Package `hvfloat`
# Controlling captions, fullpage and doublepage floats
ver 2.42

Herbert Voß*

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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!

Figure 1: What a nice Caption :-)

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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.
nostfloats	do not load package stfloats.

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, stfloats, floatpag, expl3, multido, graphicx, xkeyval, ifoddpage, and afterpage.

2 The Macros and optional arguments

The syntax for the macros and \hvFloatSetDefaults, \hvFloatSet, and \hvFloat is

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

The star version is explained in section 11 on page 22 and 19.2 on page 49 and the optional + is explained in section 17.3 on page 38.

\hvFloatSet allows the global setting of keywords and \hvFloatSetDefaults 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}
\tabcaptionbelow[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 \hvDefFloatStyle one can define a style which can be used instead of the individual setting:

```
\hvDefFloatStyle{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
floatPos	tbp	This is the same default placement setting as in standard LATEX; maybe not always the best setting.
rotAngle	0	The value for the angle if both the object and the caption should be rotated together.
capWidth	n	The width of the caption. Can be n for a natural width given by the current linewidth, w for the width of the object, h for the height of the object, or a scale factor for \columnwidth.
capAngle	0	The integer value for the angle if the caption should be rotated. Positive is counter-clockwise.
capPos	bottom	The position of the caption relative to the object. Possible values: before: *always* before (left) from the object. top: *always* on top of the object. left: *always* before (left) from the object, but on the same page in twocolumn mode. after: *always* after (right) from the object. bottom: *always* on the bottom of the object. right: *always* after (right) from the object, but on the same page 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.
capVPos	center	Only used when capPos=left | right; in these cases, the caption can be vertically placed at the bottom, center or top.
objectPos	center	Horizontal placement of the object relative to the document. Possible values are (**l**)eft, (**c**)enter, (**r**)ight.
objectAngle	0	Integer value for the angle if the object should be rotated. Positive is counter-clockwise.
floatCapSep	5pt	Additional space between the object and a left- or right-placed caption.
useOBox	false	Instead of passing the object as a parameter to \hvFloat, with useOBox=true the contents of the predefined box \hvOBox is used.
onlyText	false	The caption is printed as normal text with no entry in any list of …
nonFloat	false	The object isn't put in a floating environment, but printed as standard text with an additional caption. The float counter is increased as usual and can be referenced.
wide	false	The float can use \textwidth + \marginparwidth as horizontal width.

Keyword	Default	Description
objectFrame	false	Put a frame with no separation around the float object.
style	*none*	Use a defined style.
capFormat	*none*	Define formatting options for \caption; see documentation of package caption.
subcapFormat	*none*	Define formatting options for \subcaption.
fullpage	false	Use a complete column in twocolumn mode.
FullPage	false	Use the full text area for the object.
FULLPAGE	false	Use the full paper width/height for the object.
doublePage	false	Use the text area on a doublepage with additional text.
doublePAGE	false	Use the text area on a doublepage without additional text.
doubleFULLPAGE	false	Use the paperwidth on a doublepage without additional text.
vFill	false	Put a \vfill between every two objects in a multi- or subfloat.
sameHeight	false	use the same text height on both pages for a doublePage object.

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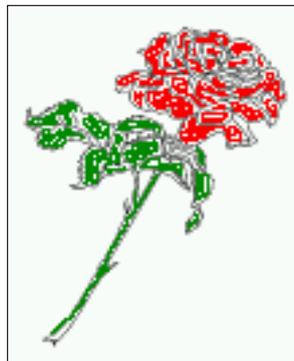
Figure 2: Without any keywords (only the fbox package option)

Code for figure 2:

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

Code for table 3:

```
1   \hvFloat[capPos=top]{table}{%
2   \begin{tabularx}{\textwidth}{>{\ttfamily}l|l|X}
3     \rmfamily Name & Type & Description\\\hline
4     \CMD{hvFloat} & command    & places object and caption in different ways\\
5     hvFloatEnv  & environment & places object and caption exactly Here\\
6     \CMD{figcaption} & command   & writes a figure caption in a non floating environment\\
7     \CMD{tabcaption} & command   & writes a table caption in a non floating environment\\
8     \CMD{hvFloatSetDefaults} & command  & sets all options to the defaults\\
9     \CMD{hvDefFloatStyle} & command & define a user style
10  \end{tabularx}}%
```

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
\hvFloatSetDefaults	command	sets all options to the defaults
\hvDefFloatStyle	command	define a user style

```
11  {With the only Option \texttt{capPos=top} to place the caption on top of the table, which is
        often the default.}%
12  {tab:0}
```

See section 14 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`:

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

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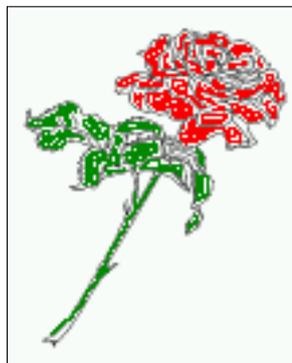
Figure 3: Default caption width setting, which is the natural width with respect to the current linewidth.

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

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 8).

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

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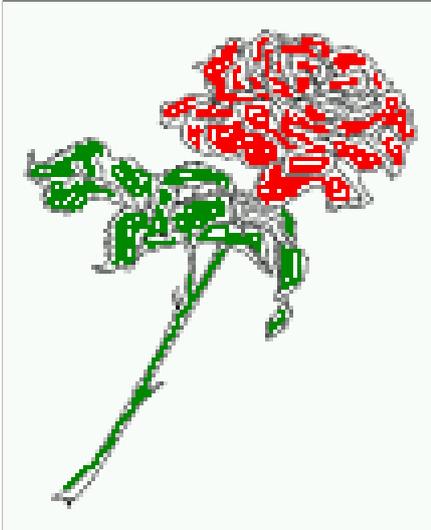
Figure 4: Caption right beside with a *natural* width, which is given by the width of the object, the separation between object and caption, and the current linewidth.

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.

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

Fig. 5

Figure 5: Caption below with a width of 0.9 of the current line width (column width), which is in this special case 376.42744pt. Divide it by 28.82 to get cm.

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:

```
1  \hvFloat[floatPos=!htb,
2          capPos=after,
3          capWidth=0.9]{figure}{\includegraphics[scale=1.5]{images/rose}}%
4    {Caption right beside with a width setting of \texttt{0.9\textbackslash linewidth}
5    which is too big for this example and therefore corrected
6    by the macro to the maximal width.}{fig:width3}
```

Fig. 6

Figure 6: Caption right beside with a width setting of `0.9\linewidth` w
for this example and therefore corrected by the macro to the maxima

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.

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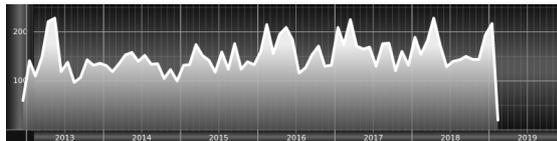

Figure 7: Caption below with a width of the
given object which may be a problem if it is a
very small object.

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.

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

Fig. 8

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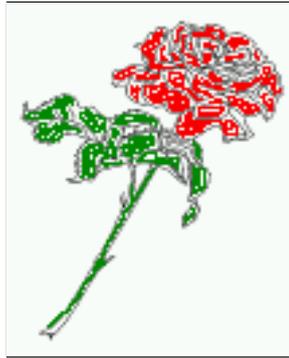
Figure 8: Caption beside with a width of the given object height which may be a problem if it is a very small object.

