

Package hvfloat

Rotating and scaling of objects and captions ver 2.12

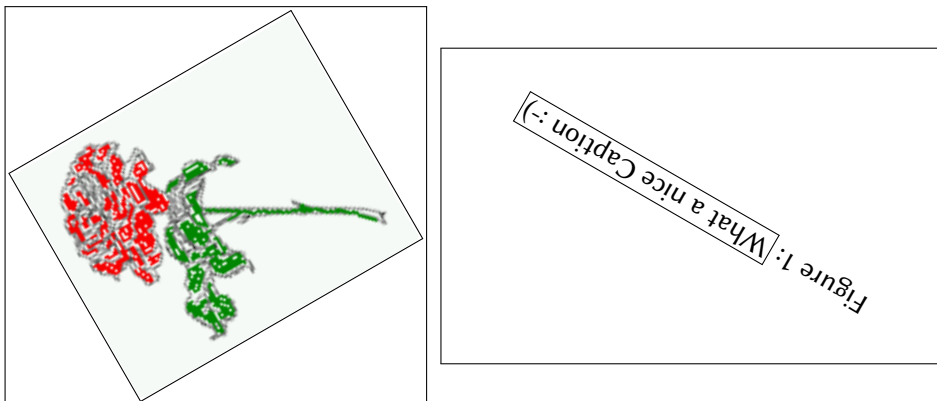
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The package hvfloat defines a macro to place objects and captions of floats in different positions with different rotating angles.

All objects and captions are framed on the first pages, which is only for some demonstration here and has no additional sense!

To compare the place of the definition of the floating objects in the source and the output a marginnote `\float` is set into the margin. This is done also only for demonstration!



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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 or for locating problems if images seems to have too much whitespace.
- `hyperref` Load package `hyperref`.

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

The following packages are loaded by `hvfloat` and the optional argument `hypcap` is passed to the packages `caption` and `subcaption`:

`caption`, `subcaption`, `atbegshi`, `expl3`, `multido`, `graphicx`, `xkeyval`, `ifoddpage`, and `afterpage`.

2 The Macros and optional arguments

The syntax for the macros and `\setDefault`s, `\hvSet`, and `\hvFloat` is

```
\hvset{key=value list}
\setDefault
\hvFloat* [Options] + {float type}{floating object}[short caption] {long caption}{label}
```

The star version is explained in section 10 on page 22 and 18.2 on page 50 and the optional `+` is explained in section 16.3 on page 37.

`\hvSet` allows the global setting of keywords and `\setDefault`s sets all keywords to its default value as shown in Table 2 on the next page.

If `\hvFloat` has an empty second parameter `<float type>`, then `\hvFloat` 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 `hvfloat`, 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` keyword, 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 2 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.

With the macro `\defhvstyle` one can define a style which can be used instead of the individual setting:

```
\defhvstyle{name}{setting}
```

Internally the style is saved in a macro named `\hv@<name>`.

There are the following keywords:

Table 2: The optional keywords for the macro `\hvFloat`

Keyword	Default	Description
<code>floatPos</code>	<code>htb</code>	This is <i>not</i> the same default placement setting like the one from the floats.
<code>rotAngle</code>	<code>0</code>	The value for the angle if both, the object and the caption should be rotated in the same way.
<code>capWidth</code>	<code>n</code>	The width of the caption. Can be <code>»n«</code> like a natural width, <code>»w«</code> for the width of the object, <code>»h«</code> for the height of the object, or a scale for <code>\columnwidth</code> .
<code>capAngle</code>	<code>0</code>	The value for the angle if the caption should be rotated. Counted anti clockwise.
<code>capPos</code>	<code>before</code>	The position of the caption relative to the object. Possible values are before: <i>always</i> before (left) from the object. left: <i>always</i> before (left) from the object, but on the <i>same page</i> in twocolumn mode. after: <i>always</i> after (right) from the object. right: <i>always</i> after (right) from the object, but on the <i>same page</i> in twocolumn mode. inner: in twoside mode always typeset at the inner margin. outer: in twoside mode always typeset at the outer margin. evenPage: in twoside mode with fullpage objects always on an even page. oddPage: in twoside mode with fullpage objects always on an odd page.
<code>capVPos</code>	<code>c</code>	This is only important for <code>capPos=left right</code> . Only in this case the caption can vertically placed at the bottom, center and top.
<code>objectPos</code>	<code>center</code>	The horizontalplacement of the object relative to the document. Possible values are (l) eft (c)enter (r)ight.
<code>objectAngle</code>	<code>0</code>	The value for the angle if the object should be rotated. Counted anti clockwise.
<code>floatCapSep</code>	<code>5</code>	The additional width between the object and a left or right placed caption. The default unit is pt.

3 The default use of floating environments

Keyword	Default	Description
use0Box	false	Instead of passing the object as parameter to the <code>\hvFloat</code> , the contents maybe saved in the box <code>\hv0Box</code> . With <code>use0Box=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.
wide	false	The float can use <code>\textwidth+\marginparwidth</code> as horizontal width.
objectFrame	false	put a frame with no separation around the float object.
style	–	Use a defined style

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}
```



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

Code for figure 2:

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

float

Code for table 3:

```
\hvFloat[capPos=top]{table}{%
\begin{tabularx}{\textwidth}{>{\ttfamily}l|l|X}
\rmfamily Name & Type & Description\\ \hline
\CMD{hvFloat} & & command & places object and caption in different ways\\
```


Table 3: With the only Option capPos=top 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
\defhvstyle	command	define a user style

```

hvFloatEnv & environment & places object and caption exactly Here\\
\CMD{figcaption} & command & writes a figure caption in a non floating environment\\
\CMD{tabcaption} & command & writes a table caption in a non floating environment\\
\CMD{setDefault} & command & sets all options to the defaults\\
\CMD{defhvstyle} & command & define a user style
\end{tabularx}}%
{With the only Option \texttt{capPos=top} to place the caption on top of the table, which is often
the default.}%
{tab:0}

```

See section 13 for some more informations about tabulars as objects.

4 Caption width

4.1 Default – natural width

The default setting is the natural width of a paragraph with respect to the current linewidth or columnwidth for a caption below or above an object. It behaves in the same way as a caption set by one of the default floating environments like figure or table:

```

\hvFloat[floatPos=htb]{figure}{\includegraphics{images/rose}}%
{Default caption width setting, which is the natural width with respect to the current linewidth
.}{fig:width0}

```

For the following examples the package option fbox is disabled. All frames are now set with the macro \frame or the optional keyword objectFrame. float

For a caption beside an object, the *natural* caption width (without the optional argument wide) is given by the current linewidth minus the width of the object and the space between object and caption, which is set by floatCapSep (see Table 2 on page 7).

```

\hvFloat[floatPos=htb,capPos=after,objectFrame]{figure}{\includegraphics[scale=1.5]{images/rose}}
%
{Caption right beside with a \emph{natural} width, which is given by the width of the object,
the separation between object and caption, and the current linewidth.}{fig:width1}

```

float

4 Caption width



Figure 3: Default caption width setting, which is the natural width with respect to the current linewidth.

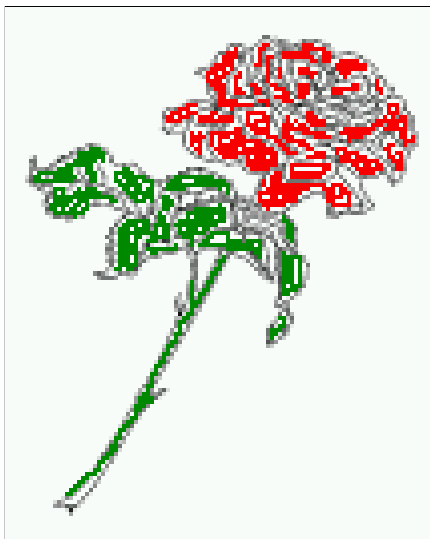


Figure 4: Caption right beside with a *natural* width, which is given by the width of the object, the separation between object and caption, and the current linewidth.

4.2 Relative linewidth

With `capWidth=<number>` the caption width is set to `<number>\columnwidth`. For captions at the bottom or on top of objects the setting is not checked if `<number>` is greater than 1.

```
\hvFloat[floatPos=!htb,capWidth=0.9]{figure}{\includegraphics{images/rose}}%  
  {Caption below with a width of 0.9 of the current line width (column width), which is  
  in this special case \the\linewidth. Divide it by 28.82 to get cm.}{fig:width2}
```

float

If such a value like `0.9\linewidth` is used for a caption beside an object, then the macro does a test if the space beside the object is less equal the defined caption width. If not then the width is set to the possible value between object and margin:

```
\hvFloat[floatPos=!htb,  
  capPos=after,  
  capWidth=0.9]{figure}{\includegraphics[scale=1.5]{images/rose}}%
```

4.3 Identical object and caption width



Figure 5: Caption below with a width of 0.9 of the current line width (column width), which is in this special case 376.4258pt. Divide it by 28.82 to get cm.

```
{Caption right beside with a width setting of \texttt{0.9\textbackslash linewidth}
which is too big for this example and therefore corrected
by the macro to the maximal width.}{fig:width3}
```

float

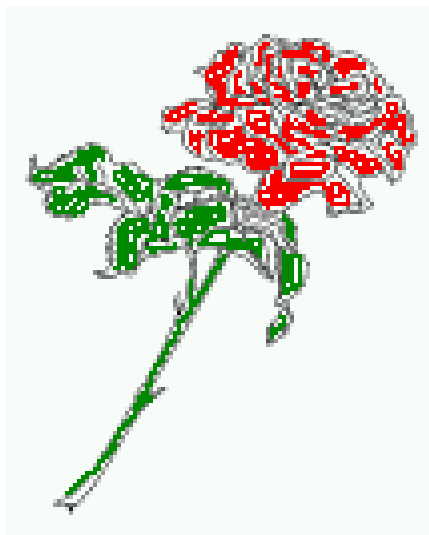


Figure 6: Caption right beside with a width setting of 0.9\linewidth which is too big for this example and therefore corrected by the macro to the maximal width.

4.3 Identical object and caption width

With capWidth=w the caption width is like the object width which makes only real sense if you have a lot of identical images with respect to its widths.

```
\hvFloat[floatPos=!htb,capWidth=w]{figure}{\includegraphics[width=0.5\linewidth]{images/CTAN}}%
{Caption below with a width of the given object which may be a problem
if it is a very small object.}{fig:width4}
```

float

5 Caption left or right of the object

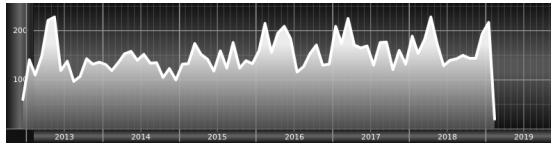


Figure 7: Caption below with a width of the given object which may be a problem if it is a very small object.

4.4 caption width to height of the object

With `capWidth=h` the caption width is like the object height which makes only real sense if you want to put a rotated caption beside the object.

```
\hvFloat[floatPos=!htb, capPos=after, capWidth=h, capAngle=90, objectFrame]{figure}{\includegraphics{
  images/rose}}%
{Caption beside with a width of the given object height which may be a problem
if it is a very small object.}{fig:width5}
```



Figure 8: Caption beside with a width of the given object height which may be a problem if it is a very small object.

5 Caption left or right of the object

By default the caption is set on the left side of the object. If the caption and the object are set side by side, then the keyvalue before is identical to the setting left.

5.1 Caption right with specific length

Code for figure 9:

```
\hvFloat%
[ floatPos=htb,
  capPos=right,
  objectFrame,
  objectPos=c]{figure}{\includegraphics[scale=0.9]{images/rose}}%
[Caption beside object and vertically centered]%
```

```
{Caption vertically centered right beside the float with a natural caption width
(the default). \blindtext}%
{fig:1}
```



Figure 9: Caption vertically centered right beside the float with a natural caption width (the default). Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

```
float
capPos=right
```

5.2 Caption left and rotated

Code for figure 10:

```
\hvFloat%
[ floatPos=htb,
  capPos=left,
  capWidth=h,% of \columnwidth
  capAngle=90,
  objectFrame
]{figure}{\includegraphics{images/rose}}%
[Centered Caption beside Object]%
{Caption vertically centered left beside the float with a caption width
of \texttt{capWidth=h}, which is the height of the object.}{fig:2}
```

Figure 10: Caption vertically centered left beside the float with a caption width of `capWidth=h`, which is the height of the object.



```
float
capAngle=90
```

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 macro `\rotatebox`. Without any definition the caption will be

6 Caption inner or outer

placed vertically centered to the object. Important for the height of the object is the surrounding orthogonal rectangle.

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Code for figure 11:

```
\hvFloat[%
  capWidth=h,
  capPos=after,
  capAngle=180,
  objectAngle=90,
  capVPos=center,
  objectPos=center]{figure}{\frame{\includegraphics{images/rose}}}%
[Centered Caption beside Object]{%
{Caption vertically centered right beside the float with a caption width of the height
of the image and a rotation of the caption and the object.}}{fig:3}
```

float



Figure 11: Caption vertically centered right beside the float with a caption width of the height of the image and a rotation of the caption and the object.

6 Caption inner or outer

Setting the caption position to *inner* or *outer* makes only sense for a document in twoside mode. For a oneside document *inner* is the same as *left* and *outer* is the same as *right*. We show only the code for the first image with the setting `capPos=inner`, whereas the second one chooses only `capPos=outer`.

Code for figure 12:

```
\hvFloat[capPos=inner]{figure}{\includegraphics{images/rose}}%
[Centered Caption on the inner side]{%
Caption set with the parameter setting \texttt{capPos=inner}, which will be
a caption on the right side for an even page and on the left side for
an odd page.}{fig:20}
```

Figure 12: Caption set with the parameter setting capPos=inner, which will be a caption on the right side for an even page and on the left side for an odd page.



Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

float
capPos=inner

Now the same Image with capPos=outer . The current pagenumber is 15, an odd page. We now set a pagebreak at the end of the second image to see if it works with inner/outer.

```
\hvFloat[capPos=outer]{figure}{\includegraphics{images/rose}}%
[Centered Caption on the inner side]{%
Caption set with the parameter setting \texttt{capPos=outer}, which will be
a caption on the right side for an even page and on the left side for
an odd page.}{fig:20b}
```



float
capPos=outer

Figure 13: Caption set with the parameter setting capPos=outer, which will be a caption on the right side for an even page and on the left side for an odd page.

We have an odd page, the reason why figure 13 has the caption for inner on the left side and figure 14 for outer on the right side.

float

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how



Figure 14: Caption at the bottom right beside the float with a caption width of 0.5\columnwidth and $\text{capPos}=\text{outer}$.

the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Code for figure 15:

```
\hvFloat[%
  capWidth=0.5,% of \columnwidth
  capPos=inner,% =====> INNER
  capAngle=0,
  capVPos=bottom,
  objectPos=center]{figure}{\includegraphics{images/rose}}%
  [Centered Caption beside Object]{%
  Caption vertically centered right beside the float with a caption
  width of \texttt{0.5\textbackslash columnwidth} and \texttt{capPos=outer} }{fig:22}
```

float



Figure 15: Caption vertically centered right beside the float with a caption width of 0.5\columnwidth and $\text{capPos}=\text{outer}$

We have an even page, the reason why figure 12 has the caption for *inner* on the right side and figure 14 for *outer* on the left side.

7 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 16:

```
\hvFloat[%  
    floatPos=htb,%  
    capWidth=0.25,%  
    capPos=right,%  
    capVPos=bottom,%  
{figure}{\frame{\includegraphics{images/rose}}}{Caption at bottom right beside the float}{fig:4}
```

float



Figure 16: Caption at bottom right beside the float

The code for figure 17:

```
\hvFloat[%  
    floatPos=htb,  
    capWidth=0.25,  
    capPos=right,  
    capVPos=top,  
{figure}{\frame{\includegraphics{images/rose}}}{Caption at top left beside the float}{fig:5}
```

float

Figure 17: Caption at top left beside the float



The code for figure 18:

```
\hvFloat[%  
    capWidth=0.25,  
    capPos=right,  
    capVPos=center,% the default  
{figure}{\frame{\includegraphics{images/rose}}}{Caption centered right beside the float}{fig:6}
```

float



Figure 18: Caption centered right beside the float

8 Horizontal Position of the Float

The caption is always near the object, only divided by the length `\floatCapSep` which can be set by the keyword of the same name `floatCapSep`. It accepts only a decimal number and is preset to 5. The default unit is pt and cannot be changed. The keyword `objectPos` refers always to the complete floating object: caption *and* object. The meaning of `objectPos=left` is: Put the object as far as possible to the left margin. If `capPos=left` is also used, then the caption is at the left margin followed by the object (see Figure 20 on the next page).

The code for figure 19:

```
\hvFloat[%
  capWidth=0.25,
  capPos=right,
  capVPos=top,
  objectPos=left,
  objectFrame,
]{figure}{\includegraphics{images/rose}}{%
  Caption at top right beside the float and object position left}{fig:7}
```

float



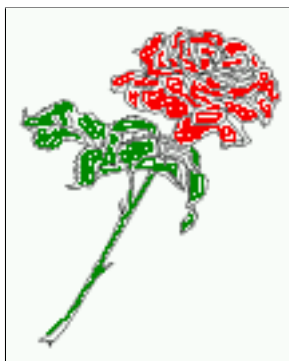
Figure 19: Caption at top right beside the float and object position left

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how

the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

The same with capPos=left :

Figure 20: Caption at top right beside the float and object position left



float
capPos=left

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

The code for figure 21:

```
\hvFloat[%
  capWidth=0.25,
  capPos=before,
  capVPos=top,
  objectPos=right,
  objectFrame,
]{figure}{\includegraphics{images/rose}}{%
  Caption at top leftt beside the float and object position right}{fig:8}
```

Figure 21: Caption at top left beside the float and object position right



float

Hello, here is some text without a meaning. This text should show what a printed text will

look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

9 Wide floats

With the optional argument `wide` the width of the defined `\marginparwidth` is added to the allowed horizontal width of the float.

The code for figure 22:

```
\hvfFloat[wide,
  capPos=right,
  capVPos=top,
  objectPos=left,
]{figure}{\includegraphics[width=0.75\linewidth]{images/CTAN}}{%
  Caption at top right beside the float and object position left and
the option \texttt{wide}.}{fig:70}
```

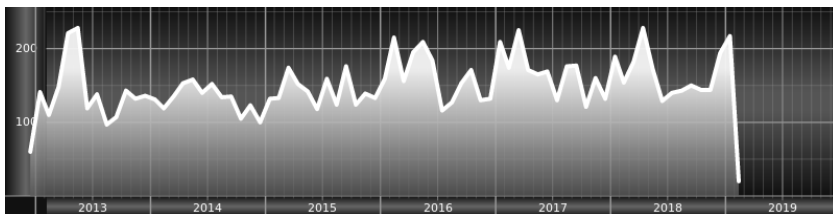
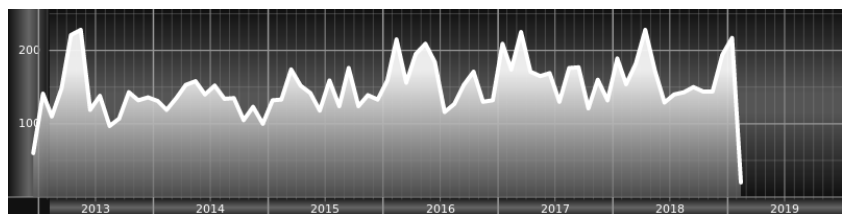


Figure 22: Caption at top right beside the float and object position left and the option `wide`.

The code for figure 23:

```
\hvfFloat[wide,
  capPos=left,
  capVPos=top,
  objectPos=right,
]{figure}{\includegraphics[width=0.75\linewidth]{images/CTAN}}{%
  Caption at top left beside the object and object position left and
the option \texttt{wide}.}{fig:80}
```

Figure 23: Caption at top left beside the object and object position left and the option `wide`.

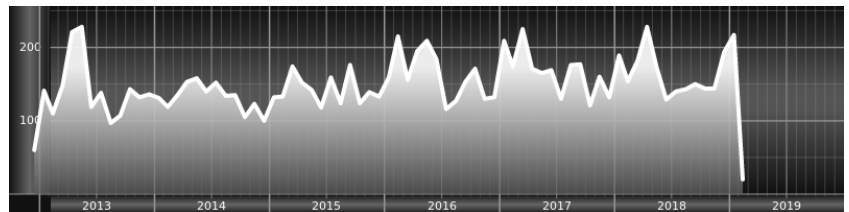


For a twosided document it will place the object always in the margin.

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

```
\hvFloat[wide,
    capPos=inner,
    capVPos=top,
]{figure}{\includegraphics[width=0.75\linewidth]{images/CTAN}}{%
Caption at top and inner beside the float and object position right and
the option \texttt{wide}.}{fig:81}
```

Figure 24: Caption at top and inner beside the float and object position right and the option wide.

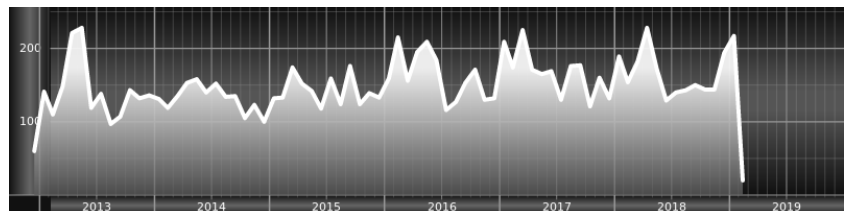


Now we set the same image with the same setting on the next page. The caption will change its side due to the setting `capPos=outer`.

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

```
\hvFloat[wide,
    capPos=inner,
    capVPos=top,
]{figure}{\includegraphics[width=0.75\linewidth]{images/CTAN}}{%
Caption at top inner beside the float and object position right and
the option \texttt{wide}.}{fig:81}
```

Figure 25: Caption at top inner beside the float and object position right and the option wide.



11 Full Page Width in Landscape Mode

10 The star version \hvFloat*

In the twocolumn mode the floating environment can be set over both columns with the star version \hvFloat*. The floating environment will not be on the bottom of the page. The code for the following example (Figure 26) is:

```
\hvFloat*[capPos=right]{figure}%
{\includegraphics{images/frose}}%
[A float with the default caption setting]%
{A default caption of a '' object with the default setting, which
is a ''left'' caption which means that it always appears before the object.
This can be an even or odd page. And some more text which has no
real meaning because it fills only the space for a long caption.}%
{fig:0}
```

The example shows on page 3 the star version and on page 4 the same without using the star.

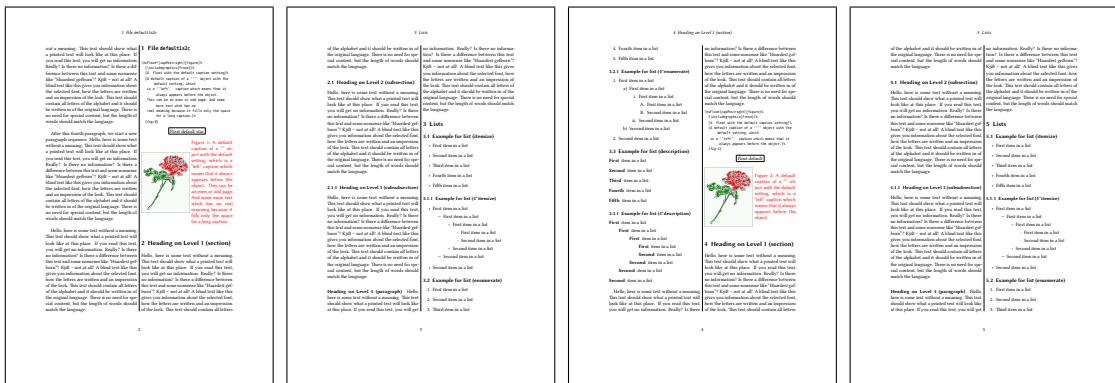


Figure 26: Output of default1s2c (pages 2 –5)

11 Full Page Width in Landscape Mode

If you do not want to load the package lscap (or pdf lscap) you can use the floatPos=p option to put the image on an own page and rotated by 90 degrees (figure 27).

Code for figure 27:

```
\hvFloat[%
floatPos=p,
capPos=bottom,
rotAngle=90,
objectPos=center,
]{figure}{\includegraphics[width=0.9\textheight]{images/CTAN}}%
[Object and Caption in landscape mode]%
Caption and object in landscape mode. \blindtext}{fig:9}
```

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

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

float
landscape

The code for figure 28:

```
\hvFloat[%
  floatPos=p,
  capWidth=h,
  capPos=right,
  objectAngle=90,
  capAngle=-90,
  objectPos=left,
]{figure}{\includegraphics[width=\textwidth]{images/CTAN}}%
[Rotated Caption in Landscape]{%
  Caption right beside the float and object position left. The caption rotated by $-90$
  degrees.\blindtext}{fig:10}
```

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

float

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

12 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 keyword `nonFloat`.

Some nonsense text before the following `\emph{non floating}` object.

```
\hvFloat[%
  nonFloat,
```

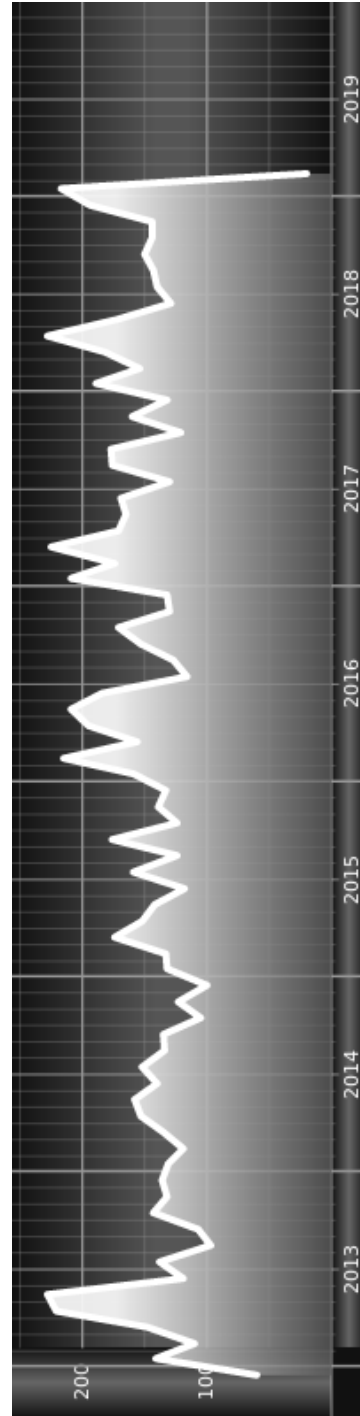
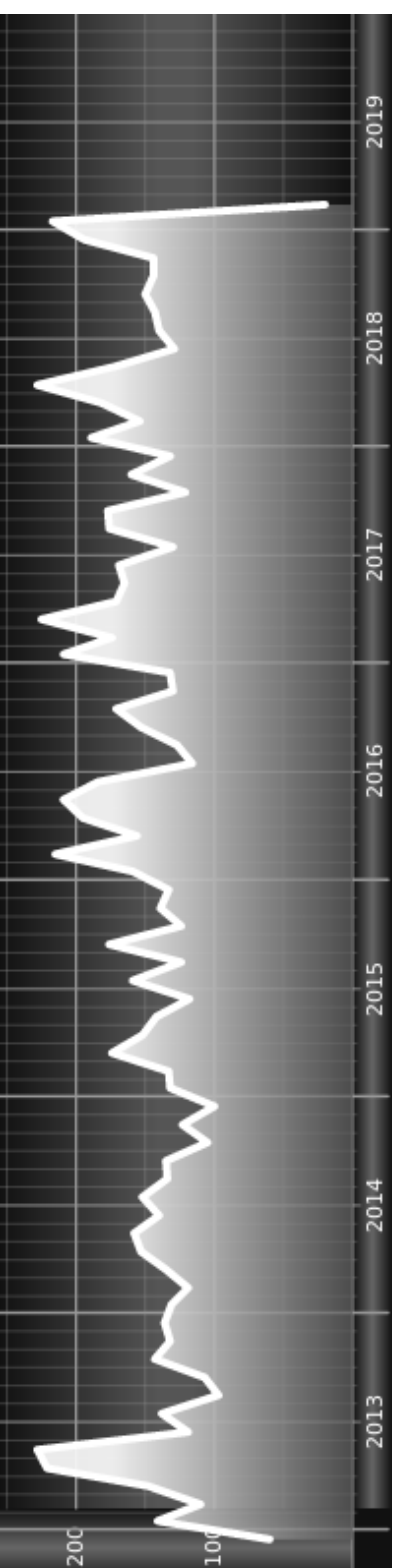


Figure 27: Caption and object in landscape mode. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Figure 28: Caption right beside the float and object position left. The caption rotated by -90 degrees. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.



13 Tabulars as Objects

```
capWidth=0.25,
capPos=right,
capVPos=bottom,
objectPos=center,
objectFrame,
]{figure}{\includegraphics[scale=1.5]{images/rose}}%
[Nonfloat Captions]{%
Caption of a ‘‘nonfloat’’ Object, using the \texttt{nonfloat} Package}{fig:11}
```

Some nonsense text after the preceding `\emph{non floating}` object.

`float`

Some nonsense text before the following *non floating* object.

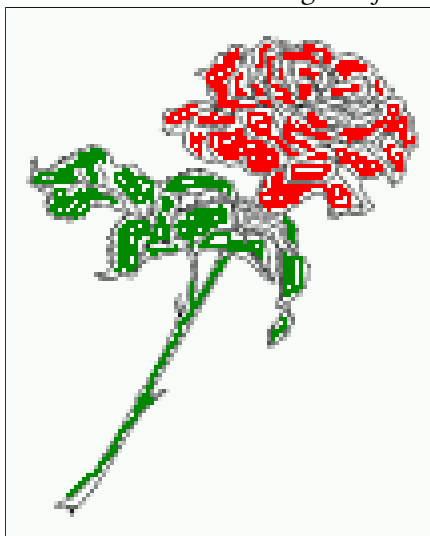


Figure 29: Caption of a
“nonfloat” Object, using
the nonfloat Package

Some nonsense text after the preceding *non floating* object.

The image 12 is exactly placed where the command `\hvFloat` appears. There are only commands for figure and table environments:

```
\newcommand{\figcaption}{\def\@capttype{figure}\caption}
\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.

13 Tabulars 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 4 and 5:

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no

information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

```
\savebox{\hv0Box}{%
\begin{tabular}{>{\small\ttfamily}l|l|l}\hline
\rmfamily Name      & Type      & Description\\\hline
\CMD{hvFloat} & command & places object and caption in different ways\\
hvFloatEnv & environment & places object and caption exactly Here\\
\CMD{figcaption} & command & writes a figure caption in a non floating environment\\
\CMD{tabcaption} & command & writes a table caption in a non floating environment\\
\CMD{setDefault} & command & sets all options to the defaults\\\hline
\end{tabular}%
}
```

The code for table 4 and 5 is:

```
\hvFloat[%
floatPos=!hb,
capPos=top,
use0Box=true]{table}{\texttt{Demonstration of the \texttt{use0Box} Parameter}}{table:1}

\blindtext

\hvFloat[%
floatPos=hb,
use0Box=true,
objectAngle=90,
capPos=right,
capVPos=top,
capWidth=0.3]{table}{\texttt{Another demonstration of the \texttt{use0Box} Parameter}}{table:2}
```

In this case leave the third parameter empty.

float

Table 4: Demonstration of the use0Box 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
\setDefault	command	sets all options to the defaults

float

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 5: Demonstration of the use0Box Parameter

14 Text and objects

With the onlyText keyword it is no problem to put some text beside an image without getting the caption title Figure/Table. The object still can be a floating one or a nonfloating if the nonfloat keyword is used.

The code for figure 14:

```
\hvFloat[%
  onlyText=true,
  capAngle=90,
  capPos=right,
  capVPos=top,
  objectFrame,
  capWidth=h]{\includegraphics{images/rose}}%
[‘‘\texttt{onlyText}’’ Caption]{%
  Demonstration of the \texttt{onlyText} Parameter, which makes it
```

possible to put some text beside a floating object without getting a starting `\texttt{Figure:}` or `\texttt{Table:}}`{fig:text}



Demonstration of the onlyText Parameter, which makes it possible to put some text beside a floating object without getting a starting Figure: or Table:

`float`

15 Environment hvFloatEnv

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

```
\begin{hvFloatEnv}
\captionof{table}{A caption for a nice table}
\begin{tabular}{@{} l c r @{}}\hline
left & center & right \\
L & & C & & R & \\
\end{tabular}
\end{hvFloatEnv}
```

Table 6: A caption for a nice table

left	center	right
L	C	R

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

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

Table 7: A caption for a nice table

left	center	right
L	C	R

16 Full page objects in onecolumn mode

For an image or table which needs the whole space of a page the caption can be printed at the bottom of the preceding or following page. It is possible in oneside and twoside mode, but makes only real sense in the twoside mode. hvfloat defines three additional optional arguments for placing images in a complete column, page or paper:

```
\define@key{Gin}{fullpage}[true]{%
  \def\Gin@ewidth{\columnwidth}%
  \def\Gin@eheight{\textheight}%
  \Gin@boolkey{false}{iso}%
}

\define@key{Gin}{FULLPAGE}[true]{%
  \def\Gin@ewidth{\paperwidth}%
  \def\Gin@eheight{\paperheight}%
  \Gin@boolkey{false}{iso}%
}
```

Figure 30 shows the meaning of the optional arguments fullpage, FullPage, and FULLPAGE for `\includegraphics[...]{tiger}`.

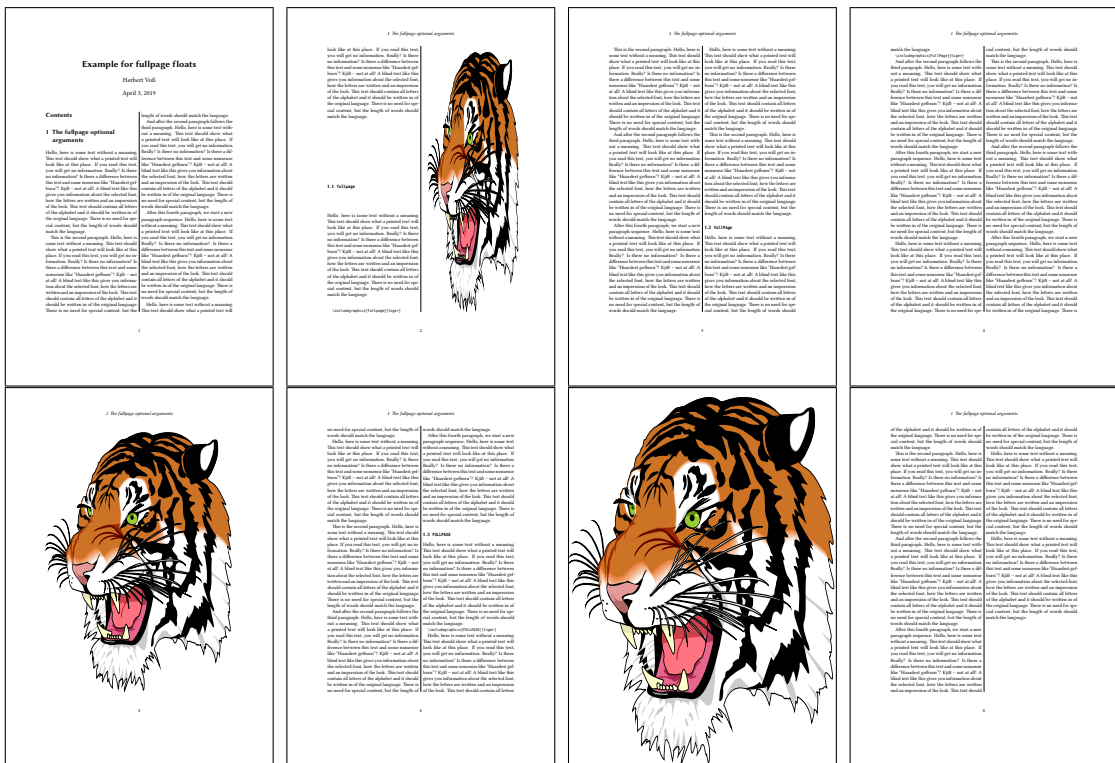


Figure 30: Output of fullpage1s2c (pages 1–8)

16.1 Using the textarea

The setting `capPos=evenPage` (even) or `capPos=oddPage` (odd) page for a document in twocolumn mode makes no real sense. For a twosided document a setting like `capPos=inner` for inner or `capPos=outer` for outer margin makes more sense. For an image or table which needs the whole space of a page the caption can be printed at the bottom of the preceeding or following page. It is possible in onese and twoside mode, but makes only real sense in the twoside mode. Without any additional argument the caption is set first and the object on the follwing page:

16.1.1 Using the default or `capPos=before`

Without any additional argument the caption is set first (left) at the bottom of the current page and the object on the following page. This is the same setting like `capPos=left` for a onecolumn document. For the twocolumn option it makes more sense to use the setting `capPos=before` if the caption and object can appear on different pages.

```
\hvFloat[fullpage]%
{figure}%
{\includegraphics[fullpage]{images/frose}}%
[A fullpage float with the default caption setting]%
{A default caption of a "fullpage" object with the default setting, which
 is a "left" caption which means that it always appears "before" the object.
 This can be an even or odd page. And some more text whch has no
 real meaning because it fills only the space for a long caption.}%
{fig:fullpage0}
```

Table 8: Valid optional arguments for a full page object.

Name	Type	Description
fullpage	true false	Put the caption on the bottom of the preceding or following page and the object alone a page.
FULLPAGE	true false	The same for full papersize objects over one or two columns. The <code>pagestyle</code> is set to empty
multiFloat	true false	For multiple objects with captions for every object. See section 16.3 on page 37.
subFloat	true false	For multiple objects with one main and more subcaptions. See section 17 on page 39.
separatorLine	true	Put a line with a predefined width of 0.4pt between the text and the caption. Only valid for the keyword <code>fullpage</code> .
capPos	value	caption before, after an object or on an evenPage or oddPage.

With this setting the caption is always placed *before* the following object. This maybe sufficient for a onese document but not the best solution if this document is printed on a duplex machine. In such a case it may make sense to have the captions always on an even (left)

Depending to the used documentclass it can be a problem, if the caption should be placed on the first page. In such a case use one of the other setting. Table 8 on the previous page shows the valid optional arguments for a full page floating object.

