22 Library LIB fitting

The library is loaded by a package option or inside the preamble by:

通过包选项或在导言区中加载以下命令来加载该库：

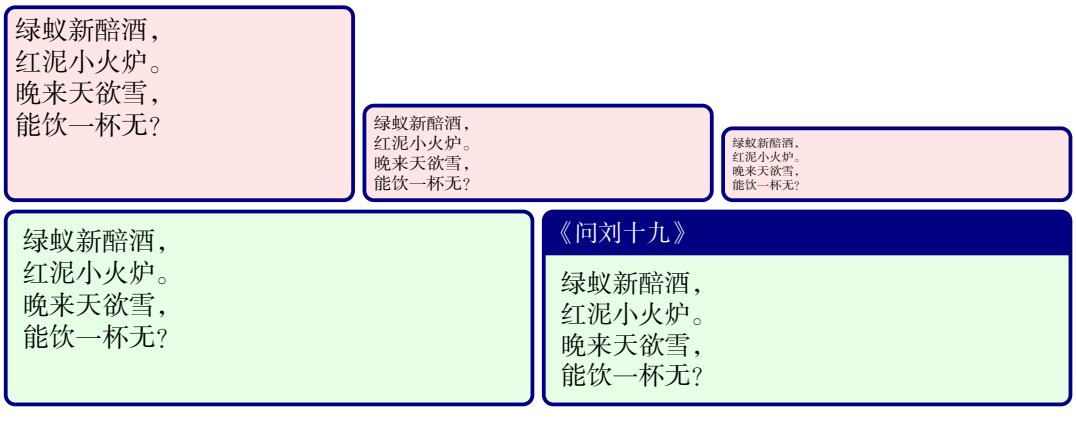
```
\tcbuselibrary{fitting}
```

22.1 Macros of the Library 库中的宏

`\tcboxfit[⟨options⟩]{⟨box content⟩}`

Creates a colored box where the given ⟨*box content*⟩ is fitted to the width and height of the box. A `tcboxfit` has to have a fixed height. If no fixed height is given, a square box is constructed. In principle, most ⟨*options*⟩ for a **tcolorbox**→ P. ?? can be used for `\tcboxfit` with some restrictions. A `\tcboxfit` cannot have a lower part and cannot be broken.
创建一个带有颜色的框，其中给定的 ⟨*盒子内容*⟩ 被适应为框的宽度和高度。一个 `tcboxfit` 必须有一个固定的高度。如果没有给定固定的高度，则构造一个正方形框。原则上，大多数 **tcolorbox**→ P. ?? 的 ⟨*选项*⟩ 都可以用于带有一些限制的 `\tcboxfit`。`\tcboxfit` 不能有下部并且不能被打破。

```
%\tcbuselibrary{raster}
\tcbset{colframe=blue!50!black,colback=red!10!white,
boxsep=0pt,top=1mm,bottom=1mm,left=1mm,right=1mm,
fit algorithm=hybrid*,raster equal skip=1mm}
\begin{tcbraster}[raster columns=3,raster valign=bottom]
\tcboxfit[height=8em]{绿蚁新醅酒，\\红泥小火炉。\\
晚来天欲雪，\\能饮一杯无？}
\tcboxfit[height=4em]{绿蚁新醅酒，\\红泥小火炉。\\
晚来天欲雪，\\能饮一杯无？}
\tcboxfit[height=1cm]{绿蚁新醅酒，\\红泥小火炉。\\
晚来天欲雪，\\能饮一杯无？}
\end{tcbraster}
\begin{tcbraster}[colback=green!10!white,boxsep=1mm]
\tcboxfit[height=8em]{绿蚁新醅酒，\\红泥小火炉。\\
晚来天欲雪，\\能饮一杯无？}
\tcboxfit[height=8em,title=《问刘十九》]{绿蚁新醅酒，\\红泥小火炉。\\
晚来天欲雪，\\能饮一杯无？}
\end{tcbraster}
```



