

# The `caption` package\*

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## Abstract

The `caption` package provides many ways to customise the captions in floating environments such `figure` and `table`. The `\rotcaption` command and the `sidewaysfigure` and `sidewaystable` environments provided by the `rotating` package from S. Rahtz and L. Barroca are also supported. The `caption` package also cooperates with the `float` package written by A. Lingnau and the `subfigure` package written by S.D. Cochran.

## 1 The user interface

To use this package just type

```
\usepackage[<options>]{caption}
```

in the preamble of your document, where the following options are supported:

<code>normal</code>	provides ‘normal’ captions, this is the default
<code>hang</code> or <code>isu</code>	provides captions with hanging indention
<code>center</code>	provides captions where each line is centered
<code>centerlast</code>	provides captions where the last line of the paragraph is centered
<code>nooneline</code>	if a caption fits on <i>one</i> line on the page, it will be centered. If you don’t like this behaviour, just select this option.
<code>scriptsize</code> , ..., <code>Large</code>	sets the font size of the captions
<code>up</code> , <code>it</code> , <code>sl</code> , <code>sc</code> , <code>md</code> , <code>bf</code> , <code>rm</code> , <code>sf</code> , or <code>tt</code>	sets the font attribute of the caption labels.
<code>ruled</code>	supports ruled floats of the <code>float</code> package, see section 1.1 for details

<code>\captionfont</code> <code>\captionlabelfont</code>	To setup the font size and attributes of the captions, this package also provides
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\*This package has version number 1.4b, last revised 1995/04/05.

the commands `\captionfont` and `\captionlabelfont` to allow a more flexible way to customize the captions than the above options could do. `\captionfont` is called before each caption, `\captionlabelfont` is called just before the label of the caption, so the whole caption will be created as

```
\captionfont{\captionlabelfont <label>: }<caption>}
```

Note that these commands are used by the options, e.g. the options `small` and `sf` are identical to

```
\renewcommand{\captionfont}{\small} and
\renewcommand{\captionlabelfont}{\sffamily}
```

`\captionmargin` Furthermore there is a new length `\captionmargin` to setup an extra left and right margin for the captions, e.g. the command

```
\setlength{\captionmargin}{10pt}
```

sets this margin to 10pt.

`\abovecaptionskip` The lengths `\abovecaptionskip` and `\belowcaptionskip` contain the amount of  
`\belowcaptionskip` white space to leave above and below the caption. `\abovecaptionskip` is preset (in the `article`, `report` and `book` document class) to 10pt, `\belowcaptionskip` to 0pt.

## 1.1 The rotating, float and subfigure package

If you want to use this package together with the `rotating`[1], `float`[2] and/or the subfigure package, you have to input this package *after* the other ones, like

```
\usepackage{float,rotating,subfigure}
\usepackage[centerlast,small,sc]{caption}
```

The `caption` package now redefines the `sidewaysfigure` and `sidewaystable` environments and the `\rotcaption` command provided by the `rotating` package from S. Rahtz and L. Barroca. Note that the `\captionmargin` does not affect the `\rotcaption` command.

It also redefines the captions of the `plain` and `boxed` styled floats provided by the `float` package from A. Lingnau. `ruled` floats are not supported by default, but you can change this via setting the option `ruled`. Note that the `\captionmargin` is not supported in ruled floats.

If the `subfigure` package from S.D. Cochran is detected, the options `scriptsize`, ..., `large` will redefine `\subcapsize` in an adequate way. If you redefine `\captionfont` by yourself and use the `subfigure` package, you also have to redefine `\subcapsize` by yourself. Also the commands `\@thesubfigure` and `\@thesubtable` will be redefined to use the `\captionlabelfont` command, please take this into consideration if you redefine `\@thesubfigure` or `\@thesubtable` by yourself. E.g. a adequate version of the second example in `subfigure.sty` will be:

```
\renewcommand{\thesubfigure}{\thefigure.\arabic{subfigure}}
```

```

\makeatletter
\renewcommand{\@thesubfigure}{\captionlabelfont\thesubfigure:\space}
\renewcommand{\p@subfigure}{}
\makeatother
...

```

This package cooperates with the version 2.8 (1995/04/02) of the `rotating` package, version 1.2c (1995/03/29) of the `float` package and version 1.6 (1993/05/13) of the `subfigure` package, but will hopefully work with future versions, too.

## 2 Example

Here's an example figure which was produced with the following code in the preamble of this document:

```

\usepackage[hang,small,bf]{caption}
\setlength{\captionmargin}{20pt}

```

EXAMPLE FIGURE

**Figure 1:** This is an example caption with a small font and a sans serif label. The hang option was used. There is a left and right margin of 20pt.