```
1  \hvFloat%
2    [floatPos=htb,
3     capPos=right,
4     objectFrame,
5     objectPos=c]{figure}{\includegraphics[scale=0.9]{images/rose}}%
6    [Caption beside object and vertically centered]%
7    {Caption vertically centered right beside the float with a natural caption width
8     (the default). \blindtext}%
9    {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.

Fig. float
capPos=right

5.2 Caption left and rotated

Code for figure 10:

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

It is no problem to rotate the object, too. But with a different angle value than for the caption. Do not ask for the sense, it is only a demonstration of what is possible ... The object (image) is rotated by −30 degrees with the macro \rotatebox. Without any definition the caption will be placed vertically centered to the object. Important for the height of the object is the surrounding orthogonal rectangle.

Fig. 10

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

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}
```

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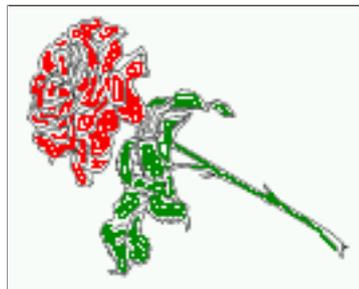
Figure 11: Caption vertically centered right beside the float with a caption width of the height of the image and a rotation of the caption and the object.

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
```

```
5      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.

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*.

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

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.

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

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

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 15:

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

Fig. 15
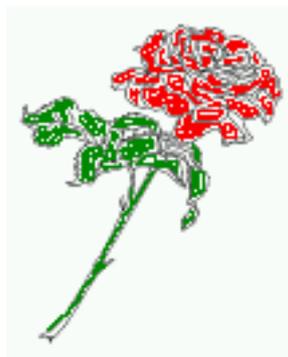
Figure 15: Caption vertically centered right beside the float with a caption width of `0.5\columnwidth` and `capPos=outer`

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:

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

Fig. 16

The code for figure 17:

```
1  \hvFloat[%
2      floatPos=htb,
3      capWidth=0.25,
```
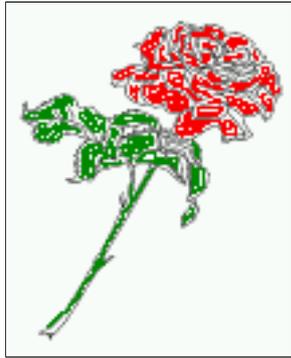
Figure 16: Caption at bottom right beside the float

```
4      capPos=right,
5      capVPos=top,
6  ]{figure}{\frame{\includegraphics{images/rose}}}{Caption at top left beside the float}{fig:5}
```

Figure 17: Caption at top left beside the float
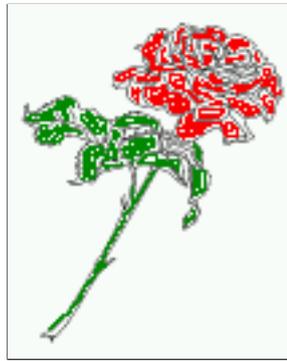
The code for figure 18:

```
1  \hvFloat[%
2      capWidth=0.25,%
3      capPos=right,%
4      capVPos=center,% the default
5  ]{figure}{\frame{\includegraphics{images/rose}}
6          \frame{\includegraphics[origin=c,angle=180]{images/rose}}}%
7  {Caption centered right beside the float}{fig:6}
```
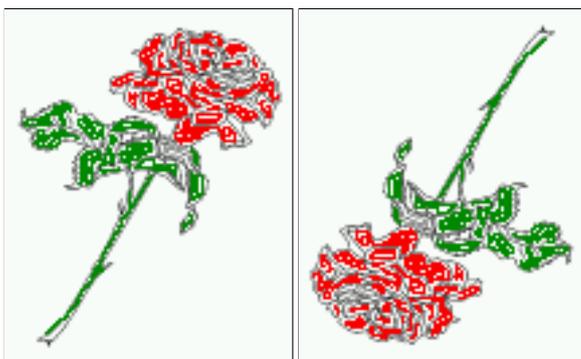
Figure 18: Caption centered right beside the float

8 Caption format

The \caption and \subcaption macros are fully under the control of the package caption. The formatting can be set with the macros \captionsetup, \subcaptionsetup, or via the optional

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argument setting of \hvFloat with the keywords `capFormat` and `subcapFormat`. The argument itself will then be used internally by \captionsetup and/or \subcaptionsetup in a minipage, the reason why it will be local to the current image..