See ?? for more elaborate methods to create new commands.
有关创建新命令的更详细方法，请参见 ??。

\newtcboxfit[⟨*init options*⟩]{\⟨*name*⟩}[⟨*number*⟩][⟨*default*⟩]{⟨*options*⟩}

Creates a new macro \⟨*name*⟩ based on **\tcboxfit** → P. ??. Basically, \newtcboxfit operates like \newcommand. The new macro \⟨*name*⟩ optionally takes ⟨*number*⟩+1 arguments, where ⟨*default*⟩ is the default value for the optional first argument. The ⟨*options*⟩ are given to the underlying tcboxfit. The ⟨*init options*⟩ allow setting up automatic numbering, see Section ?? from page ??.
基于 **\tcboxfit** → P. ?? 创建一个新的宏 \⟨*name*⟩。基本上，\newtcboxfit 的操作类似于 \newcommand。新宏 \⟨*name*⟩ 可以选择地接受 ⟨*number*⟩+1 个参数，其中 ⟨*default*⟩ 是可选第一个参数的默认值。⟨*options*⟩ 给底层的 tcboxfit。⟨*init options*⟩ 允许设置自动编号，请参见第 ?? 页的第 ?? 节。

```
\newtcboxfit{\mybox}{colback=red!5!white,
  colframe=red!75!black,width=4cm,
  height=1.5cm,halign=center}

\mybox{This is my own box.}\par
\mybox{This is my own box with more text
       to be written.}
```

This is my own box.

This is my own box with more text to be written.

```
% \usepackage{lipsum}
\newtcboxfit{\mybox}[2]{colback=red!5!white,
  colframe=red!75!black,fonttitle=\bfseries,
  boxsep=1mm,left=0mm,right=0mm,top=0mm,
  bottom=0mm,halign=center,valign=center,
  nobeforeafter,width=#1,height=#2}

\mybox{2.5cm}{1cm}{First box}%
\mybox{2.5cm}{1cm}{Second box with more text}\\
\mybox{5cm}{2cm}{Third box with text}\\
\mybox{5cm}{3cm}{\lipsum[1]}
```

First box

Second box with more text

Third box with text

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

```
% \usepackage{lipsum}
\newtcboxfit{\mybox}[2][]{colback=red!5!white,
  colframe=red!75!black,
  width=#2,height=#2/3*2,#1}

\mybox[colback=yellow]{5cm}%
  {\lipsum[2]}
```

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

\renewtcboxfit[⟨*init options*⟩]{\⟨*name*⟩}[⟨*number*⟩][⟨*default*⟩]{⟨*options*⟩}

Operates like **\newtcboxfit** → P. ??, but based on \renewcommand instead of \newcommand. An existing macro is redefined.
与 **\newtcboxfit** → P. ?? 类似，但基于 \renewcommand 而不是 \newcommand。重定义现有的宏。

\tcbfitdate 2020-04-24 (read-only LaTeX length)

This is a LaTeX length adapted automatically by most variants of **/tcb/fit algorithm** →P. ??. Therefore, it never is to be changed by the user, but may be applied read-only. The **\tcbfitdim** →P. ?? corresponds to the font size and may also be used to calculate box margins or other distances in dependency. The initial and maximum value for **\tcbfitdim** →P. ?? is set by **/tcb/fit basedim** →P. ??.
这是一个 LaTeX 长度，由大多数 **/tcb/fit algorithm** →P. ?? 变体自动调整。因此，用户不能更改它，但可以只读访问。 **\tcbfitdim** →P. ?? 对应于字体大小，也可以用于计算框边距或其他依赖距离。 **\tcbfitdim** →P. ?? 的初始和最大值由 **/tcb/fit basedim** →P. ?? 设置。

\tcbfontsize{⟨*factor*⟩}

Selects a font size inside a tcolorbox which is scaled with the given ⟨*factor*⟩ relative to **\tcbfitdim** →P. ??. Also see **/tcb/fit fontsize macros** →P. ??
在一个 tcolorbox 中选择一个字体大小，其相对于 **\tcbfitdim** →P. ?? 缩放给定的 ⟨*缩放因子*⟩。也参见 **/tcb/fit fontsize macros** →P. ??。

```
\tcbset{colback=red!5!white,size=small,
  colframe=red!75!black}
\begin{tcolorbox}[fit basedim=10pt]
  {\tcbfontsize{0.25} Very tiny,}\\
  {\tcbfontsize{0.5} Small,}\\
  {\tcbfontsize{1} Normal,}\\
  {\tcbfontsize{2} Large,}\\
  {\tcbfontsize{4} Huge.}
\end{tcolorbox}
```

Very tiny,
Small,
Normal,
Large,
Huge.

