

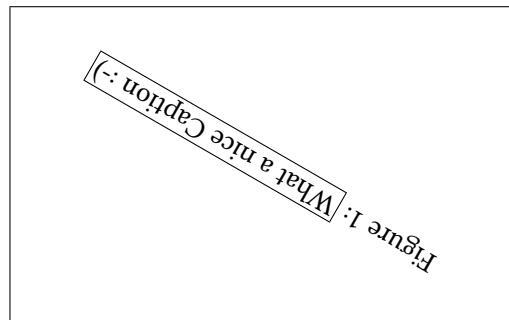
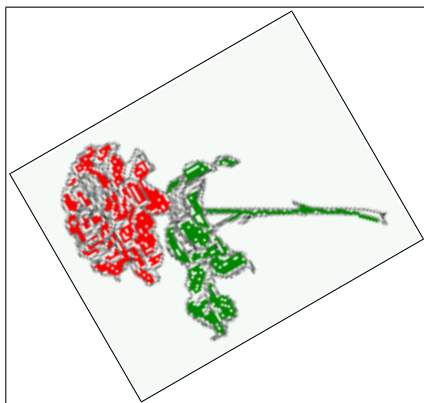
Package hvfloat Rotating objects and captions ver 1.2b

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This hvfloat.sty defines a macro to place objects and captions of floats in different positions with different rotating angles.

All objects and captions are framed, which is only for demonstration here and has no additional sense.



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1 The Package Options

fbox The objects and captions are put into a `\fbox` command, like in this documentation.

This doesn't make real sense and is only for some demonstration useful.

The length `\belowcaptionskip` is set by \TeX to 0pt and changed in `hvfloating` to the same value than `\abovecaptionskip`. This length can be changed to another value in the usual way with `\setlength` or `\addtolength`.

2 The Macros

The syntax for the `\hvFloat` macro is

```
\hvFloat[<options>]%  
  {<float type>}%  
  {<floating object>}%  
  [<short caption>]{<long caption>}%  
  {<label>}
```

If the second parameter `<float type>` is empty, then `hvfloating` switches by default to a nonfloat (see table 2) object, which is not important for the user. All other parameters may also be empty and the short caption as second optional parameter missing. This one is as usual the caption for the `listoffigures`.

There are some more macros defined, more or less for internally use in `hvfloating`, but they can be used for own purposes.

```
\figcaption[<short caption text>]{<caption text>}  
\tabcaption[<short caption text>]{<caption text>}
```

They are used for the nonfloat option, where these macros write captions in the same way but outside of a float environment. The default caption cannot be used here. It is no problem to use the `\tabcaption` command to place a caption anywhere, like here in an inlined mode:

Table 1: A Caption without any sense and any object

A label can be put inside the argument or after the command in the usual way, so that a reference to the not existing table 1 is no problem.

```
[...] It is no problem to use the \verb|\tabcaption| command to  
place a caption anywhere, like here in an inlined mode:  
\tabcaption[The Caption without sense ...]{A Caption without any  
sense and any object}\label{dummy} A label can be put inside the  
argument or after the command in the usual way, so that a  
reference to the not existing table \ref{dummy} is no problem.
```

2.1 The Options

There are following options:

Table 2: The Options for the Macro hvFloat

| Option | Default | Description |
|-------------|---------|---|
| floatPos | htb | This is the same placement option like the one from the floats. |
| rotAngle | 0 | The value for the angle if both, the object and the caption should be rotated in the same way. |
| capWidth | 0.8 | The width of the caption. Can be "w" for the width of the object or "h" for the height of the object or a scale for <code>\columnwidth</code> . |
| capAngle | 0 | The value for the angle if the caption should be rotated. Counted anti clockwise. |
| capPos | b | The position of the caption relative to the object. Possible values are (l) eft (b) ottom (t) op (r) ight. |
| capVPos | c | This is only important for <code>capPos=l r</code> . Only in this case the caption can vertically placed at the (b) ottom (c) enter (t) op. |
| objectPos | c | The horizontal placement of the object relative to the document. Possible values are (l) eft (c) enter (r) ight. |
| objectAngle | 0 | The value for the angle if the object should be rotated. Counted anti clockwise. |
| floatCapSep | 5 | The additional width between the object and a left or right placed caption. The default unit is pt. |
| useOBox | false | Instead of passing the object as parameter to the hvFloat, the contents maybe saved in the box <code>\hvOBox</code> With <code>useOBox=true</code> the contents of this box will be used. |
| nonFloat | false | The object isn't put in a floating environment. It is printed as standard text with an additional caption. The float counters are increased as usual and can be referenced. |

3 The Default Use of Floating Environments

In this case there is no essential difference to the well known `figure` or `table` environment, f.ex.:

```
\begin{figure}
... object ...
\caption{...}% caption below the object
\end{figure}
```

Code for figure 2:

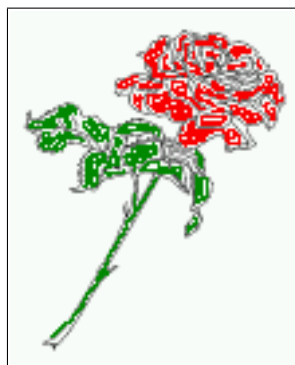


Figure 2: Without any Options (only the fbox package option)

```
1 \hvFloat{figure}{\includegraphics{rose}}{Without any Options (only the \texttt{fbox}
package option)}{fig:0}
```