[illegible]

16.1.2 Using capPos=after

The caption will be printed always on the right side which is the same as *after* the full page object. The object appears immediately on the next page and the caption of the next following page at the bottom. There is no check for an even or odd page. This behaviour makes only sense for a oneside document.

```
\hvFloat[fullpage, capPos=after]%
{figure}%
{\includegraphics[fullpage]{images/frose}}%
[A float which needs the complete page width and height.]%
{A Caption of a "fullpage" object, which follows on the next page.
This can be an even or odd page. And some more text which has no
real meaning because it fills only the space for a long caption.}
{fig:fullpage}
```

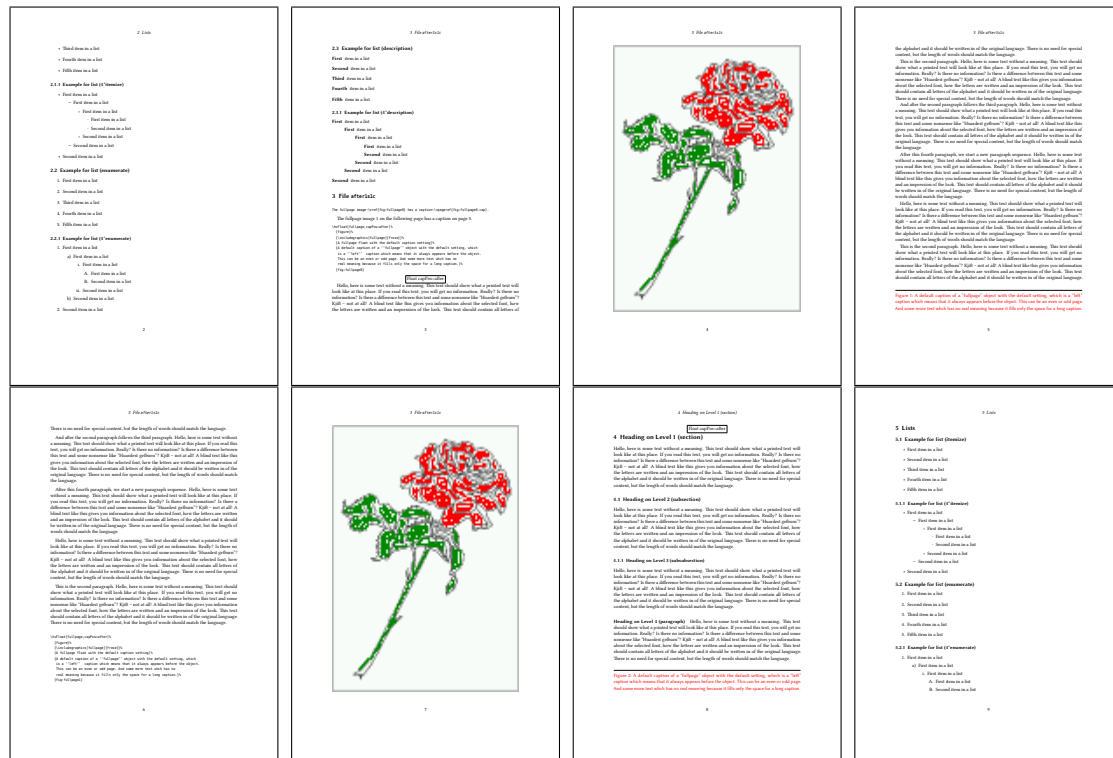


Figure 32: Output of after1s1c (pages 2–9)

16 Full page objects in onecolumn mode

16.1.3 Using capPos=evenPage — caption on an even page

With capPos=evenPage the caption will be printed on an even (left) page, the object will always be on an odd (right) page. This option makes only real sense for The twoside mode!

```
\hvfloa[fullpage, capPos=evenPage]%  
{figure}%  
{\includegraphics[fullpage]{images/frose}}%  
[A float with a caption on an even page (left)]%  
{A caption on an even (left) page of a “fullpage” object.. \blindtext}  
{fig:fullpage3}
```

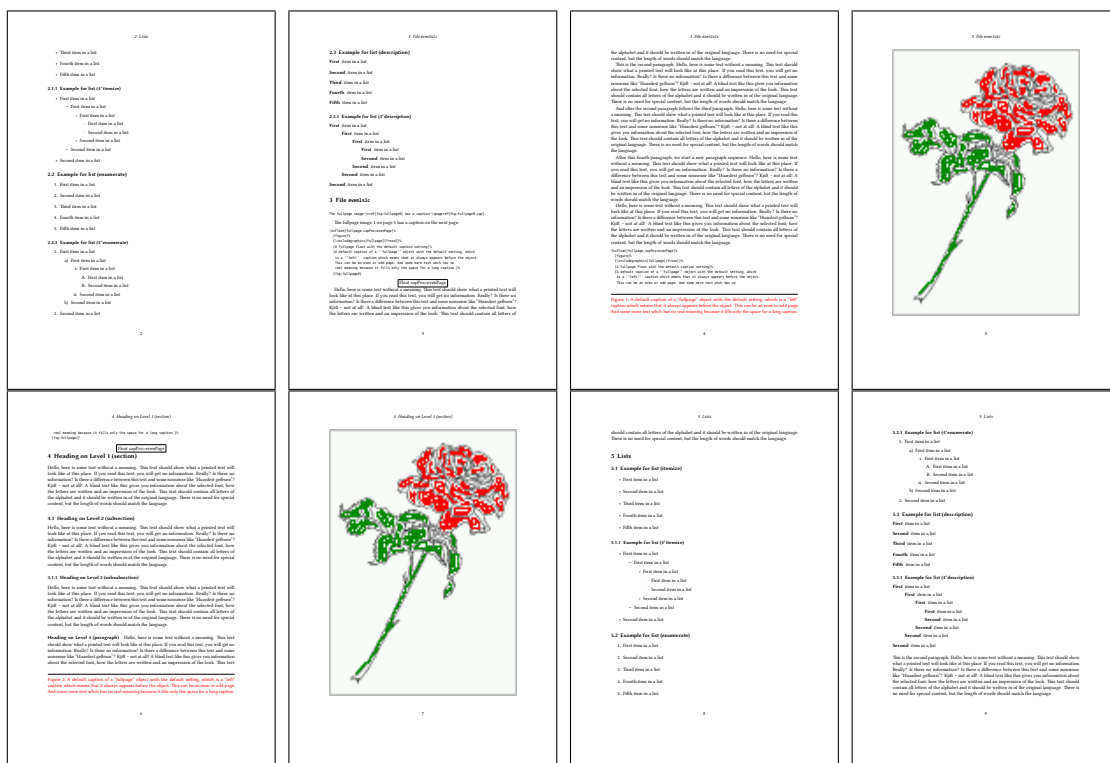


Figure 33: Output of even1s1c (pages 2–9)

16.1.4 Using capPos=oddPage — caption on an odd page

With `capPos=oddPage` the caption will be printed on an odd (right) page, the object will always be on an even (left) page, which is before the caption.

```
\hvFloat[fullpage, capPos=oddPage]%
{figure}%
{\includegraphics[fullpage]{images/frose}}%
[A float which needs the complete page width and height.]%
{A Caption on an odd page of a "fullpage" object, which follows on the next page.
This can be an even or odd page. And some more text which has no
real meaning because it fills only the space for a long caption.}
{fig:fullpage2}
```

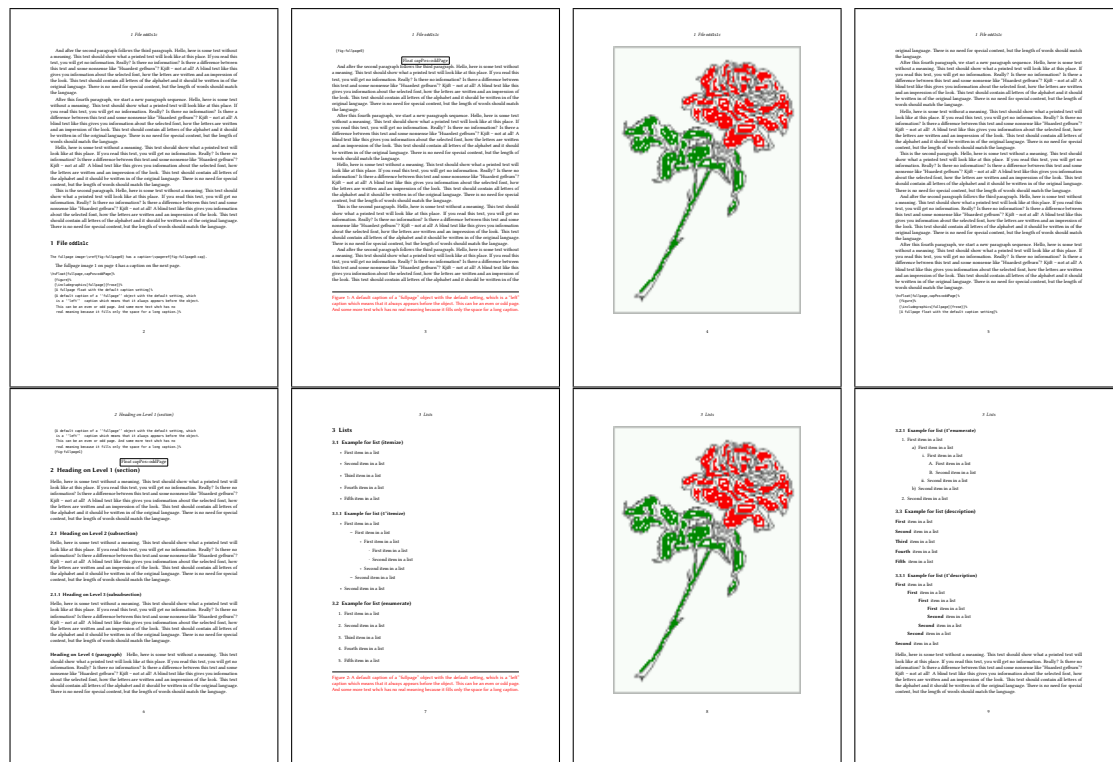


Figure 34: Output of odd1s1c (pages 2–9)

16.1.5 Using capPos=inner or capPos=outer — caption on the inner or outer side

These settings make no sense in onecolumn mode.

16 Full page objects in onecolumn mode

16.2 Using the paper size

It belongs to the user to create an object which fills the complete page. However, with the keyword `FULLPAGE` which is valid for `\hvfloat` and for the macro `\includegraphics` an image will be scaled to the paper dimensions `\paperwidth` and `\paperheight`. It can be used in one- and twocolumn mode!

```
\hvFloat[FULLPAGE]%  
{figure}%  
{\includegraphics[FULLPAGE]{froese.png}}%  
[A fullpage float with the default caption setting]%  
{A default caption of a "fullpage" object with the default setting, which  
is a "left" caption which means that it always appears before the object.  
This can be an even or odd page. And some more text which has no  
real meaning because it fills only the space for a long caption.}%  
{fig:fullpage0}
```

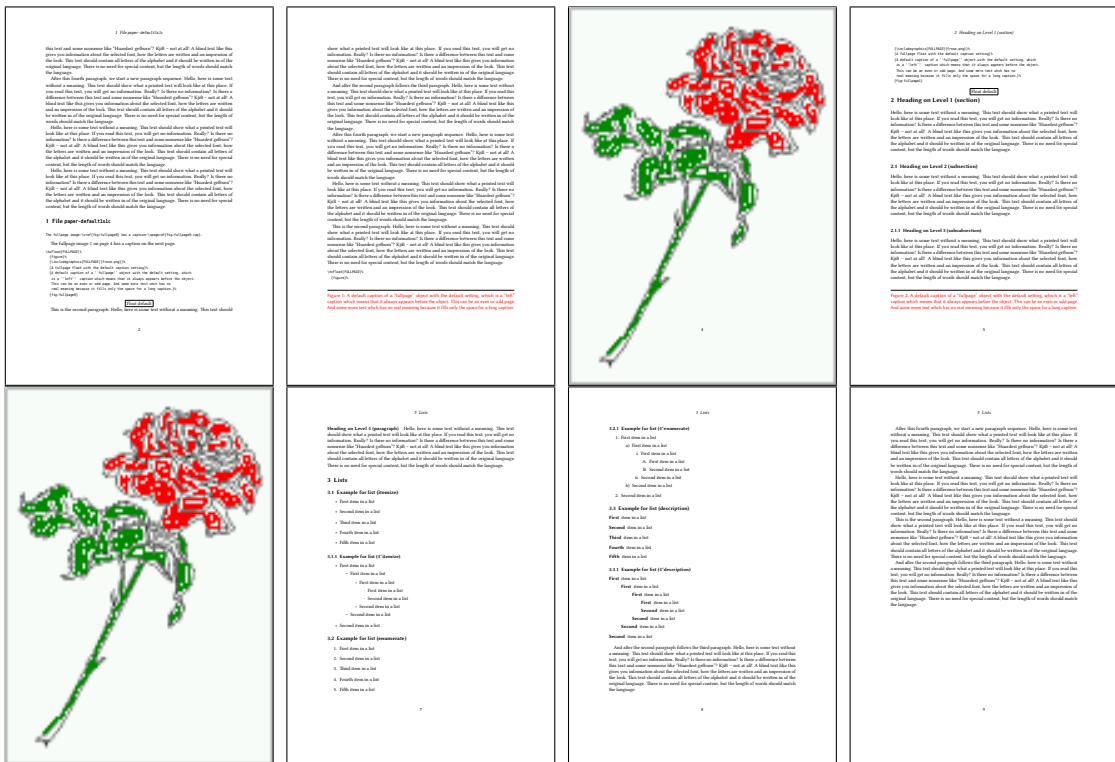


Figure 35: Output of paper-default1s1c (pages 2–9)

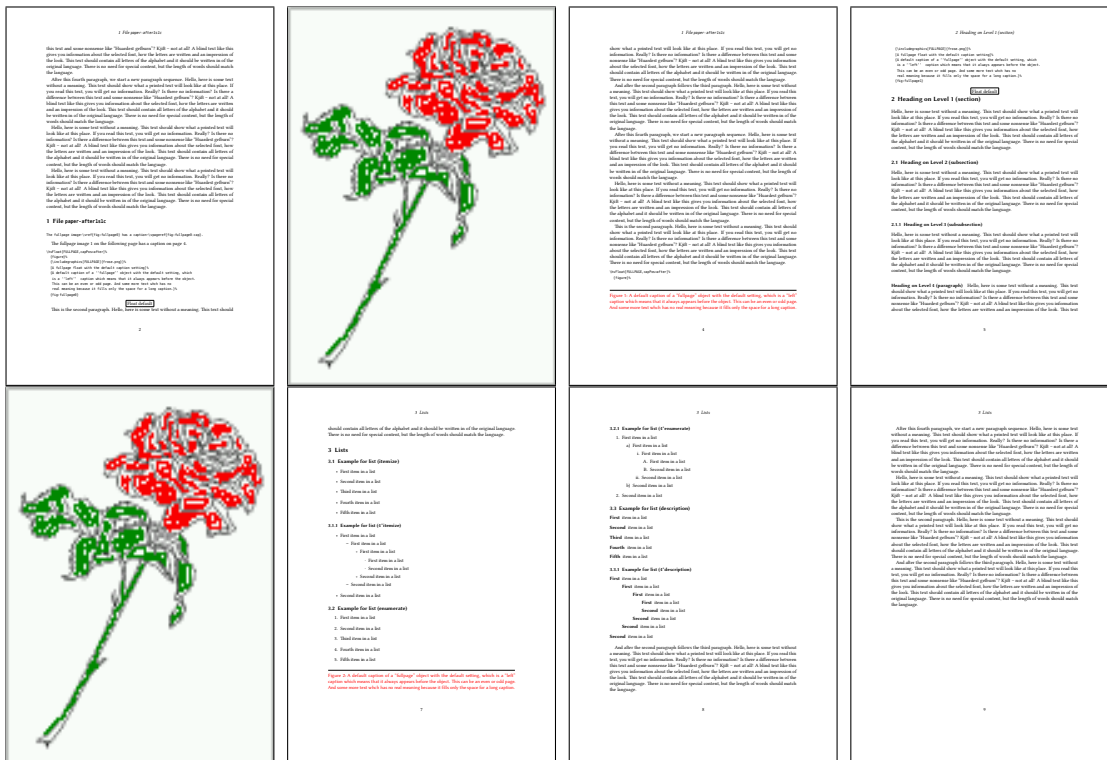


Figure 36: Output of paper-after1s1c (pages 2–9)

16.3 Multifloats

Multifloats is the name for more than one image and/or tabular in *one* floating environment. Every image and/or tabular has its own caption, which is different to a subcaption. The syntax for multiple floats is

```
\hvfFloat [Options] +{float type}{floating object} [short caption] {long caption}{label}
+{float type}{floating object} [short caption] {long caption}{label}
+...
+{float type}{floating object} [short caption] {long caption}{label}
```

The + symbol defines an additional Object which will be part of the same floating environment. It's up too the user to be sure that one page or one column can hold all defined objects. Every object gets its own caption which is the reason why figures and tabulars and ... can be mixed:

```
\captionsetup{singlelinecheck=false}
\hvfFloat[fullpage,capPos=before,multiFloat]%
+{figure}{\includegraphics[width=\linewidth]{images/CTAN}}%% no 1
[Short caption A]%
{A Caption A of a "fullpage" object, which follows on the left or
right column. This can be an even or odd page. And some more text which has no
```

16 Full page objects in onecolumn mode

```

real meaning because it fills only the space for a long caption.}%
{img:demo0}%
+{table}{\begin{tabular}{lrcp{3cm}}\hline                                %              no 2
    Linksbündig & Rechtsbündig & Zentriert & Parbox\\\hline
    L            & R            & C            & P\\
    left         & right         & center       & Text with possible linebreaks\\
\multicolumn{4}{c}{Multicolumn over all columns}\\\hline
\end{tabular}}%
[Short Caption B]%
{A Caption B of a "fullpage" object, which follows on the left or
right column. This can be an even or odd page.}%}
+{figure}{\includegraphics[width=\linewidth]{images/CTAN}}}%              no 3
{A Caption C of a "fullpage" object, which follows on the left or
right column.}%
{img:demo1}
+{figure}{\includegraphics[width=\linewidth]{images/CTAN}}}%              no 4
{A Caption C of a "fullpage" object, which follows on the left or
right column.}%
{img:demo2}

```

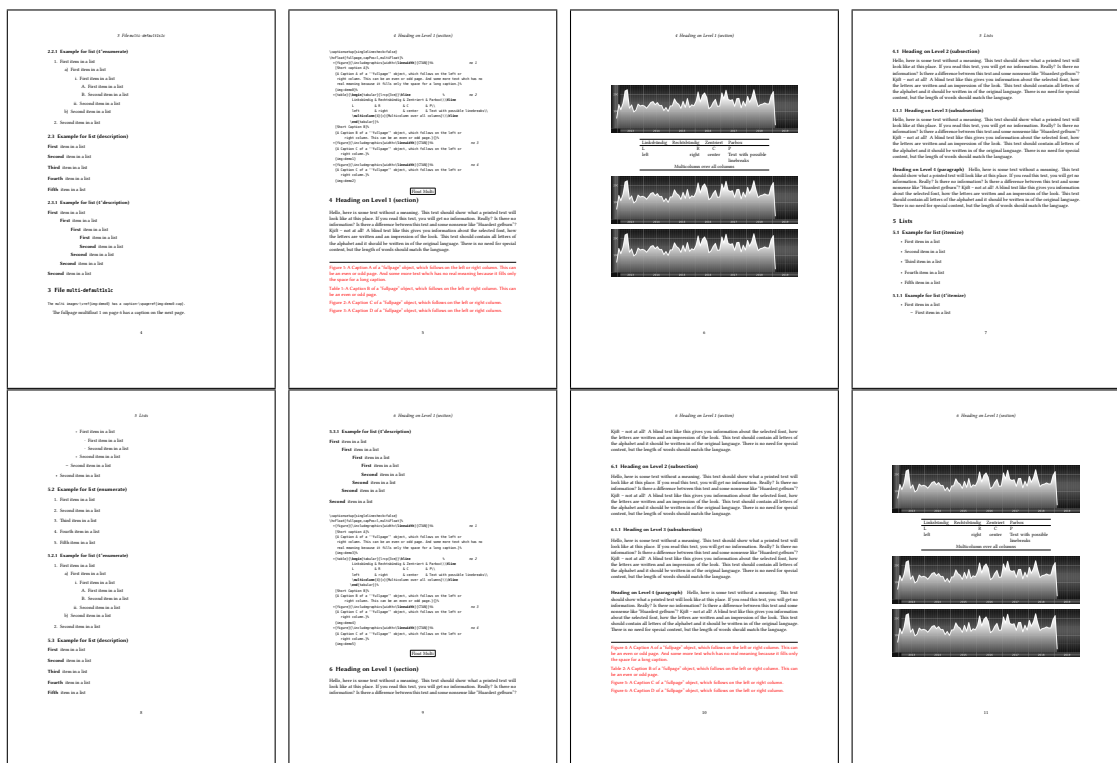


Figure 37: Output of multi-default1s1c (pages 4–11)

