# The sidenotes package*

Andy Thomas
andythomas(at)web.de

August 10, 2015

**Abstract**

This package allows the typesetting of rich content in the margin. It includes text, but also figures, captions, tables and citations, which is common in science textbooks such as Feynman's *Lectures on Physics*.

## Contents

**1 Usage** **1**

**2 Technical note** **2**

**3 Required packages** **2**

**4 Implementation** **3**

## 1 Usage

`\sidenote` The macro is very similar to the footnote macro and tries to emulate its behavior. It just puts the notes in the margin instead of the bottom of the page, therefore the name *sidenote*. It has the same parameters as footnote as well as an additional offset: `\sidenote[number][offset]{text}`. All the sidenotes are subsequently numbered and float in the margin to avoid overlap. The first, optional parameter will manually change the numbering to the given value. The second offset parameter will fix the text at a certain position in the margin. In particular, there is a difference between not providing an offset (floating text) and an offset of 0 (fix text at actual position).

`\sidenotemark` Sidenote tries to mimic the footnote behavior and, consequently, provides the same solutions. Sometimes, it is not possible to directly call a sidenote macro, e.g. inside of a figure caption. Then, you can use `\sidenotemark[number]` and `\sidenotetext[number][offset]{text}` macros. `\sidenotemark` puts a mark

*This document corresponds to sidenotes v0.99, dated 2015/08/10. Earlier versions by Oliver Schebaum.

at the current position. Afterwards, outside of the environment that causes the trouble, it is possible the call `\sidenotetext[number][offset]{text}` to provide the text and typeset the sidenote. The optional parameters are similar to the sidenote macro. The first, optional parameter will change the numbering and the offset will change the position.

`\sidenotetext`

`\sidecaption` The `\sidecaption[entry][offset]{text}` macro can be used if the caption of a figure or table should be in the margin. The caption has to be adjacent to the figure, so a float is not an option here. Therefore, the caption might overlap with other marginals. Then, these marginals have to be adjusted with offset parameters. The formatting of the caption is done by the *caption* package by defining a *sidecaption* style. Please refer to the documentation of the caption package for information on styles. The macro can be starred, which is analog to the regular starred caption (no numbering, no tof entry): `\sidecaption*[offset]{text}`.

`marginfigure` The marginfigure environment puts a figure and its caption in the margin. Instead of `\begin{figure}[htbp]` use `\begin{marginfigure}[offset]`. Again, using an offset value switches the behavior from float to fixed position. The marginfigure has its own caption style named *marginfigure*.

`margintable` The margintable environment works similar to marginfigure, but with table environments. Use `\begin{margintable}[offset]` instead of `\begin{table}[htbp]`, its caption style is named *margintable*.

`figure*` The `figure*` environment is used to position figures across the full page, i.e. the text width plus the margin. The algorithm has to distinguish between recto and verso (left and right) pages and might need up to three LaTeX runs to provide

`table*` the desired result. The corresponding caption style is called *widefigure*. The sister environment for tables is `table*`. Use *widetable* to change its caption style.

## 2 Technical note

When writing the package, we tried to provide a *minimum* extension to standard LaTeX for typesetting rich content in the margin. This means, that there are no sensible default values for most things such as page geometry, fonts and font sizes. However, the *caesar_book*-class accompanies this package as an example implementation as well as a template we use for our theses.

In addition, we tried to keep compatibility with packages the user might want to use later. However, the following packages are needed by *sidenotes* and might introduce side effects with other packages.

## 3 Required packages

**marginnote** supports an alternative to `\marginpar` and creates notes in the margin. The notes are not floats and can be shifted up or down. Technically, every time an offset is provided the package uses `\marginnote` and `\marginpar` otherwise.

**caption** allows to set figure and table captions in the margin and allows easier formatting of these captions. Please refer to the *caption* manual for details on styles.

**xparse** is used to take advantage of the improved LaTeX3 syntax. All macros and environments are defined using this package.

**l3keys2e** provides a key/value mechanism

**changepage** is used to correctly shift figure* and table*. It has to use the option [strict] to work properly. This might lead to an option clash, if the same package is loaded without this option.

# 4 Implementation

Process the package options: onside

```
\ExplSyntaxOn
%
\keys_define:nn { sidenotes }
  {
    oneside .bool_set:N = \sidenotes_oneside
  }
\ProcessKeysOptions { sidenotes }
```

We need a counter similar to the footnote counter.

```
\newcounter{sidenote} % make a counter
\setcounter{sidenote}{1} % init the counter
```

The LaTeX3 parts concerning the optional arguments should not distinguish between an empty bracket pair and no optional argument. This is required to keep macros with two leading optional arguments.

```
\DeclareExpandableDocumentCommand{\IfNoValueOrEmptyTF}{ m m m }
{
 \IfNoValueTF{#1}
  {#2}
  {\tl_if_empty:nTF {#1} {#2} {#3}}
}
```