Figure 3: With the only Option capPos=t to place the caption on top of the table, which is often the default

| Name | Type | Description |
|------------|-------------|---|
| hvFloat | command | places object and caption in different ways |
| hvFloatEnv | environment | places object and caption exactly Here |
| figcaption | command | writes a figure caption in a non floating environment |
| tabcaption | command | writes a table caption in a non floating environment |
| setDefault | command | sets all options to the defaults |

Code for table 3:

```
1 \hvFloat[capPos=t]{figure}{%
2 \begin{tabularx}{\textwidth}{l|l|X}
3 Name & Type & Description\\ \hline
4 \CMD{hvFloat} & command & places object and caption in different ways\\
5 \texttt{hvFloatEnv} & environment & places object and caption exactly Here\\
6 \CMD{figcaption} & command & writes a figure caption in a non floating environment\\
7 \CMD{tabcaption} & command & writes a table caption in a non floating environment\\
8 \CMD{setDefault} & command & sets all options to the defaults
9 \end{tabularx}%
10 }{With the only Option \texttt{capPos=t} to place the caption on top of the table, which is often the default
}{tab:0}
```

See section 9 for some more informations about tabulars as objects.

4 Caption Right or Left

Code for figure 4:

```
1 \hvFloat[%
```



Figure 4: Caption vertically centered right beside the float with a caption width of 0.5\columnwidth and `floatcapsep=5pt` (the default)

```

2 floatPos=htb,%
3 capWidth=0.5,% of \columnwidth
4 capPos=r,%
5 capVPos=c,%
6 objectPos=c]{figure}{\includegraphics{rose}}%
7 [Caption beside object and vertically centered]{%
8 Caption vertically centered right beside the float with a caption width of \texttt
  {0.5\textbackslash columnwidth} and \texttt{floatcapsep=5pt} (the default)}{fig
  :1}

```

4.1 Caption Right and Rotated



Figure 5: Caption vertically centered right beside the float with a caption width of 0.5\columnwidth and `floatcapsep=5pt` (the default)

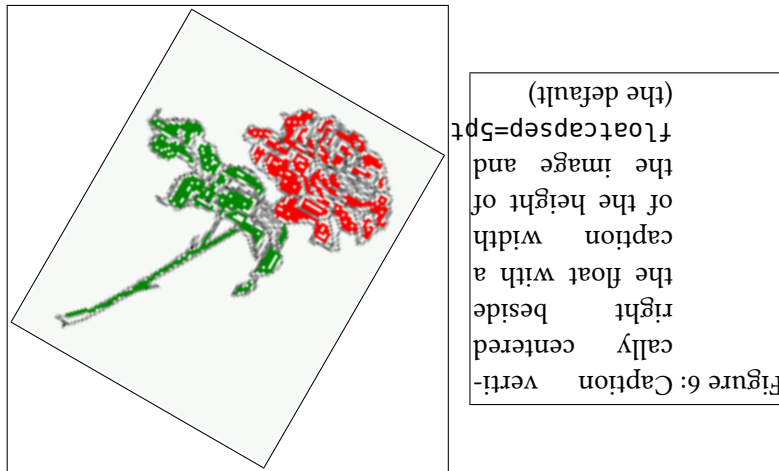
Code for figure 5:

```

1 \hvFloat[%
2 floatPos=htb,%
3 capWidth=h,% of \columnwidth
4 capPos=r,%
5 capAngle=90,%
6 capVPos=c,%
7 objectPos=c]{figure}{\includegraphics{rose}}%
8 [Centered Caption beside Object]{%
9 Caption vertically centered right beside the float with a caption width of \texttt
  {0.5\textbackslash columnwidth} and \texttt{floatcapsep=5pt} (the default)}{fig
  :2}

```

It is no problem to rotate the object, too. But with a different angle value than for the caption. Do not ask for the sense, it is only a demonstration of what is possible ... The object (image) is rotated by -30 degrees with the `rotatebox` makro.



Code for figure 6:

```

1 \hvFloat[%
2   floatPos=htb,%
3   capWidth=h
4   capPos=r,%
5   capAngle=180,%
6   objectAngle=-30,%
7   capVPos=c,%
8   objectPos=c]{figure}{\fbox{\includegraphics{rose}}}%
9   [Centered Caption beside Object]}%
10  Caption vertically centered right beside the float with a caption width of the height
    of the image and \texttt{floatcapsep=5pt} (the default)}{fig:3}

```

5 Vertical Position of the Caption

The caption can be placed beside the object in the positions

(c)enter | (b)ottom | (t)op

The code for figure 7:

```

1 \hvFloat[%
2   floatPos=htb,%
3   capWidth=0.25,%
4   capPos=r,%
5   capVPos=b,%
6 ]{figure}{\includegraphics{rose}}{Caption at bottom right beside the float}{fig:4}

```

The code for figure 8:



Figure 7: Caption at bottom right beside the float

Figure 8: Caption at top left beside the float



```

1 \hvFloat[%
2     floatPos=htb,%
3     capWidth=0.25,%
4     capPos=r,%
5     capVPos=t,%
6 ]{figure}{\includegraphics{rose}}{Caption at top left beside the float}{fig:5}

```



Figure 9: Caption centered right beside the float

The code for figure 9:

```

1 \hvFloat[%
2     capWidth=0.25,%
3     capPos=r,%
4     capVPos=c,% the default

```

```
5 ]{figure}{\includegraphics{rose}}{Caption centered right beside the float}{fig:6}
```

