

# joinbox 盒子拼接宏包 $\Rightarrow$ English Version

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\*[https://gitee.com/nwafu\\_nan/joinbox](https://gitee.com/nwafu_nan/joinbox)

# 1 引言

joinbox 是一个基于 l3coffins 用 expl3 开发的盒子拼接宏包，它用于实现盒子的垂直或水平拼接。垂直拼接会以各对象等宽的方式拼接，而水平拼接会以各对象等高的方式拼接。

该宏包提供了\joinbox和\joinfigs两个命令。其中，\joinbox用于拼接两个独立对象，\joinfigs用于拼接多个图像。这两个命令的不带\*(星号)版本用于垂直拼接，而带\*(星号)的版本用于水平拼接。同时，该宏包还提供了\joinset命令用于对拼接方式进行设置。

## 2 用户接口

### 2.1 \joinbox拼接两个对象命令

---

```
\joinbox \joinbox [<拼接方式>] {<对象 1>} {<对象 2>}
\joinbox* \joinbox* [<拼接方式>] {<对象 1>} {<对象 2>}
```

---

用于拼接两个对象。该命令需要用两个必选参数 {<对象 1>} 和 {<对象 2>} 指定需要拼接的对象。拼接对象将被置于 coffin 中，然后按需求进行拼接。

在可选项 [<拼接方式>] 中，可以通过 key-value 指定输出结果基线位置、输出尺寸 (垂直拼接是输出宽度，水平拼接是输出高度) 和拼接间距。

### 2.2 \joinfigs拼接多个图像命令

---

```
\joinfigs \joinfigs [<拼接方式>] {<文件名称列表>}
\joinfigs* \joinfigs* [<拼接方式>] {<文件名称列表>}
```

---

用于拼接多个图像。该命令需要一个必选参数 {<文件名称列表>}，用于指定需要拼接图像，文件名称中可以包含路径，不同文件名称之间用英文逗号进行分隔，最少需要有 1 个图像文件名称。

在 [<拼接方式>] 可选项中，可以通过 key-value 指定结果基线位置、输出尺寸 (垂直拼接是输出宽度，水平拼接是输出高度)、拼接间距。

### 2.3 \joinset

---

```
\joinset \joinset {<拼接方式>}
```

---

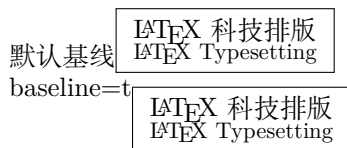
用于通过 key-value 指定拼接结果中的基线位置、输出尺寸 (垂直拼接是输出宽度，水平拼接是输出高度)、拼接间距。

## 3 拼接方式

**baseline** =  $\langle t, vc, H, b \rangle$  (initially b)

设置 joinbox 或 joinfigs 拼接结果的输出基线位置，目前支持：

- t— 盒子顶端水平线、
- vc— 盒子水平中心线、
- H— 盒子内容基线、
- b— 盒子底端水平线。



```

1 默认基线\fbbox{
2    \joinbox{\LaTeX 科技排版}
3              {\LaTeX~Typesetting}
4  }
5
6 baseline=t\fbbox{
7   \joinbox[baseline=t]{\LaTeX 科技排版}
8                       {\LaTeX~Typesetting}
9  }

```

**outlen** =  $\langle dim \rangle$  (initially 0pt)

设置 joinbox 或 joinfigs 拼接结果的输出尺寸，对于垂直拼接，设置输出宽度，对于水平拼接，设置输出高度。

若指定的输出尺寸  $\leq 0$ ，则表示使用被拼接对象中的最小尺寸输出。



```

1 输出宽度\fbbox{
2   \joinbox[outlen=2cm]{\LaTeX 科技排版}
3                       {\LaTeX~Typesetting}
4  }
5
6 输出高度\fbbox{
7   \joinbox*[outlen=0.2cm]{\LaTeX 科技排版}
8                           {\LaTeX~Typesetting}
9  }

```

**sep** =  $\langle dim \rangle$  (initially 0pt)

设置拼接对象之间的间距。



```

1 垂直间距\fbbox{
2   \joinbox[sep=5pt]{\LaTeX 科技排版}
3                   {\LaTeX~Typesetting}
4  }
5
6 水平间距\fbbox{
7   \joinbox*[outlen=0.2cm,sep=5pt]
8               {\LaTeX 科技排版}
9               {\LaTeX~Typesetting}
10  }

