示例，输出结果见\cnautoref{figure:end-by-end-
    charts-example-1}和\cnautoref{figure:end-by-end-charts-example-2}所示。

\CrossColumnText{
    \lstinputlisting[language=LaTeX, label=listing:end-by-end-charts-example]{figures/end-by
        -end-charts-example.tex}
```

```
}
\switchcolumn*

There is an interesting question worth discussing here. Since we nested the \verb"
    BiliFigure" environment in the \verb"\endbyend" command, it involves the setting of two
    widths. The \verb"\linewidth" in the outer \verb"\endbyend" command means that we have
    created a box with the width of \verb"\linewidth", and the content defined later will be
     typeset in this box, The horizontal alignment of the chart in the \verb"\endbyend"
    command defaults to center alignment, so the final typesetting result is like \enautoref
    {figure:end-by-end-charts-example-1} and \enautoref{figure:end-by-end-charts-example-2}
    as shown. If we change the width in the outer \verb"\endbyend" command to \verb"0.5\
    linewidth", then we will find that the final typesetting result will be centered in the
    left half.

\switchcolumn

这里有一个有趣的问题值得讨论。由于我们在\verb"\endbyend"命令中嵌套使用了\verb"BiliFigure"环境，于是涉及
    到了两个宽度的设置问题。外层\verb"\endbyend"命令中的\verb"\linewidth"表示我们创建了一个宽度为\verb
    "\linewidth"的盒子，之后定义的内容都将在这里盒子中进行排版，\verb"\endbyend"命令中图表的水平对齐方式
    默认为居中对齐，因此最终的排版结果如\cnautoref{figure:end-by-end-charts-example-1}和\cnautoref
    {figure:end-by-end-charts-example-2}所示。如果我们将外层\verb"\endbyend"命令中的宽度改为\verb
    "0.5\linewidth"，这时我们会发现最终的排版结果将在左半区域居中对齐。

\switchcolumn*

Let's look at the width of the inner \verb"BiliFigure" environment again. It is worth
    noting that the value of \verb"\linewidth" here is different from the name of \verb"\
    linewidth" of the outer \verb"\endbyend" command. \verb"\linewidth" is actually the
    width of the environment where the command is located. For the outer \verb"\endbyend"
    command, \verb"\linewidth" is the width of the \verb"document" environment, which is the
     width of the heart of the document, and for the inner \verb"BiliFigure" environment, \
    verb"\linewidth" is the width of the box created by the \verb"\endbyend" command, which
    is the width value of the outer \verb"\endbyend" command. If we change the width options
     of the outer \verb"\endbyend" command and the inner \verb"BiliFigure" environment to \
    verb"0.5\linewidth", then we will find the width of the picture finally created by the \
    verb"BiliFigure" environment becomes approximately \verb"0.25\linewidth".

\switchcolumn

我们再来看一下内层\verb"BiliFigure"环境中的宽度。值得注意的是，这里的\verb"\linewidth"在数值与外层\
    verb"\endbyend"命令的\verb"\linewidth"并不相同。\verb"\linewidth"为命令所处环境的宽度，对于外层
    \verb"\endbyend"命令，\verb"\linewidth"为\verb"document"环境的宽度，也就是文档版心的宽度，而对于
    内层\verb"BiliFigure"环境，\verb"\linewidth"为由\verb"\endbyend"命令创建的盒子的宽度，也就是外
    层\verb"\endbyend"命令的宽度值。如果我们将外层\verb"\endbyend"命令和内层\verb"BiliFigure"环境的
    宽度选项均改为\verb"0.5\linewidth"，那么我们会发现最终由\verb"BiliFigure"环境创建的图片宽度变成了
    大约为\verb"0.25\linewidth"。

\switchcolumn*[\subsection{Combination of Side-by-Side and End-by-End Charts 横排与竖排图表的
    组合}]
```

```
If we need to typeset charts with more complicated position, such as one picture on the
    left and two pictures on the right, the \verb"\sidebyside" command and \verb"\endbyend"
    command obviously cannot satisfy us, at this time we can combine the two commands to
    achieve our purpose.

\switchcolumn

如果我们需要排版更复杂位置的图表，比如左侧排一张图，右侧以竖排的方式排两张图，\verb"\sidebyside"命令和\
    verb"\endbyend"命令显然都不能满足我们的需求，这时我们可以将两个命令结合起来以达到我们的目的。

\switchcolumn*

The following \verb"listing" is an example of the combination of \verb"sidebyside" and \
    verb"\endbyend" command, and the output result is shown in \enautoref{figure:combination
    -of-side-by-side-and-end-by-end-charts-example-1}$\sim$\enautoref{figure:combination-of-
    side-by-side-and-end-by-end-charts-example-3}.