6 Horizontal Position of the Float

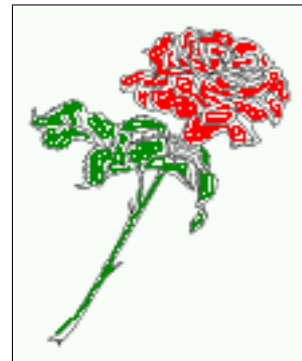


Figure 10: Caption at top right beside the float and object position left

The code for figure 10:

```
1 \hvFloat[%  
2   capWidth=0.25,%  
3   capPos=r,%  
4   capVPos=t,%  
5   objectPos=l,%  
6 ]{figure}{\includegraphics{rose}}{%  
7   Caption at top right beside the float and object position left}{fig:7}
```

Figure 11: Caption at top left beside the float and object position right



The code for figure 11:

```
1 \hvFloat[%  
2   capWidth=0.25,%  
3   capPos=l,%  
4   capVPos=t,%  
5   objectPos=r,%  
6 ]{figure}{\includegraphics{rose}}{%  
7   Caption at top left beside the float and object position right}{fig:8}
```

7 Full Page Width in Landscape Mode

If you do not want to load the `lscape` package you can use the `floatPos=p` option to put the image on an own page and rotated by 90 degrees (figure 12).

Code for figure 12:

```
1 \hvFloat[%
2   floatPos=p,%
3   capWidth=1,%
4   capPos=b,%
5   rotAngle=90,%
6   objectPos=c%
7 ]{figure}{\includegraphics[width=0.9\textheight]{bateaux}}{%
8   Caption at top right beside the float and object position right}{fig:9}
```

The float can also be put to the left or to the right (above/below in landscape) with the `objectPos=l` parameter

The code for figure 13:

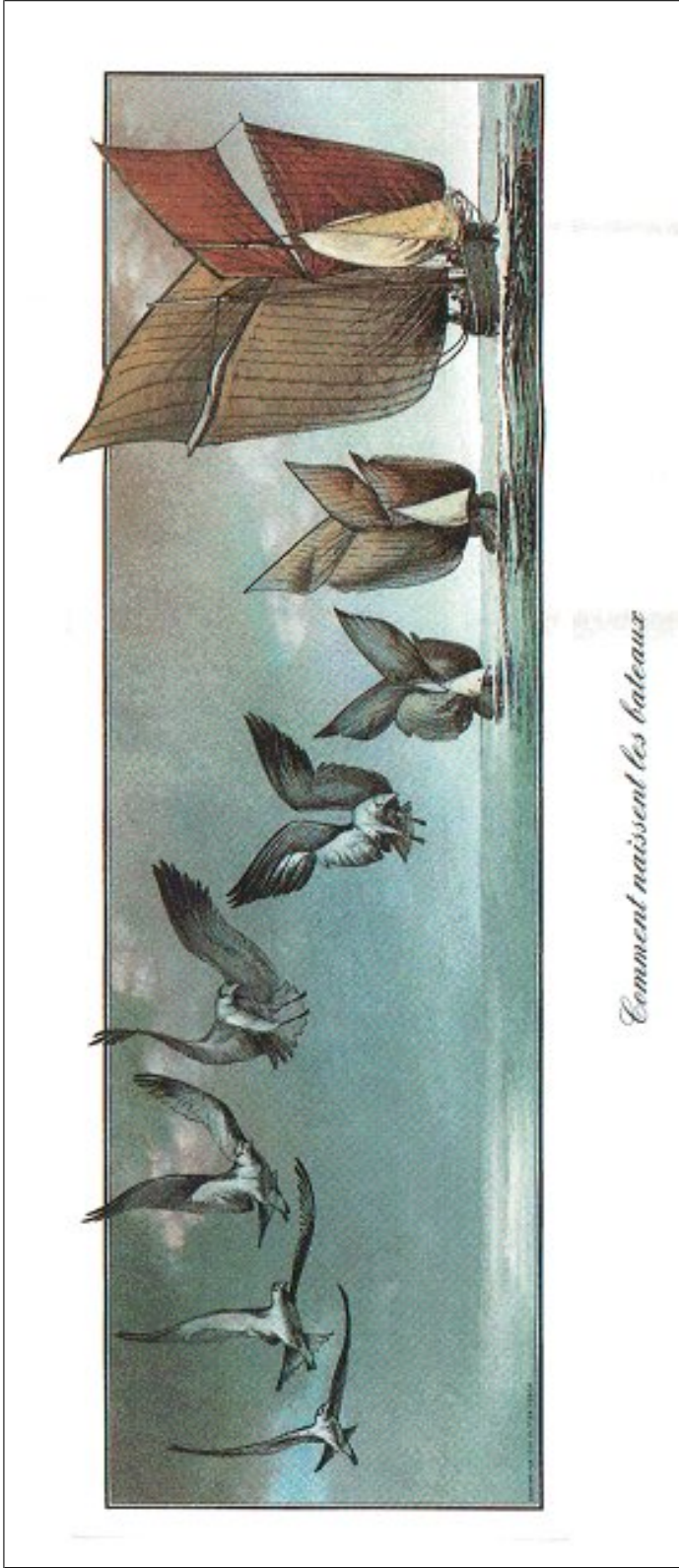
```
1 \hvFloat[%
2   floatPos=p,%
3   capWidth=h,%
4   capPos=r,%
5   objectAngle=90,%
6   capAngle=-90,%
7   objectPos=l%
8 ]{figure}{\includegraphics[width=\textheight]{bateaux}}%
9   [Rotated Caption]{%
10  Caption right beside the float and object position left. The caption rotated by $-90$
    degrees}{fig:10}
```