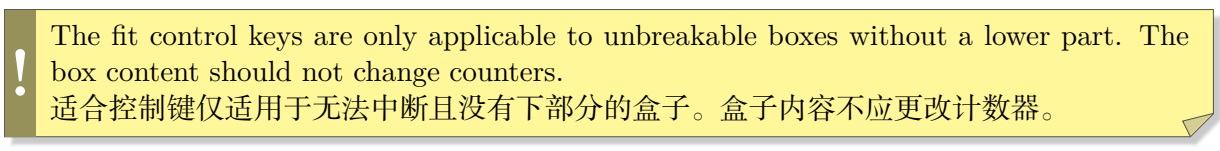
```
\tcbset{colback=red!5!white,size=small,
  colframe=red!75!black}
\begin{tcolorbox}[fit basedim=10pt,
    fit to height=2cm]
  {\tcbfontsize{0.25} Very tiny,}\\
  {\tcbfontsize{0.5} Small,}\\
  {\tcbfontsize{1} Normal,}\\
  {\tcbfontsize{2} Large,}\\
  {\tcbfontsize{4} Huge.}
\end{tcolorbox}
```

Very tiny,
Small,
Normal,
Large,
Huge.

22.2 Option Keys of the Library
库的选项键

The font size for the content of a box with fixed width and fixed height can be adjusted automatically. This is called the *fitbox capture mode*. Note that the fit control algorithm constructs a series of versions for the box and selects the "best". Therefore, the compilation time is quite longer than for a normal box. The algorithm will fail, if a different selected font size does not change the overall size of the box content. The **\tcboxfit** →P. ?? macro uses this algorithm by default.

具有固定宽度和固定高度的盒子内容的字体大小可以自动调整。这称为*自适应盒子捕获模式*。请注意，适合控制算法构建盒子的一系列版本并选择 " 最佳版本 "。因此，编译时间比普通盒子要长得多。如果不同的所选字体大小不会改变盒子内容的整体大小，则算法将失败。默认情况下，**\tcboxfit** →P. ?? 宏使用此算法。



/tcb/fit (style, initially unset)

Sets the **/tcb/capture** mode to `fitbox`, i. e. enables the font size adjustment algorithm. Thereby, a **tcolorbox** acts like **\tcboxfit** where the given ⟨*box content*⟩ is fitted to the width and height of the box. Therefore, the box has to have a fixed height. If no fixed height is given, a square box is constructed. The font dimension **\tcbfitdim** can also be used to adjust the margins of the box since a box with a tiny font may not need large margins. The number of constructed boxes is saved to the macro `\tcbfitsteps` for analysis.
将 **/tcb/capture** 模式设置为 `fitbox`，即启用字体大小调整算法。因此，**tcolorbox** 的行为类似于 **\tcboxfit**，其中给定的 ⟨*box content*⟩ 适应于盒子的宽度和高度。因此，盒子必须有固定高度。如果没有给定固定高度，则构造一个正方形盒子。字体尺寸 **\tcbfitdim** 也可用于调整盒子的边距，因为字体很小的盒子可能不需要大的边距。构造的盒子数保存到宏 `\tcbfitsteps` 中以供分析。

```
% \usepackage{lipsum}
% \tcbuselibrary{skins}
\newtcolorbox{fitting}[2][]{fit,height=#2,boxsep=1pt,valign=center,opacityupper=0.5,
  top=0.4\tcbfitdim,bottom=0.4\tcbfitdim,left=0.75\tcbfitdim,right=0.75\tcbfitdim,
  enhanced,watermark text={\tcbfitsteps},colframe=blue!75!black,colback=white,#1}

\begin{fitting}{4cm}
\lipsum[1]
\end{fitting}

\begin{fitting}{2cm}
\lipsum[2]
\end{fitting}

\begin{fitting}{1cm}
\lipsum[3]
\end{fitting}
```

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

Nulla malesuada porttitor diam. Donec felis erat, congue non, volutpat at, tincidunt tristique, libero. Vivamus viverra fermentum felis. Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum. Morbi blandit ligula feugiat magna. Nunc eleifend consequat lorem. Sed lacinia nulla vitae enim. Pellentesque tincidunt purus vel magna. Integer non enim. Praesent euismod nunc eu purus. Donec bibendum quam in tellus. Nullam cursus pulvinar lectus. Donec et mi. Nam vulputate metus eu enim. Vestibulum pellentesque felis eu massa.

