

The `sidecap` package

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Abstract

This package defines the new environments `SCfigure` and `SCtable`, analogous to `figure` and `table`, which make it easy to typeset captions sideways.

Additionally, a `wide` environment is defined; it allows to use the margin area, e. g., for figures wider than `\textwidth`.

1 Introduction

In some cases it may be useful to typeset the caption aside the figure or the table. For this purpose the package `sidecap` defines the new environments `SCfigure` and `SCtable`. The figure or the table and the caption are put into two minipages that are positioned side by side and centered as a whole. The space between the minipages is `\columnsep`. The correct positioning with respect to left and right pages requires at least two compilation runs.

2 Usage

```
\usepackage[<option>]{sidecap}
\begin{SCtable} [<relwidth>] [<float>] ... \end{SCtable}
\begin{SCfigure} [<relwidth>] [<float>] ... \end{SCfigure}
\begin{SCtable*} [<relwidth>] [<float>] ... \end{SCtable*}
\begin{SCfigure*} [<relwidth>] [<float>] ... \end{SCfigure*}
```

<option> – `outercaption` (default): Caption appears left on left pages and right on right pages.

`innercaption`: Caption appears right on left pages and left on right pages.

`leftcaption`, `rightcaption`: Caption is always on the left or right, respectively.

`wide`: The floating objects may extend into the margin area.

`raggedright`: Better justification for small captions. The `ragged2e` package is used if available.

<relwidth> – optional; caption width relative to the width of the figure or table. A large value (e.g., 50) reserves the maximum width that is possible. Default is 1.0.

<float> – optional; like the floating position parameter of the original table/figure environments. Default is `tbp`.

```
\begin{wide} ... \end{wide}
```

The `wide` environment may be used inside `figure` and `table` environments as well as in the normal text.

3 Required packages

This package requires the standard L^AT_EX package `ifthen`.

4 Supported packages

This package is compatible L^AT_EX package `hyperref` (tested with version 6.69c as of 2000/01/22).

If the `raggedright` package option has been given, then captions will be set with ragged right margin. The `ragged2e` package will be used if it can be found.

5 The implementation

5.1 Register allocation and auxiliary macros

```
1 (*package)
2
3 \RequirePackage{ifthen}
4
5 \newlength{\SC@BOXWD} \newlength{\SC@CAPWD} \newlength{\SC@tempdim}
6 \newcounter{SC@C} \newsavebox{\SC@BOX} \newcommand*\SC@FLOAT{-}
7 \newcommand*\SC@IDENT{\SC@number\value{SC@C}}
8
9 \newcommand*\isSC@WIDEi[2]{#2} %default: false
10 \newcommand*\isSC@WIDEii[2]{#2} %default: false
11
12 \let\SC@caption=\caption \let\SC@label=\label%
13
14 \let\SC@justify=\relax
```

5.2 Package `hyperref` compatibility

The following work-around for `hyperref` is due to Heiko Oberdiek.

```
15 %% From Heiko Oberdiek, 2000/01/24
16 \newcommand*\@getsecondarg{}% LaTeX-check if already defined
17 \long\def\@getsecondarg#1#2#3\@nil{#2}
18
19 \providecommand*\getpagenumber[1]{%
20   \expandafter\@getpagenumber\csname r@#1\endcsname{#1}%
21 }
22
23 \newcommand*\@getpagenumber[2]{%
24   \ifx#1\relax
25     \protect\G@refundefinedtrue % LaTeX: rerun warning
26     \@latex@warning{Reference ‘#2’ on page \thepage\space
27       undefined}%
28     0%
```

```

29 \else
30   \expandafter\@getsecondarg#1\@nil
31 \fi
32 }
33 %%-----
Note: The \pageref doesn't work with hyperref ...:-(
34 \newcommand*\isSC@ODD}[2]{%
35 % \ifthenelse{\isodd{\pageref{\SC@IDENT}}}{#1}{#2}}
36 \ifthenelse{\isodd{\getpagenumber{\SC@IDENT}}}{#1}{#2}}

```

5.3 Option processing

```

37 \DeclareOption{innercaption}{\renewcommand*\SC@FLOAT}[2]{%
38   \isSC@ODD{#1}\hspace{\columnsep}{#2}} {{#2}\hspace{\columnsep}{#1}}}}
39
40 \DeclareOption{outercaption}{%
41   \renewcommand*\SC@FLOAT}[2]{%
42     \isSC@ODD{#2}\hspace{\columnsep}{#1}} {{#1}\hspace{\columnsep}{#2}}}}
43
44 \DeclareOption{rightcaption}{%
45   \renewcommand*\SC@FLOAT}[2]{{#2}\hspace{\columnsep}{#1}}}}
46
47 \DeclareOption{leftcaption}{%
48   \renewcommand*\SC@FLOAT}[2]{{#1}\hspace{\columnsep}{#2}}}}
49
50 \DeclareOption{wide}{%
51   \renewcommand*\isSC@WIDEi}[2]{\if@twocolumn #2\else #1\fi}
52   \renewcommand*\isSC@WIDEii}[2]{#1}}
53
54 \DeclareOption{raggedright}{%
55   \let\SC@justify=\raggedright}
56
57 \ExecuteOptions{outercaption}
58
59 \ProcessOptions
60
61 \ifx\SC@justify\raggedright
62   \IfFileExists{ragged2e.sty}{%
63     \RequirePackage[OriginalCommands]{ragged2e}%
64     \let\SC@justify=\RaggedRight
65   }-}
66 \fi
67