8 The nonfloat Option

Sometimes it is better to put a "float" in a specific position of the page. This is possible with the `nonfloat` package and the option `nonFloat=true`.

```
1 \hvFloat[%
2   nonFloat=true,%
3   capWidth=0.25,%
4   capPos=r,%
5   capVPos=b,%
6   objectPos=c,%
7 ]{figure}{\includegraphics{rose}}%
8   [Nonfloat Captions]{%
9   Caption of a "nonfloat" Object, using the \texttt{nonfloat} Package}{fig:11}
```

Figure 12: Caption at top and together with the object rotated



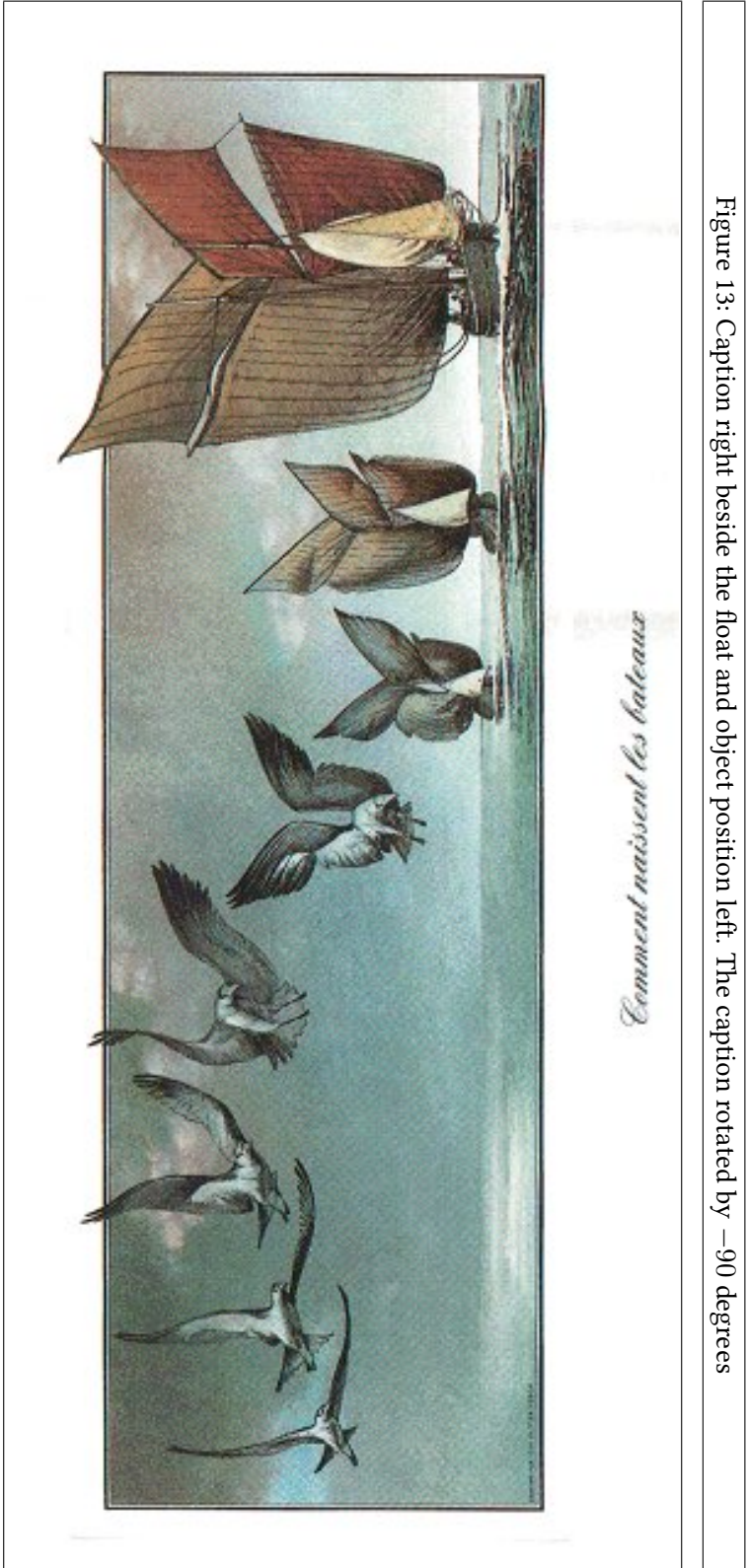
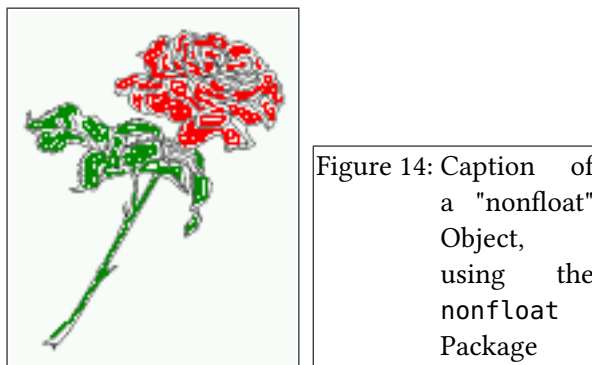


Figure 13: Caption right beside the float and object position left. The caption rotated by -90 degrees



The image 14 is exactly placed where the hvFloat command appears. There are only commands for figure and table environments:

```
1 \newcommand{\figcaption}{\def\capttype{figure}\caption}
2 \newcommand{\tabcaption}{\def\capttype{table}\caption}
```

But it is no problem, to define more xxxcaption commands to support other with the float package defined new floats.

