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:

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

`\captionfont` `\captionlabelfont` To setup the font size and attributes of the captions, this package also provides

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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` `\belowcaptionskip` The lengths `\abovecaptionskip` and `\belowcaptionskip` contain the amount of 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 `\captlonlabelfont` 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

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

3.2 Initial code

`\captionfont` `\captionlabelfont` `\captionmargin`

`\captionsize` is defined for backward compatibility with v1.3 of this package.

```
\newcommand{\captionsize}{}
\newcommand{\captionfont}{\captionsize}
\newcommand{\captionlabelfont}{}
\newlength{\captionmargin}
```

Here are the different basic types of captions implemented:

`\as@normalcaption` The 'normal' caption

```
\newcommand{\as@normalcaption}[2]{%
  #1 #2\par}
```

`\as@isucaption` The 'iso' or 'hang' caption; this code was taken from The LaTeX Companion[3, p155] and modified

```
\newcommand{\as@isucaption}[2]{%
  \sbox{\as@captionbox}{#1\space}%
```

```
  \addtolength{\as@captionwidth}{-\wd\as@captionbox}%
  \usebox{\as@captionbox}\parbox[t]{\as@captionwidth}{\leavevmode#2}}
```

`\as@centercaption` The 'center' caption

```
\newcommand{\as@centercaption}[2]{%
  \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]

```
\newcommand{\as@annecaption}[2]{%
  \addtolength{\leftskip}{0pt plus 1fil}%
  \addtolength{\rightskip}{0pt plus -1fil}%
  \setlength{\parfillskip}{0pt plus 2fil}%
  #1 #2\par}
```

`\as@shortcaption` Short captions are centered by default

```
\let\as@shortcaption\as@centercaption
```

3.3 Detection of the subfigure package

`\as@subcapsize` `\@thesubfigure` `\@thesubtable` If the subfigure package is loaded, a little message will be typeout and `\as@subcapsize` – which sets the size of the subcaptions – will be defined. Also `\@thesubfigure` 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.

```
\ifx\thesubfigure\undefined
  \newcommand{\as@subcapsize}[1]{}
\else%
  \typeout{\space\space\space\space\space\space\space\space\space
           `subfigure' package detected}
  \let\as@subcapsize\subcapsize
  \renewcommand{\@thesubfigure}{{\captionlabelfont\thesubfigure}\space}
  \renewcommand{\@thesubtable}{{\captionlabelfont\thesubtable}\space}
\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`.

```
\DeclareOption{normal}{\let\as@caption\as@normalcaption}
\DeclareOption{isu}{\let\as@caption\as@isucaption}
\DeclareOption{hang}{\ExecuteOptions{isu}}
\DeclareOption{center}{\let\as@caption\as@centercaption}
\DeclareOption{anne}{\let\as@caption\as@annecaption}
\DeclareOption{centerlast}{\ExecuteOptions{anne}}
```

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

```
\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).

```
\DeclareOption{scriptsize}{%
  \renewcommand{\captionsize}{\scriptsize}
  \as@subcapsize{\scriptsize}}
\DeclareOption{footnotesize}{%
  \renewcommand{\captionsize}{\footnotesize}
  \as@subcapsize{\scriptsize}}
\DeclareOption{small}{%
  \renewcommand{\captionsize}{\small}
  \as@subcapsize{\footnotesize}}
\DeclareOption{normalsize}{%
  \renewcommand{\captionsize}{\normalsize}
  \as@subcapsize{\footnotesize}}
\DeclareOption{large}{%
  \renewcommand{\captionsize}{\large}
  \as@subcapsize{\normalsize}}
\DeclareOption{Large}{%
  \renewcommand{\captionsize}{\Large}
  \as@subcapsize{\large}}
```

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

```
\DeclareOption{up}{\renewcommand{\captionlabelfont}{\upshape}}
\DeclareOption{it}{\renewcommand{\captionlabelfont}{\itshape}}
\DeclareOption{sl}{\renewcommand{\captionlabelfont}{\slshape}}
\DeclareOption{sc}{\renewcommand{\captionlabelfont}{\scshape}}
\DeclareOption{md}{\renewcommand{\captionlabelfont}{\mdseries}}
\DeclareOption{bf}{\renewcommand{\captionlabelfont}{\bfseries}}
\DeclareOption{rm}{\renewcommand{\captionlabelfont}{\rmfamily}}
\DeclareOption{sf}{\renewcommand{\captionlabelfont}{\sffamily}}
\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.

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

3.5 Execution of options

The 'normal' type of caption is preselected.

```
\ExecuteOptions{normal}
\ProcessOptions
```

3.6 Main code

`\as@captionbox` `\as@captionwidth` `\as@makecaption` `\@makecaption`

And now … it's … the new `\@makecaption` code!

```
\newsavebox{\as@captionbox}
\newlength{\as@captionwidth}
\newcommand{\as@makecaption}[2]{%
  \setlength{\leftskip}{\captionmargin}%
  \setlength{\rightskip}{\captionmargin}%
  \addtolength{\as@captionwidth}{-2\captionmargin}%
  \captionfont%
  \sbox{\as@captionbox}{{\captionlabelfont #1:} #2}%
```

```
  \ifdim \wd\as@captionbox >\as@captionwidth
    \as@caption{{\captionlabelfont #1:}}{#2}%
  \else%
    \as@shortcaption{{\captionlabelfont #1:}}{#2}%
  \fi}
\renewcommand{\@makecaption}[2]{%
  \vskip\abovecaptionskip%
  \setlength{\as@captionwidth}{\linewidth}%
  \as@makecaption{#1}{#2}%
  \vskip\belowcaptionskip}
```

3.7 Support of the rotating package

\@makercaption
\@makerotcaption

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.

```
\ifx\@makerotcaption\undefined
\else
  \typeout{\space\space\space\space\space\space\space\space\space
           `rotating' package detected}
% \let\@makercaption\undefined
  \renewcommand{\@makerotcaption}[2]{%
    \captionfont%
    \sbox{\as@captionbox}{{\captionlabelfont #1:} #2}%
    \ifdim \wd\as@captionbox > .8\vsize
      \rotatebox{90}{%
        \setlength{\as@captionwidth}{.8\textheight}%
        \begin{minipage}{\as@captionwidth}%
          \as@caption{{\captionlabelfont #1:}}{#2}%
        \end{minipage}}\par
    \else%
      \rotatebox{90}{\usebox{\as@captionbox}}%
    \fi
    \hspace{12pt}}
\fi
```

3.8 Support of the float package

\floatc@plain
\floatc@ruled

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.

```
\ifx\floatc@plain\undefined
\else
  \typeout{\space\space\space\space\space\space\space\space\space
           `float' package detected}
  \renewcommand\floatc@plain[2]{%
    \setlength{\as@captionwidth}{\linewidth}%
    \as@makecaption{#1}{#2}}
  \ifx\as@ruled\undefined
  \else
    \renewcommand\floatc@ruled[2]{%
      \setlength{\as@captionwidth}{\linewidth}%
      \captionfont%
      \as@caption{{\captionlabelfont #1:}}{#2}}
```

```
  \fi
\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