The page with the objects has no additional informations it holds only the figures and/or

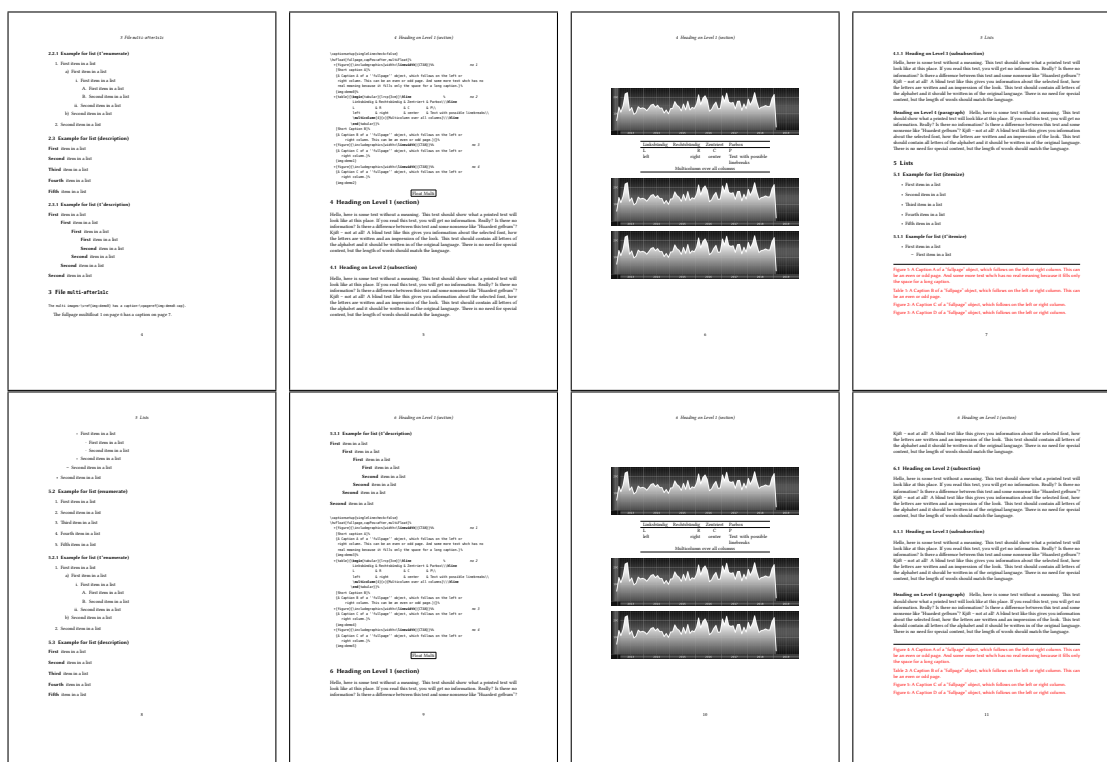


Figure 38: Output of multi-afterls1c (pages 4–11)

tabulars. If you want it like subfigures or subtabulars then go to section 17. The setting `\captionsetup{singlelinecheck=false}` is needed if you want the captions always left aligned.

17 Subfloat page

A subfloat page can have only one type of floats which will have one main caption and individual subcaptions. The syntax is similar to the one for a multifloat page:

```
\hvFloat [Options] +{float type}{<empty>} [short caption] {long caption}{label}
+{<empty>}{floating object} [short caption] {long caption}{label}
+...
+{<empty>}{floating object} [short caption] {long caption}{label}
```

Some arguments are ignored for a subfloat, one can leave them empty. The first line defines only the type and the main caption, the object entry is ignored! All additional lines will have the same float type, the reason why the float type entry is ignored.

```
\hvFloat[fullpage,capPos=before,objectFrame,subFloat]%
+{figure}{}[Short main caption of the objects]% main short lsi entry
{The main caption of a "fullpage" object, which follows on the left or
```

17 Subfloat page

```
right column. This can be an even or odd page. And some more text which has no
real meaning because it fills only the space for a long caption.}% main caption
{sub:demo0}%
+{{\includegraphics[width=\linewidth]{images/CTAN}}}%
[Short caption B]%
{A Caption B of a “fullpage” sub object.}% subcaption
}%
+{{\includegraphics[width=\linewidth]{images/CTAN}}}%
{A Caption C of a “fullpage” object, which follows on the left or right column.}%
{sub:demo1}
+{{\includegraphics[width=\linewidth]{images/CTAN}}}%
{A Caption D of a “fullpage” object}%
{sub:demo2}
+{{\includegraphics[width=\linewidth]{images/CTAN}}}%
{A Caption E of a “fullpage” object}%
{sub:demo3}
```

The keyword `subFloat` defines the images or tabulars as subfloats. The package `subcaption` is loaded by default and should be activated with `\captionsetup[sub][singlelinecheck]`.

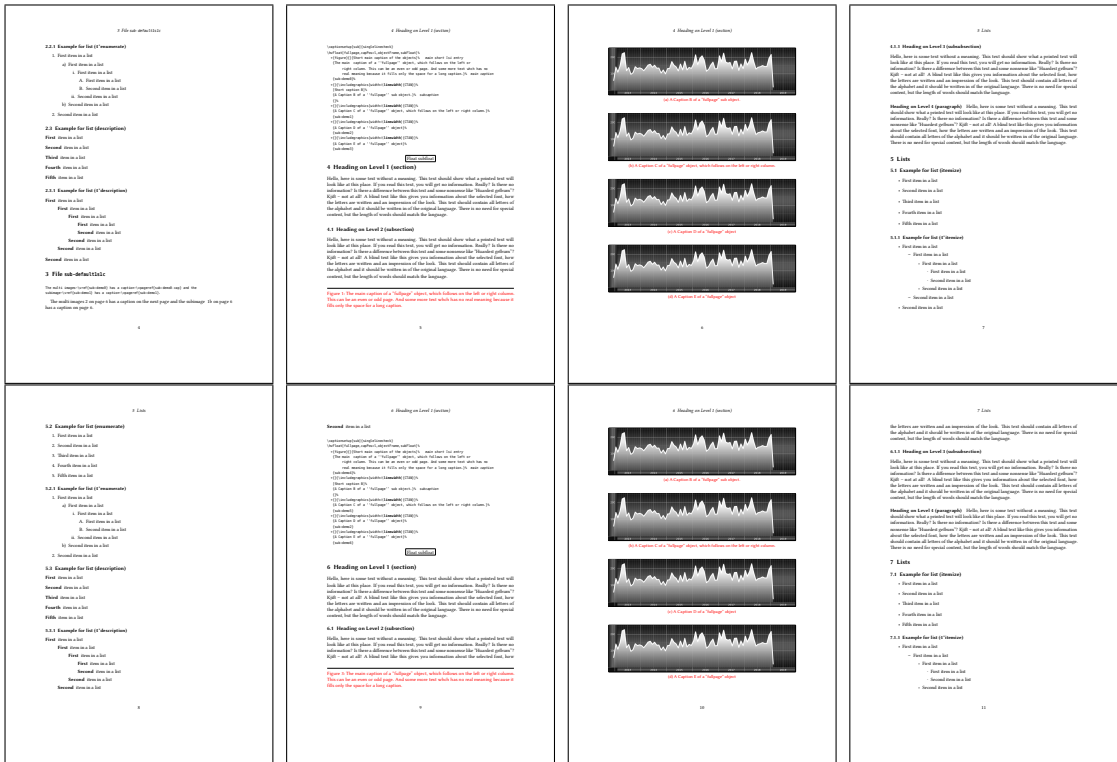


Figure 39: Output of sub-default1s1c (pages 4–11)

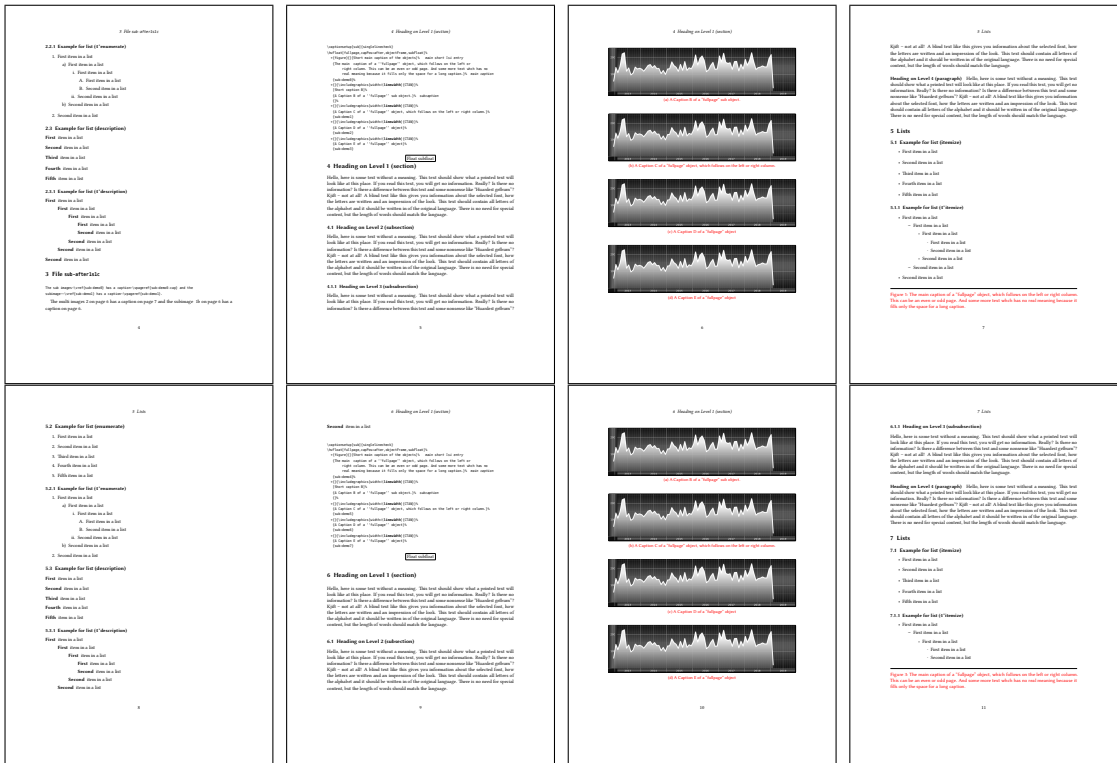


Figure 40: Output of sub-after1s1c (pages 4–11)

18 Full page objects in twocolumn mode

The filenames always have a “2c” for two columns in its names, e.g. left2s2c indicates capPos=before and the documentclass setting twoside and twocolumn. Depending to the used documentclass it can be a problem, if the caption should be placed on the first page of the whole document. In such a case use one of the other setting. Table 8 on page 31 shows the valid optional arguments for a full page floating object.

18.1 Default setting

For the twocolumn mode the caption can be in the left (first) or right (second) column. With the default setting (without using the keyword capPos) it is equivalent to the setting capPos=before, the caption is always placed *before* (left of) the object. This can be the first or the second column and both can be on different pages. With capPos=before (uppercase L) it is possible to get the caption and the object in the twocolumn mode always on one page. This is then the left (first) column for the caption (see figure 41).

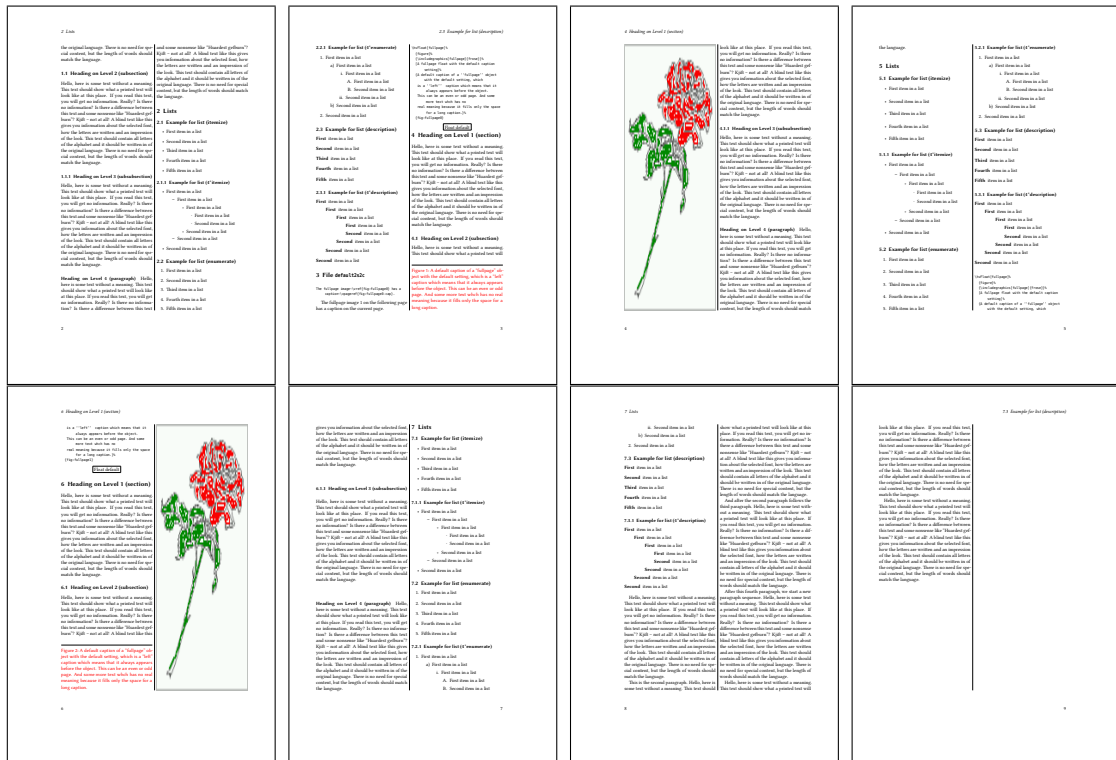


Figure 41: Output of default2s2c (pages 2–9)

```
\hvFloat[fullpage]{figure}%
{\includegraphics[width=\columnwidth,height=0.9\textheight]{images/frose}}%
[A float which needs the complete column width and height.]%
```

{A Caption of a “fullpage” object, which follows on the next column.
This is always the right column on an even or odd page. And some more
text which has no real meaning because it fills only the space for a long
caption.}%
{fig:fullpage0-2}

The example 41 on the preceding page shows that the caption and the object can be on different pages. If you do not like this behaviour, then use the setting `capPos=left`, which puts the caption before the object, but always on the *same page* (see Figure 42).

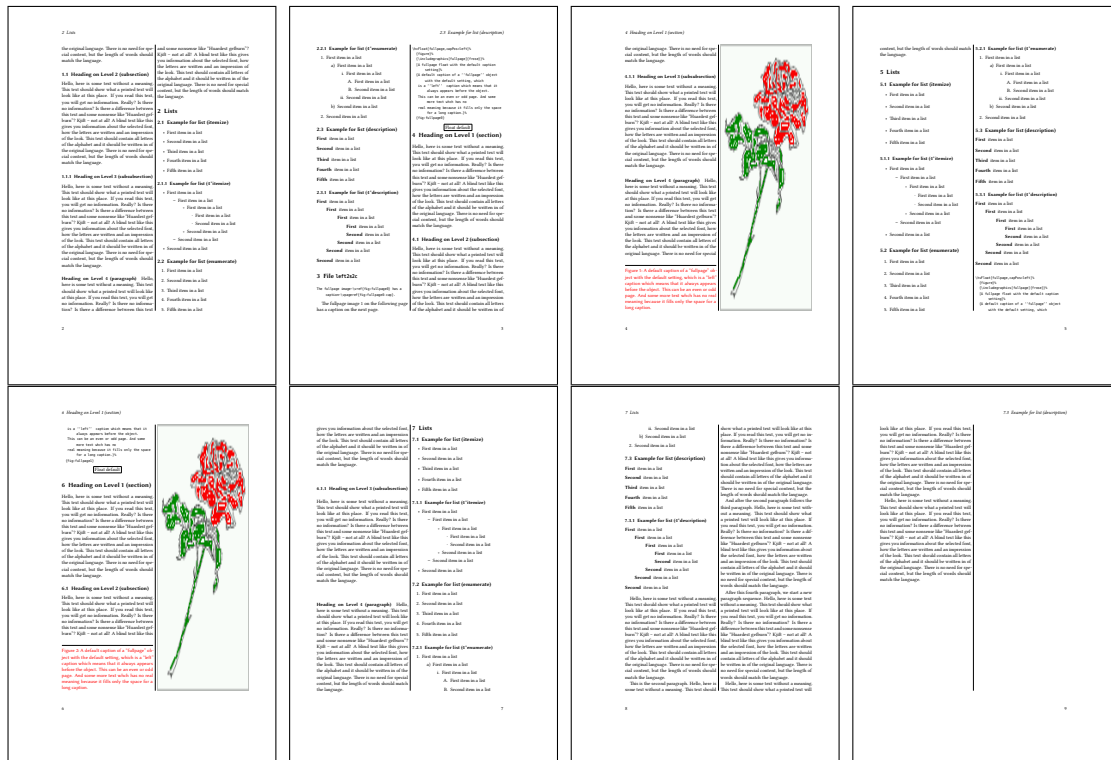


Figure 42: Output of left2s2c (pages 2–9)

18.1.1 Using `capPos=after`

The caption will be printed always right of the object which is the same as *after* the full page object. With `capPos=after` it is possible to get the caption in the twocolumn mode always in the right (second) column (see figure 44 on page 45)

```
\hvFloat[fullpage, capPos=after]{figure}%
{\includegraphics[fullpage]{images/rose}}%
[A float which needs the complete column width and height.]%
{A Caption of a “fullpage” object, which is on the left column.
This is always the right column on an even or odd page. And some more
```

18 Full page objects in twocolumn mode

text which has no real meaning because it fills only the space for a long caption.%
{fig:fullpage1-2}

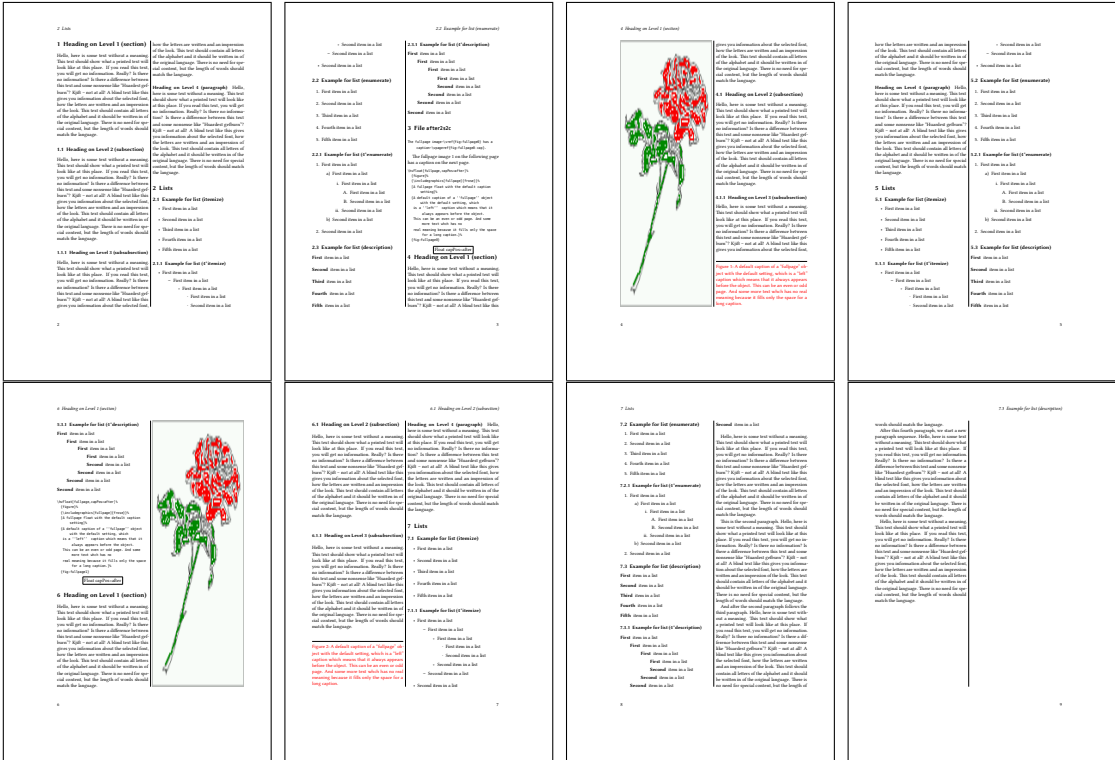


Figure 43: Output of after2s2c (pages 2–9)

The caption and the object can be on different pages (Figure 43). If you do not like this behaviour, then use the setting capPos=right instead of capPos=after . Figure right2s2c shows that caption and object in this case are always on the same page.