```

5.4 User-level macros (environments)

SCfigure Simply passes the first (optional) parameter and the required one, in this case ‘figure’, to `SC@float`. The figure caption should be bottom aligned.

```

68
69 \newenvironment{SCfigure}{\SC@float [b]{figure}}{\endSC@float}
70 \newenvironment{SCfigure*}{\SC@dblfloat [b]{figure}}{\endSC@dblfloat}
71

```

`SCTable` Simply passes the first (optional) parameter and the required one, in this case ‘table’, to `SC@float`. The table caption should be top aligned.

```
72
73 \newenvironment{SCTable}{\SC@float[t]{table}}{\endSC@float}
74 \newenvironment{SCTable*}{\SC@dblfloat[t]{table}}{\endSC@dblfloat}
75
```

`wide` This is an environment that allows to extend the width of the text body (or of a floating environment) by using the margin space.

It shouldn’t be used in twocolumn text.

```
76
77 \newenvironment{wide}%
78 {%
79   \setlength{\@tempdima}{\linewidth}
80   \addtolength{\@tempdima}{\marginparwidth}%
81   \addtolength{\@tempdima}{\marginparsep}%
82   \begin{lrbox}{\SC@BOX}% ???
83     \begin{minipage}{\@tempdima}% ???
84   }%
85   {%
86     \end{minipage}% ???
87   \end{lrbox}% ???
88   \stepcounter{SC@C}\SC@label{\SC@IDENT}%
89   \isSC@ODD{\def\SC@hpos{1}}{\def\SC@hpos{r}}%
90   \noindent\makebox[\linewidth][\SC@hpos]{\usebox{\SC@BOX}}%
91 }
92
```

5.5 Internal macros

5.5.1 Collecting arguments

The new internal float environment, similar/analogous to L^AT_EX’s `@float` environment.

Syntax: `\SC@float` [*vpos*] {*name*} [*relwd*] [*fps*]

- Parameter *vpos* (optional) is the vertical positioning of the caption.
- Parameter *name* (required) is the name of the ‘original’ L^AT_EX floating environment (e.g., ‘figure’ or ‘table’).
- Parameter *relwd* (optional) is the desired relative width of the caption.
- Parameter *fps* (optional) is the usual L^AT_EX float positioning specifier.

The usual ‘cascading’ programming style is applied (cf. L^AT_EX’s `@float`).

`\SC@float` Initially, the first optional parameter is checked for.

```
93 \def\SC@float{\@ifnextchar[\SC@xfloat{\SC@xfloat[c]}}
```

`\SC@xfloat` Then the first and second parameters are consumed and the third one is checked for.

```
94 \def\SC@xfloat[#1]#2{\@ifnextchar[%
95   {\SC@yfloat{#1}{#2}}%
96   {\SC@zfloat{#1}{#2}{1.0}[\@nameuse{fps#2}]}}
```

`\SC@yfloat` Again, the fourth (and last) parameter is checked for.

```
97 \def\SC@yfloat#1#2[#3]{\@ifnextchar [%
98   {\SC@zfloat{#1}{#2}{#3}}%
99   {\SC@zfloat{#1}{#2}{#3}[\@nameuse{fps@#2}]}}
```

5.5.2 Capturing the float's contents

`\SC@zfloat` Finally, here is the macro that does all the work.

```
100 \def\SC@zfloat#1#2#3[#4]{%
101   \def\SC@vpos{#1}%
102   \expandafter\edef\csname fps@#2\endcsname{#4}%
103   \def\SC@captype{#2}%
104   \ifx#3\@empty\def\SC@fraction{1}\else\def\SC@fraction{#3}\fi%
105   \let\SC@CAPtext\@empty \let\SC@OPTCAPtext\@empty \let\SC@LABtext\@empty%
106   \renewcommand\caption[2] []{\gdef\SC@OPTCAPtext{##1}%
107     \gdef\SC@CAPtext{\SC@justify##2}}%
108   \renewcommand\label[1]{\gdef\SC@LABtext{##1}}%
109   \@namedef{fnum#2}{\mbox{\@nameuse{#2name}~\@nameuse{the#2}}}%
110   \begin{lrbox}{\SC@BOX}%
111   }%
112
```

The `\caption` and `\label` commands must be redefined.

