

# The `mcaption` package\*

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## Abstract

This package provides a `margincap` environment for putting captions in the outer document margin with either a top or bottom alignment.

## 1 Package options

Margin captions can be either top or bottom aligned. That is, the first or last line of the caption is aligned with the top or bottom of a figure or table. In case a caption is higher than a figure it will hang or grow in the margin beneath running text. You can control the alignment by loading the package with options `bottom`, which is the default, or `top`, *e. g.*:

```
\usepackage[top]{mcaption}
```

## 2 Usage

`margincap` Place the `margincap` environment inside a `figure` or any other floating environment. Then put the stuff you want to have a margin caption inside the `margincap` environment, including commands for horizontal alignment, *e. g.*, `\centering` (see file `example.tex`, which has been generated during package installation). Placing those commands before `margincap` would likely lead to unwanted output.

Arguments to the `margincap` environment are the same as to the `\caption` command, *i. e.*, the mandatory caption text and one optional alternative list entry. A sample declaration of a figure with a margin caption looks like this<sup>1</sup>:

```
\begin{figure}  
  \begin{margincap}[short caption]{margin caption}  
    \centering  
    \includegraphics{picture}
```

---

\*This document corresponds to `mcaption` v2.2, dated 2005/09/30.

<sup>1</sup>Currently, references to figures with margin captions are not supported.

```

\end{margincap}
\end{figure}

```

`wrapfigure` The `margincap` environment even works inside a `wrapfigure` environment that is provided by the `wrapfig` package as long as the figure or table appears in the outer margin, *e. g.*, by specifying a parameter ‘o’ or ‘O’ to the `wrapfigure` environment (see the *Known Problems* section below). This even works in two column mode.

## 3 Caption Format

### 3.1 Vertical alignment

Vertical alignment of margin caption can be controlled by package options `bottom` or `top` (see section 1). As an alternative, you can `\renewcommand` macro `\margincapalign` to either `b` or `t`. This way you can adjust the alignment of single captions in the document. Although, there might be situations where this could be useful, the author suggests one document wide alignment setting. The true reason macro `\margincapalign` is provided for is explained in section 4.

### 3.2 Horizontal alignment

Horizontal space between a `margincap` environment’s contents and the caption can be adjusted by setting length `\margincapsep` to the desired value. This has to be done after `\begin{document}` or via `\AtBeginDocument` in the preamble. Although changes of `\margincapsep` will affect all further `margincap` environments you should use one document wide setting to get a consistent look throughout the document. Default value is `\marginparsep`.

### 3.3 Further tweaks

To get visually pleasing results you should provide wide enough outer margins. To further smoothen line breaking consider using a smaller caption font and setting captions ragged. The author suggests using the `caption` package to format captions. *E. g.*, issuing the following line in the document preamble

```
\usepackage[font=footnotesize,justification=raggedright]{caption}
```

will type set all further captions at a smaller font size and flush left. The `RaggedRight` option might be useful here, too, to allow for hyphenation inside ragged text.

## 4 Tables

When using a `tabular` environment inside the `margin cap` environment an alignment parameter has to be passed to `tabular` to get proper vertical alignment of the caption. This parameter should be either `b` or `t`. Since the parameter should also match margin captions' alignment, it is recommended to pass parameter `\margin cap align` to a `tabular` declaration. Omitting this parameter causes captions to appear near the vertical center of a `tabular`. A typical table declaration should look like this:

`\margin cap align`

```
\begin{table}
  \begin{margin cap}{margin caption}
    \centering
    \begin{tabular}[\margin cap align]{...}
      ...
    \end{tabular}
  \end{margin cap}
\end{table}
```

## 5 Known Problems

1. The label/reference mechanism doesn't work for margin captions, currently.
2. Captions can appear in the wrong margin sometimes. Running  $\text{\LaTeX}$  again should solve that problem.
3. When changing the font size of captions they may be slightly vertically misaligned.
4. When using the `wrap fig` package the auto sizing feature of the `wrap figure` environment won't work when putting a `margin cap` environment in. You'll have to specify the width of a `wrap figure` manually.

## 6 Bugs

If you find bugs feel free to contact me at `stephanhennig@arcor.de`.