\switchcolumn

下面的~\verb"listing"~是~\verb"\sidebyside"~命令和~\verb"\endbyend"~命令结合使用的一个示例，输出结
    果见\cnautoref{figure:combination-of-side-by-side-and-end-by-end-charts-example-1}$\sim
    $\cnautoref{figure:combination-of-side-by-side-and-end-by-end-charts-example-3}所示。

\CrossColumnText{
    \lstinputlisting[language=LaTeX, label=listing:combination-of-side-by-side-and-end-by-
        end-charts-example]{figures/combination-of-side-by-side-and-end-by-end-charts.tex}
    \input{figures/combination-of-side-by-side-and-end-by-end-charts.tex}
}
\switchcolumn*

Here we will discuss the \verb"float" parameter of the above command again. since the \verb
    "\sidebyside" and \verb"\endbyend" commands are based on the paragraph box \verb"
    minipage" environment, floating environments cannot be created in the box, the \verb"
    float" The parameter can only be set to the \verb"H" option provided by the \verb"float"
     package.

\switchcolumn

这里我们再来讨论上述命令的\verb"float"参数。由于\verb"\sidebyside"和\verb"\endbyend"命令基于段落盒子
    \verb"minipage"环境， 盒子中不能创建浮动环境，因此该命令中图表定义中的\verb"float"参数只能设置为\
    verb"float"宏包提供的\verb"H"选项。

\switchcolumn*

For the above case, due to the nesting problem of the \verb"\sidebyside" and \verb"\
    endbyend" commands, only the \verb"float" parameter of the outer command can be set on
    your own, the \verb"float" parameter of the inner command can only be set to the \verb"H
    " option provided by the \verb"float" package.
```

```latex
    \switchcolumn

对于上面所述的案列，由于涉及到了\verb"\sidebyside"和\verb"\endbyend"命令的嵌套问题，只有外层命令的\
    verb"float"参数可以自行设置，内层命令的\verb"float"参数都只能设置为\verb"float"宏包提供的\verb"H"
    选项。

    \switchcolumn*[\subsection{Cross Reference 交叉引用}]

This document class has defined \verb"\cnautoref" and \verb"\enautoref" commands so that we
     can freely switch the cross-reference format in English and Chinese language
    environments. \verb"\cnautoref" and \verb"\enautoref" commands accept \verb"label" from
    \verb"figure", \verb"subfigure", \verb"table", \verb"appendix" and \verb"equation", and
    automatically generate the corresponding application format, for example, \enautoref{
    figure:bilingual-figure-example}, \enautoref{figure:2a}, \enautoref{table:bilingual-
    table-example} et al.

    \switchcolumn

本文档类定义了\verb"\cnautoref"命令以及\verb"\enautoref"命令，以便我们能在英文和中文两种语言环境中自由
    切换交叉引用的格式。\verb"\cnautoref"命令和\verb"\enautoref"命令接受来自\verb"figure"、\verb"
    subfigure"、\verb"table"、\verb"appendix"以及\verb"equation"的\verb"label"，自动生成对应的应
    用格式，例如\cnautoref{figure:bilingual-figure-example}、\cnautoref{figure:2a}、\cnautoref
    {table:bilingual-table-example}等。

    \switchcolumn*[\subsection{Reference 参考文献}]

For detailed usage of references, please refer to \href{https://www.ctan.org/pkg/natbib}{
    natbib} package or \href{https://www.ctan.org/pkg/gbt7714}{gbt7714} package.

    \switchcolumn

参考文献的详细用法可参考\href{https://www.ctan.org/pkg/natbib}{natbib}宏包或\href{https://www.
    ctan.org/pkg/gbt7714}{gbt7714}宏包。

\end{ParaColumn}
```

Listing 4: source-code-of-this-document.tex

```latex
\section{Source Code of This Document 本文档的源码}

\subsection{Main Document File 主文件}

% Main Document
\lstinputlisting[language=LaTeX, caption=bilidoc.tex]{bilidoc.tex}

\subsection{Section File 章节文件}
% Sections
\lstinputlisting[language=LaTeX, caption=getting-started.tex]{sections/getting-started.tex}
```