## 3 The code

### 3.1 Identification

```

1 \NeedsTeXFormat{LaTeX2e}[1994/06/01]
2 \ProvidesPackage{caption}[1995/04/05 v1.4b caption package (HS)]
3 \typeout{Package: caption v1.4b <1995/04/05> (Harald Sommerfeldt)}

```

### 3.2 Initial code

```

\captionfont \captionsize is defined for backward compatibility with v1.3 of this package.
\captionlabelfont 4 \newcommand{\captionsize}{}
\captionmargin 5 \newcommand{\captionfont}{\captionsize}
6 \newcommand{\captionlabelfont}{}
7 \newlength{\captionmargin}

```

Here are the different basic types of captions implemented:

```

\as@normalcaption The 'normal' caption
8 \newcommand{\as@normalcaption}[2]{%
9   #1 #2\par}

\as@isucaption The 'iso' or 'hang' caption; this code was taken from The LATEX Companion[3,
p155] and modified
10 \newcommand{\as@isucaption}[2]{%
11   \sbox{\as@captionbox}{#1\space}%
12   \addtolength{\as@captionwidth}{-\wd\as@captionbox}%
13   \usebox{\as@captionbox}\parbox[t]{\as@captionwidth}{\leavevmode#2}}

```

```

\as@centercaption The ‘center’ caption
14 \newcommand{\as@centercaption}[2]{%
15   \parbox[t]{\as@captionwidth}{\centering#1 #2\par}}

\as@annecaption The ‘centerlast’ caption; the idea how to do this was taken from Brüggemann-
Klein[4], it is also mentioned in Kopka[5, p227]
16 \newcommand{\as@annecaption}[2]{%
17   \addtolength{\leftskip}{0pt plus 1fil}%
18   \addtolength{\rightskip}{0pt plus -1fil}%
19   \setlength{\parfillskip}{0pt plus 2fil}%
20   #1 #2\par}

\as@shortcaption Short captions are centered by default
21 \let\as@shortcaption\as@centercaption

```

### 3.3 Detection of the subfigure package

`\as@subcapsize` If the subfigure package is loaded, a little message will be typeout and `\as@subcapsize`  
`\@thesubfigure` – which sets the size of the subcaptions – will be defined. Also `\@thesubfigure`  
`\@thesubtable` and `\@thesubtable` will be redefined here to support the `\captionlabelfont`  
in subcaptions, too (thanks to Kevin Ruland for this idea!). If you don’t like  
this behaviour, just load the `caption` package *after* the `subfigure` package (and  
eventually redefine the `\subcapsize` by yourself) or redefine `\@thesubfigure` and  
`\@thesubtable` after loading the `caption` package as shown in the documentation  
of the subfigure package.

```

22 \ifx\thesubfigure\undefined
23   \newcommand{\as@subcapsize}[1]{%
24     \else%
25     \typeout{\space\space\space\space\space\space\space\space\space\space\space\space
26       ‘subfigure’ package detected}
27     \let\as@subcapsize\subcapsize
28     \renewcommand{\@thesubfigure}{\captionlabelfont\thesubfigure\space}
29     \renewcommand{\@thesubtable}{\captionlabelfont\thesubtable\space}
30 \fi

```

### 3.4 Declaration of options

There are four different types of captions supported: `normal`, `isu`, `center` and `centerlast`. `hang` is exactly the same as `isu`.

```

31 \DeclareOption{normal}{\let\as@caption\as@normalcaption}
32 \DeclareOption{isu}{\let\as@caption\as@isucaption}
33 \DeclareOption{hang}{\ExecuteOptions{isu}}
34 \DeclareOption{center}{\let\as@caption\as@centercaption}
35 \DeclareOption{anne}{\let\as@caption\as@annecaption}
36 \DeclareOption{centerlast}{\ExecuteOptions{anne}}

```

If option `nooneline` is set, only-one-line captions will behave like normal ones.

```

37 \DeclareOption{nooneline}{\AtBeginDocument{\let\as@shortcaption\as@caption}}

```

There are options for six different font sizes available, they also redefine the `\subcapsize` provided by the subfigure package (if detected).

```

38 \DeclareOption{scriptsize}{%

```

```

39 \renewcommand{\captionsize}{\scriptsize}
40 \as@subcapsize{\scriptsize}}
41 \DeclareOption{footnotesize}{%
42 \renewcommand{\captionsize}{\footnotesize}
43 \as@subcapsize{\scriptsize}}
44 \DeclareOption{small}{%
45 \renewcommand{\captionsize}{\small}
46 \as@subcapsize{\footnotesize}}
47 \DeclareOption{normalsize}{%
48 \renewcommand{\captionsize}{\normalsize}
49 \as@subcapsize{\footnotesize}}
50 \DeclareOption{large}{%
51 \renewcommand{\captionsize}{\large}
52 \as@subcapsize{\normalsize}}
53 \DeclareOption{Large}{%
54 \renewcommand{\captionsize}{\Large}
55 \as@subcapsize{\large}}