```
1  \hvFloat[%
2    capPos=right,
3    capFormat={labelsep=newline,justification=RaggedRight,font={small,it},labelfont=bf}
4  ]{figure}{\frame{\includegraphics{images/rose}}}{\blindtext}{fig:66}
```

Fig. 19
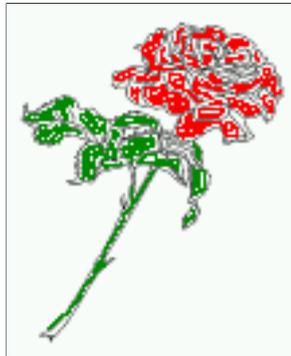
Figure 19
Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – 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 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 value with any allowed unit. 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).

The code for figure 20:

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

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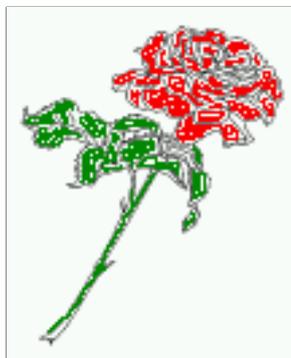
Figure 20: Caption at top right beside the float and object position left

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 21: Caption at top right beside the float and object position left
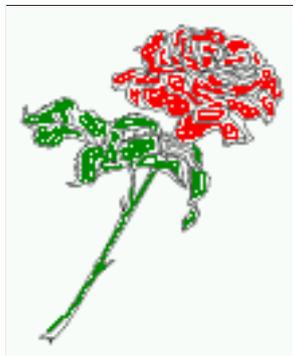
Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! 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 code for figure 22:

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

Figure 22: Caption at top left beside the float and object position right
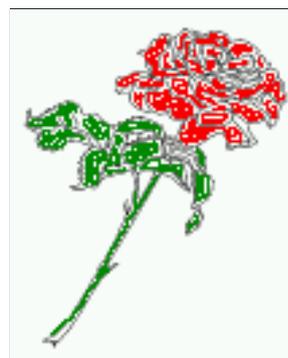
Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! 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.

10 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 23:

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

Fig. 23
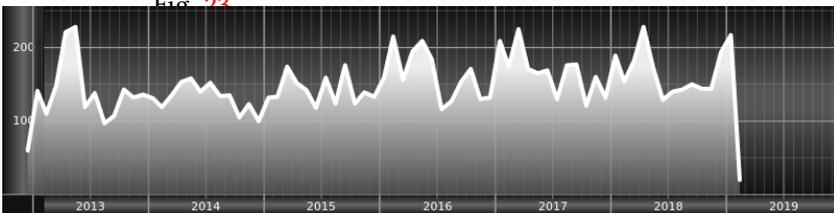
Figure 23: Caption at top right beside the float and object position left and the option wide.

The code for figure 24:

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

Figure 24: Caption at top left beside the object and object position left and the option wide.

Fig. 24
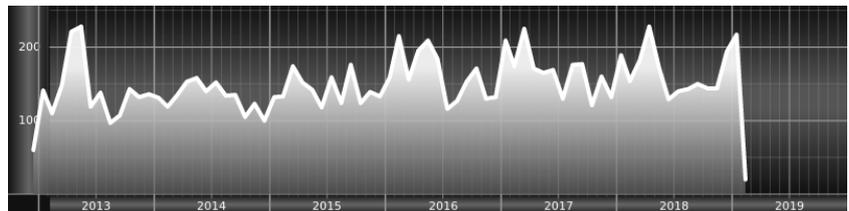
For a twosided document it will place the object always in the margin.

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.

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

Figure 25: Caption at top and inner beside the float and object position right and the option `wide`.
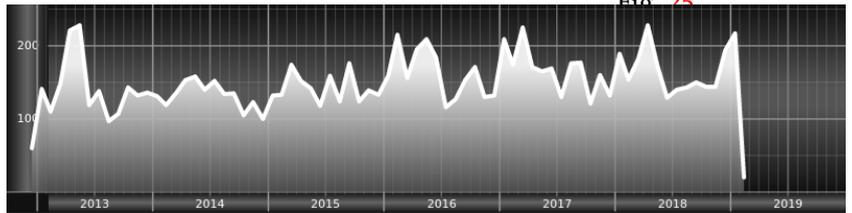
Now we set the same image with the same setting on the next page. The caption will change its side due to the setting `capPos=outer` .

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.

```
1  \hvFloat[wide,
2      capPos=inner,
3      capVPos=top,
4  ]{figure}{\includegraphics[width=0.75\linewidth]{images/CTAN}}{%
5  Caption at top inner beside the float and object position right and
6  the option \texttt{wide}.}{fig:811}
```

Figure 26: Caption at top inner beside the float and object position right and the option `wide`.
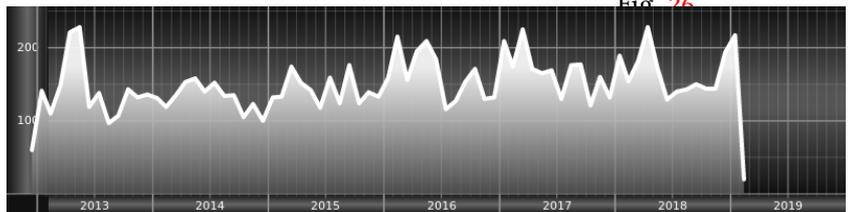
The caption can be typeset completely into the margin with:

```
1  \captionsetup{justification=RaggedRight}
2  \hvFloat[wide,
3      capPos=outer,
4      capVPos=top,
5          floatCapSep=\marginparsep,
6  ]{figure}{\includegraphics[width=\linewidth]{images/CTAN}}{%
7  Caption at top inner beside the float and object position right and
8  the option \texttt{wide}.}{fig:812}
```
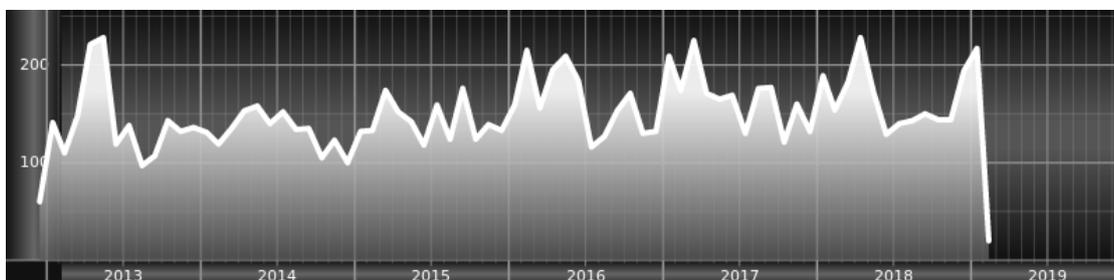

Figure 27: Caption at top inner beside the float and object position right and the option `wide`.

With the optional argument `capWidth=l` the caption can be terminated to the current line width. With the optional argument `capHPos=right` one cat set the caption to the left, center, or right of the full width which is linewidth and margin width.

```
1  \hvFloat[capPos=bottom,capWidth=l,wide,capHPos=right]{figure}
2    {\includegraphics[width=0.49\hvWideWidth]{images/CTAN}\quad
3     \includegraphics[width=0.49\hvWideWidth]{images/CTAN}}
4    {\hvblindtext}
5    {label}
```

Fig. 28
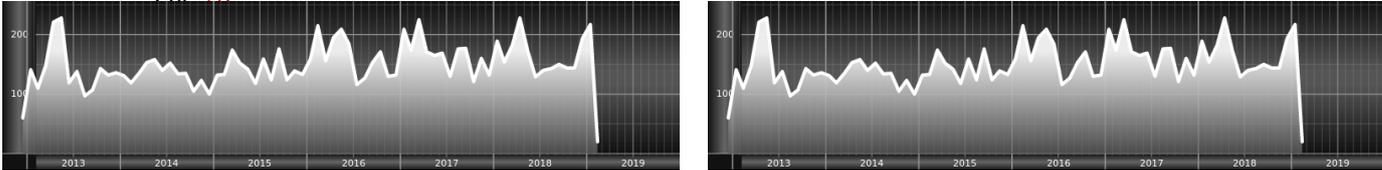
Figure 28: Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – 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.

11 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) is:

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

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

12 Full Page Width in Landscape Mode

If you do not want to load the package lscape (or pdflscape) you can use the floatPos=p option to put the image on an own page and rotated by 90 degrees (figure 30).

Code for figure 30:

```
1  \hvFloat[%
2      floatPos=p,
```
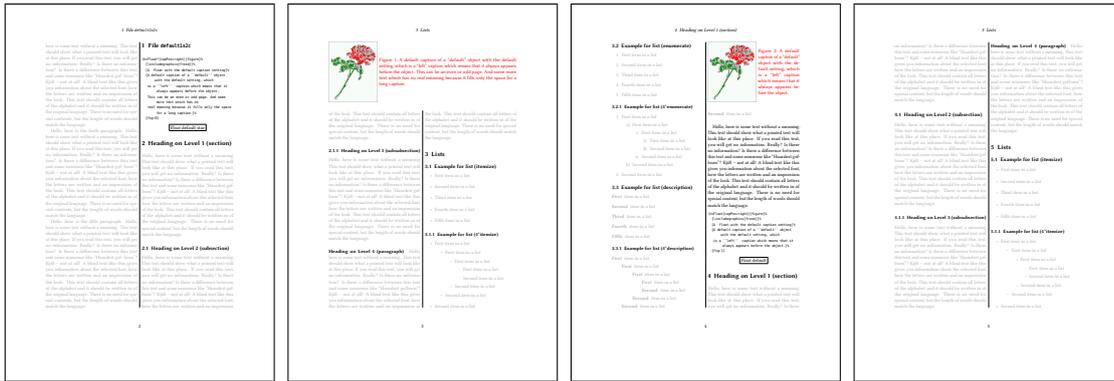
Figure 29: Output of `default1s2c` (pages 2 –5)

```
3        capPos=bottom,
4        rotAngle=90,
5        objectPos=center,
6    ]{figure}{\includegraphics[width=0.9\textheight]{images/CTAN}}%
7      [Object and Caption in landscape mode]{%
8        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.

The code for figure 31:

```
1    \hvFloat[%
2        floatPos=p,
3        capWidth=h,
4        capPos=right,
5        objectAngle=90,
6        capAngle=-90,
7        objectPos=left,
8    ]{figure}{\includegraphics[width=\textheight]{images/CTAN}}%
9        [Rotated Caption in Landscape]{%
10       Caption right beside the float and object position left. The caption rotated by $-90$
11           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.

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

Figure 30: 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 31: 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.

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 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.

```
1  Some nonsense text before the following \emph{non floating} object.
2
3  \hvFloat[%
4      nonFloat,
5      capWidth=0.25,
6      capPos=right,
7      capVPos=bottom,
8      objectPos=center,
9      objectFrame,
10 ]{figure}{\includegraphics[scale=1.5]{images/rose}}%
11     [Nonfloat Captions]{%
12     Caption of a ``nonfloat'' Object, using the \texttt{nonfloat} Package}{fig:11}
13
14 Some nonsense text after the preceding  \emph{non floating} object.
```

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

Fig. 32
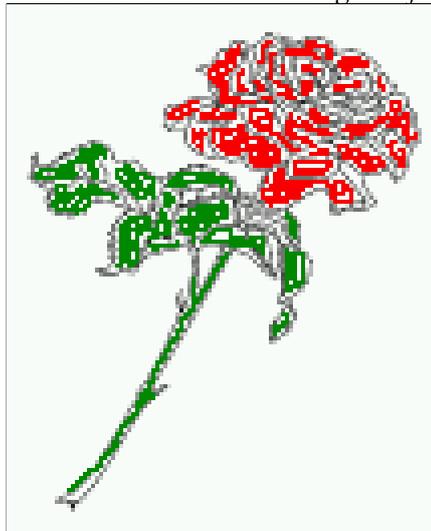
Figure 32: Caption of a "nonfloat" Object, using the nonfloat Package

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

The image 32 is exactly placed where the command \hvFloat appears. There are only commands for figure and table environments:

```
\newcommand{\figcaption}{\def\@captype{figure}\caption}
\newcommand{\tabcaption}{\def\@captype{table}\caption}
```

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

14 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 `\hvOBox` to save the table in this box and pass it then to `\hvFloat` with the `useOBox` 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.

```
1  \savebox{\hvOBox}{%
2  \begin{tabular}{>{\small\ttfamily}l|l|l}\hline
3    \rmfamily Name    & Type        & Description\\\hline
4    \CMD{hvFloat}  & command     & places object and caption in different ways\\
5    hvFloatEnv  & environment & places object and caption exactly Here\\
6    \CMD{figcaption} & command    & writes a figure caption in a non floating environment\\
7    \CMD{tabcaption} & command    & writes a table caption in a non floating environment\\
8    \CMD{hvFloatSetDefaults} & command  & sets all options to the defaults\\\hline
9  \end{tabular}%
10 }
```

The code for table 4 and 5 is:

```
1  \hvFloat[%
2    floatPos=!hb,
3    capPos=top,
4    useOBox=true]{table}{}{Demonstration of the \texttt{useOBox} Parameter}{table:1}
5
6  \hvblindtext
7
8  \marginnote{Tab.~\ref{table:2}}
9  \hvFloat[%
10   floatPos=hb,
11   useOBox=true,
12   objectAngle=90,
13   capPos=right,
14   capVPos=top,
15   capWidth=0.3]{table}{}{Another demonstration of the \texttt{useOBox} Parameter}{table:2}
```

In this case leave the third parameter empty.

Table 4: Demonstration of the `useOBox` Parameter

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

15 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`

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
\hvFloatSetDefaults	command	sets all options to the defaults

Table 5: Demonstration of the useOBox Parameter

keyword is used.

The code for figure 15:

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

Fig. 15
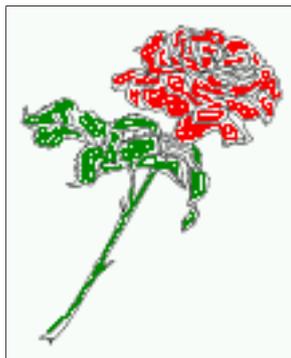
Demonstration of the onlyText Parameter, which makes it possible to put some text beside a floating object without getting a starting Figure: or Table:

16 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:

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

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

Table 7: A caption for a nice table

left	center	right
L	C	R

17 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 preceeding 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]{%              \define@key{Gin}{FullPage}[true]{%
  \def\Gin@ewidth{\columnwidth}%                  \def\Gin@ewidth{\textwidth}%
  \def\Gin@eheight{\textheight}%                  \def\Gin@eheight{\textheight}%
  \Gin@boolkey{false}{iso}%                       \Gin@boolkey{false}{iso}%
}                                               }
\define@key{Gin}{FULLPAGE}[true]{%
  \def\Gin@ewidth{\paperwidth}%
  \def\Gin@eheight{\paperheight}%
  \Gin@boolkey{false}{iso}%
}
```

Figure 33 shows the meaning of the optional arguments `fullpage`, `FullPage`, and `FULLPAGE` for `\inclugegraphics[...]{`*tiger*`}`.