```latex
\lstinputlisting[language=LaTeX, caption=commands-and-environments.tex]{sections/commands-and-
    environments.tex}
\lstinputlisting[language=LaTeX, caption=source-code-of-this-document.tex]{sections/source-
    code-of-this-document.tex}


\subsection{Table File 表格文件}
% Tables
\lstinputlisting[language=LaTeX, caption=bilingual-table-example.tex]{tables/bilingual-table-
    example.tex}


\subsection{Figure File 图片文件}
% Figures
\lstinputlisting[language=LaTeX, caption=bilingual-figure-example.tex]{figures/bilingual-
    figure-example.tex}
\lstinputlisting[language=LaTeX, caption=bilingual-subfigure-example.tex]{figures/bilingual-
    subfigure-example.tex}
\lstinputlisting[language=LaTeX, caption=side-by-side-charts-example.tex]{figures/side-by-side
    -charts-example.tex}
\lstinputlisting[language=LaTeX, caption=end-by-end-charts-example.tex]{figures/end-by-end-
    charts-example.tex}


\subsection{Listing File 代码文件}
% Listings
\lstinputlisting[language=LaTeX, caption=a-minimal-example.tex]{listings/a-minimal-example.tex
    }
\lstinputlisting[language=LaTeX, caption=abstract.tex]{listings/abstract.tex}
\lstinputlisting[language=LaTeX, caption=paracolumn.tex]{listings/paracolumn.tex}
\lstinputlisting[language=LaTeX, caption=bilingual-table.tex]{listings/bilingual-table.tex}
\lstinputlisting[language=LaTeX, caption=bilingual-figure.tex]{listings/bilingual-figure.tex}
\lstinputlisting[language=LaTeX, caption=bilingual-subfigure.tex]{listings/bilingual-subfigure
    .tex}
\lstinputlisting[language=LaTeX, caption=side-by-side-charts.tex]{listings/side-by-side-charts
    .tex}
\lstinputlisting[language=LaTeX, caption=end-by-end-charts.tex]{listings/end-by-end-charts.tex
    }
```

3.3   Table File 表格文件

Listing 5: bilingual-table-example.tex

```latex
\begin{BiliTable}[crosscolumn=true,label=table:bilingual-table-example][htb]{Properties of
    Skabo clay}{Skabo 黏土的物理特性}
  \begin{tabular}{ll|ll}
    \Xhline{1pt}
    Properties & value & Properties & value \\
    \Xcline{1-4}{0.7pt}
    Water content, percent & 43.1 (39.4-47.8) & Activity & 0.63 \\
    Liquid limit & 52 & Salt content, g/L & 25 (24.2-28.8) \\
    Plastic limit & 24 & Organic content, percent & 0.32 \\
```

```
      Plastic index & 28 & $S_u/p$ & 0.25 \\
      Clay fraction $<2\mu$ ,percent & 45 & Sensitivity & 5\\
      \Xhline{1pt}
    \end{tabular}
\end{BiliTable}
```

3.4   Figure File 图片文件

Listing 6: bilingual-figure-example.tex

```
\begin{BiliFigure}[crosscolumn=true,label=figure:bilingual-figure-example][htb]{(a) Plasticity
    chart; (b) CPTU soil classification chart}{（a）可塑性图；（b）CPTU土壤分类图}
  \includegraphics[width=0.80\linewidth]{figures/figure-1.png}
\end{BiliFigure}
```

Listing 7: bilingual-subfigure-example.tex

```
\begin{BiliFigure}[label=figure:bilingual-subfigure-example][htb]{Hvorslev Parameters}{
   Hvorslev参数}
  \subfigure[Kawasaki Clays I]{
      \includegraphics[width=0.36\textwidth]{figures/figure-2a.png}
      \label{figure:2a}
  }
  \subfigure[Lagunilla Clay]{
      \includegraphics[width=0.36\textwidth]{figures/figure-2b.png}
      \label{figure:2b}
  }
\end{BiliFigure}
```

Listing 8: side-by-side-charts-example.tex

```
\sidebyside[crosscolumn=false][htb]{0.50\linewidth}{
   \begin{BiliFigure}[label=figure:side-by-side-charts-example-1][H]{Relationship between $K
      _0$, $I_p$ and OCR}{$K_0$,$I_p$和OCR之间的关系}
      \includegraphics[width=\linewidth]{figures/figure-3}
   \end{BiliFigure}
}{0.45\linewidth}{
   \begin{BiliFigure}[label=figure:side-by-side-charts-example-2][H]{Trianguler classification
       chart}{三角分类图}
      \includegraphics[width=\linewidth]{figures/figure-4}
   \end{BiliFigure}
}
```

Listing 9: end-by-end-charts-example.tex