`/tcb/fit to=`⟨*width*⟩ and ⟨*height*⟩ (style, initially unset)

Shortcut for using **/tcb/fit** and setting the ⟨*width*⟩ and ⟨*height*⟩ values separately.
该选项是使用 **/tcb/fit** 并分别设置 ⟨宽度⟩ 和 ⟨高度⟩ 值的快捷方式。

```
\tcbset{colback=red!5!white,colframe=red!75!black}

% This box content is fitted to the given
% dimensions.
\begin{tcolorbox}[fit to=3cm and 2cm]
此盒子的内容将适应给定的尺寸。
\end{tcolorbox}
```

此盒子的内容将适应给定的尺寸。

`/tcb/fit to height=`⟨*height*⟩ (style, initially unset)

Shortcut for using **/tcb/fit** →P. ?? and setting the ⟨*height*⟩ value separately.
该选项是使用 **/tcb/fit** →P. ?? 并单独设置 ⟨*高度*⟩ 值的快捷方式。

```
\tcbset{colback=red!5!white,colframe=red!75!black}

% This box content is fitted to the given
% height.
\begin{tcolorbox}[fit to height=2cm]
此盒子的内容将适应给定的高度。
\end{tcolorbox}
```

此盒子的内容将适应给定的高度。

`/tcb/fit basedim=`⟨*length*⟩ (no default, initially `10pt`)

Sets the starting font dimension for the font size adjustment algorithm to ⟨*length*⟩. The algorithm never enlarges this dimension. Therefore, the final **\tcbfitdim** →P. ?? is identical to or small than ⟨*length*⟩.
将字体大小调整算法的起始字体尺寸设置为 ⟨*长度*⟩。算法永远不会扩大这个尺寸。因此，最终的 **\tcbfitdim** →P. ?? 等于或小于 ⟨*长度*⟩。

```
\tcbset{colback=red!5!white,colframe=red!75!black}

% Too few words for the box.
\begin{tcolorbox}[fit to=4cm and 2cm]
此盒子的内容过少。
\end{tcolorbox}

\begin{tcolorbox}[fit to=4cm and 2cm,
  fit basedim=50pt]
此盒子的内容足够多多多多多多多多多。
\end{tcolorbox}

\begin{tcolorbox}[fit to=4cm and 2cm,
fit basedim=50pt]
此盒子的内容足够多多多多多多多多多多多多多多多多多多多。
\end{tcolorbox}
```

此盒子的内容过少。

此盒子的内容足够多多多多多多多多多。

此盒子的内容足够多多多多多多多多多多多多多多多多多多多。

`/tcb/fit skip=`⟨*real value*⟩ (no default, initially `1.2`)

Sets the skip value of the selected font to ⟨*real value*⟩ times **\tcbfitdim** →P. ??.
将所选字体的间距设置为 ⟨*实数值*⟩ 乘以 **\tcbfitdim** →P. ??。

```
% \usepackage{lipsum}
\tcbset{colback=red!5!white,
  colframe=red!75!black,left=1mm,
  right=1mm,boxsep=0mm}

\begin{tcolorbox}[fit to=5cm and 4cm,
  fit skip=1.0  ]
  \lipsum[1]
\end{tcolorbox}
```

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

`/tcb/fit fontsize macros` (style, initially unset)

Redefines the standard LaTeX font size macros `\tiny`, `\scriptsize`, `\footnotesize`, `\small`, `\normalsize`, `\large`, `\Large`, `\LARGE`, `\huge`, and `\Huge`, to set font sizes relative to the current **\tcbfitdim**→ P. ??. Note that the display skip values for mathematical formulas are respected by the redefined macros. Also see **\tcbfontsize**→ P. ??.

重新定义了标准的 LaTeX 字体大小宏 `\tiny`，`\scriptsize`，`\footnotesize`，`\small`，`\normalsize`，`\large`，`\Large`，`\LARGE`，`\huge` 和 `\Huge`，使其相对于当前的 **\tcbfitdim**→ P. ?? 设置字体大小。请注意，数学公式的显示间距值也会受到重新定义的宏的影响。此外，还可以参考 **\tcbfontsize**→ P. ??。

```
% \usepackage{lipsum}
\tcbset{colback=red!5!white,
  colframe=red!75!black,left=1mm,
  right=1mm,boxsep=0mm}

\begin{tcolorbox}[fit to height=4cm]
  {\Large\bfseries This text is
              not adapted:\par}
  \lipsum[2]
\end{tcolorbox}

\begin{tcolorbox}[fit to height=4cm,
  fit fontsize macros ]
  {\Large\bfseries This text is adapted:\par}
  \lipsum[2]
\end{tcolorbox}
```

This text is not adapted:

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

This text is adapted:

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

```
\tcbset{colback=red!5!white,
  colframe=red!75!black,left=1mm,
  right=1mm,boxsep=0mm}

\let\realHuge=\Huge

\begin{tcolorbox}[fit basedim=7pt,
  fontupper=\normalsize,
  fit fontsize macros]
The relative relative font size macros
are also usable without the
\textit{fit} algorithm.\par
{\Huge Adapted Huge} ---
{\realHuge Original Huge}
\end{tcolorbox}
```

The relative relative font size macros are also usable without the *fit* algorithm.