Put a marker in the horizontal list to detect subsequent sidenotemarks.

```
\NewDocumentCommand \@sidenotes@thesidenotemark { m }
{
    \leavevmode
    \ifhmode
        \edef \@x@sf {\the \spacefactor }
        \nobreak
    \fi
    \hbox {\@textsuperscript {\normalfont #1 }}
    \ifhmode
```

```
        \spacefactor \@x@sf
    \fi
    \relax
}
%
\NewDocumentCommand \@sidenotes@multisign { } {3sp}
%
\NewDocumentCommand \@sidenotes@multimarker { }
{
  \kern-\@sidenotes@multisign
  \kern\@sidenotes@multisign\relax
}
%
\NewDocumentCommand \@sidenotes@multichecker { }
{
  \dim_compare:nNnTF \lastkern = \@sidenotes@multisign
  {\@sidenotes@thesidenotemark{,}}
  {}
}
%
```

Introduce an internal macro to place the marginal text. Use margin note in case an offset is given and marginpar otherwise.

```
\NewDocumentCommand \@sidenotes@placemarginal { m m }
{
  \IfNoValueOrEmptyTF{#1}
    {\marginpar{#2}}
    {\marginnote{#2}[#1]}
}
%
```

`\sidenote` Introduce the `\sidenote` macro with two optional arguments to set the number and the offset.

```
\NewDocumentCommand \sidenote { o o +m }
{
  \sidenotemark[#1]
  \sidenotetext[#1][#2]{#3}
  \@sidenotes@multimarker
}
```

`\sidenotemark` Sidenotemark is supposed to work similarly to footnotemark.

```
\NewDocumentCommand \sidenotemark { o }
{
  \@sidenotes@multichecker
  \IfNoValueOrEmptyTF{#1}
    {\@sidenotes@thesidenotemark{\thesidenote}}
    {\@sidenotes@thesidenotemark{#1}}
  \@sidenotes@multimarker
}
```

`\sidenotetext` Sidenotetext is supposed to work similarly to footnotetext. The additional, optional argument sets the offset.

```
\NewDocumentCommand \sidenotetext { o o +m }
{
  \IfNoValueOrEmptyTF{#1}
    {
      \@sidenotes@placemarginal{#2}{\textsuperscript{\thesidenote}{}~#3}
  \refstepcounter{sidenote}
}
    {\@sidenotes@placemarginal{#2}{\textsuperscript{#1}~#3}}
}
```

`\sidecaption` Sidecaption puts the caption in the margin. It never floats with the other text in the margin, since it has to be next to the figure. Sidecaption* works similarly to sidecaption, but without an entry.

```
\DeclareCaptionStyle{sidecaption}{font=footnotesize}
\NewDocumentCommand \sidecaption {s o o m}
{
  \captionsetup{style=sidecaption}
  \IfBooleanTF{#1}
  { % starred
    \IfNoValueOrEmptyTF{#2}
    {\marginnote{\caption*{#4}}}
    {\marginnote{\caption*{#4}}[#2]}
  }
  { % unstarred
  \IfNoValueOrEmptyTF{#2}
    {\def\@sidenotes@sidecaption@tof{#4}}
    {\def\@sidenotes@sidecaption@tof{#2}}
  \IfNoValueOrEmptyTF{#3}
    {\marginnote{\caption[\@sidenotes@sidecaption@tof]{#4}}}
    {\marginnote{\caption[\@sidenotes@sidecaption@tof]{#4}}[#3]}
  }
}
```

`marginfigure` The marginfigure environment is similar to the figure environment. But the figure is put in the margin.

```
\newsavebox{\@sidenotes@marginfigurebox}
\DeclareCaptionStyle{marginfigure}{font=footnotesize}
\NewDocumentEnvironment{marginfigure} { o }
{
  \begin{lrbox}{\@sidenotes@marginfigurebox}
    \begin{minipage}{\marginparwidth}
      \captionsetup{type=figure,style=marginfigure}
}
{
    \end{minipage}%
  \end{lrbox}%
```

```
  \@sidenotes@placemarginal{#1}{\usebox{\@sidenotes@marginfigurebox}}
}
```

`margintable` The margintable is similar to the table environment. But the table is put in the margin.

```
\newsavebox{\@sidenotes@margintablebox}
\DeclareCaptionStyle{margintable}{font=footnotesize}
\NewDocumentEnvironment{margintable} { o }
{
  \begin{lrbox}{\@sidenotes@margintablebox}
    \begin{minipage}{\marginparwidth}
      \captionsetup{type=table,style=margintable}
}
{
    \end{minipage}
  \end{lrbox}
  \@sidenotes@placemarginal{#1}{\usebox{\@sidenotes@margintablebox}}
}
```