Save the figure or table (or whatever) in a box.

`\SC@dblfloat` Analogous to L^AT_EX's `\dblfloat`.

```
113 \def\SC@dblfloat{%
114   \if@twocolumn\let\reserved@a\SC@dbflt\else\let\reserved@a\SC@float\fi
115   \reserved@a}
116 \def\SC@dbflt{\SC@float}
```

5.5.3 Output the float's contents

`\endSC@float` Outputs the figure or table (or whatever) and the caption.

```
117 \def\endSC@float{%
118   \end{lrbox}%
119   (+debug) \typeout{onecolumn}%
120   \let\isSC@WIDE\isSC@WIDEi%
121   \def\@FLOAT{\@float}\def\end@FLOAT{\end@float}%
122   \isSC@WIDE%
123   {\setlength{\@tempdima}{\textwidth}%
124     \addtolength{\@tempdima}{\marginparwidth}%
125     \addtolength{\@tempdima}{\marginparsep}}%
126   {\setlength{\@tempdima}{\columnwidth}}
127   \endSC@FLOAT{\@tempdima}}%
```

`\endSC@dblfloat` Ditto for *-forms of floats.

```
128 \def\endSC@dblfloat{%
129   \end{lrbox}%
130   (+debug) \typeout{twocolumn}%
131   \let\isSC@WIDE\isSC@WIDEii%
132   \def\@FLOAT{\@dblfloat}\def\end@FLOAT{\end@dblfloat}%
133   \isSC@WIDE%
```

```

134     {\setlength{\@tempdima}{\textwidth}}%
135     \addtolength{\@tempdima}{\marginparwidth}}%
136     \addtolength{\@tempdima}{\marginparsep}}%
137     {\setlength{\@tempdima}{\textwidth}}
138 \endSC@FLOAT{\@tempdima}}%

```

`\endSC@FLOAT` Sets the caption width. If caption width plus figure/table width (plus separation space) is too large then the caption width is set equal to the remaining width.

```

139 \def\endSC@FLOAT#1{%
140   \setlength\SC@tempdim{#1}%
141   % Kann man auf dieses Laengenregister verzichten? (RN) <****>
142   \settoheight\SC@BOXWD{\usebox\SC@BOX}%
143   \setlength\SC@CAPWD{\SC@fraction\SC@BOXWD}%
144   \setlength\@tempdima{\SC@BOXWD}%
145   \addtolength\@tempdima{\SC@CAPWD}%
146   \addtolength\@tempdima{\columnsep}}%
147   \ifthenelse{\lengthtest{\@tempdima>\SC@tempdim}}%
148     {\addtolength\SC@CAPWD{-\@tempdima}\addtolength\SC@CAPWD{\SC@tempdim}}{-}%

```

`\@FLOAT` Calls the L^AT_EX float command with the two minipages inside a main minipage.

```

149   \@FLOAT{\SC@capttype}%
150   \abovecaptionskip\z@skip
151   \belowcaptionskip\z@skip

```

Creates a label for each figure or table (etc.) for later determination if the page is odd or even. The counter `SC@C` must be incremented before.

```

152   \stepcounter{SC@C}\SC@label{\SC@IDENT}}%

```

`\isSC@WIDE`

```

153   \isSC@WIDE%
154   {\ifthenelse{\lengthtest{\@tempdima>\textwidth}}%
155     {\isSC@ODD{\def\SC@hpos{l}}{\def\SC@hpos{r}}}%
156     {\def\SC@hpos{c}}}%
157   \setlength{\@tempdimc}{\textwidth}}%
158   {\setlength{\@tempdimc}{\SC@tempdim}\def\SC@hpos{c}}%
159   \makebox[\@tempdimc][\SC@hpos]{%

```

`\SC@FLOAT` Has two parameters. The first parameter is the minipage with the caption text inside and the last parameter is the minipage with the body of the figure or table inside.

```

160   \SC@FLOAT%
161   {\begin{minipage}[\SC@vpos]{\SC@CAPWD}}%
162   \ifthenelse{\equal{\SC@OPTCAPtext}{\@empty}}%
163     {\SC@caption{\expandafter\protect\SC@CAPtext}}%
164     {\SC@caption[\expandafter\protect\SC@OPTCAPtext}%
165       {\expandafter\protect\SC@CAPtext}}%
166   \unskip%
167   \ifthenelse{\equal{\SC@LABtext}{\@empty}}%
168     {\SC@label{\expandafter\protect\SC@LABtext}}%
169   \end{minipage}}%
170   {\begin{minipage}[\SC@vpos]{\SC@BOXWD}}%

```

```
171         \offinterlineskip%
172         \kern0pt\relax
173         \usebox{\SC@BOX}%
174     \end{minipage}}%
175 }%
176 \end@FLOAT%
177 }
178 </package>
```