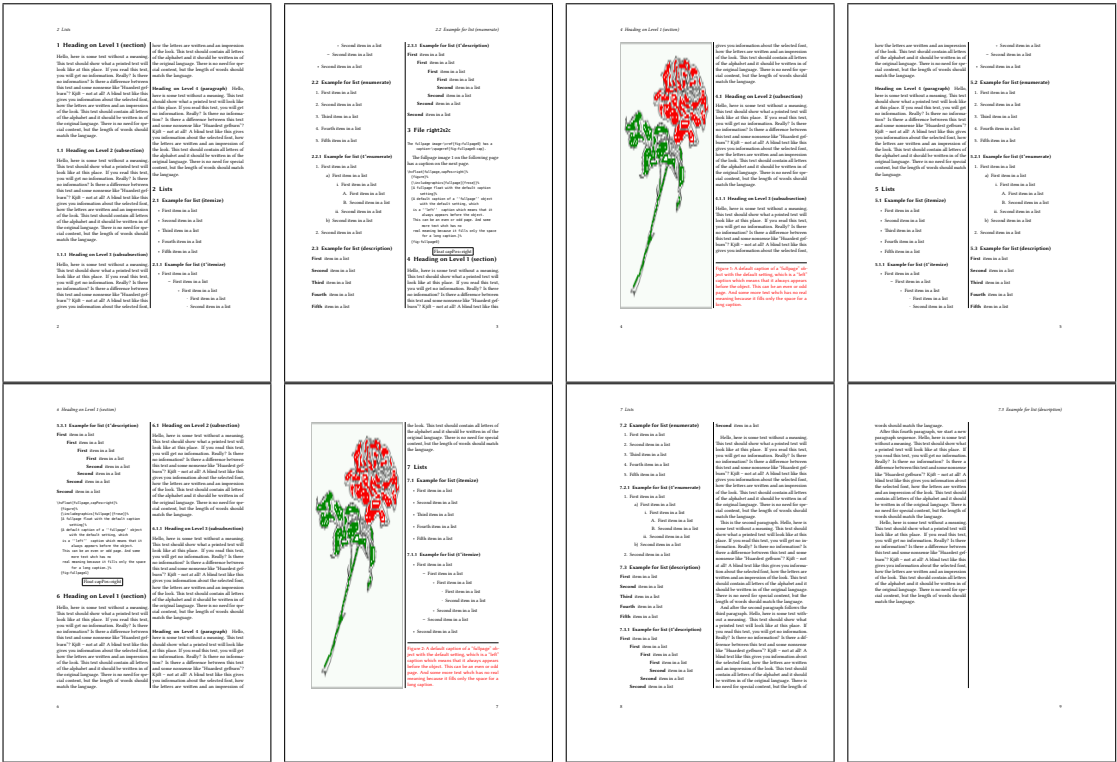


Figure 44: Output of right2s2c (pages 2–9)

18 Full page objects in twocolumn mode

18.1.2 Using capPos=evenPage — caption on an even page

There can be a problem if there is not enough space on the bottom of the even page. Then the caption will be on the next page which is an odd one. In such a case use a manually `\clearpage` or wait for an update of `hvfloat`.

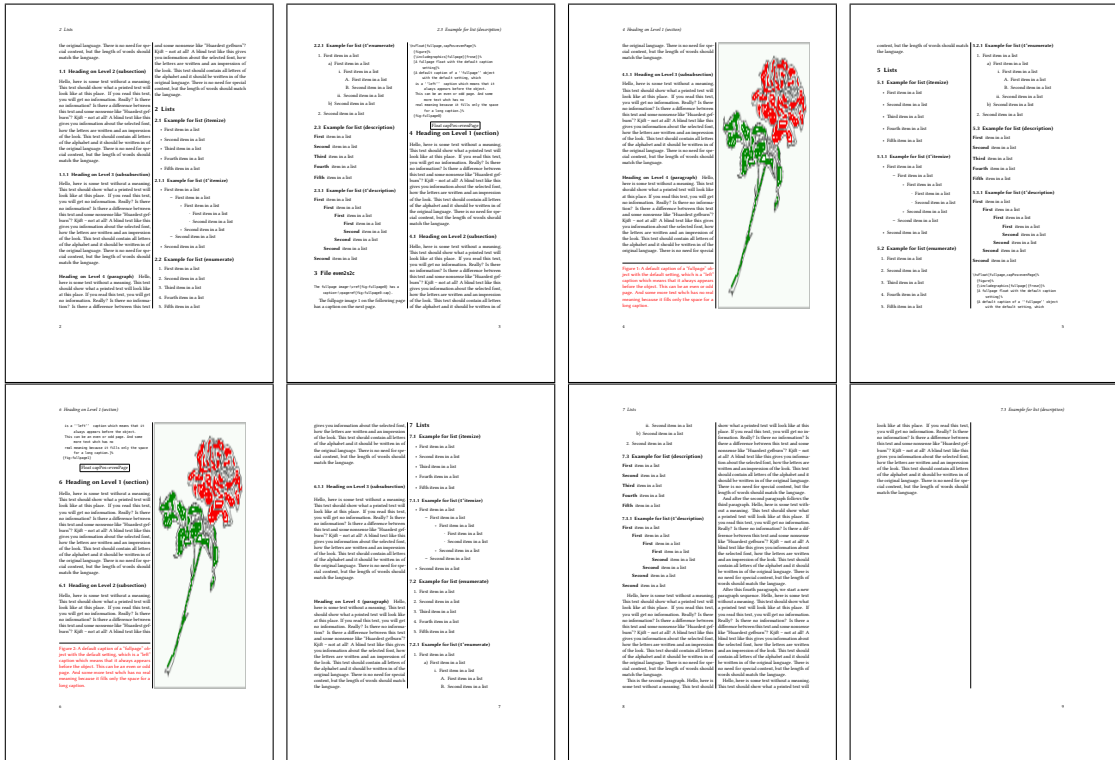


Figure 45: Output of even2s2c (pages 2-9)

18.1.3 Using capPos=oddPage — caption on an odd page

There can be a problem if there is not enough space on the bottom of the even page. Then the caption will be on the next page which is an odd one. In such a case use a manually `\clearpage` or wait for an update of `hvfloater`.

[illegible]

Figure 46: Output of odd2s2c (pages 2–9)

18 Full page objects in twocolumn mode

18.1.4 Using capPos=inner — caption in the inner column

The caption will be printed in the right column for an even page and in the left column for an odd page.

```
\hvFloat[fullpage,capPos=inner]{figure}{\includegraphics[fullpage]{images/rose}}%  
[A float which needs the complete column width and height.]%  
{A Caption of a “fullpage” object, which follows on the left or right column.  
This can be an even or odd page. And some more text which has no  
real meaning because it fills only the space for a long caption.}{fig:fullpage3-2}
```

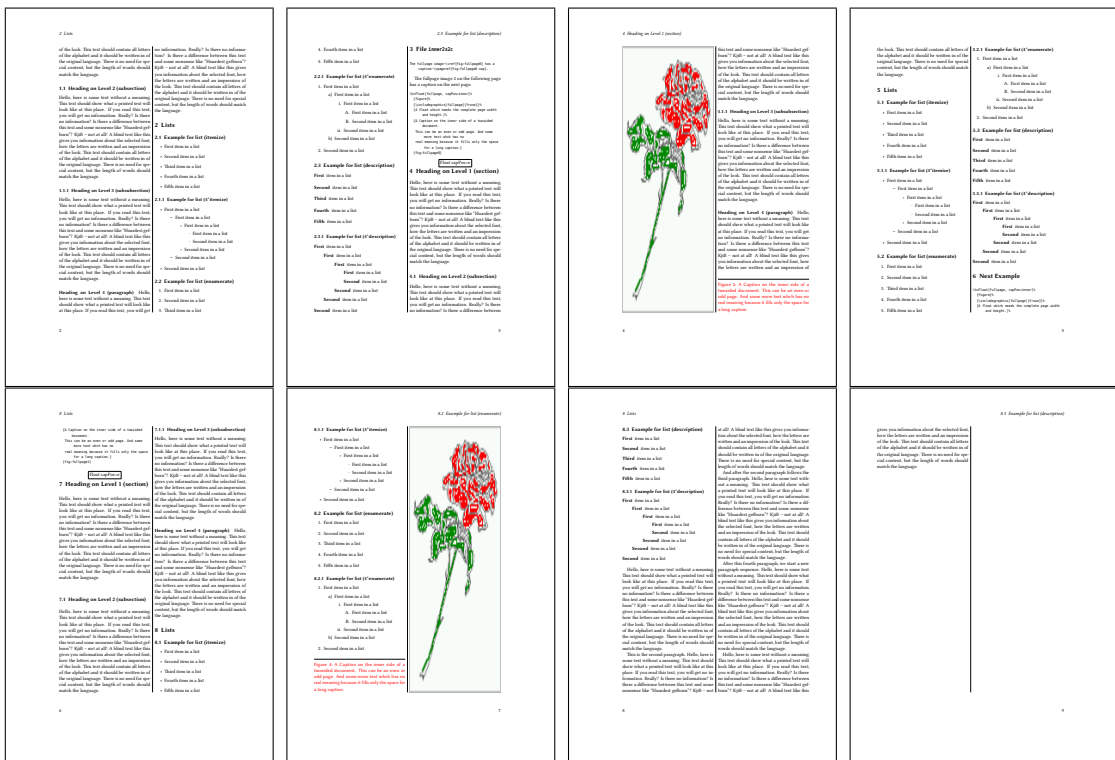


Figure 47: Output of inner2s2c (pages 2–9)

18.1.5 Using capPos=outer — caption on the outer column

The caption will be printed on the left column an odd page, the object can appear before or after this caption.

```
\hvFloat[fullpage, capPos=outer]{figure}%
{\includegraphics[fullpage]{images/rose}}%
[A float which needs the complete page width and height with \texttt{capPos=outer}.]%
{A Caption of a "fullpage" object, which has the caption position in the
outer page. This can be an even or odd page. And some more text which has no
real meaning because it fills only the space for a long caption.}{fig:fullpage2-2a}
```

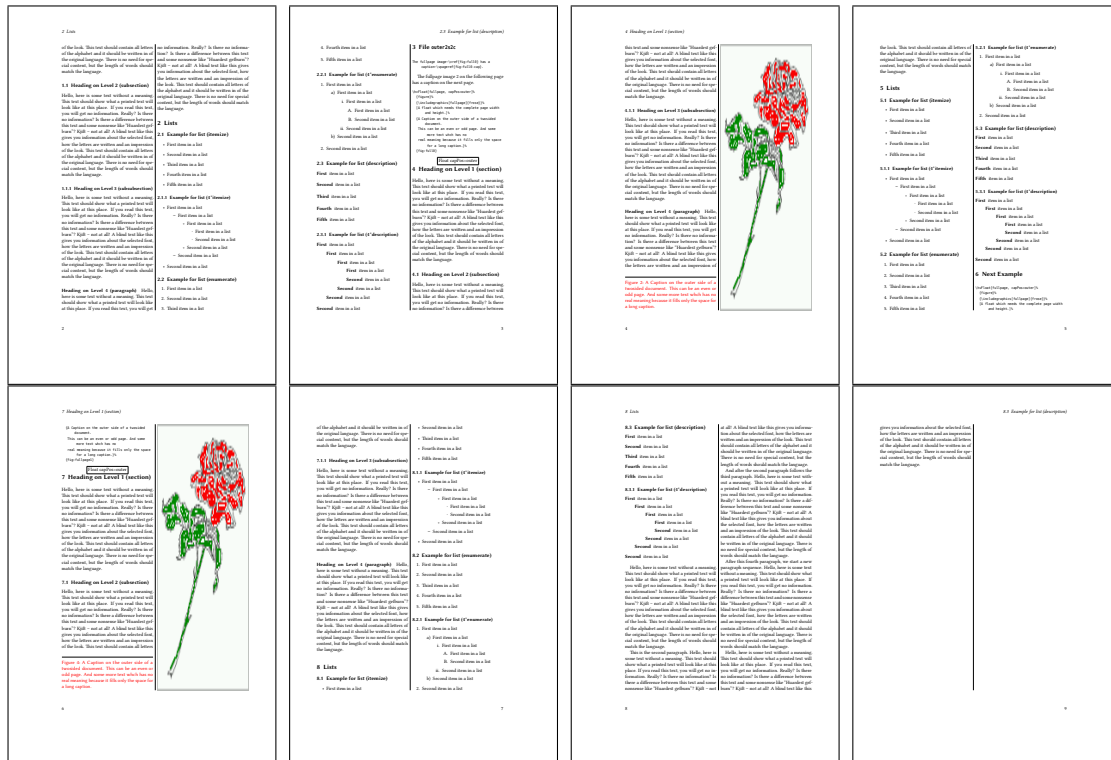


Figure 48: Output of outer2s2c (pages 2–9)

18 Full page objects in twocolumn mode

18.2 Using full page in twocolumn mode

With the star version of \hvfloat The object is placed over both columns, the whole page. In such a case the only useful caption position is capPos=inner for inner.

```
\hvfloat*[fullpage, capPos=inner]{figure}%
{\includegraphics[FullPage]{images/rose}}%
[A float which needs the complete page width and height with \texttt{capPos=outer}.]%
{A caption of a "fullpage" object in twocolumn mode: It uses the star version
of \textbackslash hvfloat. The object goes over both columns.}{fig:two}
```

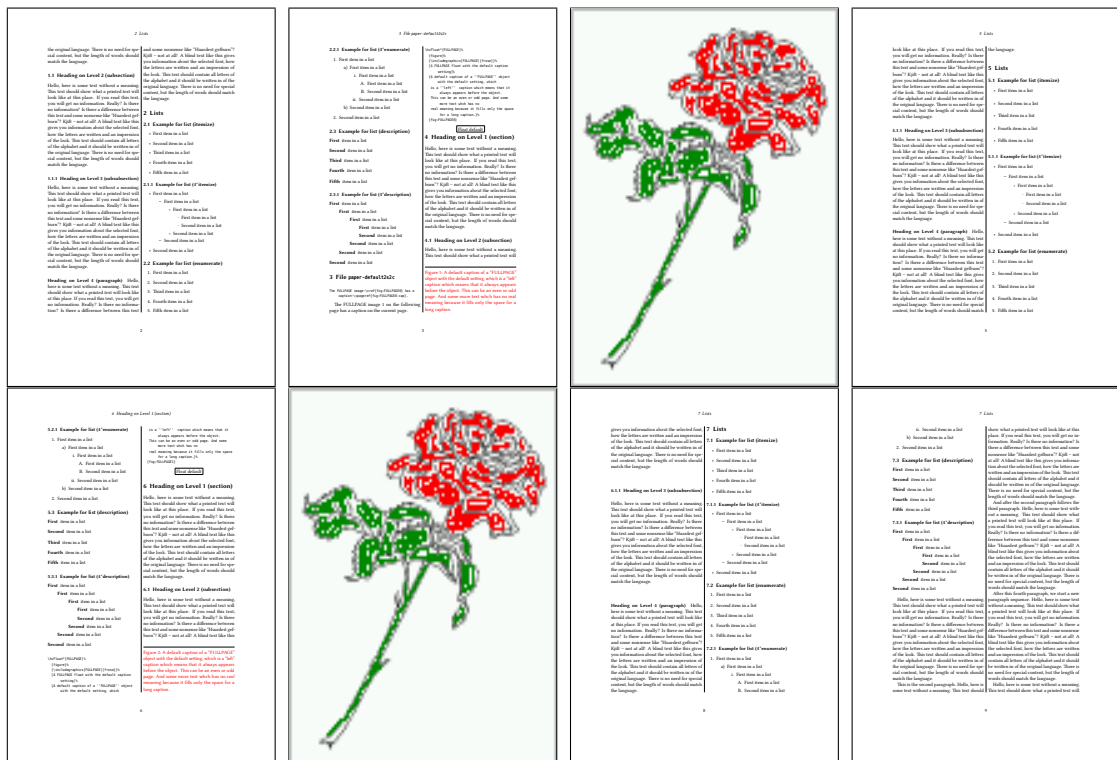


Figure 49: Output of paper-default2s2c (pages 2–9)

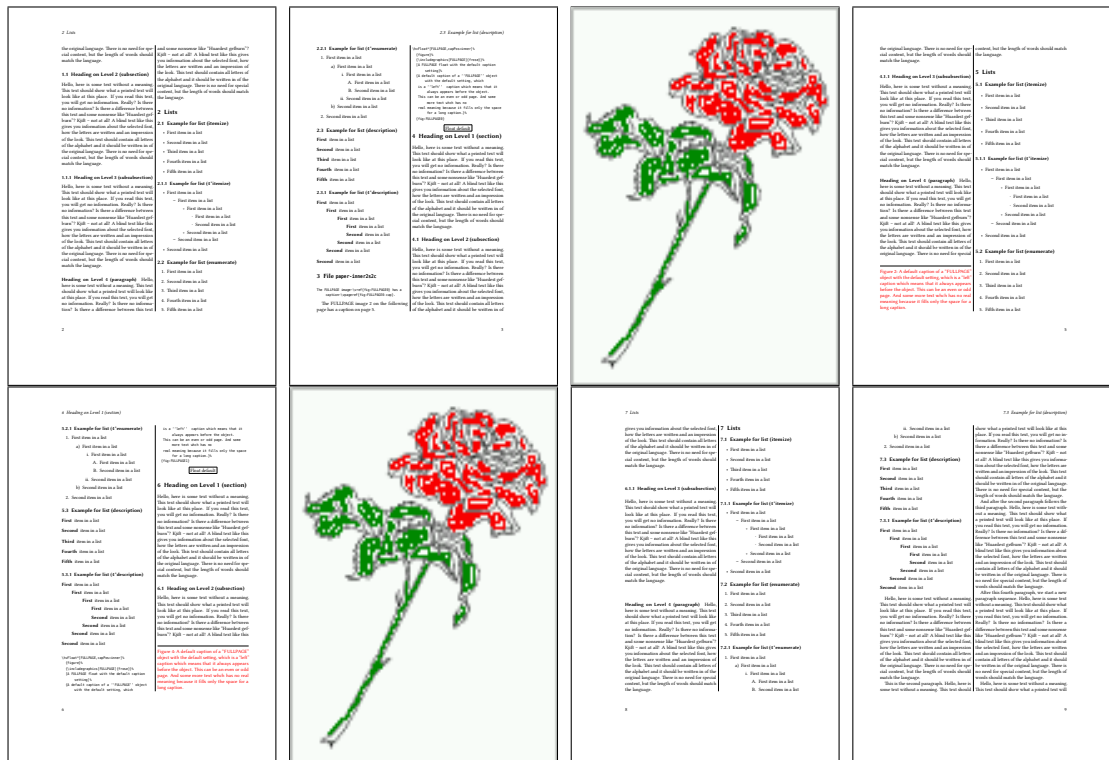


Figure 50: Output of paper-inner2s2c (pages 2–9)

18.3 Multifloats

Multifloats is the name for more than one image and/or tabular in *one* floating environment. Every image and/or tabular has its own caption, which is different to a subcaption. The + symbol defines an additional Object which will be part of the same floating environment. It's up too the user to be sure that one page or one column can hold all defined objects. Every object gets its own caption which is the reason why figures and tabulars and ... can be mixed:

```
\captionsetup{singlelinecheck=false}
\hvFloat[fullpage,multiFloat,capPos=inner]%
+{figure}{\includegraphics[height=0.4\textheight]{images/rose}}%% no 1
[Short caption A]%
{A Caption A of a "fullpage" object, which follows on the left or
right column. This can be an even or odd page. And some more text which has no
real meaning because it fills only the space for a long caption.}%
{multi:demo0}%
+{table}{\begin{tabular}{lr}\hline
Linksbündig & Rechtsbündig\\
L & R \\
left & right \\
\multicolumn{2}{c}{Multicolumn}\hline
\end{tabular}} % no 2
```

19 Subfloat page

```
\end{tabular}}%
[Short Caption B]%
{A Caption B of a "fullpage" object, which follows on the left or
right column. This can be an even or odd page.}%
}%
+{figure}{\includegraphics[height=0.4\textheight]{images/rose}}%% no 3
{A Caption C of a "fullpage" object, which follows on the left or
right column.}%
{\multi{demol}}
```

The page with the objects has no additional informations it holds only the figures and/or tabulars. If you want it like subfigures or subtabulars then go to section [17 on page 39](#). The setting `\captionsetup{singlelinecheck=false}` is needed if you want the captions always left aligned.