9 Tables as Objects

The object has to be passed as an parameter to the hvFloat macro. This is no problem with images but maybe with tables, so it is easier to use the box \hv0Box to save the table in this box and pass it then to hvFloat with the use0Box option. For example see table 3 and 4:

```
1 \begin{tabular}{l|l|l}
2   Name & Type & Description\\\hline
3   \texttt{hvFloat} & command & places object and caption in different ways\\
4   \texttt{hvFloatEnv} & environment & places object and caption exactly Here\\
5   \texttt{figcaption} & command & writes a figure caption in a non floating environment\\
6   \texttt{tabcaption} & command & writes a table caption in a non floating environment\\
7   \texttt{setDefault} & command & sets all options to the defaults
8 \end{tabular}
9 }
```

The code for table 3 and 4 is:

```
1 \hvFloat[%
2   floatPos=!hb,%
3   use0Box=true]{table}{{Demonstration of the \texttt{use0Box} Parameter}{table:1}
4
5 \hvFloat[%
6   floatPos=hb,%
7   use0Box=true,%
8   objectAngle=90,%
9   capPos=r,%
10  capVPos=t,%
11  capWidth=0.3]{table}{{Demonstration of the \texttt{use0Box} Parameter}{table:2}}
```

In this case leave the third parameter empty.

| Name | Type | Description |
|--------------|-------------|---|
| hvFloat | command | places object and caption in different ways |
| hvFloatEnv | environment | places object and caption exactly Here |
| figcaption | command | writes a figure caption in a non floating environment |
| tabcaption | command | writes a table caption in a non floating environment |
| setDefaultts | command | sets all options to the defaults |

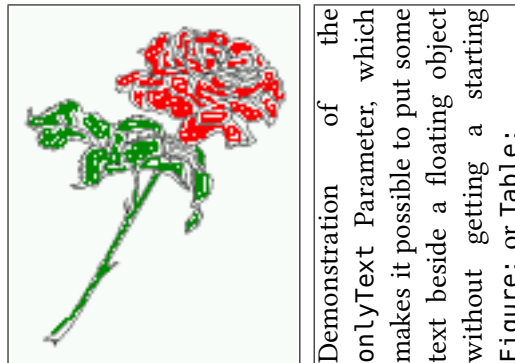
Table 3: Demonstration of the useOBox Parameter

| Name | Type | Description |
|--------------|-------------|---|
| hvFloat | command | places object and caption in different ways |
| hvFloatEnv | environment | places object and caption exactly Here |
| figcaption | command | writes a figure caption in a non floating environment |
| tabcaption | command | writes a table caption in a non floating environment |
| setDefaultts | command | sets all options to the defaults |

Table 4: Demonstration of the useOBox Parameter

10 Text and Objects

With the `onlyText` option it is no problem to put some text beside an image without getting the caption titles `figure/table`. The object still can be a floating one or a nonfloating if the `nonfloat` is used.



The code for figure 10:

```

1 \hvFloat[%
2   onlyText=true,%
3   capAngle=90,%
4   capPos=r,%
5   capVPos=t,%
6   capWidth=h]{\includegraphics{rose}}%
7   ["\texttt{onlyText}" Caption]{%
8   Demonstration of the \texttt{onlyText} Parameter, which makes it
9   possible to put some text beside a floating object without getting
10  a starting \texttt{Figure:} or \texttt{Table:}}{fig:text}

```

11 Environment hvFloatEnv

With the environment `hvFloat` one can place an object exactly on that position where the environment is defined. For captions the use of `\captionof` is recommended:

Table 5: A caption for a nice table

| left | center | right |
|------|--------|-------|
| L | C | R |

```

1 \begin{hvFloatEnv}
2 \captionof{table}{A caption for a nice table}
3 \begin{tabular}{@{} l c r @{}}\hline
4 left & center & right \\
5 L & C & R \\
6 \end{tabular}
7 \end{hvFloatEnv}

```

The environment has an optional argument for setting the line width which is preset to `\textwidth`. The object is always centered.

Table 6: A caption for a nice table

| left | center | right |
|------|--------|-------|
| L | C | R |

```
1 \begin{hvFloatEnv}[0.5\textwidth]
2 \captionof{table}{A caption for a nice table}
3 \begin{tabular}{@{} l c r @{}}\hline
4 left & center & right \\
5 L & C & R \\
6 \end{tabular}
7 \end{hvFloatEnv}
```

12 Global float setting

Instead of writing the following sequence into the preamble:

```
\makeatletter
\renewcommand\fps@figure{tb}
\renewcommand\fps@table{t}
\makeatother
```

you can change the global setting of floats by loading the package `hvfloat-fps`. It allows optional package options to set the global placement:

```
\usepackage[figure=tb,table=t]{hvfloat-fps}
```