`figure*` The figure* environment provides a figure environment for figures that span across the full page (text plus margin width).

```
\AtBeginDocument{%
\newlength{\@sidenotes@extrawidth}
\setlength{\@sidenotes@extrawidth}{\marginparwidth}
\addtolength{\@sidenotes@extrawidth}{\marginparsep}}
%
\NewDocumentEnvironment{autoadjustwidth}{ m m }%
{
    \bool_if:NTF \sidenotes_oneside
    {
        \begin{adjustwidth}{#1}{#2}
    }
    {
        \begin{adjustwidth*}{#1}{#2}
    }
}
{
    \bool_if:NTF \sidenotes_oneside
    {
        \end{adjustwidth}
    }
    {
        \end{adjustwidth*}
    }
}
%
\DeclareCaptionStyle{widefigure}{font=footnotesize}
\RenewDocumentEnvironment{figure*}{ O{htbp} }
{
```

```
148     \begin{figure}[#1]
149         \begin{autoadjustwidth}{}{-\@sidenotes@extrawidth}
150         \captionsetup{style=widefigure}
151 }
152 {
153         \end{autoadjustwidth}
154     \end{figure}
155 }
```

`table*` The table* environment provides a table environment for figures across text and margin width.

```
156 \DeclareCaptionStyle{widetable}{font=footnotesize}
157 \RenewDocumentEnvironment{table*}{ O{htbp} }
158 {
159     \begin{table}[#1]
160         \begin{autoadjustwidth}{}{-\@sidenotes@extrawidth}
161         \captionsetup{style=widetable}
162 }
163 {
164         \end{autoadjustwidth}
165     \end{table}
166 }
167 \ExplSyntaxOff
```

# Index

Numbers written in italic refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in roman refer to the code lines where the entry is used.


**E**

environments:
`figure*` . . . . . *2*, 120
`marginfigure` . . *2*, 94
`margintable` . . *2*, 107
`table*` . . . . . *2*, 156

**F**

`figure*` (environment) . . . . . *2*, 120

**M**

`marginfigure` (environment) . . . . . *2*, 94
`margintable` (environment) . . . . *2*, 107

**S**

`\sidecaption` . . . . . *1*, 75
`\sidenote` . . . . . *1*, 52
`\sidenotemark` . . . . *1*, 58
`\sidenotetext` . . . . *1*, 66

**T**

`table*` (environment) . . . . . *2*, 156


# Change History


v0.2
General: Initial version . . . . . 1
v0.3
`marginfigure`: define the sidefigure enviroment without the environ package . . . . . 5
v0.4
`margintable`: define the sidetable

enviroment without the environ package . . . . . 5
v0.51
General: Extent the documentation of the macros. . . . . 1
v0.52
General: added a section that the package needs marginnote, caption and xifthen. . . . . 2
v0.53
`\sidenote`: bugfix, now optional number and offset possible . . . . 4
v0.61
General: documentation of sidetext 1
v0.7
General: rewrite without optional offsets . . . . . 1
v0.80
`\sidenote`: unstar the newcommand. . . . . 4
`\sidenotetext`: unstar the newcommand. . . . . 4
v0.81
`\sidenote`: added a comma between subsequent sidenotes . . . 4
v0.85
`table*`: added the table* environment . . . . . 6
`figure*`: added the figure* environment . . . . . 6
v0.90
General: added a section that the package needs twoopt and changepage. . . . . 2
two opt package is required, the definitions are too confusing otherwise . . . . . 1
`marginfigure`: the optional offset parameter is back, renamed environment from sidefigure to marginfigure . . . . . 5
`margintable`: the optional offset parameter is back, renamed environment from sidetable to margintable . . . . . 5
`\sidenote`: add optional offset for sidenote . . . . . 4
`\sidenotetext`: add optional offset for sidenotetext . . . . . 4
v0.91
General: deleted marginfullcite . . . 1
sidenotetextstyle is not needed any more . . . . . 3
`\sidecaption`: sidecaption* accompanies sidecaption . . . . . 5
v0.92
General: corrected typo in email address . . . . . 1
v0.93
General: regular ifnextchar gobbles trailing whitespaces, introduce a new one that does not. . . . . 3
`\sidenote`: removed mandatory whitespace, new ifnextchar takes care of that . . . . . 4
`\sidenotetext`: add missing comment marks . . . . . 4
v0.94
General: change sidenote counter behavior . . . . . 3
start using xparse . . . . . 2
`marginfigure`: use xparse syntax . 5
`margintable`: use xparse syntax . . 5
`\sidecaption`: use xparse syntax . 5
`\sidenote`: use xparse syntax . . . . 4
`\sidenotemark`: use xparse syntax, change counter behavior . . . . . 4
`\sidenotetext`: use xparse syntax, change counter behavior . . . . . 4
v0.95
General: cleaned up the documentation. . . . . 1
v0.96
`\sidenotemark`: increase the sidenote counter in sidenotetext now . . . . . 4
v0.97
General: introduce an internal macro to place the marginal text . . . . . 4
introduce package option oneside . . . . . 1
make it a expl package . . . . . 1
New macro to place the superscript mark . . . . . 3
New mechanism to detect subsequent sidenotemarks . . . . . 3
start using l3keys2e . . . . . 2

`table*`: use adjustwidth in table* environment . . . . . 6
`figure*`: use adjustwidth in figure* environment . . . . . 6
v0.98
General: compatible with new mhchem version . . . . . 1
v0.99
General: no changes (only in caesarbook.cls) . . . . . 1