Figure 33: Output of `fullpage1s2c` (pages 1–8)

17.1 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 oneside 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:

17.1.1 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.

```
1  \hvFloat[fullpage]%
2    {figure}%
3    {\includegraphics[fullpage]{images/frose}}%
4    [A fullpage float with the default caption setting]%
5    {A default caption of a ``fullpage'' object with the default setting, which
6     is a ``left''  caption which means that it always appears ``before'' the object.
7     This can be an even or odd page. And some more text which has no
8     real meaning because it fills only the space for a long caption.}%
9    {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 pagestyle is set to `empty`
multiFloat	true|false	For multiple objects with captions for every object. See section 17.3 on page 38.
subFloat	true|false	For multiple objects with one main and more subcaptions. See section 18 on page 40.
separatorLine	true	Put a line with a predefined width of 0.4pt between the text and the caption. Only valid for the keyword `fullpage`.
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 oneside 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) page, even though the socument is typeset in a oneside mode. Figure 34 on the following page shows the output for a oneside document with a setting `capPos=before`.

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 shows the valid optional arguments for a full page floating object.
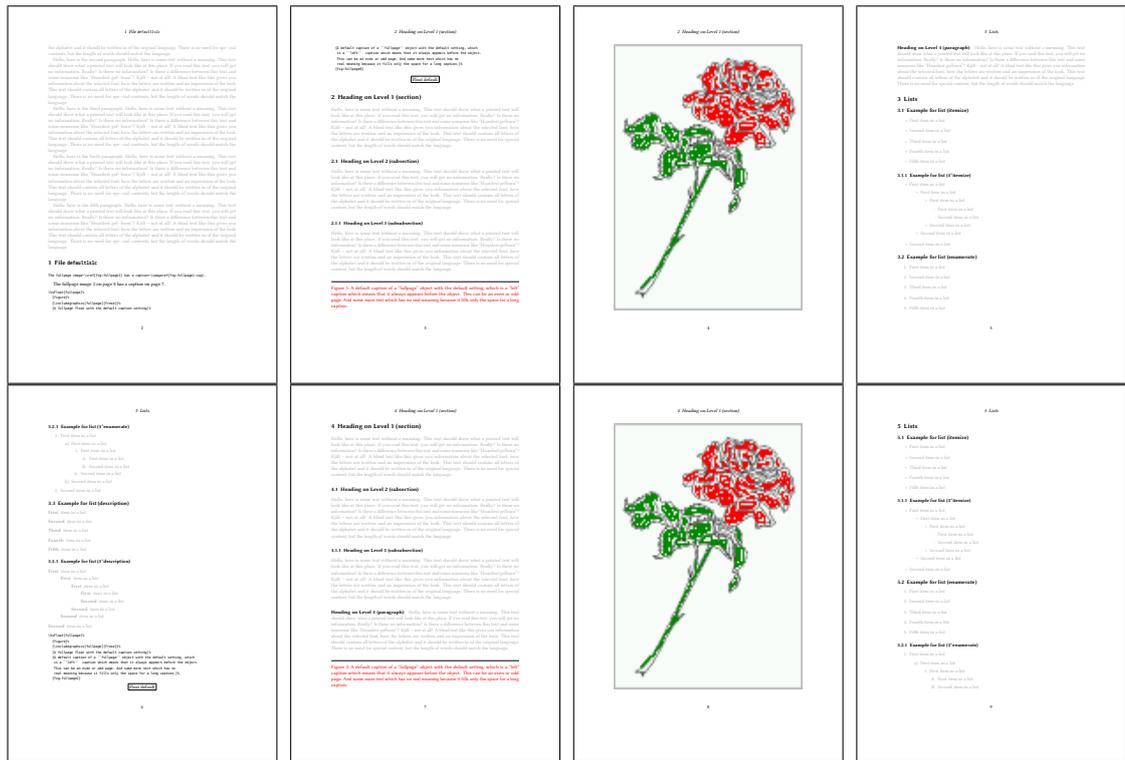
Figure 34: Output of `default1s1c` (pages 2–9)

17.1.2 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 appers 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.

```
1  \hvFloat[fullpage, capPos=after]%
2    {figure}%
3    {\includegraphics[fullpage]{images/frose}}%
4    [A float which needs the complete page width and height.]%
5    {A Caption of a ``fullpage'' object, which follows on the next page.
6     This can be an even or odd page. And some more text which has no
7     real meaning because it fills only the space for a long caption.}
8    {fig:fullpage1}
```
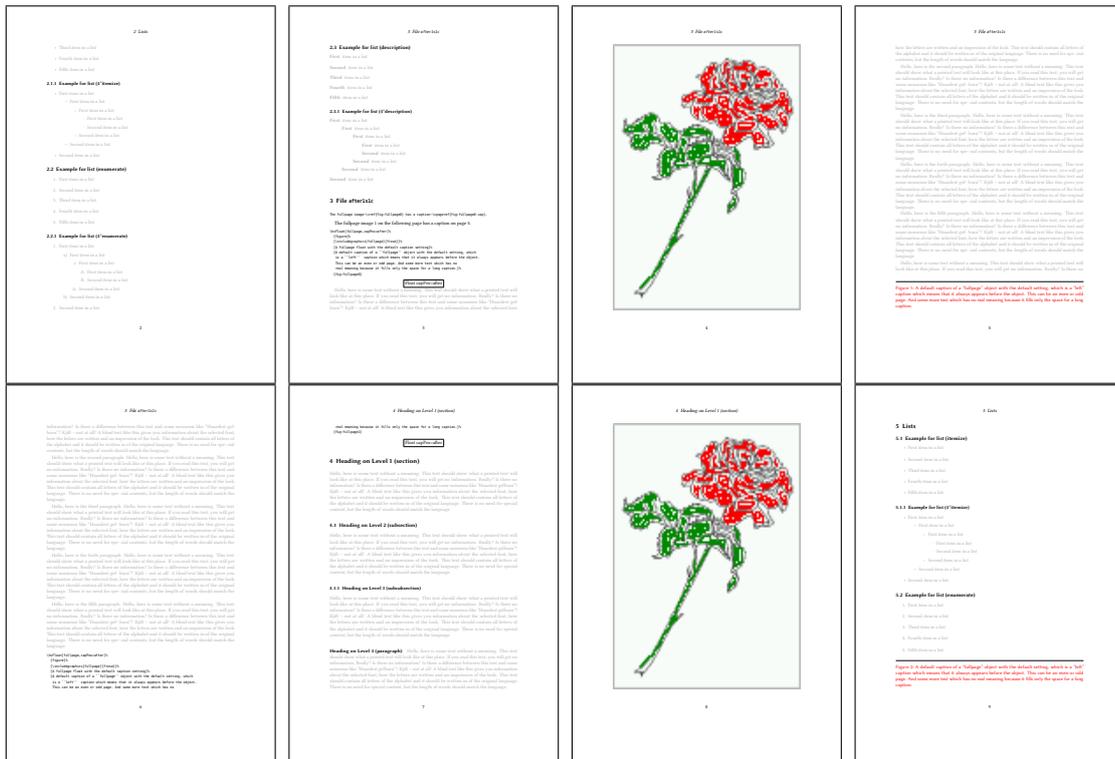

Figure 35: Output of `after1s1c` (pages 2–9)

17.1.3 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!