13 The Package Source

```
1 \NeedsTeXFormat{LaTeX2e}
2 \ProvidesPackage{hvfloat}[2017/01/28 rotating of floating objects]
3 %%
4 %% IMPORTANT NOTICE:
5 %%
6 %% This is file 'hvfloat.sty',
7 %%
8 %% Herbert Voss <hvoss@tug.de>
9 %%
10 %% This program can be redistributed and/or modified under the terms
11 %% of the LaTeX Project Public License Distributed from CTAN archives
12 %% in directory macros/latex/base/lppl.txt.
13 %%
14 %% DESCRIPTION:
15 %% 'hvfloat' offers rotating of captions and objects for floats
16 %%
17 \def\fileversion{1.2b}
18 \def\filedate{2017/12/22}
```

```

19 \message{'hvfloat' v\fileversion, \filedate\space (Herbert Voss)}
20 %
21 \newif\ifhv@fbox \hv@fboxfalse
22 \DeclareOption{fbox}{\hv@fboxtrue\setlength{\fboxsep}{1pt}}
23 \ProcessOptions
24 %
25 \RequirePackage{graphicx}
26 \RequirePackage{keyval}
27 \RequirePackage{caption}
28 %
29 \newlength\hvObjectWidth
30 \newlength\hvCapWidth
31 \newlength\hvMaxCapWidth
32 \newsavebox\hvObjectBox
33 \newsavebox\hvCaptionBox
34 \newsavebox\hvOBox
35 %
36 \newif\ifhv@useOBox
37 \newif\ifhv@nonFloat
38 \newif\ifhv@onlyText
39
40 \def\hv@figure{figure}
41 %
42 \def\hvSet@boolkey#1#2{\csname hv@#2\ifx\relax#1\relax true\else#1\fi\endcsname}
43 %
44 \define@key{hvSet}{floatPos}[htbp]{%      LaTeX's position parameters htpb
45   \def\hvSet@floatPos{#1}%
46 }
47 \define@key{hvSet}{rotAngle}[0]{%      rotates caption AND image together
48   \def\hvSet@rotAngle{#1}%
49 }
50 \define@key{hvSet}{capWidth}[.8]{%      object (w)idth|object (h)eight|<scale of \
51   columnwidth>
52   \def\hvSet@capWidth{#1}%
53 }
54 \define@key{hvSet}{capAngle}[0]{%      -360..+360
55   \def\hvSet@capAngle{#1}%
56 }
57 \define@key{hvSet}{capPos}[b]{%      (l)eft|(b)ottom|(t)op|(r)ight
58   \def\hvSet@capPos{#1}%      it is relativ to the object
59 }
60 \define@key{hvSet}{capVPos}[c]{%      (b)ottom|(c)enter|(t)op
61   \def\hvSet@capVPos{#1}%      it is relativ to the object
62 }
63 \define@key{hvSet}{objectPos}[c]{%      (l)eft|(c)enter|(r)ight
64   \def\hvSet@objectPos{#1}%      it is relativ to the document
65 }
66 \define@key{hvSet}{objectAngle}[0]{%      -360..+360
67   \def\hvSet@objectAngle{#1}%
68 }
69 \define@key{hvSet}{floatCapSep}[5]{%      a width with the unit pt
70   \def\hvSet@floatCapSep{#1}%
71 }
72 \define@key{hvSet}{useOBox}[false]{%      use of the hvOBox contents

```

```

72   \lowercase{\hvSet@boolkey{#1}}{use0Box}%
73 }
74 \define@key{hvSet}{nonFloat}[false]{%   Do not use float environment
75   \lowercase{\hvSet@boolkey{#1}}{nonFloat}%
76 }
77 \define@key{hvSet}{onlyText}[false]{%   Write the caption only as text
78   \lowercase{\hvSet@boolkey{#1}}{onlyText}%
79 }
80 %
81 \newcommand{\setDefault}{%
82 \setkeys{hvSet}{%
83   floatPos=htbp, rotAngle=0, capWidth=.8, capAngle=0,
84   capPos=b, capVPos=c, objectPos=c, objectAngle=0,
85   floatCapSep=5, use0Box=false, nonFloat=false,
86   onlyText=false}%
87 }
88 %
89 \def\hv@Top{t}
90 \def\hv@Bottom{b}
91 \def\hv@Right{r}
92 \def\hv@Left{l}
93 \def\hv@Center{c}
94 \def\hv@Width{w}
95 \def\hv@Height{h}
96 \def\hv@Zero{0}
97 %
98 \newlength{\hvAboveCaptionSkip}
99 \newlength{\hvBelowCaptionSkip}
100 \setlength{\belowcaptionskip}{\abovecaptionskip}% it is in latex.ltx = 0pt
101 \newcommand{\saveCaptionSkip}{%
102   \setlength{\hvAboveCaptionSkip}{\abovecaptionskip}
103   \setlength{\hvBelowCaptionSkip}{\belowcaptionskip}
104   \setlength{\abovecaptionskip}{0pt}
105   \setlength{\belowcaptionskip}{0pt}
106 }
107 \newcommand{\restoreCaptionSkip}{%
108   \setlength\abovecaptionskip{\hvAboveCaptionSkip}
109   \setlength\belowcaptionskip{\hvBelowCaptionSkip}
110 }
111 %
112 %
113 \newcommand{\figcaption}[2][\def\@capttype{figure}%
114   \ifx\relax#1\relax \caption{#2}\else\caption[#1]{#2}\fi}
115 \newcommand{\tabcaption}[2][\def\@capttype{table}%
116   \ifx\relax#1\relax \caption{#2}\else\caption[#1]{#2}\fi}
117 %
118 %
119 \def\hvFloat{\@ifnextchar[{\do@hvFloat}{\do@hvFloat[]}}
120 \def\do@hvFloat[#1]#2#3{%
121   \setDefault
122   \ifx\relax#1\relax\else\setkeys{hvSet}{#1}\fi%
123   \gdef\hv@floatType{#2}%
124   \ifx\relax#2\relax \setkeys{hvSet}{nonFloat=true}\fi%
125   \gdef\hv@floatObject{#3}%