```

## 4 嵌套拼接

可以嵌套使用 \joinbox 命令以实现复杂对象拼接。



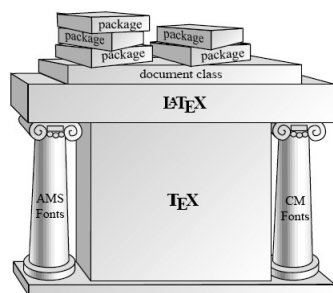
```

1 \joinbox*[outlen=0.04\textheight,sep=-5pt]
2   {
3     \joinbox[sep=5pt]{\LaTeX 科技排版}
4                     {\quad\LaTeX~Typesetting\quad}
5   }{
6     \includegraphics[scale=0.2]{expl3}
7   }

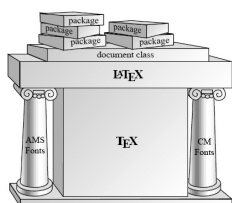
```

## 5 图像拼接

### 5.1 原始图像



### 5.2 垂直拼接图像



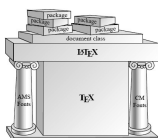
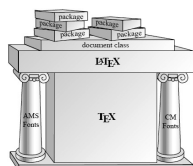
```
1 \joinfigs[outlen=3cm, sep=5pt]
2   {latexframe, tl-lion, expl3}
```

### 5.3 水平拼接图像



```
1 \joinfigs*[outlen=1.3cm, sep=5pt]
2   {latexframe, tl-lion, expl3}
```

### 5.4 嵌套拼接图像



```
1 \joinbox*[outlen=0.20\textheight, sep=5pt]
2   {
3     \joinfigs[outlen=0.25\textwidth]
4       {latexframe, tl-lion, expl3}
5   }
6   \joinfigs[outlen=0.25\textwidth]
7     {expl3, tl-lion, latexframe}
8 }
```

# joinbox package for Joinning Boxs or Figures $\Rightarrow$ 中文版本

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August 12, 2023      v1.0.0 \*

## 6 Introduction

joinbox is a box joining package based on l3coffins developed with expl3, which provides the `\joinbox` and `\joinfigs` macros for vertical or horizontal joining of boxes. Different types of joining can be set up with the options or `\joinset` macro.

Boxes can be joined vertically or horizontally. When using vertical joining, all boxes to be joined will keep same width, while when using horizontal joined, all boxes to be joined will keep same height.

The `\joinbox` and `\joinfigs` macros without star are used for vertical joining, while the `\joinbox*` and `\joinfigs*` with star are used for horizontal joining.

## 7 Interfaces

### 7.1 `\joinbox` for Two Contents Joinning

---

<code>\joinbox</code>	<code>\joinbox</code>	<code>[\langle options \rangle]</code>	<code>\{\langle content1 \rangle\}</code>	<code>\{\langle content2 \rangle\}</code>
<code>\joinbox*</code>	<code>\joinbox*</code>	<code>[\langle options \rangle]</code>	<code>\{\langle content1 \rangle\}</code>	<code>\{\langle content2 \rangle\}</code>

---

Used to join two contents. It requires two arguments `\{\langle content1 \rangle\}` and `\{\langle content2 \rangle\}` to specify the objects to be joined. The contents will be placed in the coffin respectively and then joined.

In the `[\langle options \rangle]`, the typeout baseline, typeout size (vertical joining is width, horizontal joining is height), and joining sepearate spacing can be specified with *key-value*.

### 7.2 `\joinfigs` for Figure Sets Joinning

---

<code>\joinfigs</code>	<code>\joinfigs</code>	<code>[\langle options \rangle]</code>	<code>\{\langle namelist \rangle\}</code>
<code>\joinfigs*</code>	<code>\joinfigs*</code>	<code>[\langle options \rangle]</code>	<code>\{\langle namelist \rangle\}</code>

---

Used for joining multiple images. This command requires a argument `\{\langle namelist \rangle\}` to specify the image to be joined. The file name can include a path, and different file names should be separated by commas. At least one image file name is required.

In the `[\langle options \rangle]`, the typeout baseline, typeout size (vertical joining is width, horizontal joining is height), and joining sepearate spacing can be specified with *key-value*.

---

\*[https://gitee.com/nwafu\\_nan/joinbox](https://gitee.com/nwafu_nan/joinbox)  
\*[https://gitee.com/nwafu\\_nan/joinbox](https://gitee.com/nwafu_nan/joinbox)

## 7.3 `\joinset` for Settings

---

`\joinset` `\joinset`  $\{\langle options \rangle\}$

---

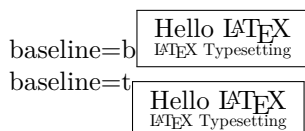
Used to set the typeout baseline, typeout size (vertical joinning is width, horizontal joinning is height), and joinning seperate spacing with *key-value*.