```
1  \hvFloat[fullpage, capPos=evenPage]%
2    {figure}%
3    {\includegraphics[fullpage]{images/frose}}%
4    [A float whith a caption on an even page (left)]%
5    {A caption on an even (left) page of a ``fullpage'' object.. \blindtext}
6    {fig:fullpage3}
```
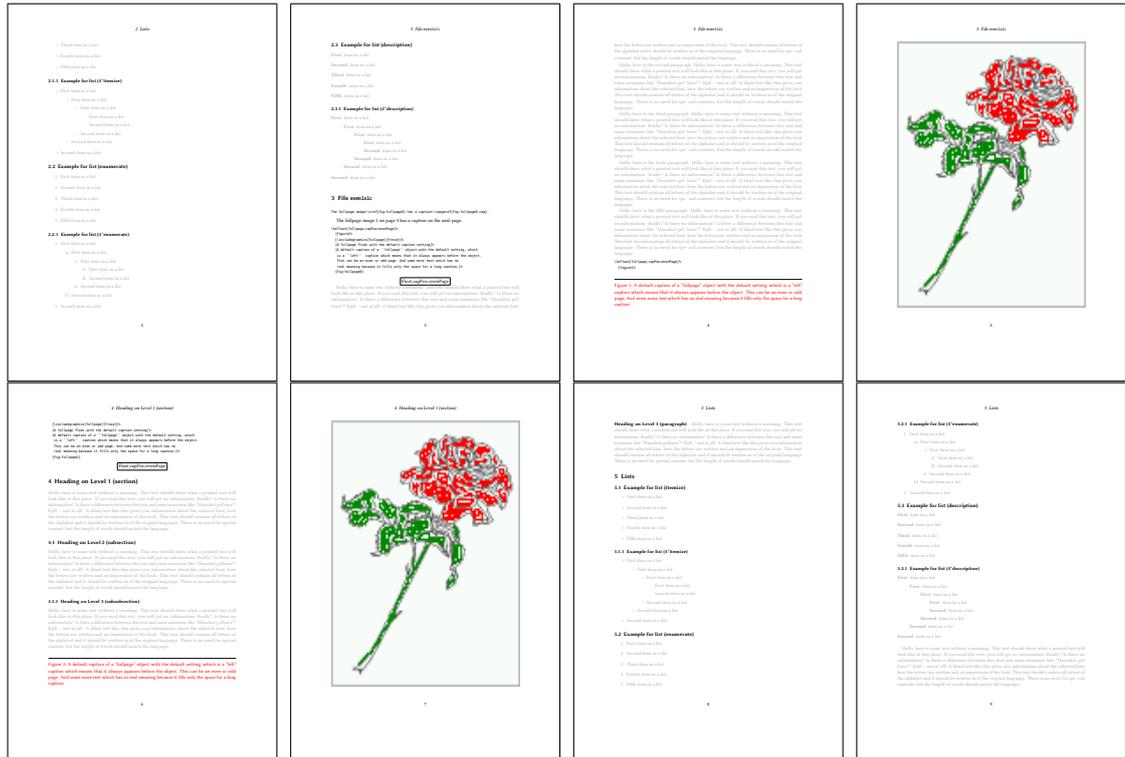

Figure 36: Output of even1s1c (pages 2–9)

17.1.4 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.

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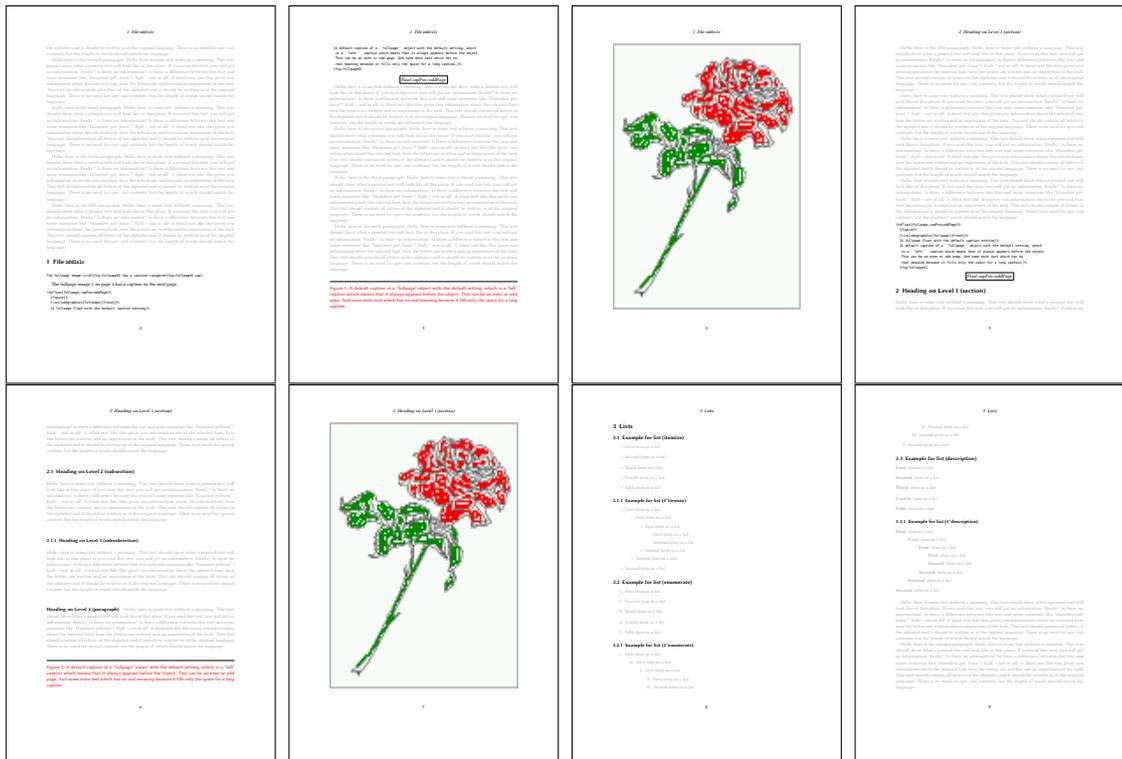

Figure 37: Output of `odd1s1c` (pages 2–9)