```

```

126 \@ifnextchar[{\do@@hvFloat}{\do@@hvFloat[]}%
127 }
128 \def\do@@hvFloat[#1]#2#3{%
129 \def\hv@shortCap{#1}%
130 \def\hv@longCap{#2}%
131 \def\hv@Label{#3}%
132 %\newcommand*{\hvFloat}[5]{}%
133 % [#1]: keyvalues
134 % #2: type figure | table | ...
135 % #3: float contents
136 % [#4]: short caption
137 % #5: caption
138 % #6: label
139 % \setDefault%
140 % \def\@tempa{#1}%
141 % \ifx\@tempa\empty\else\setkeys{hvSet}{#1}\fi% set options, only when not empty
142 \def\@tempa{90}%
143 \ifx\hvSet@rotAngle\@tempa \setlength{\hvMaxCapWidth}{\textheight}%
144 \else \setlength{\hvMaxCapWidth}{\linewidth}%
145 \fi
146 %
147 % First we save the object in \hvObjectBox
148 %
149 \ifx\hvSet@objectAngle\hv@Zero % rotate the object?
150 \savebox{\hvObjectBox}{\ifhv@useOBox\usebox{\hvOBox}\else\hv@floatObject\fi}%
151 \else
152 \savebox{\hvObjectBox}{%
153 \rotatebox{\hvSet@objectAngle}{%
154 \ifhv@useOBox\usebox{\hvOBox}\else\hv@floatObject\fi}}%
155 \fi
156 \setlength{\hvObjectWidth}{\wd\hvObjectBox}%
157 %
158 % Now we save the caption with its defined \hvCapWidth
159 %
160 \ifx\hvSet@capWidth\hv@Width\setlength{\hvCapWidth}{\hvObjectWidth}%
161 \else
162 \ifx\hvSet@capWidth\hv@Height\setlength{\hvCapWidth}{\ht\hvObjectBox}%
163 \else
164 \setlength{\hvCapWidth}{\hvObjectWidth}%
165 \ifx\hvSet@capPos\hv@Left\addtolength{\hvMaxCapWidth}{-\hvObjectWidth}\fi
166 \ifx\hvSet@capPos\hv@Right\addtolength{\hvMaxCapWidth}{-\hvObjectWidth}\fi
167 \ifdim\hvSet@capWidth\columnwidth<\hvMaxCapWidth
168 \setlength{\hvCapWidth}{\hvSet@capWidth\columnwidth}%
169 \else
170 \setlength{\hvCapWidth}{\hvMaxCapWidth}%
171 \fi
172 \fi
173 \fi
174 %
175 % now we have the object and the caption with the right
176 % rotated angles saved in boxes
177 %
178 \def\fps@figure{\hvSet@floatPos}%
179 \ifhv@nonFloat\begingroup% Start the nonfloat part

```

```

180 \else \begin{\hv@floatType}% Start the floating environment
181 \fi
182 \saveCaptionSkip% we put this space ourselves
183 \ifx\hvSet@capAngle\hv@Width % need rotation?
184 \sbox{\hvCaptionBox}{%
185 \begin{minipage}[b]{\hvCapWidth}% minipage, to get hyphenation
186 \ifhv@nonFloat
187 \ifhv@onlyText#2
188 \else
189 \ifx\hv@floatType\hv@figure
190 \ifx\relax#1\relax \figcaption{#2}\else\figcaption[#1]{#2}\fi
191 \else
192 \ifx\relax#1\relax \tabcaption{#2}\else\tabcaption[#1]{#2}\fi
193 \fi
194 \fi
195 \else
196 \expandafter\ifx\expandafter\relax\hv@shortCap\relax \caption{#2}\else\caption
197 \fi
198 \label{#3}%
199 \end{minipage}%
200 }%
201 \else
202 \sbox{\hvCaptionBox}{%
203 \rotatebox{\hvSet@capAngle}{%
204 \begin{minipage}[b]{\hvCapWidth}% minipage, to get hyphenation
205 \ifhv@nonFloat
206 \ifhv@onlyText#2
207 \else
208 \ifx\hv@floatType\hv@figure
209 \ifx\relax#1\relax \figcaption{#2}\else\figcaption[#1]{#2}\fi
210 \else
211 \ifx\relax#1\relax \tabcaption{#2}\else\tabcaption[#1]{#2}\fi
212 \fi
213 \fi
214 \else
215 \expandafter\ifx\expandafter\relax\hv@shortCap\relax \caption{#2}\else\caption
216 \fi
217 \label{#3}%
218 \end{minipage}%
219 }%
220 }%
221 \fi%
222 %%
223 \restoreCaptionSkip% save old values
224 \ifx\hvSet@objectPos\hv@Right\raggedleft%
225 \else
226 \ifx\hvSet@objectPos\hv@Center
227 \ifhv@nonFloat\hspace*{\fill}\else\centering\fi
228 \fi
229 \fi
230 %
231 % to rotate object and caption together, we save all in another box