Adapted Huge — Original Huge

```
\tcbset{size=fbox,colback=red!5!white,
  colframe=red!75!black}

\tcboxfit[height=5cm,
  fit fontsize macros,
  fonttitle=\normalsize\bfseries,
  title=Adapted title]
{\lipsum[2]}
```

Adapted title

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

/tcb/fit height plus=⟨*dimension*⟩ (no default, initially 0pt)

The box is allowed to enlarge the fixed height up to the given ⟨*dimension*⟩, before a font size fit is applied. An optional **/tcb/fit width plus**→P. ?? is tried after the height adaption.
在应用字体大小调整之前，该盒子允许将固定高度增加至给定的 ⟨*dimension*⟩。可选的 **/tcb/fit width plus**→P. ?? 在高度适应后进行尝试。

```
% \usepackage{lipsum}
\tcbset{colback=red!5!white,colframe=red!75!black,left=1mm,top=1mm,bottom=1mm,
  right=1mm,boxsep=0mm,width=3cm,height=3cm,nobeforeafter}

\begin{tcolorbox}[fit]
这是一个tcolorbox。
\end{tcolorbox}
\begin{tcolorbox}[fit,fit height plus=1cm]
这是一个tcolorbox。
\end{tcolorbox}
\begin{tcolorbox}[fit]
\lipsum[2]
\end{tcolorbox}
\begin{tcolorbox}[fit,fit height plus=1cm]
\lipsum[2]
\end{tcolorbox}
```

这是一个 tcolorbox。

这是一个 tcolorbox。

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

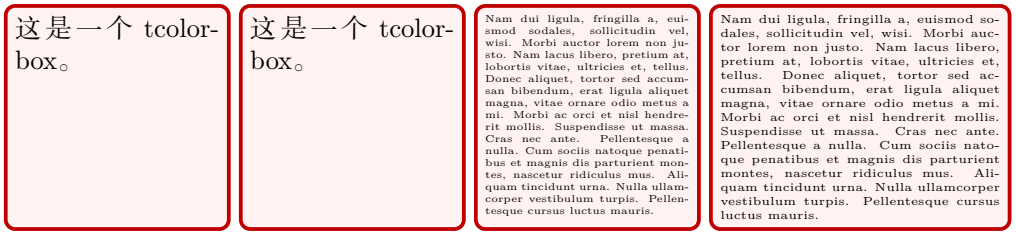
Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

/tcb/fit width plus=⟨*dimension*⟩ (no default, initially 0pt)

The box is allowed to enlarge the fixed width up to the given ⟨*dimension*⟩, before a font size fit is applied. An optional **/tcb/fit height plus**→P. ?? is tried before the width adaption.
在应用字体大小调整之前，该盒子允许将固定宽度增加至给定的 ⟨*dimension*⟩。可选的 **/tcb/fit height plus**→P. ?? 在宽度适应之前进行尝试。

```
% \usepackage{lipsum}
\tcbset{colback=red!5!white,colframe=red!75!black,left=1mm,top=1mm,bottom=1mm,
  right=1mm,boxsep=0mm,width=3cm,height=3cm,nobeforeafter}

\begin{tcolorbox}[fit]
这是一个tcolorbox。
\end{tcolorbox}
\begin{tcolorbox}[fit,fit width plus=1cm]
这是一个tcolorbox。
\end{tcolorbox}
\begin{tcolorbox}[fit]
\lipsum[2]
\end{tcolorbox}
\begin{tcolorbox}[fit,fit width plus=1cm]
\lipsum[2]
\end{tcolorbox}
```