## 8 Options

**baseline** =  $\langle t, vc, H, b \rangle$  (initially *b*)

Set typeout baseline, currently as follows:

- *t*—a pole running along the top edge of the bounding box of the coffin;
- *vc*—a pole running horizontally through the centre of the coffin half-way between the bottom and top edges of the bounding box (i.e. the “vertical centre” );
- *H*—a pole running along the baseline of the typeset material contained in the coffin;
- *b*—a pole running along the bottom edge of the bounding box of the coffin.



```

1 baseline=b\fbbox{
2   \joinbox{Hello \LaTeX}
3     {\LaTeX~Typesetting}
4 }
5
6 baseline=t\fbbox{
7   \joinbox[baseline=t]{Hello \LaTeX}
8     {\LaTeX~Typesetting}
9 }

```

**outlen** =  $\langle dim \rangle$  (initially 0pt)

Used to set typeout size, vertical joinning is width and horizontal joinning is height.

If  $outlen \leq 0$ , then the typeout size is minimal size of all contents.



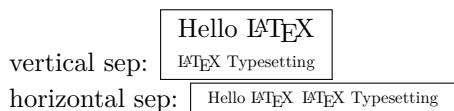
```

1 width: \fbbox{
2   \joinbox[outlen=2cm]{Hello \LaTeX}
3     {\LaTeX~Typesetting}
4 }
5
6 height: \fbbox{
7   \joinbox*[outlen=0.2cm]{Hello \LaTeX}
8     {\LaTeX~Typesetting}
9 }

```

**sep** =  $\langle dim \rangle$  (initially 0pt)

Used to set joinning seperate spacing.



```

1 vertical sep: \fbbox{
2   \joinbox[sep=5pt]{Hello \LaTeX}
3     {\LaTeX~Typesetting}
4 }
5
6 horizontal sep: \fbbox{
7   \joinbox*[outlen=0.2cm,sep=5pt]
8     {Hello \LaTeX}
9     {\LaTeX~Typesetting}
10 }

```

## 9 Nested Joinning

The `\joinbox` can be nested to get complex joinning.

Hello L<sup>A</sup>T<sub>E</sub>X   
L<sup>A</sup>T<sub>E</sub>X Typesetting

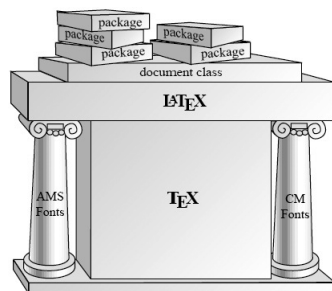
```

1 \joinbox*[outlen=0.04\textheight,sep=-5pt]
2   {
3     \joinbox[sep=5pt]{Hello \LaTeX}
4     {\quad\LaTeX~Typesetting\quad}
5   }{
6     \includegraphics[scale=0.2]{expl3}
7   }

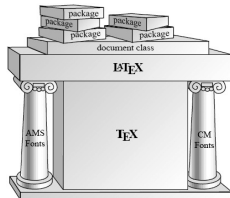
```

## 10 Figures Joinning

### 10.1 Original



### 10.2 Vertical Joinning



```

1 \joinfigs[outlen=3cm, sep=5pt]
2   {latexframe, tl-lion, expl3}

```

### 10.3 Horizontal Joinning

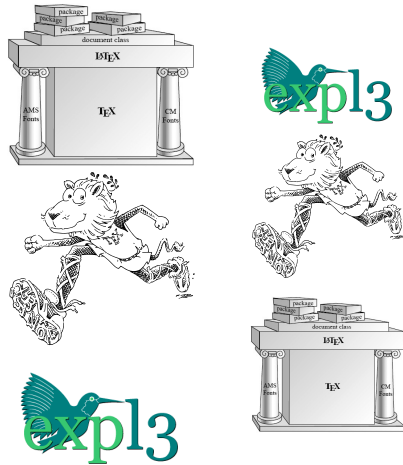


```

1 \joinfigs*[outlen=1.3cm, sep=5pt]
2   {latexframe, tl-lion, expl3}

```

## 10.4 Nested Joinning



```

1 \joinbox*[outlen=0.20\textheight, sep=5pt]
2   {
3     \joinfigs[outlen=0.25\textwidth]
4       {latexframe, tl-lion, expl3}
5   }{
6     \joinfigs[outlen=0.25\textwidth]
7       {expl3, tl-lion, latexframe}
8   }

```

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<b>J</b>		outlen (option) .....	3, 6
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