```

```

232 % the caption comes first, if its on the left or the top
233 %
234 \savebox{\@tempboxa}{%
235 \ifx\hvSet@capPos\hv@Left % caption on left side
236 \ifx\hvSet@capVPos\hv@Center
237 \ifhv@fbox\fbbox{\parbox{\wd\hvCaptionBox}{\usebox{\hvCaptionBox}}}%
238 \else \parbox{\wd\hvCaptionBox}{\usebox{\hvCaptionBox}}%
239 \fi
240 \hspace{\hvSet@floatCapSep pt}% capfloatsep
241 \ifhv@fbox\fbbox{\parbox{\wd\hvObjectBox}{\usebox{\hvObjectBox}}}%
242 \else \parbox{\wd\hvObjectBox}{\usebox{\hvObjectBox}}%
243 \fi
244 \else
245 \ifx\hvSet@capVPos\hv@Top % caption at top
246 \ifhv@fbox\fbbox{\raisebox{-\height}{\usebox{\hvCaptionBox}}}%
247 \else \raisebox{-\height}{\usebox{\hvCaptionBox}}%
248 \fi
249 \hspace{\hvSet@floatCapSep pt}% capfloatsep
250 \ifhv@fbox\fbbox{\raisebox{-\height}{\usebox{\hvObjectBox}}}%
251 \else \raisebox{-\height}{\usebox{\hvObjectBox}}%
252 \fi
253 \else% caption on bottom
254 \ifhv@fbox\fbbox{\usebox{\hvCaptionBox}}%
255 \else\usebox{\hvCaptionBox}%
256 \fi%
257 \hspace{\hvSet@floatCapSep pt}%
258 \ifhv@fbox\fbbox{\usebox{\hvObjectBox}}%
259 \else \usebox{\hvObjectBox}%
260 \fi
261 \fi
262 \fi
263 \else
264 \ifx\hvSet@capPos\hv@Top
265 \ifdim\wd\hvCaptionBox>\wd\hvObjectBox
266 \begin{minipage}{\wd\hvCaptionBox}%
267 \else
268 \begin{minipage}{\wd\hvObjectBox}%
269 \fi
270 \centering
271 \ifhv@fbox
272 \fbbox{\usebox{\hvCaptionBox}}\[\hvBelowCaptionSkip]
273 \fbbox{\usebox{\hvObjectBox}}%
274 \else
275 \usebox{\hvCaptionBox}\[\hvBelowCaptionSkip]
276 \usebox{\hvObjectBox}%
277 \fi
278 \end{minipage}%
279 \else
280 \ifx\hvSet@capPos\hv@Bottom
281 \ifdim\wd\hvCaptionBox>\wd\hvObjectBox
282 \begin{minipage}{\wd\hvCaptionBox}
283 \else
284 \begin{minipage}{\wd\hvObjectBox}
285 \fi

```

```

286         \centering
287     \ifhv@fbox
288         \fbox{\usebox{\hvObjectBox}}\[\hvAboveCaptionSkip]
289         \fbox{\usebox{\hvCaptionBox}}
290     \else
291         \usebox{\hvObjectBox}\[\hvAboveCaptionSkip]
292         \usebox{\hvCaptionBox}
293     \fi%
294 \end{minipage}
295 % the last option: put the caption on the right
296 \ifx\hvSet@capVPos\hv@Center%
297     \ifhv@fbox
298         \fbox{\parbox{\wd\hvObjectBox}{\usebox{\hvObjectBox}}}
299     \else
300         \parbox{\wd\hvObjectBox}{\usebox{\hvObjectBox}}
301     \fi%
302     \hspace{\hvSet@floatCapSep pt}%
303     \ifhv@fbox
304         \fbox{\parbox{\wd\hvCaptionBox}{\usebox{\hvCaptionBox}}}%
305     \else
306         \parbox{\wd\hvCaptionBox}{\usebox{\hvCaptionBox}}
307     \fi%
308 \else%
309     \ifx\hvSet@capVPos\hv@Top
310         \ifhv@fbox
311             \fbox{\raisebox{-\height}{\usebox{\hvObjectBox}}}%
312         \else
313             \raisebox{-\height}{\usebox{\hvObjectBox}}%
314         \fi%
315         \hspace{\hvSet@floatCapSep pt}%
316         \ifhv@fbox
317             \fbox{\raisebox{-\height}{\usebox{\hvCaptionBox}}}%
318         \else
319             \raisebox{-\height}{\usebox{\hvCaptionBox}}%
320         \fi
321     \else
322         \ifhv@fbox
323             \fbox{\usebox{\hvObjectBox}}%
324         \else
325             \usebox{\hvObjectBox}%
326         \fi
327         \hspace{\hvSet@floatCapSep pt}%
328         \ifhv@fbox
329             \fbox{\usebox{\hvCaptionBox}}%
330         \else
331             \usebox{\hvCaptionBox}%
332         \fi%
333     \fi%
334 \fi
335 \fi
336 \fi
337 \fi
338 }% End savebox Object and caption
339 %

```

```

340 % now we rotate the object and caption, if needed
341 %
342     \ifx\hvSet@rotAngle\hv@Zero
343         \usebox{\@tempboxa}
344     \else
345         \rotatebox{\hvSet@rotAngle}{\usebox{\@tempboxa}}
346     \fi
347 \ifhv@nonFloat
348     \ifx\hvSet@objectPos\hv@Center
349         \ifhv@nonFloat
350             \hspace{\fill}
351         \fi
352     \fi
353     \endgroup% End the nonfloat part
354 \else
355     \end{\hv@floatType}% End the floating environment
356 \fi
357 }
358 %
359 \newenvironment{hvFloatEnv}[1][\textwidth]
360     {\minipage{#1}\center}
361     {\endcenter\endminipage}
362 %
363 \endinput

```