```

There are nine options available to set the font attributes of the caption labels.

```

56 \DeclareOption{up}{\renewcommand{\captionlabelfont}{\upshape}}
57 \DeclareOption{it}{\renewcommand{\captionlabelfont}{\itshape}}
58 \DeclareOption{sl}{\renewcommand{\captionlabelfont}{\slshape}}
59 \DeclareOption{sc}{\renewcommand{\captionlabelfont}{\scshape}}
60 \DeclareOption{md}{\renewcommand{\captionlabelfont}{\mdseries}}
61 \DeclareOption{bf}{\renewcommand{\captionlabelfont}{\bfseries}}
62 \DeclareOption{rm}{\renewcommand{\captionlabelfont}{\rmfamily}}
63 \DeclareOption{sf}{\renewcommand{\captionlabelfont}{\sffamily}}
64 \DeclareOption{tt}{\renewcommand{\captionlabelfont}{\ttfamily}}

```

If the option `ruled` is set, the captions of ruled floats provided by the `float` package will also be supported.

```

65 \DeclareOption{ruled}{\newcommand\as@ruled{}}

```

### 3.5 Execution of options

The ‘normal’ type of caption is preselected.

```

66 \ExecuteOptions{normal}
67 \ProcessOptions

```

### 3.6 Main code

```

\as@captionbox And now ... it's ... the new \@makecaption code!
\as@captionwidth 68 \newsavebox{\as@captionbox}
\as@makecaption 69 \newlength{\as@captionwidth}
\@makecaption 70 \newcommand{\as@makecaption}[2]{%
71 \setlength{\leftskip}{\captionmargin}%
72 \setlength{\rightskip}{\captionmargin}%
73 \addtolength{\as@captionwidth}{-2\captionmargin}%
74 \captionfont%
75 \sbox{\as@captionbox}{\captionlabelfont #1:} #2}%
76 \ifdim \wd\as@captionbox >\as@captionwidth
77 \as@caption{\captionlabelfont #1:}{#2}%
78 \else%
79 \as@shortcaption{\captionlabelfont #1:}{#2}%

```

```

80 \fi}
81 \renewcommand{\@makecaption}[2]{%
82 \vskip\abovecaptionskip%
83 \setlength{\as@captionwidth}{\linewidth}%
84 \as@makecaption{#1}{#2}%
85 \vskip\belowcaptionskip}

```

### 3.7 Support of the rotating package

`\@makercaption` If the rotating package is loaded, the command `\@makerotcaption` (for support of `\rotcaption`) will be redefined here. The code was taken from the rotating package [1] itself and adapted.

```

86 \ifx\@makerotcaption\undefined
87 \else
88 \typeout{\space\space\space\space\space\space\space\space\space\space
89 \space\space\space\space\space\space\space\space\space\space\space
90 \space\space\space\space\space\space\space\space\space\space\space\space
91 \space\space\space\space\space\space\space\space\space\space\space\space
92 \space\space\space\space\space\space\space\space\space\space\space\space}
93 \typeout{‘rotating’ package detected}
94 % \let\@makercaption\undefined
95 \renewcommand{\@makerotcaption}[2]{%
96 \captionfont%
97 \sbox{\as@captionbox}{\captionlabelfont #1:} #2}%
98 \ifdim \wd\as@captionbox > .8\vsiz
99 \rotatebox{90}{%
100 \setlength{\as@captionwidth}{.8\textheight}%
101 \begin{minipage}{\as@captionwidth}%
102 \as@caption{\captionlabelfont #1:}{#2}%
103 \end{minipage}}\par
104 \else%
105 \rotatebox{90}{\usebox{\as@captionbox}}%
106 \fi
107 \hspace{12pt}}
108 \fi

```

### 3.8 Support of the float package

`\floatc@plain` If the float package is loaded, the command `\floatc@plain` (and the command `\floatc@ruled` if the option `ruled` is given) will be redefined here.

```

105 \ifx\floatc@plain\undefined
106 \else
107 \typeout{\space\space\space\space\space\space\space\space\space\space
108 \space\space\space\space\space\space\space\space\space\space\space
109 \space\space\space\space\space\space\space\space\space\space\space\space
110 \space\space\space\space\space\space\space\space\space\space\space\space}
111 \typeout{‘float’ package detected}
112 \renewcommand\floatc@plain[2]{%
113 \setlength{\as@captionwidth}{\linewidth}%
114 \as@makecaption{#1}{#2}}
115 \ifx\as@ruled\undefined
116 \else
117 \renewcommand\floatc@ruled[2]{%
118 \setlength{\as@captionwidth}{\linewidth}%
119 \captionfont%
120 \as@caption{\captionlabelfont #1:}{#2}}
121 \fi
122 \fi

```

## References

- [1] Sebastian Rahtz and Leonor Barroca: *A style option for rotated objects in  $\LaTeX$* , 1994/10/02
- [2] Anselm Lingnau: *An Improved Environment for Floats*, 1995/03/25
- [3] Michel Goossens, Frank Mittelbach and Alexander Samarin: *The  $\LaTeX$  Companion*, Addison-Wesley, Reading, Massachusetts, 1994.
- [4] Anne Brüggemann-Klein: *Einführung in die Dokumentverarbeitung*, B.G. Teubner, Stuttgart, 1989
- [5] Helmut Kopka:  *$\LaTeX$ -Erweiterungsmöglichkeiten*, 3. überarbeitete Auflage, Addison-Wesley, Bonn, 1991