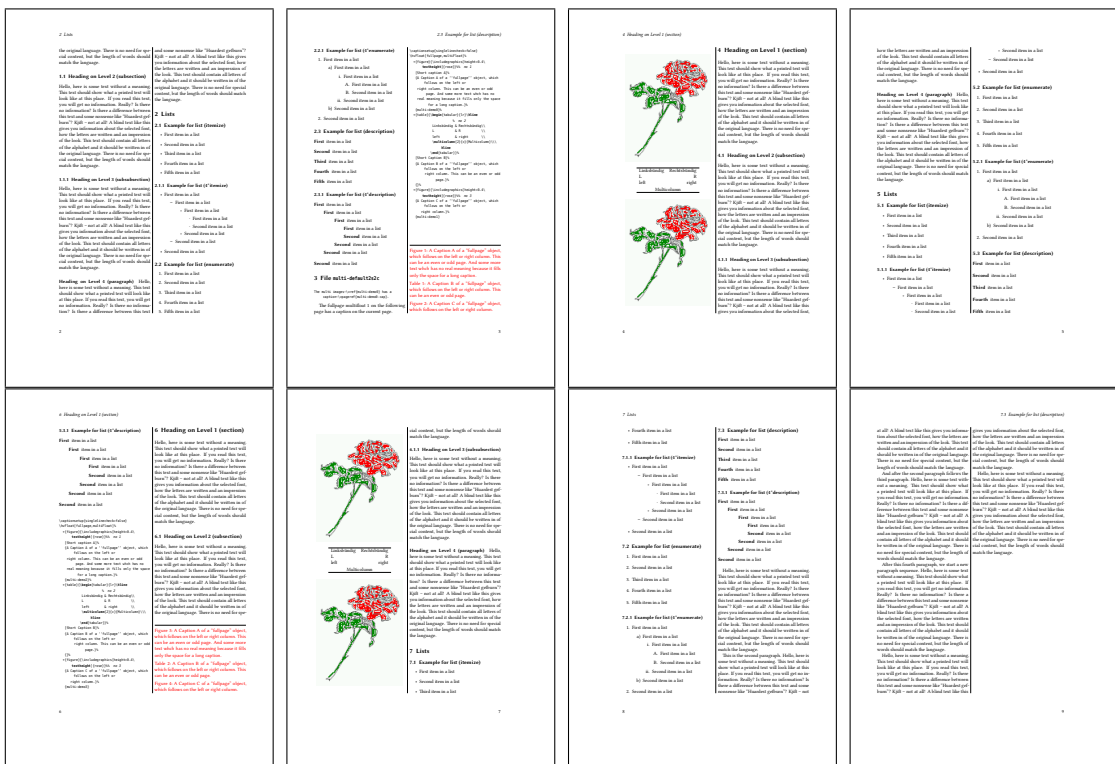


Figure 51: Output of multi-default2s2c (pages 2-9)

19 Subfloat page

A subfloat page can have only one type of floats which will have one main caption and individual subcaptions. Some arguments are ignored for a subfloat, one can leave them empty. The first line defines only the type and the main caption, the object entry is ignored! All additional lines will have the same float type, the reason why the float type entry is ignored.

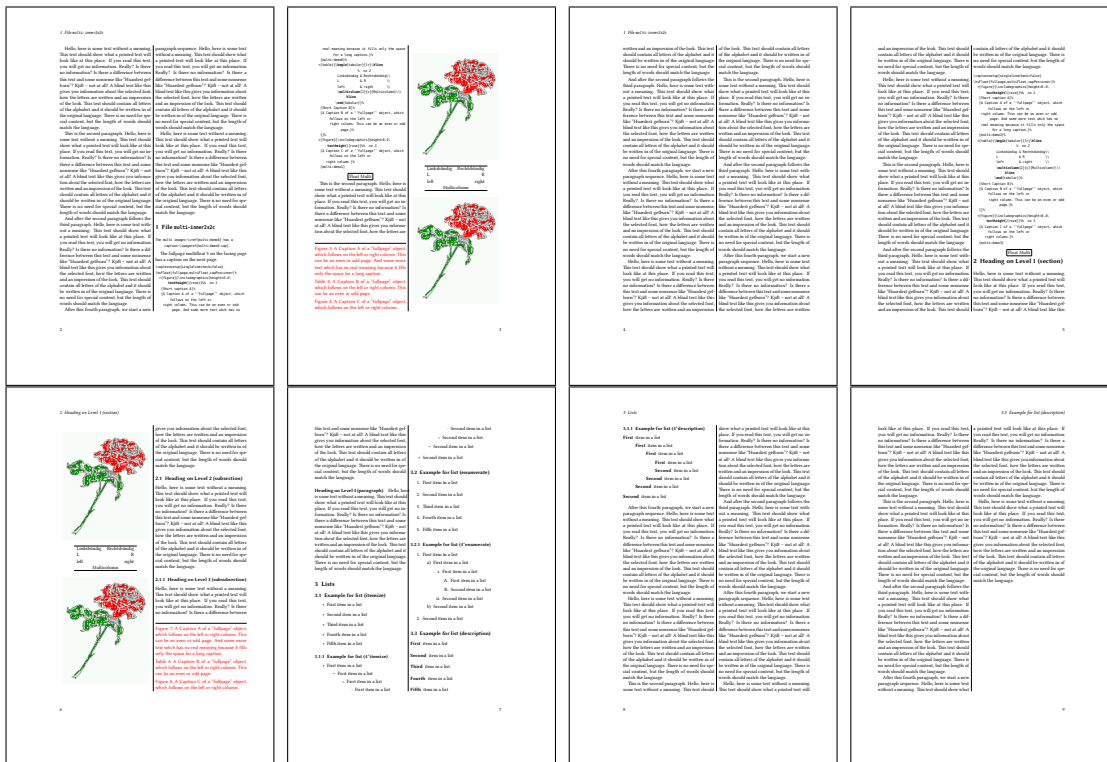


Figure 52: Output of multi-inner2s2c (pages 2-9)

```
\captionsetup[sub]{singlelinecheck}
\hvFloat[fullpage,capPos=before,objectFrame,subFloat]%
+{{figure}}{[Short main caption of the objects]}% main short lsi entry
{The main caption of a "fullpage" object, which follows on the left or
right column. This can be an even or odd page. And some more text which has no
real meaning because it fills only the space for a long caption.}% main caption
{sub:demo00}%
+{{\includegraphics[height=0.28\textheight]{images/rose}}}%
[Short caption B]%
{A Caption B of a "fullpage" sub object.}% subcaption
}%
+{{\includegraphics[height=0.28\textheight]{images/rose}}}%
{A Caption C of a "fullpage" object, which follows on the left or right column.}%
{sub:demo10}
+{{\includegraphics[height=0.28\textheight]{images/rose}}}%
{A Caption D of a "fullpage" object}%
{sub:demo20}
```

The keyword subFloat defines the images or tabulars as subfloats. The package subcaption is loaded by default. For the subcaptions the singlelinecheck should be true (see listing).

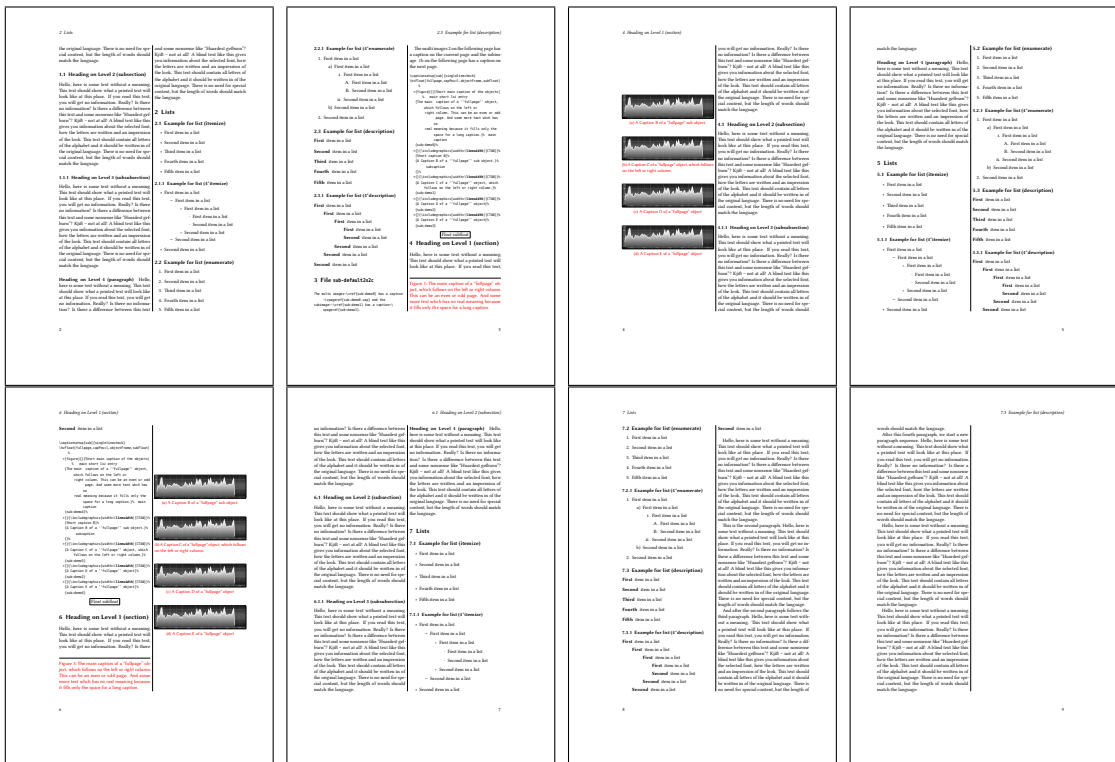


Figure 53: Output of sub-default2s2c (pages 2–9)

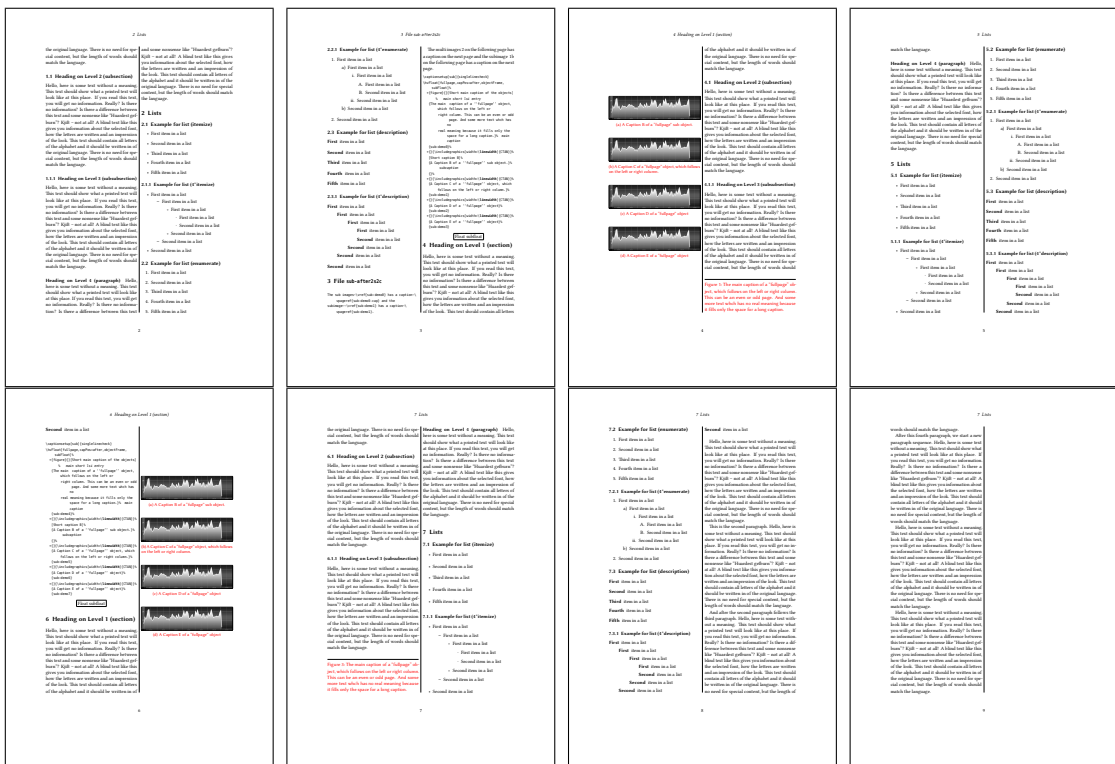


Figure 54: Output of sub-after2s2c (pages 2–9)

20 References to the page

With the command `\pageref` one can have a reference to the page number of a caption. For the `fullpage` option this can be the wrong page if someone wants a reference to the page where the object is set. Let's assume that we use something like

```
\setDefaults
\hvfFloat[fullpage,capPos=evenPage]{figure}%
  {\IncludeGraphics{images/frose}}%
  [A float which needs the complete paper width and height.]%
  [A Caption of a ‘‘fullpage’’ object, which follows on the next page.
   This can be an even or odd page. The object uses the complete paper dimensions]%
  {demo:fullpage}
```

The label `demo:fullpage` is used for the *image* and not for the caption! Internally another label called `demo:fullpage-cap` is set on the caption page which can be before or behind the object (depending to the optional argument of `capPos`). For example:

The caption of figure-`\ref{demo:fullpage-cap}` is on page-`\pageref{demo:fullpage-cap}`, but the image itself is on page-`\pageref{demo:fullpage}`.

The caption of figure 56 is on page 56, but the image itself is on page 57. With package `varioref` it is:

With the package `\pack{varioref}` ([\url{https://ctan.org/pkg/varioref}](https://ctan.org/pkg/varioref)) one can get something like: see figure-`\vref{demo:fullpage}`, which uses a correct page number of the floating object and not the caption page number which is-`\vpageref{demo:fullpage-cap}`. The figure-`\ref{demo:fullpage}` is on page-`\pageref{demo:fullpage}` and the caption on page-`\pageref{demo:fullpage-cap}`

With the package `varioref` (<https://ctan.org/pkg/varioref>) one can get something like: see figure 56 on page 57, which uses a correct page number of the floating object and not the caption page number which is on the next page. The figure 56 is on page 57 and the caption on page 56

21 Defining a style

With `\defhvstyle` one can define a special style to get rid of the individual setting:

`\defhvstyle{name}{setting}`

For example:

```
\defhvstyle{RightCaption}{floatPos=htb, capWidth=0.5, capPos=after, capVPos=bottom, objectPos=center}
\hvfFloat[style=RightCaption]{figure}{\includegraphics{images/rose}}%
  {Caption vertically centered right beside the float with a caption width of
   \texttt{0.5\textbackslash columnwidth}.}{fig:style}
```




Figure 55: Caption at bottom right beside the float with a caption width of 0.5\columnwidth .

22 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 `hvfloa-fps`. It allows optional package options to set the global placement:

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

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Figure 56: A Caption of a “fullpage” object, which follows on the next page. This can be an even or odd page. The object uses the complete paper dimensions



Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

This is the second paragraph. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

And after the second paragraph follows the third paragraph. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

After this fourth paragraph, we start a new paragraph sequence. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

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23 The Package Source

```
1 %% $Id: hvfloat.sty 1033 2019-04-04 07:24:57Z herbert $
2 %%
3 \NeedsTeXFormat{LaTeX2e}
4 \ProvidesPackage{hvfloat}[2019/02/03 rotating of floating objects]
5 %%
6 %% IMPORTANT NOTICE:
7 %%
8 %% This is file 'hvfloat.sty',
9 %%
10 %% Herbert Voss <hvoss@tug.org>
11 %%
12 %% This program can be redistributed and/or modified under the terms
13 %% of the LaTeX Project Public License Distributed from CTAN archives
14 %% in directory macros/latex/base/lppl.txt.
15 %%
16 %% DESCRIPTION:
17 %% 'hvfloat' offers rotating of captions and objects for floats
18 %%
19 \def\fileversion{2.12}
20 \def\filedate{2019/04/04}
21 \message{'hvfloat' v\fileversion, \filedate\space (Herbert Voss)}
22 \let\hvFileVersion\fileversion
23 %
24 \newif\ifhv@fbox \hv@fboxfalse
25 \newif\ifhv@hyperref \hv@hyperreffalse
26 \DeclareOption{fbox}{\hv@fboxtrue\setlength{\fboxsep}{1pt}}
27 \DeclareOption{hyperref}{\hv@hyperreftrue}
28
29 \ProcessOptions
30
31 \PassOptionsToPackage{hycap}{caption}
32 \RequirePackage{caption}
33 \PassOptionsToPackage{hycap}{subcaption}
34 \RequirePackage{subcaption}
35 \RequirePackage{atbegshi}
36
37 \RequirePackage{expl3,multido}
38 \RequirePackage{graphicx}
39
40 \RequirePackage{xkeyval}
41 \RequirePackage{ifoddpage}
42 \RequirePackage{afterpage}
43 %\RequirePackage{zref-abspos}
44
45 \ifhv@hyperref
46   \RequirePackage{hyperref}
47   % \RequirePackage{hycap}
48 \fi
49 %
50 %\unitlength=1cm
51 \providecommand*{\LenToUnit[1]{\strip@pt\dimexpr#1*\p@/\unitlength}
```