## 7 Implementation

Make sure the `ifthen` and `chn gpage` packages are loaded.

```
1 \RequirePackage{ifthen}
2 \RequirePackage{chn gpage}
```

`\margin cap align`

Provide this macro to store the vertical alignment specifier for user access (see section 4).

```
3 \newcommand*{\margin cap align}{}%
```

Declare options `bottom` and `top` to determine vertical alignment of a caption. Default package option is `bottom`.

```
4 \DeclareOption{top}{\renewcommand*{\margincapalign}{t}}
5 \DeclareOption{bottom}{\renewcommand*{\margincapalign}{b}}
6 \ExecuteOptions{bottom}
7 \ProcessOptions\relax
```

`\margincapsep` Length `\margincapsep` determines the horizontal distance between contents and caption and can be adjusted by the user. This length has to be set only after `\begin{document}` and equals `\marginparsep` by default.

```
8 \newlength{\margincapsep}
9 \AtBeginDocument{%
10   \setlength{\margincapsep}{\marginparsep}%
11 }
```

Declare boxes to store the contents and caption of a `margincap` environment.

```
12 \newsavebox{\mcaption@ObjectBox}
13 \newsavebox{\mcaption@CaptionBox}
```

Declare lengths that are used for vertical positioning of contents and caption and a temporary one. Could one use a global temporary length instead?

```
14 \newlength{\mcaption@ObjectHeight}
15 \newlength{\mcaption@ObjectRaise}
16 \newlength{\mcaption@CaptionRaise}
17 \newlength{\mcaption@tempdima}
```

`margincap` Provide `margincap` environment.

```
18 \newenvironment{margincap}[2][\mcaption@DefaultOpt]{%
```

Call `\caption` with or without optional argument. Trick taken from UK-TeX-FAQ, question 286: ‘Optional arguments like `\section`’.

```
19   \def\mcaption@DefaultOpt{#2}%
```

Put caption in box `\mcaption@CaptionBox` with requested alignment for later use.

```
20   \begin{lrbox}{\mcaption@CaptionBox}%
21     \setlength{\mcaption@tempdima}{\marginparsep}%
22     \addtolength{\mcaption@tempdima}{\marginparwidth}%
23     \addtolength{\mcaption@tempdima}{-\margincapsep}%
24     \begin{minipage}{\margincapalign}{\mcaption@tempdima}%
25       \caption[#1]{#2}%
26     \end{minipage}%
27   \end{lrbox}%
```

Put user stuff into box `\mcaption@ObjectBox` of width `\linewidth` with requested alignment.

```
28   \begin{lrbox}{\mcaption@ObjectBox}%
29     \begin{minipage}{\margincapalign}{\linewidth}%
30   }{%
31     \end{minipage}%
32   \end{lrbox}%
```

Depending on requested alignment of the caption, *i. e.* `\margincapalign` is `b` or `t`, do some calculations about how much to raise contents and caption:

alignment	raise contents	raise caption	new height of contents
bottom	0	0	natural height
top	−natural height	height of <code>\strutbox</code>	0

Furthermore, height and depth of a caption are set to zero to allow them to hang into or grow beneath running text.

```

33 \settoheight{\mcaption@ObjectHeight}{\usebox{\mcaption@ObjectBox}}%
34 \ifthenelse{\equal{\margincapalign}{t}}{%
35   \setlength{\mcaption@ObjectRaise}{-\mcaption@ObjectHeight}%
36   \setlength{\mcaption@ObjectHeight}{0pt}%
37   \settoheight{\mcaption@CaptionRaise}{\strut}%
38 }{%
39   \setlength{\mcaption@ObjectRaise}{0pt}%
40   \setlength{\mcaption@CaptionRaise}{0pt}%
41 }%
```

Now check, if we have a two sided document. If so, check if we're on an even or odd page. If the document is one sided, treat every page like an odd page.

```

42 \if@twoside%
43   \checkoddpage%
44 \else%
45   \cpoddpagetrue%
46 \fi%
```

Finally, output contents and caption. On odd pages, output contents first, and then caption. On even pages, the order is reversed.

```

47 \ifcpoddpage%
48   \makebox[\linewidth][l]{%
49     \raisebox{\mcaption@ObjectRaise}{\mcaption@ObjectHeight}{%
50       \usebox{\mcaption@ObjectBox}%
51     }%
52     \hspace*{\margincapsep}%
53     \raisebox{\mcaption@CaptionRaise}[0pt][0pt]{%
54       \usebox{\mcaption@CaptionBox}%
55     }%
56   }%
57 \else%
58   \makebox[\linewidth][r]{%
59     \raisebox{\mcaption@CaptionRaise}[0pt][0pt]{%
60       \usebox{\mcaption@CaptionBox}%
61     }%
62     \hspace*{\margincapsep}%
63     \raisebox{\mcaption@ObjectRaise}{\mcaption@ObjectHeight}{%
64       \usebox{\mcaption@ObjectBox}%
65     }%
66   }%
67 \fi%
```

We're done.

68 }%

## Change History

v2.0		v2.2	
General: Prepared .dtx package. . .	3	General: Provide package options 'bottom' and 'top'. . . . .	4
v2.1		<b>margincap</b> : Captions were put in wrong margin in one sided doc- uments. Fixed. . . . .	5
<b>margincap</b> : Now works with stan- dard classes. . . . .	4		

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