```
\endbyend[crosscolumn=false][htb]{\linewidth}{
   \begin{BiliFigure}[label=figure:end-by-end-charts-example-1][H]{An example of shear wave
       velocity measurement}{剪切波速度测量示例}
      \includegraphics[width=0.3\linewidth]{figures/figure-5.png}
   \end{BiliFigure}
```

```
}{
    \begin{BiliFigure}[label=figure:end-by-end-charts-example-2][H]{Conceptual field loading
        condition}{概念性的场地加载条件}
        \includegraphics[width=0.3\linewidth]{figures/figure-6.png}
    \end{BiliFigure}
}
```

3.5 Listing File 代码文件

Listing 10: a-minimal-example.tex

```
\begin{lstlisting}[language=LaTeX, label=listing:a-minimal-example]
\documentclass{bilidoc}
\title{Document Title}
\author{Author Name}
\date{\today}
\begin{document}
    \maketitle
    <Abstract>
    \section{Introduction 介绍}
    ...
    \bibliographystyle{plainnat}
    \bibliography{bibfile.bib}
    \begin{appendix}
        \section{A Minamal Example}
        ...
    \end{appendix}
\end{document}
\end{lstlisting}
```

Listing 11: abstract.tex

```
\begin{lstlisting}[language=LaTeX, label=listing:abstract]
\begin{Abstract}{<English Key Words>}{<中文关键词>}[<Width of 1st Column>]
    <English Abstract>
    \switchcolumn
    <中文摘要>
\end{Abstract}
\end{lstlisting}
```

Listing 12: paracolumn.tex

```
\begin{lstlisting}[language=LaTeX, label=listing:paracolumn]
\begin{ParaColumn}[<Width of 1st Column>]
    First Paragraph in English.
    \switchcolumn
    中文第一段。
    \switchcolumn*
    Second Paragraph in English.
    \switchcolumn
```

```
    中文第二段。
\end{Abstract}
\end{lstlisting}
```

Listing 13: bilingual-table.tex

```
\begin{lstlisting}[language=LaTeX, label=listing:bilingual-table]
\begin{BiliTable}[<Options>][<FloatPlacement>]{<English Figure Name>}{<中文图名>}
   % <Table Content>
   \begin{tabular}[<Vertical Alignment>]{<Column Format>}
      ...
   \end{tabular}
\end{BiliTable}
\end{lstlisting}
```

Listing 14: bilingual-figure.tex

```
\begin{lstlisting}[language=LaTeX, label=listing:bilingual-figure]
\begin{BiliFigure}[<Options>][<FloatPlacement>]{<English Figure Name>}{<中文图名>}
   % <Figure Content>
   \includegraphics[<Options>]{<Figure File Name>}
\end{BiliFigure}
\end{lstlisting}
```

Listing 15: bilingual-subfigure.tex

```
\begin{lstlisting}[language=LaTeX, label=listing:bilingual-subfigure]
\begin{BiliFigure}[<Options>][<FloatPlacement>]{<English Figure Name>}{<中文图名>}
   \subfigure[<Subfigure Name>]{
      \includegraphics[<Options>]{<Subfigure File Name>}
      \label{<Subfigure Label>}
   }
   \subfigure[<Subfigure Name>]{
      \includegraphics[<Options>]{<Subfigure File Name>}
      \label{<Subfigure Label>}
   }
\end{BiliFigure}
\end{lstlisting}
```

Listing 16: side-by-side-charts.tex

```
\begin{lstlisting}[language=LaTeX, label=listing:side-by-side-charts]
\sidebyside[<Options>]
   {<Width of 1st Chart>}{<1st Chart Definition>}
   {<Width of 2nd Chart>}{<2nd Chart Definition>}
   [<Width of 3rd Chart>][<3rd Chart Definition>]
   [<Width of 4th Chart>][<4th Chart Definition>]
\end{lstlisting}
```

Listing 17: end-by-end-charts.tex

```
\begin{lstlisting}[language=LaTeX, label=listing:end-by-end-charts]
\endbyend[<Options>][<FloatPlacement>]{<Width>}
   {<1st Chart Definition>}
   {<2nd Chart Definition>}
   [<3rd Chart Definition>]
   [<4th Chart Definition>]
\end{lstlisting}
```