23 The Package Source

```

52
53 \newlength\hvObjectWidth
54 \newlength\hvCapWidth
55 \newlength\hvWideWidth
56 \newlength\hvMultiFloatSkip
57 \newlength\hvMaxCapWidth
58 %\newlength\hv@BottomSpace
59 %\AtBeginDocument{%
60 %   \setlength\hv@BottomSpace{\dimexpr\paperheight-1in-\topmargin-\headheight-\headsep-\textheight}}
61
62 \newsavebox\hvObjectBox
63 \newsavebox\hvCaptionBox
64 \newsavebox\hvOBox
65 \newsavebox\@tempbox
66 \newsavebox\hv@caption@box
67
68 \newif\ifhv@capbeside \hv@capbesidefalse
69
70 \def\hv@Top{top}
71 \def\hv@Bottom{bottom}
72 \def\hv@After{after}
73 \def\hv@Before{before}
74 \def\hv@Right{right}
75 \def\hv@Left{left}
76 \def\hv@Center{center}
77 \def\hv@Outer{outer}
78 \def\hv@Inner{inner}
79 \def\hv@Even{evenPage}
80 \def\hv@Odd{oddPage}
81 \def\hv@Natural{n}
82 \def\hv@Width{w}
83 \def\hv@Height{h}
84 \def\hv@Zero{0}
85 %
86 \def\hv@figure{figure}
87 %
88 \define@key{hvSet}{floatPos}{htbp}{%      LaTeX's position parameters htpb
89   \def\hvSet@floatPos{#1}%
90 }
91 \define@key{hvSet}{rotAngle}[0]{%      rotates caption AND image together
92   \def\hvSet@rotAngle{#1}%
93 }
94 \define@key{hvSet}{capWidth}[n]{%      (n)atural width|object (w)idth|object (h)eight|<scale of \columnwidth
95   >
96   \def\hvSet@capWidth{#1}%
97 }
98 \define@key{hvSet}{capAngle}[0]{%      -360...+360
99   \def\hvSet@capAngle{#1}%
100 }
101 \define@key{hvSet}{capPos}[bottom]{%      (l)eft|(b)ottom|(t)op|(r)ight|(i)nn(er)|(o)uter|(e)ven|(o)(d)d
102   \def\hvSet@capPos{#1}%      it is relativ to the object, (e),(d) only valid for fullpage float
103   \edef\@tempa{#1}%
104   \ifx\hv@Bottom\@tempa

```

```

104 \hv@capbesidefalse
105 \else
106 \ifx\hv@Top\@tempa
107 \hv@capbesidefalse
108 \else
109 \hv@capbesidetrue
110 \fi
111 \fi
112 }
113 \define@key{hvSet}{capVPos}[center]{% bottom|center|top
114 \def\hvSet@capVPos{#1}% it is relativ to the object
115 }
116 \define@key{hvSet}{objectPos}[center]{% (l)eft|(c)enter|(r)ight|(i)nner|(o)uter
117 \def\hvSet@objectPos{#1}% it is relativ to the document
118 }
119 \define@key{hvSet}{objectAngle}[0]{% -360..+360
120 \def\hvSet@objectAngle{#1}%
121 }
122 \define@key{hvSet}{floatCapSep}[5]{% a width with the unit pt
123 \def\hvSet@floatCapSep{#1}%
124 }
125 \define@key{hvSet}{multiFloatSkip}{\normalbaselineskip}{% a width with the unit pt
126 \setlength\hvMultiFloatSkip{#1}%
127 }
128 \define@boolkey{hvSet}[hv@]{use0Box}[true]{}% use of the hv0Box contents
129 \define@boolkey{hvSet}[hv@]{nonFloat}[true]{}% Do not use float environment
130 \define@boolkey{hvSet}[hv@]{onlyText}[true]{}% Write the caption only as text
131 \define@boolkey{hvSet}[hv@]{wide}[true]{}% Write the caption only as text
132 \define@boolkey{hvSet}[hv@]{fullpage}[true]{}% fullpage float with caption on other page
133 %\define@boolkey{hvSet}[hv@]{FullPage}[true]{}% fullpage float with caption on other page
134 \define@boolkey{hvSet}[hv@]{FULLPAGE}[true]{}% fullpage float with caption on other page
135 \define@boolkey{hvSet}[hv@]{subFloat}[true]{% typeset values as subfloats
136 \ifhv@subFloat\setkeys{hvSet}{multiFloat=false}\fi
137 }%
138 \define@boolkey{hvSet}[hv@]{multiFloat}[true]{% typeset values as continous floats
139 \ifhv@multiFloat\setkeys{hvSet}{subFloat=false}\fi
140 }%
141 \define@boolkey{hvSet}[hv@]{separatorLine}[true]{}% separator line for caption of a full page float
142 \define@boolkey{hvSet}[hv@]{objectFrame}[true]{}% a frame around the object with no separation
143 \define@key{hvSet}{style}{%
144 \@ifundefined{hv@#1}%
145 {\errmessage{Custom style '#1' undefined}}%
146 {\begingroup
147 \edef\x{\endgroup\noexpand\setkeys{hvSet}{\@nameuse{hv@#1}}\x}% use a defined style
148 }
149 \def\hv@set#1{\begingroup\edef\x{\endgroup\noexpand\setkeys{hvSet}{#1}}\x}
150 %
151 \def\defhvstyle#1#2{\@namedef{hv@#1}{#2}}
152 %
153 \newcommand{\setDefaults}{%
154 \hv@set{%
155 floatPos=htbp, rotAngle=0, capWidth=n, capAngle=0,
156 capPos=bottom, capVPos=center, objectPos=center, objectAngle=0,

```

23 The Package Source

```

157   floatCapSep=5, useOBox=false, nonFloat=false,
158   onlyText=false, wide=false, fullpage=false, FULLPAGE=false,
159   multiFloat=false, subFloat=false,
160   separatorLine, objectFrame=false, multiFloatSkip=\normalbaselineskip,
161 }%
162 }
163 \newcommand\reset@special@float{%
164   \hv@set{subFloat=false, fullpage=false, multiFloat=false, FULLPAGE=false}}
165
166 \def\hv@vskip{\vspace{\hvMultiFloatSkip}}
167
168 %
169 \newlength\hvAboveCaptionSkip
170 \newlength\hvBelowCaptionSkip
171 \newcount\hv@@capPos
172
173 \newlength\fbboxlinewidth
174 \AtBeginDocument{%
175   \setlength\fbboxlinewidth{\dimexpr\linewidth-2\fbboxrule-2\fbboxsep}%
176 }
177 \setlength\belowcaptionskip{\abovecaptionskip}% it is in latex.ltx = 0pt
178 \newcommand\saveCaptionSkip{%
179   \setlength{\hvAboveCaptionSkip}{\abovecaptionskip}
180   \setlength{\hvBelowCaptionSkip}{\belowcaptionskip}
181   \setlength{\abovecaptionskip}{0pt}
182   \setlength{\belowcaptionskip}{0pt}
183 }
184 \newcommand{\restoreCaptionSkip}{%
185   \setlength\abovecaptionskip{\hvAboveCaptionSkip}%
186   \setlength\belowcaptionskip{\hvBelowCaptionSkip}%
187 }
188 %
189 \newcommand\figcaption[2][{}]{\def\@captype{figure}%
190   \begingroup\ifx\relax#1\relax \caption{#2}\else\caption[#1]{#2}\fi\endgroup}
191 \newcommand\tabcaption[2][{}]{\def\@captype{table}%
192   \begingroup\ifx\relax#1\relax \caption{#2}\else\caption[#1]{#2}\fi\endgroup}
193 %
194 \newlength\hv@maxImageWidth
195 \AtBeginDocument{\hv@maxImageWidth=\columnwidth}
196
197 \define@key{Gin}{fullpage}[true]{%
198   \def\Gin@ewidth{\columnwidth}%
199   \def\Gin@eheight{\textheight}%
200   \Gin@boolkey{false}{iso}%
201 }
202 \define@key{Gin}{FullPage}[true]{%
203   \def\Gin@ewidth{\textwidth}%
204   \def\Gin@eheight{\textheight}%
205   \Gin@boolkey{false}{iso}%
206 }
207 \define@key{Gin}{FULLPAGE}[true]{%
208   \def\Gin@ewidth{\paperwidth}%
209   \def\Gin@eheight{\paperheight}%

```



```

210 \Gin@boolkey{false}{iso}%
211 }
212 \newcommand\IncludeGraphics[2][]{%
213 % \newpage
214 %\iffalse
215 \vspace*{\the\dimexpr-\lin-\voffset+\topskip-\headheight-0.5\baselineskip}%
216 \leavevmode\checkoddpages
217 \ifoddpages
218 \hspace*{\dimexpr-\oddsidemargin-\parindent-\lin}%
219 \else
220 \hspace*{\dimexpr-\evensidemargin-\parindent-\lin}%
221 \fi\noindent
222 \includegraphics[#1,width=\paperwidth,height=\paperheight,keepaspectratio=false]{#2}%
223 %\fi
224 % \includepdf[#1],width=\paperwidth,height=\paperheight,keepaspectratio=false]
225 % {#2}%
226 }
227
228 \newcommand\put@CaptionBox[1][0]{%
229 \ifcase#1
230 \ifhv@fbox
231 \fbox{\parbox{\wd\hvCaptionBox}{\usebox{\hvCaptionBox}}}%
232 \else
233 \parbox{\wd\hvCaptionBox}{\usebox{\hvCaptionBox}}%
234 \fi
235 \or
236 \ifhv@fbox
237 \fbox{\raisebox{-\height}{\usebox{\hvCaptionBox}}}%
238 \else
239 \raisebox{-\height}{\usebox{\hvCaptionBox}}%
240 \fi
241 \or
242 \ifhv@fbox\fbox{\usebox{\hvCaptionBox}}\else\usebox{\hvCaptionBox}\fi
243 \fi
244 }
245
246 \newcommand\put@ObjectBox[1][0]{%
247 \ifcase#1
248 \ifhv@fbox
249 \fbox{\parbox{\wd\hvObjectBox}{\usebox{\hvObjectBox}}}%
250 \else
251 \parbox{\wd\hvObjectBox}{\ifhv@objectFrame\frame{\usebox{\hvObjectBox}}\else\usebox{\hvObjectBox}\fi}%
252 \fi
253 \or
254 \ifhv@fbox
255 \fbox{\raisebox{-\height}{\usebox{\hvObjectBox}}}%
256 \else
257 \raisebox{-\height}{\ifhv@objectFrame\frame{\usebox{\hvObjectBox}}\else\usebox{\hvObjectBox}\fi}%
258 \fi
259 \or
260 \ifhv@fbox
261 \fbox{\usebox{\hvObjectBox}}%
262 \else

```

23 The Package Source

```

263     \ifhv@objectFrame\frame{\usebox{\hvObjectBox}}\else\usebox{\hvObjectBox}\fi%
264     \fi
265   \fi
266 }
267
268 \newif\ifhv@star
269 \newif\ifhv@substar
270 \setDefault
271
272 \def\hvFloat{\@ifnextchar*%      Main macro
273   {\hv@startrue\hv@maxImageWidth=\textwidth\hvFloat@i}%
274   {\hv@starfalse\hv@maxImageWidth=\columnwidth\hvFloat@i*}%
275 }
276
277 %\newcommand*{\hvFloat}[5][{}]{%
278 %  [#1]: keyvalues
279 %  #2: type figure | table | ...
280 %  #3: float contents
281 %  [#4]: short caption
282 %  #5: caption
283 %  #6: label
284 %
285 \def\hvFloat@i*{\@ifnextchar[{\do@hvFloat}{\do@hvFloat[]}}
286
287 \def\do@hvFloat[#1]{%
288   \begingroup
289   \setlength\hvWideWidth{\dimexpr\linewidth+\marginparwidth}%
290   \hv@maxImageWidth=\textwidth
291   \hv@capbesidefalse
292   \reset@special@float
293   \setcounter{hv@pfigure}{\value{figure}}%
294   \setcounter{hv@ptable}{\value{table}}%
295   \gdef\hv@save@setting{#1}%
296   \ifx\relax#1\relax\else\setkeys{hvSet}{#1}\fi
297   \gdef\hv@floatType{figure}%
298   \@ifnextchar+{\do@multiFloat}{\hvFloat@ii[#1]}%
299
300   \ExplSyntaxOn
301
302   \def\do@multiFloat+#1#2{%
303     \clist_set:Nn\l_clist_Type{{#1}}%
304     \clist_set:Nn\l_clist_Object{{#2}}%
305     \@ifnextchar[{\do@multiFloat@i{\do@multiFloat@i[]}}%
306   }
307   \def\do@multiFloat@i[#1]#2#3{%  lof-caption, caption, label
308     \ifx\relax#1\relax
309       \clist_set:Nn\l_clist_LofCaption{{}}%
310     \else
311       \clist_set:Nn\l_clist_LofCaption{{#1}}%
312     \fi
313     \clist_set:Nn\l_clist_Caption{{#2}}%
314     \ifx\relax#3\relax
315       \clist_set:Nn\l_clist_Label{{}}%

```

```

316 \else
317 \clist_set:Nn\l_clist_Label{{#3}}%
318 \fi
319 \@ifnextchar+{\do@multiFloat@ii}{}%
320 }
321 \def\do@multiFloat@ii+#1#2{%
322 \clist_put_right:Nn\l_clist_Type{{#1}}%
323 \clist_put_right:Nn\l_clist_Object{{#2}}%
324 \@ifnextchar[\do@multiFloat@iii{\do@multiFloat@iii[]}%
325 }
326
327 \def\do@multiFloat@iii[#1]#2#3{% lof-caption, caption, label
328 \ifx\relax#1\relax
329 \clist_put_right:Nn\l_clist_LofCaption{{}}%
330 \else
331 \clist_put_right:Nn\l_clist_LofCaption{{#1}}%
332 \fi
333 \clist_put_right:Nn\l_clist_Caption{{#2}}%
334 \ifx\relax#3\relax
335 \clist_put_right:Nn\l_clist_Label{{}}%
336 \else
337 \clist_put_right:Nn\l_clist_Label{{#3}}%
338 \fi
339 \@ifnextchar+{\do@multiFloat@ii%
340 {\def\hvSet@CapWidth{n}%
341 \do@@@hvFloat}%
342 }
343 \ExplSyntaxOff
344
345
346 \newcounter{hv@pfigure}
347 \newcounter{hv@ptable}
348 \newcounter{subhv@pfigure}
349 \newcounter{subhv@ptable}
350
351 \def\drawSepLine{%
352 \par\noindent
353 \if@twocolumn\rule{\columnwidth}{0.4pt}\else\rule{\linewidth}{0.4pt}\fi
354 \vspace{0pt}%
355 }
356
357 \newcount\hv@canta
358 \newcount\hv@cntb
359
360
361 \def\hvFloat@ii[#1]#2#3{%
362 \hv@maxImageWidth=\textwidth
363 \hv@capbesidefalse
364 \ifx\relax#1\relax\else\setkeys{hvSet}{{#1}}\fi
365 \gdef\hv@floatType{#2}%
366 \ifx\relax#2\relax \setkeys{hvSet}{nonFloat=true}\fi
367 \gdef\hv@floatObject{#3}%
368 \@ifnextchar[{\do@@hvFloat}{\do@@hvFloat[]}%

```

23 The Package Source

```

369 }
370 \def\do@@hvFloat[#1]#2#3{%
371   \gdef\hv@shortCap{#1}%
372   \gdef\hv@longCap{#2}%
373   \gdef\hv@label{#3}%
374   \ifhv@fullpage
375     \def\hvSet@CapWidth{n}% relative value
376     \do@@@hvFloat% fullpage with caption on other page
377   \else
378     \ifhv@FULLPAGE
379       \def\hvSet@CapWidth{n}% relative value
380       \do@@@hvFloat% fullpage with caption on other page
381     \else
382       \do@@hvFloat
383     \fi
384   \fi
385 }
386 %
387 \def\do@@hvFloat{% no special float page
388   \def\@tempa{90}%
389   \ifx\hvSet@rotAngle\@tempa
390     \setlength\hvMaxCapWidth{\textheight}%
391   \else
392     \setlength\hvMaxCapWidth{\hvWideWidth}%
393   \fi
394   %
395   % First we save the object in \hvObjectBox
396   %
397   \ifx\hvSet@objectAngle\hv@Zero % rotate the object?
398     \savebox{\hvObjectBox}{\ifhv@use0Box\usebox{\hv0Box}\else\hv@floatObject\fi}%
399   \else
400     \savebox{\hvObjectBox}{%
401       \rotatebox{\hvSet@objectAngle}{%
402         \ifhv@use0Box\usebox{\hv0Box}\else\hv@floatObject\fi
403       }%
404     }%
405   \fi
406   \setlength\hvObjectWidth{\wd\hvObjectBox}%
407   %
408   % Now we save the caption with its defined \hvCapWidth
409   %
410   \ifx\hvSet@capWidth\hv@Width% captionwidth=objectwidth
411     \setlength\hvCapWidth{\hvObjectWidth}%
412   \else
413     \ifx\hvSet@capWidth\hv@Height% captionwidth=objectheight
414       \setlength\hvCapWidth{\ht\hvObjectBox}%
415     \else
416       \ifx\hvSet@capWidth\hv@Natural% captionwidth=\linewidth-\objectwidth-separation
417         \ifhv@capbeside
418           \ifhv@wide
419             \setlength\hvCapWidth{\the\dimexpr\hvWideWidth-\hvObjectWidth-\hvSet@floatCapSep pt\relax}%
420           \else
421             \setlength\hvCapWidth{\the\dimexpr\columnwidth-\hvObjectWidth-\hvSet@floatCapSep pt\relax}%

```

```

422     \fi
423   \else
424     \setlength\hvCapWidth{\columnwidth}%
425   \fi
426 \else
427   \ifhv@capbeside
428     \ifhv@wide
429       \setlength\hvCapWidth{\hvSet@capWidth\hvWideWidth}%
430       \setlength\@tempdima{\the\dimexpr\hvWideWidth-\hvObjectWidth-\hvSet@floatCapSep pt\relax}%
431     \else
432       \setlength\hvCapWidth{\hvSet@capWidth\columnwidth}%
433       \setlength\@tempdima{\the\dimexpr\columnwidth-\hvObjectWidth-\hvSet@floatCapSep pt\relax}%
434     \fi
435     \ifdim\hvCapWidth>\@tempdima
436       \setlength\hvCapWidth{\@tempdima}%
437     \fi
438   \else
439     \ifhv@wide
440       \setlength\hvCapWidth{\hvSet@capWidth\hvWideWidth}%
441     \else
442       \setlength\hvCapWidth{\hvSet@capWidth\columnwidth}%
443     \fi
444   \fi
445 \fi
446 \fi
447 \fi
448 \saveCaptionSkip      % we put this space ourselves
449 \ifx\hvSet@capAngle\hv@Zero      % need rotation?
450   \sbox\hvCaptionBox{% NO rotation
451     \begin{minipage}[b]{\hvCapWidth}% minipage, to get hyphenation
452       \ifhv@nonFloat
453       \ifhv@onlyText\hv@longCap
454     \else
455       \ifx\hv@floatType\hv@figure
456         \ifx\relax\hv@shortCap\relax \figcaption{\hv@longCap}\else\figcaption[\hv@shortCap]{\hv@longCap}\fi
457       \else
458         \ifx\relax\hv@shortCap\relax \tabcaption{\hv@longCap}\else\tabcaption[\hv@shortCap]{\hv@longCap}\fi
459       \fi
460     \fi
461   \else
462     \let\@captype\hv@floatType
463     \expandafter\ifx\expandafter\relax\hv@shortCap\relax \caption{\hv@longCap}\else\caption[\hv@shortCap]{\hv@longCap}\fi
464   \fi
465   \expandafter\label\expandafter{\hv@label}%
466   \end{minipage}%
467 }%
468 \else
469   \sbox\hvCaptionBox{% Rotation
470     \rotatebox{\hvSet@capAngle}{%
471       \begin{minipage}[b]{\hvCapWidth}% minipage, to get hyphenation
472       \ifhv@nonFloat
473       \ifhv@onlyText\hv@longCap