! Typically but not necessarily, the optional title of a `tcolorbox` is not part of the fit operation. If a **/tcb/fit width plus** →P. ?? is applied, the title is also adapted to the new width. If counters are increased inside the title text, they may be increased more than one time. To avoid this, you are encouraged to use **/tcb/phantom** →P. ?? or **/tcb/step and label** →P. ?? to set counters or use automatic numbering, see Subsection ?? from page ??.
通常，但不一定，`tcolorbox` 的可选标题不是适合操作的一部分。如果应用了 **/tcb/fit width plus** →P. ??，则标题也会适应新宽度。如果计数器在标题文本内增加，则它们可能会增加多次。为避免这种情况，建议使用 **/tcb/phantom** →P. ?? 或 **/tcb/step and label** →P. ?? 来设置计数器或使用自动编号，请参见第 ?? 页的子节 ??。

/tcb/fit width from=⟨*min*⟩ **to** ⟨*max*⟩ (style, no default)

Sets the box width to ⟨*min*⟩ and allows the width to grow up to ⟨*max*⟩.
将盒子宽度设置为 ⟨*min*⟩ 并允许宽度增长到 ⟨*max*⟩。

```
% \usepackage{lipsum}
\tcbset{colback=red!5!white,colframe=red!75!black,left=1mm,top=1mm,bottom=1mm,
  right=1mm,boxsep=0mm,height=4cm}

\begin{tcolorbox}[fit,width=\linewidth/2]
\lipsum[2]
\end{tcolorbox}\par
\begin{tcolorbox}[fit width from=\linewidth/2 to \linewidth]
\lipsum[2]
\end{tcolorbox}\par
```

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

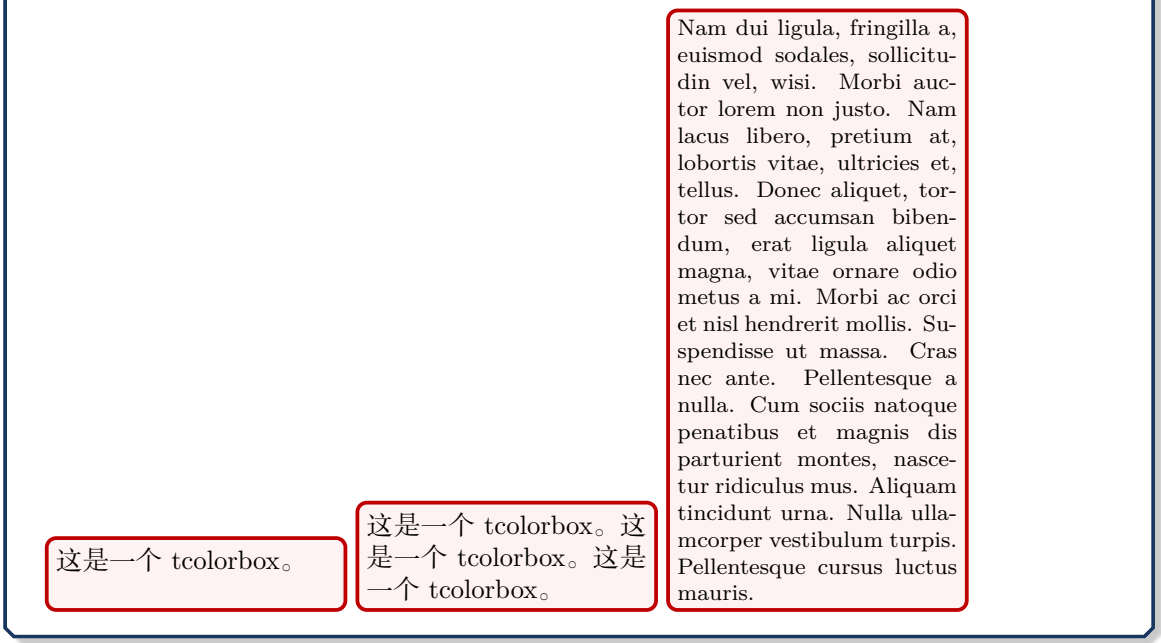
Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

/tcb/fit height from=⟨*min*⟩ to ⟨*max*⟩ (style, no default)

Sets the box height to ⟨*min*⟩ and allows the height to grow up to ⟨*max*⟩.
将盒子高度设置为 ⟨*min*⟩ 并允许高度增长到 ⟨*max*⟩。

```
% \usepackage{lipsum}
\newtcolorbox{mybox}{colback=red!5!white,colframe=red!75!black,left=1mm,top=1mm,
  bottom=1mm,right=1mm,boxsep=0mm,width=4cm,nobeforeafter,
  fit height from=1cm to 8cm}

\begin{mybox}
这是一个tcolorbox。
\end{mybox}
\begin{mybox}
这是一个tcolorbox。 这是一个tcolorbox。 这是一个tcolorbox。
\end{mybox}
\begin{mybox}
\lipsum[2]
\end{mybox}
```