```

23 The Package Source

```

474 \else
475 \ifx\hv@floatType\hv@figure
476 \ifx\relax\hv@shortCap\relax \figcaption{\hv@longCap}\else\figcaption[\hv@shortCap]{\hv@longCap}\fi
477 \else
478 \ifx\relax\hv@shortCap\relax \tabcaption{\hv@longCap}\else\tabcaption[\hv@shortCap]{\hv@longCap}\fi
479 \fi
480 \fi
481 \else
482 \let\@captype\hv@floatType
483 \expandafter\ifx\expandafter\relax\hv@shortCap\relax \caption{\hv@longCap}\else\caption[\hv@shortCap]{\hv@longCap}\fi
484 \fi
485 \label{\hv@label}%
486 \end{minipage}%
487 }% rotatebox
488 }% \sbox
489 \fi
490 %
491 % now we have the object and the caption with the right
492 % rotated angles saved in different boxes
493 %%
494 \restoreCaptionSkip% save old values
495 \def\fps@figure{\hvSet@floatPos}%
496 \ifhv@nonFloat
497 \begin{group}% Start the nonfloat part
498 \checkoddpage
499 \else
500 \begin{\hv@floatType}% Start the floating environment
501 \checkoddpage
502 \fi
503 \ifx\hvSet@objectPos\hv@Right\raggedleft\fi
504 \ifx\hvSet@objectPos\hv@Center
505 \ifhv@nonFloat\hspace*{\fill}\else\centering\fi
506 \fi
507 \ifx\hvSet@objectPos\hv@Outer
508 \ifoddpage\raggedleft\fi
509 \fi
510 \ifx\hvSet@objectPos\hv@Inner
511 \ifoddpage\else\raggedleft\fi
512 \fi
513 %
514 % to rotate object and caption together, we save all in another box
515 % the caption comes first, if its on the left or the top
516 % 0 caption left, inner and odd page, oneside inner
517 % 1 caption top
518 % 2 caption right, inner and even page, oneside outer
519 % 3 caption bottom
520 %
521 \ifx\hvSet@capPos\hv@Left
522 \hv@@capPos=0
523 \else
524 \ifx\hvSet@capPos\hv@Top
525 \hv@@capPos=1

```

```

526 \else
527 \ifx\hvSet@capPos\hv@Right
528 \hv@capPos=2
529 \else
530 \ifx\hvSet@capPos\hv@Bottom
531 \hv@capPos=3
532 \else
533 \ifx\hvSet@capPos\hv@Inner
534 \ifoddpageoroneside\hv@capPos=0\else\hv@capPos=2\fi
535 \else
536 \ifx\hvSet@capPos\hv@Outer
537 \ifoddpageoroneside\hv@capPos=2\else\hv@capPos=0\fi
538 \else
539 \ifx\hvSet@capPos\hv@Before
540 \hv@capPos=0 % same as capPos=right
541 \else
542 \ifx\hvSet@capPos\hv@After
543 \hv@capPos=2 % same as capPos=right
544 \fi
545 \fi
546 \fi
547 \fi
548 \fi
549 \fi
550 \fi
551 \fi
552 %%%
553 \savebox{\@tempboxa}{%
554 \expandafter\ifcase\the\hv@capPos % 0 is LEFT START \ifcase
555 \ifx\hvSet@capVPos\hv@Center
556 \put@CaptionBox
557 \hspace{\hvSet@floatCapSep pt}% capfloatsep
558 \put@ObjectBox
559 \else
560 \ifx\hvSet@capVPos\hv@Top% caption and object at top aligned
561 \put@CaptionBox[1]
562 \hspace{\hvSet@floatCapSep pt}% capfloatsep
563 \put@ObjectBox[1]
564 \else% caption on bottom
565 \put@CaptionBox[2]
566 \hspace{\hvSet@floatCapSep pt}% capfloatsep
567 \put@ObjectBox[2]
568 \fi
569 \fi% end caption left
570 \or %1 is top
571 \ifdim\wd\hvCaptionBox>\wd\hvObjectBox
572 \begin{minipage}{\wd\hvCaptionBox}%
573 \else
574 \begin{minipage}{\wd\hvObjectBox}%
575 \fi
576 \centering
577 \ifhv@fbox
578 \fbox{\usebox{\hvCaptionBox}}\[\hvBelowCaptionSkip]%

```

23 The Package Source

```

579 \fbox{\usebox{\hvObjectBox}}%
580 \else
581 \usebox{\hvCaptionBox}\[\hvBelowCaptionSkip]%
582 \usebox{\hvObjectBox}%
583 \fi
584 \end{minipage}%
585 \or %2 is right
586 \ifx\hvSet@capVPos\hv@Center
587 \put@ObjectBox
588 \hspace{\hvSet@floatCapSep pt}%
589 \put@CaptionBox
590 \else
591 \ifx\hvSet@capVPos\hv@Top
592 \put@ObjectBox[1]
593 \hspace{\hvSet@floatCapSep pt}% capfloatsep
594 \put@CaptionBox[1]
595 \else
596 \put@ObjectBox[2]
597 \hspace{\hvSet@floatCapSep pt}% capfloatsep
598 \put@CaptionBox[2]
599 \fi
600 \fi
601 \or %3 bottom
602 \ifdim\wd\hvCaptionBox>\wd\hvObjectBox
603 \begin{minipage}{\wd\hvCaptionBox}%
604 \else
605 \begin{minipage}{\wd\hvObjectBox}%
606 \fi
607 \centering
608 \ifhv@fbox
609 \fbox{\usebox{\hvObjectBox}}\[\hvAboveCaptionSkip]%
610 \fbox{\usebox{\hvCaptionBox}}%
611 \else
612 \ifhv@objectFrame\frame{\usebox{\hvObjectBox}}\else\usebox{\hvObjectBox}\fi\[\hvAboveCaptionSkip]%
613 \usebox{\hvCaptionBox}%
614 \fi
615 \end{minipage}
616 \fi% \ifcase\the\hv@capPos
617 }% End savebox Object and caption
618 %
619 % now we rotate the object and caption, if needed
620 %
621 \ifhv@wide
622 \ifoddpageoroneside\else\ifoddpage\else\hspace*{-\marginparwidth}\fi\fi% <- for wide and left page
623 \fi
624 \ifx\hvSet@rotAngle\hv@Zero
625 \usebox{\@tempboxa}%
626 \else
627 \rotatebox{\hvSet@rotAngle}{\usebox{\@tempboxa}}%
628 \fi
629 \ifhv@nonFloat
630 \ifx\hvSet@objectPos\hv@Center
631 \ifhv@nonFloat

```



```

632     \hspace{\fill}%
633     \fi
634 \fi
635 \endgroup% End the nonfloat part
636 \else
637     \end{\hv@floatType}% End the floating environment
638 \fi
639 \endgroup% startet at main \hvFloat
640 }
641 %
642 \newenvironment{hvFloatEnv}[1][\textwidth]
643 {\minipage{#1}\center}
644 {\endcenter\endminipage}
645 %
646
647 \ExplSyntaxOn
648 \let\clist@item@Nn\clist_item:Nn
649 \let\l@clist@Type\l_clist_Type
650 \let\l@clist@LofCaption\l_clist_LofCaption
651 \let\l@clist@Label\l_clist_Label
652 \let\clist@count@N\clist_count:N
653 \ExplSyntaxOff
654
655 \def\do@@@hvFloat{% special float page: caption <-> fullpage image
656     \ifx\hvSet@capPos\hv@After \hv@@capPos=1
657     \else
658         \ifx\hvSet@capPos\hv@Even \hv@@capPos=2
659         \else
660             \ifx\hvSet@capPos\hv@Odd \hv@@capPos=3
661             \else
662                 \ifx\hvSet@capPos\hv@Inner \hv@@capPos=4
663                 \else
664                     \ifx\hvSet@capPos\hv@Outer \hv@@capPos=5
665                     \else
666                         \ifx\hvSet@capPos\hv@Right \hv@@capPos=6 % only for twocolumn mode
667                         \else
668                             \ifx\hvSet@capPos\hv@Left \hv@@capPos=7 % only for twocolumn mode
669                             \else
670                                 \hv@@capPos=0
671                             \fi
672                         \fi
673                     \fi
674                 \fi
675             \fi
676         \fi
677     \fi
678 \checkoddpage
679 \set@caption@object% set caption and object into a box
680 \ifcase\hv@@capPos% caption before object 0-> _always_ left
681     \setBottomCaption\setPageObject
682 \or% caption after object 1-> _always_ right
683     \setPageObject\setBottomCaption
684 \or% caption on even page 2-> left page

```

23 The Package Source

```

685 \ifoddpage
686 \afterpage{\setBottomCaption\setPageObject}%
687 \else% we are on an even page
688 % \zsavaposy{hv@currentPos}%
689 % \ifdim\the\dimexpr\zposy{hv@currentPos}sp-\hv@BottomSpace-1cm>\ht\TBox % enough space*
690 \setBottomCaption\setPageObject
691 % \else
692 % \afterpage{\afterpage{\setBottomCaption\setPageObject}}%
693 % \fi
694 \fi
695 \or% caption on odd page 3->right page
696 \if@twoside
697 \if@twocolumn
698 \ifoddpage
699 \if@firstcolumn% on right side
700 \setBottomCaption\setPageObject
701 \else
702 \afterpage{\setPageObject\setBottomCaption}% start next column
703 \fi
704 \else% left (even) page
705 \if@firstcolumn
706 \afterpage{\setPageObject\setBottomCaption}% start next column
707 \else
708 \setPageObject\setBottomCaption
709 \fi
710 \fi
711 \else % onecolumn
712 \ifoddpage
713 \setPageObject\setBottomCaption
714 \else
715 \afterpage{\setPageObject\setBottomCaption}%
716 \fi
717 \fi
718 \else % oneside
719 \if@twocolumn
720 \ifoddpage
721 \if@firstcolumn% on right side
722 \setBottomCaption\setPageObject
723 \else
724 \setPageObject\setBottomCaption
725 \fi
726 \else
727 \if@firstcolumn% on left side
728 \afterpage{\setPageObject\setBottomCaption}%
729 \else
730 \setPageObject\setBottomCaption
731 \fi
732 \fi
733 \else % onecolumn
734 \ifoddpage
735 \setBottomCaption\setPageObject
736 \else
737 \afterpage{\setBottomCaption\setPageObject}%

```

```

738     \fi
739   \fi
740   \fi
741 \or%           caption on the inner column 4->inner
742 \set@caption@object
743 \if@twocolumn
744   \ifoddpage
745     \if@firstcolumn% on right side
746     \setBottomCaption\setPageObject
747   \else       % right column on right side
748     \setPageObject\setBottomCaption% start next firstcolumn next page
749   \fi
750 \else
751   \if@firstcolumn% on left side
752     \afterpage{\afterpage{\setBottomCaption\setPageObject}}% start next page/first column
753   \else% left page/column
754     \setBottomCaption\setPageObject% start on same page/column
755   \fi
756 \fi
757 \else % onecolumn
758   \setBottomCaption\setPageObject
759 \fi
760 \or%           caption on the outer column 5->outer
761 \set@caption@object
762 \if@twocolumn
763   \ifoddpage
764     \if@firstcolumn
765       \afterpage{\afterpage{\setBottomCaption\setPageObject}}%
766     \else
767       \afterpage{\setBottomCaption\setPageObject}%
768     \fi
769   \else% even page (left)
770     \if@firstcolumn
771       \setBottomCaption\setPageObject
772     \else
773
774     \fi
775   \fi
776 \else% onecolumn
777   \setBottomCaption\setPageObject
778 \fi
779 \or%           caption after object on same page 6->right for twocolumn
780 \if@twocolumn
781   \if@firstcolumn
782     \afterpage{\setPageObject\setBottomCaption}%
783   \else
784     \setPageObject\setBottomCaption
785   \fi
786 \else% always caption _after_ object for onecolumn
787   \setPageObject\setBottomCaption
788 \fi
789 \or%           caption before object on same page 7->left for twocolumn
790 \if@twocolumn

```

23 The Package Source

```

791     \if@firstcolumn
792       \setBottomCaption\setPageObject
793     \else
794       \afterpage{\setBottomCaption\setPageObject}
795     \fi
796   \else%       onecolumn -> same as before
797     \setBottomCaption\setPageObject
798   \fi
799 \fi
800 \endgroup% startet at main \hvFloat
801 }%
802 %
803 \def\setBottomCaption{%
804   \begin{\hv@floatType}[!b]
805   \ifhv@separatorLine\drawSepLine\fi
806   \par
807   \usebox\hvCaptionBox
808   \end{\hv@floatType}%
809 }
810
811 \def\setPageObject{%
812   \ifhv@star
813     \begin{\hv@floatType*}[p]%
814   \else
815     \begin{\hv@floatType}[p]%
816   \fi
817   \ifhv@FULLPAGE
818     \vspace*{\the\dimexpr-\lin-\voffset-\topmargin-\headheight-\headsep}%-0.5\baselineskip}%
819     \checkoddpage
820     \if@twoside
821       \ifoddpage
822         \hspace*{\the\dimexpr-\oddsidemargin-\parindent-\lin}%
823       \else
824         \hspace*{\the\dimexpr-\evensidemargin-\parindent-\lin}%
825       \fi
826     \else
827       \hspace*{\the\dimexpr-\oddsidemargin-\parindent-\lin}%
828     \fi
829     %\put(0,0){
830     \AtBeginShipoutNext{\thispagestyle{empty}}%
831     \usebox\hvObjectBox}%
832   \else
833     \usebox\hvObjectBox
834   \fi
835   \ifhv@star
836     \end{\hv@floatType*}%
837   \else
838     \end{\hv@floatType}%
839   \fi
840 }
841
842 \ExplSyntaxOn
843

```

```

844 \def\getMultiCaptionAndLabel{%
845   \global\sbox\hvCaptionBox{\minipage[b]{\linewidth}%
846     \setlength\belowcaptionskip{5pt}%
847     \setlength\abovecaptionskip{0pt}%
848     \hv@cntb=\clist_count:N\l_clist_Type
849     \advance\hv@cntb by \@ne
850     \hv@cna=1
851     \loop
852       \edef\@captype{\clist_item:Nn\l_clist_Type{\hv@cna}}%
853       \edef\@tempa{\clist_item:Nn\l_clist_LofCaption{\hv@cna}}%
854       \ifx\@tempa\@empty
855         \caption{\clist_item:Nn\l_clist_Caption{\hv@cna}}%
856       \else
857         \expandafter\caption\expandafter[\@tempa]{\clist_item:Nn\l_clist_Caption{\hv@cna}}%
858       \fi
859       \edef\@tempa{\clist_item:Nn\l_clist_Label{\hv@cna}}%
860       \ifx\@tempa\@empty
861       \else
862         \expandafter\label\expandafter{\clist_item:Nn\l_clist_Label{\hv@cna}-cap}\fi
863       \advance\hv@cna by \@ne
864       \ifnum\hv@cna<\hv@cntb
865       \repeat
866     \endminipage}%
867 }
868 \def\getMultiObjectAndLabel{%
869   \global\sbox\hvObjectBox{\minipage{\linewidth}%
870     \ifx\hvSet@objectPos\hv@Right\raggedleft\else
871       \ifx\hvSet@objectPos\hv@Left\raggedleft\else
872       \ifx\hvSet@objectPos\hv@Center\centering
873     \fi\fi\fi
874     \hv@cntb=\clist_count:N\l_clist_Type
875     \advance\hv@cntb by \@ne
876     \hv@cna=1
877     \loop
878       \def\@temp{\clist_item:Nn\l_clist_Object{\hv@cna}}%
879       \ifhv@objectFrame\frame{\@temp}\else\@temp\fi
880       \edef\@tempa{\clist_item:Nn\l_clist_Label{\hv@cna}}%
881       \ifx\@tempa\@empty
882       \else
883         \refstepcounter{\@captype}%
884         \expandafter\label\expandafter{\clist_item:Nn\l_clist_Label{\hv@cna}}%
885       \fi
886       \ifnum\hv@cna<\clist_count:N\l_clist_Type\par\hv@vskip\fi
887       \advance\hv@cna by \@ne
888       \ifnum\hv@cna<\hv@cntb
889       \repeat
890     \endminipage}%
891 }
892
893 \def\getMultiSubCaptionAndLabel{%
894   \global\sbox\hvCaptionBox{\minipage{\linewidth}%
895     \setlength\belowcaptionskip{5pt}%
896     \setlength\abovecaptionskip{0pt}%

```

```

897 \xdef\@capytype{\clist_item:Nn\l_clist_Type{1}}% the same for all subfloats
898 \edef\@tempa{\clist_item:Nn\l_clist_LofCaption{1}}%
899 \ifx\@tempa\@empty
900 \caption{\clist_item:Nn\l_clist_Caption{1}}%
901 \else
902 \expandafter\caption\expandafter[\@tempa]{\clist_item:Nn\l_clist_Caption{1}}%
903 \fi
904 \edef\@tempa{\clist_item:Nn\l_clist_Label{1}}%
905 \ifx\@tempa\@empty\else\expandafter\label\expandafter{\clist_item:Nn\l_clist_Label{1}-cap}\fi
906 \endminipage}%
907 }
908
909 \def\getMultiSubObjectAndLabel{%
910 \global\sbox\hvObjectBox{\minipage{\linewidth}%
911 \ifx\hvSet@objectPos\hv@Right\raggedleft\else
912 \ifx\hvSet@objectPos\hv@Left\raggedleft\else
913 \ifx\hvSet@objectPos\hv@Center\centering
914 \fi\fi\fi
915 \hv@cntb=\clist_count:N\l_clist_Caption
916 \advance\hv@cntb by \@ne
917 \hv@cmta=2
918 \xdef\@capytype{\clist_item:Nn\l_clist_Type{1}}% the same for all subfloats
919 \loop
920 \def\@temp{\clist_item:Nn\l_clist_Object{\hv@cmta}}%
921 \ifhv@objectFrame\frame{\@temp}\else\@temp\fi
922 \begingroup
923 \edef\@tempa{\clist_item:Nn\l_clist_LofCaption{\hv@cmta}}%
924 \ifx\@tempa\@empty
925 \subcaption{\clist_item:Nn\l_clist_Caption{\hv@cmta}}%
926 \else
927 \expandafter\subcaption\expandafter[\@tempa]{\clist_item:Nn\l_clist_Caption{\hv@cmta}}%
928 \fi
929 \edef\@tempa{\clist_item:Nn\l_clist_Label{\hv@cmta}}%
930 \ifx\@tempa\@empty
931 \else
932 \expandafter\label\expandafter{\clist_item:Nn\l_clist_Label{\hv@cmta}}%
933 \fi
934 \endgroup
935 \ifnum\hv@cmta<\clist_count:N\l_clist_Type\par\hv@vskip\fi
936 \advance\hv@cmta by \@ne
937 \ifnum\hv@cmta<\hv@cntb
938 \repeat
939 \edef\@tempa{\clist_item:Nn\l_clist_Label{1}}% the main label at the end
940 \ifx\@tempa\@empty
941 \else
942 \refstepcounter{\@capytype}
943 \expandafter\label\expandafter{\@tempa}%
944 \fi
945 \endminipage}%
946 }
947 \ExplSyntaxOff
948
949 \def\getSingleCaptionAndLabel{%

```

```

950 \global\sbox\hvCaptionBox{\minipage{\linewidth}%
951   \setlength\belowcaptionskip{5pt}%
952   \setlength\abovecaptionskip{0pt}%
953   \edef\@capttype{\hv@floatType}%
954   \expandafter\ifx\expandafter\relax\hv@shortCap\relax
955     \caption{\hv@longCap}%
956   \else
957     \caption[\hv@shortCap]{\hv@longCap}%
958   \fi
959   \expandafter\ifx\expandafter\relax\hv@label\relax\else\label{\hv@label-cap}\fi
960 \endminipage}%
961 }
962
963 \def\set@caption@object{%   first caption, then object
964   \ifhv@multiFloat
965     \getMultiCaptionAndLabel
966   \else
967     \ifhv@subFloat
968       \getMultiSubCaptionAndLabel
969     \else
970       \getSingleCaptionAndLabel
971     \fi
972   \fi
973   \edef\@capttype{\hv@p\hv@floatType}%
974   \ifhv@multiFloat
975     \getMultiObjectAndLabel
976   \else
977     \ifhv@subFloat
978       \getMultiSubObjectAndLabel
979     \else
980       \global\sbox\hvObjectBox{%
981         \refstepcounter{\@capttype}%
982         \ifhv@objectFrame\frame{\hv@floatObject}\else\hv@floatObject\fi
983         \expandafter\ifx\expandafter\relax\hv@label\relax
984           \else
985             \expandafter\label\expandafter{\hv@label}%
986           \fi
987       }%
988     \fi
989   \fi
990 }
991 %
992 \endinput

```