`/tcb/fit algorithm=`⟨*name*⟩ (no default, initially `fontsize`)

Sets the algorithm for the fitting process *after* optionally width and height are adapted. In the following, adapting the font size means adapting **\tcbfitdim**[→P. ??]. Feasible values for ⟨*name*⟩ are:
在可选的宽度和高度适应之后，设置适合过程的算法。在下面的说明中，适应字体大小意味着适应 **\tcbfitdim**[→P. ??]。可行的 ⟨*name*⟩ 值为：

- `fontsize` (initial): The algorithm is a bisection method that adapts the font size until certain stop conditions are fulfilled. This is the most time-consuming method but it is robust and gives pleasant results.
  该算法是一个二分法，它调整字体大小，直到满足某些停止条件。这是最耗时的方法，但它是强大而令人愉悦的结果。

  > ! The used font has to be freely scalable for this method! Other content than text is not scaled down. The aspect ratio is fully garanteed.
  > 对于这种方法使用的字体必须是自由缩放的！其他内容不会缩小。纵横比完全保证。

- `fontsize*`: First the `fontsize` algorithm is applied. If the font was scaled down and the resulting height is too small, the box is squeezed to fit the area.
  首先应用 `fontsize` 算法。如果字体被缩小并且结果高度太小，则会压缩盒子以适应区域。

> ! The used font has to be freely scalable for this method! Other content than text may be slightly rescaled. The aspect ratio cannot be fully garanteed.
> 使用的字体必须可以自由缩放！与文本不同的其他内容可能会被轻微缩放。纵横比不能完全保证。

- **areasize**: The algorithm calculates the area size for the text without scaling the font. The text box is shaped for the needed aspect ratio in one or two steps. Finally, it is scaled down with a standard `\resizebox` macro.
  该算法在不缩放字体的情况下计算文本的面积大小。文本框根据所需的纵横比在一步或两步中形成，最后使用标准的 `\resizebox` 宏进行缩小。

> ! The used font has not to be scalable. Every box content is scaled down. The aspect ratio cannot be fully garanteed.
> 使用的字体不必可缩放。每个盒子内容都会被缩小。纵横比不能完全保证。

- **areasize***: The **areasize** algorithm is applied, but if the content was scaled down and the resulting height is too small, the box is squeezed to fit the area.
  该算法应用 **areasize**，但如果内容被缩小，结果高度太小，则会压缩盒子以适应该区域。

> ! The used font has not to be scalable. Every box content is scaled down. The aspect ratio cannot be fully garanteed.
> 使用的字体不必可缩放。每个盒子内容都会被缩小。纵横比不能完全保证。

- **hybrid**: First, this algorithm estimates the needed font size in one or two steps. Then an **areasize** fitting as above is a applied.
  该算法首先通过一步或两步估计所需的字体大小，然后应用如上的 **areasize** 。

> ! The used font has to be freely scalable for this method! Other content than text may be slightly rescaled. The aspect ratio cannot be fully garanteed.
> 使用的字体必须可以自由缩放！与文本不同的其他内容可能会被轻微缩放。纵横比不能完全保证。

- **hybrid***: First, this algorithm estimates the needed font size in one or two steps. Then an **areasize*** fitting as above is a applied.
  该算法首先通过一步或两步估计所需的字体大小，然后应用如上的 **areasize*** 。

> ! The used font has to be freely scalable for this method! Other content than text may be slightly rescaled. The aspect ratio cannot be fully garanteed.
> 使用的字体必须可以自由缩放！与文本不同的其他内容可能会被轻微缩放。纵横比不能完全保证。

- **squeeze**: The text box is brutally scaled down to fit.
  文本框被强制缩小以适应。

> ! The aspect ratio is very likely to be horrible. You should not use this method for final documents.
> 纵横比很可能很糟糕。您不应将此方法用于最终文档。

```
% \usepackage{lipsum}
\newtcboxfit{mybox}[1]{colback=red!5!white,colframe=red!75!black,left=1mm,top=1mm,
  bottom=1mm,right=1mm,boxsep=0mm,width=3.5cm,height=7cm,nobeforeafter,
  before upper=\textcolor{blue}{\rule{5mm}{5mm}}\ ,
  enhanced,watermark text={\tcbfitsteps},
  fonttitle=\bfseries,adjusted title={#1},fit algorithm=#1}

\mybox{fontsize}{\lipsum[2]}\hfill
\mybox{hybrid}{\lipsum[2]}\hfill
\mybox{areasize}{\lipsum[2]}\hfill
\mybox{squeeze}{\lipsum[2]}

Quality \dotfill versus \dotfill Speed
```

fontsize

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

hybrid

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

areasize

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

squeeze

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

Quality . . . . . versus . . . . . Speed

```
% \usepackage{lipsum}
\newtcboxfit{mybox}[2]{colback=red!5!white,colframe=red!75!black,left=1mm,top=1mm,
  size=tight,width=7.2cm,height=5cm,nobeforeafter,
  before upper=\textcolor{blue}{\rule{5mm}{5mm}}\ ,
  enhanced,fonttitle=\bfseries,adjusted title={#2},fit algorithm=#1}

\mybox{hybrid}{hybrid (possible gap at end)}{\lipsum[1]}\hfill
\mybox{hybrid*}{hybrid* (no gap but possibly squeezed)}{\lipsum[1]}
```

hybrid (possible gap at end)

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

hybrid* (no gap but possibly squeezed)

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

The following options set control parameters for the fit algorithm. Mainly, they apply to the `fontsize` variant, see **/tcb/fit algorithm** → P. ??. The options should be seen as experimental and are likely to change in future versions, if necessary.
以下选项设置适合算法的控制参数。主要适用于 `fontsize` 变量，参见 **/tcb/fit algorithm** → P. ??。这些选项应视为实验性的，并且可能在未来的版本中更改，如果必要的话。

`/tcb/fit maxstep=`⟨*number*⟩ (no default, initially `20`)

Sets the maximal step size for the font size adjustment algorithm. In normal situations, the algorithm stops before reaching the intial value of 20 steps. If the box content does not shrink, this value prevents an endless loop.
设置字体大小调整算法的最大步长。在正常情况下，算法在达到初始值 20 步之前就停止。如果框内容不缩小，则该值可以防止无限循环。

`/tcb/fit maxfontdiff=`⟨*dimension*⟩ (no default, initially `0.1pt`)

The algorithm stops, if the font size is determined within a deviation of ⟨*dimension*⟩.
如果字体大小在 ⟨*dimension*⟩ 的偏差范围内确定，则算法停止。

`/tcb/fit maxfontdiffgap=`⟨*dimension*⟩ (no default, initially `1pt`)

The algorithm stops, if the number of lines is determined and the font size is determined within a deviation of ⟨*dimension*⟩.
如果行数已确定并且字体大小在 ⟨*dimension*⟩ 的偏差范围内确定，则算法停止。

`/tcb/fit maxwidthdiff=`⟨*dimension*⟩ (no default, initially `1pt`)

The algorithm stops, if the (optionally) flexible box width is determined within a deviation of ⟨*dimension*⟩.
如果确定了（可选的）灵活框宽度并且其宽度在 ⟨*dimension*⟩ 的偏差范围内，则算法停止。

`/tcb/fit maxwidthdiffgap=`⟨*dimension*⟩ (no default, initially `10pt`)

The algorithm stops, if the number of lines is determined and the (optionally) flexible box width is determined within a deviation of ⟨*dimension*⟩.
如果行数已确定并且（可选的）灵活框宽度已在 ⟨*dimension*⟩ 的偏差范围内确定，则算法停止。

`/tcb/fit warning=`⟨*value*⟩ (no default, initially `off`)

Typically, the fit control algorithm constructs several auxiliary boxes to determine the optimal one. If not switched off, the construction of the auxiliary boxes may produce many `hbox` warnings. This option key changes the `\hbadness` value.
通常，适合控制算法构建多个辅助框来确定最佳框。如果没有关闭，构建辅助框可能会产生许多 `hbox` 警告。此选项键更改 `\hbadness` 值。

- `off`: Most of ‘`Underfull \hbox`’ and ‘`Overfull \hbox`’ warnings are switched off (including the ones for the finally used box).
  关闭大部分 `Underfull \hbox`’ 和 `Overfull \hbox`’ 警告（包括最终使用的框的警告）。
- `on`: All warnings for all auxiliary boxes are displayed.
  显示所有辅助框的所有警告。
- `final`: Only warnings for the finally used box are displayed. Note that an additional box has to be contructed for theses messages.
  仅显示最终使用的框的警告。请注意，为这些消息必须构造一个额外的框。