17.1.5 Using `capPos=inner` or `capPos=outer` — **caption on the inner or outer side**

These settings make no sense in onecolumn mode.

17.2 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 valis 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!

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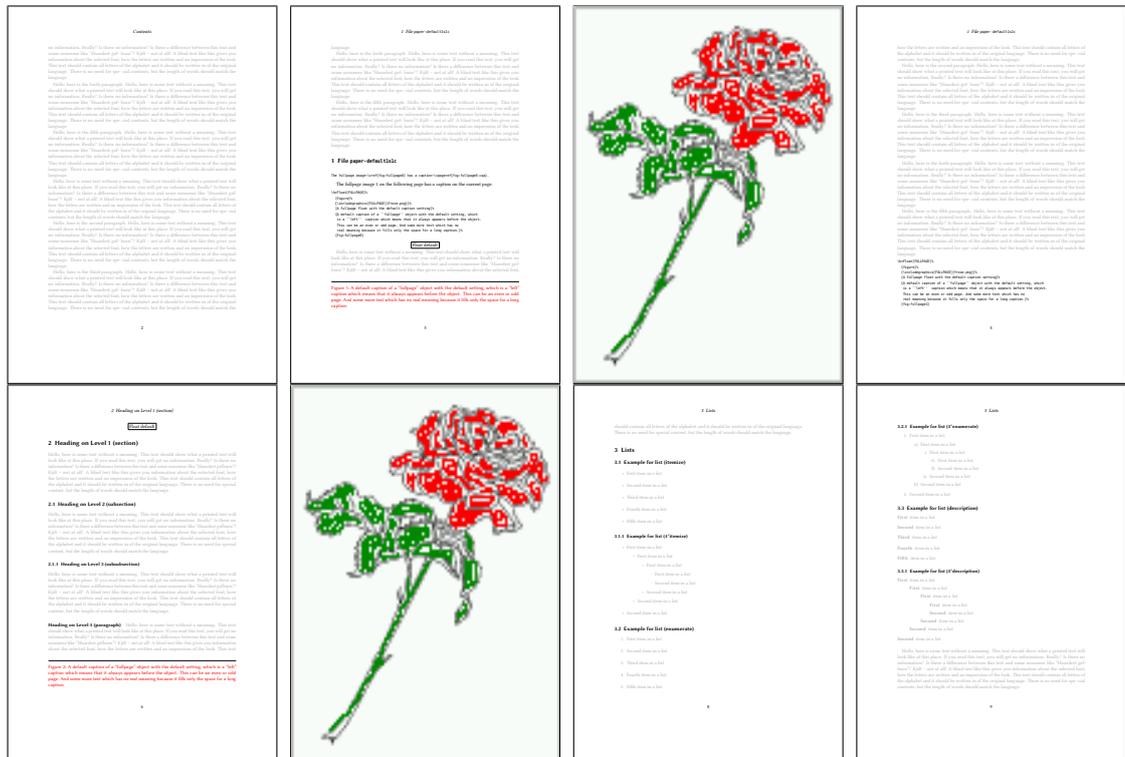

Figure 38: Output of `paper-default1s1c` (pages 2–9)
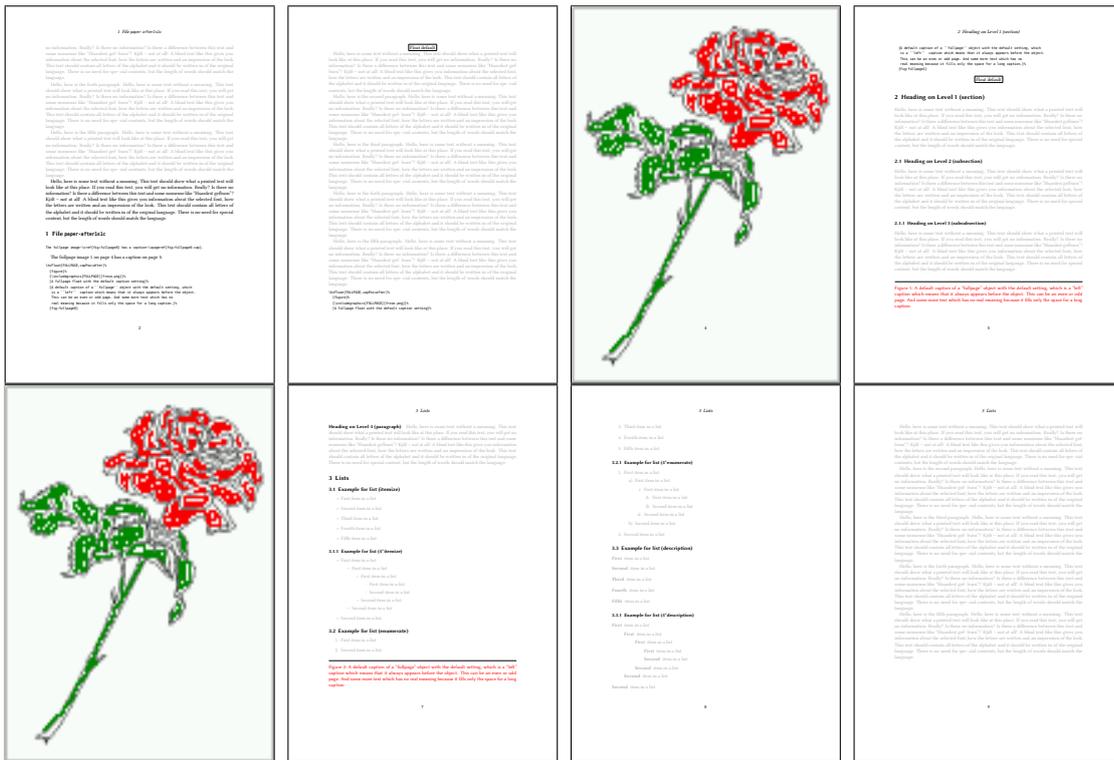
Figure 39: Output of `paper-after1s1c` (pages 2–9)

17.3 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

---

\hvFloat [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:

```
1  \captionsetup{singlelinecheck=false}
2  \hvFloat[fullpage,capPos=before,multiFloat,vFill]%
3    +{figure}{\includegraphics[width=\linewidth]{images/CTAN}}%%               no 1
4      [Short caption A]%
5      {A Caption A of a ``fullpage'' object, which follows on the left or
6       right column. This can be an even or odd page. And some more text which has no
7       real meaning because it fills only the space for a long caption.}%
8      {img:demo0}%
9    +{table}{\begin{tabular}{lrcp{3cm}}\hline                        %         no 2
10            Linksbündig & Rechtsbündig & Zentriert & Parbox\\\hline
11            L         & R          & C         & P\\
12            left      & right      & center    & Text with possible linebreaks\\
13            \multicolumn{4}{c}{Multicolumn over all columns}\\\hline
14           \end{tabular}}%
15      [Short Caption B]%
16      {A Caption B of a ``fullpage'' object, which follows on the left or
17          right column. This can be an even or odd page.}{}%
18    +{figure}{\includegraphics[width=\linewidth]{images/CTAN}}%%               no 3
19      {A Caption C of a ``fullpage'' object, which follows on the left or
20          right column.}%
21      {img:demo1}
22    +{figure}{\includegraphics[width=\linewidth]{images/CTAN}}%%               no 4
23      {A Caption C of a ``fullpage'' object, which follows on the left or
24          right column.}%
25      {img:demo2}
```

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 . The setting \captionsetup{*singlelinecheck=false* } is needed if you want the captions always left aligned.
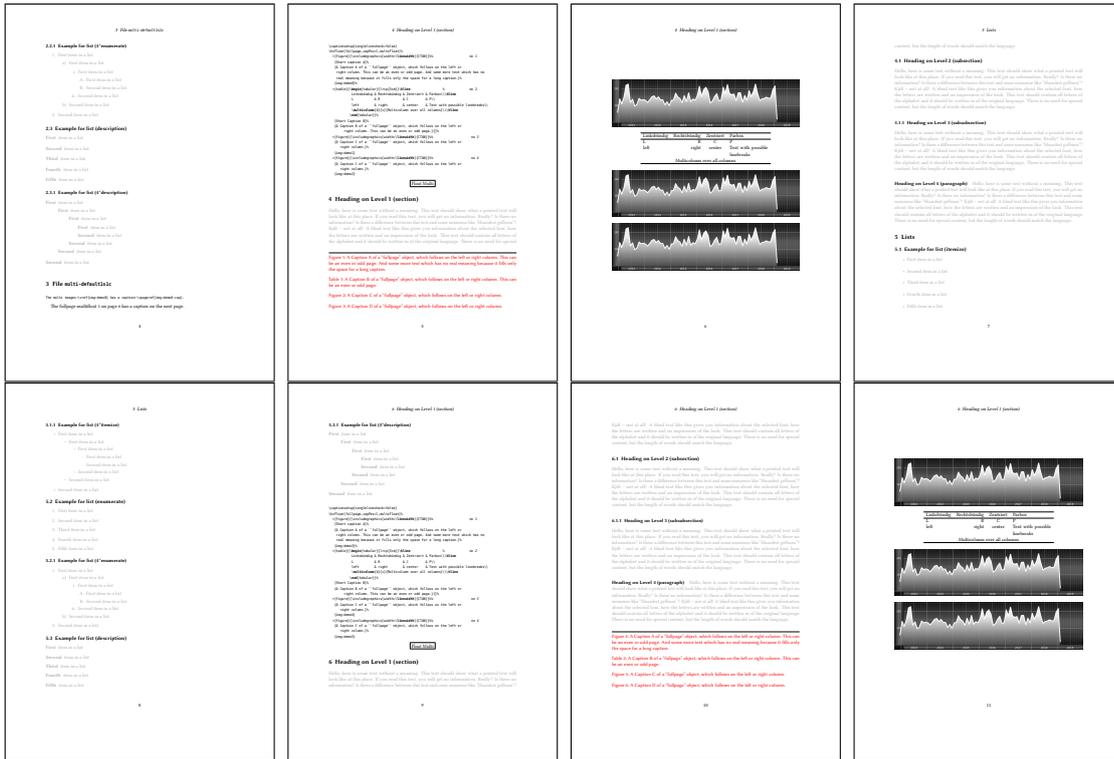
Figure 40: Output of `multi-default1s1c` (pages 4–11)
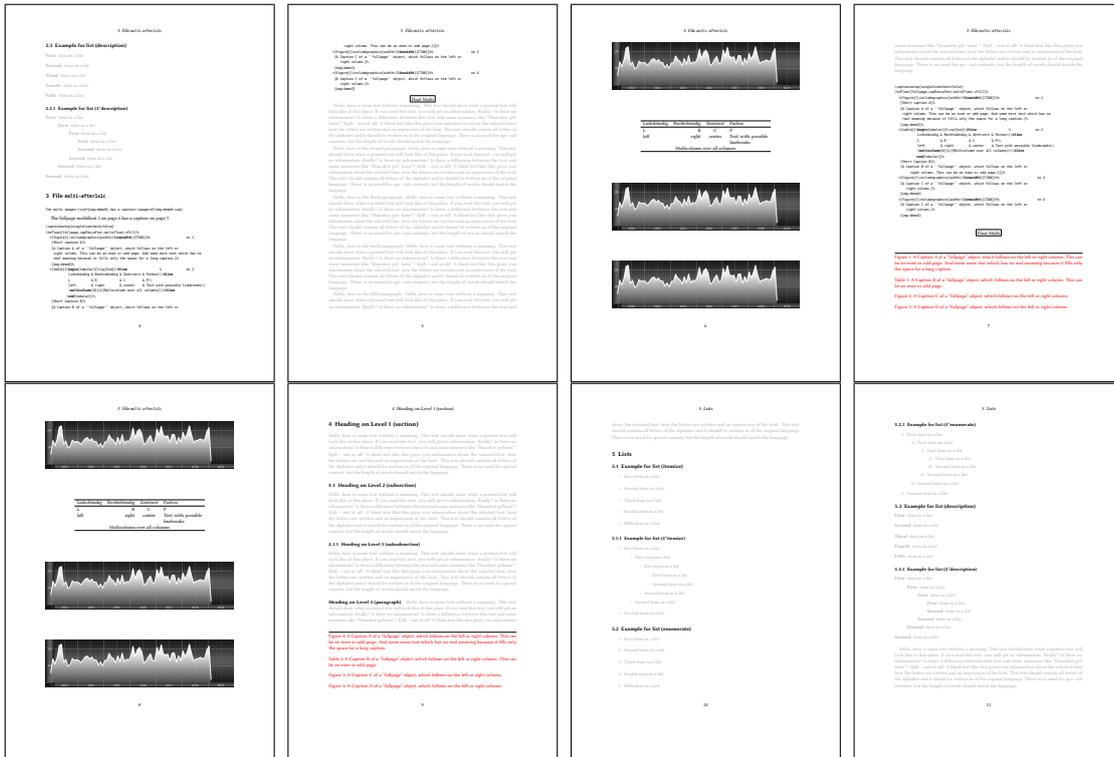
Figure 41: Output of `multi-after1s1c` (pages 4–11)

18 Subfloat page

A subfloat page can have only one type of floats which will have one main caption and individual subcaptions. The syntax is similiar 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 aditional lines will have the same float type, the reason why the float type entry is ignored.

```
1  \hvFloat[fullpage,capPos=before,objectFrame,subFloat,vFill]%
2    +{figure}{}[Short main caption of the objects]%   main short lsi entry
3     {The main  caption of a ``fullpage'' object, which follows on the left or
4         right column. This can be an even or odd page. And some more text which has no
5         real meaning because it fills only the space for a long caption.}%  main caption
6     {sub:demo0}%
7    +{}{\includegraphics[width=\linewidth]{images/CTAN}}%
8     [Short caption B]%
9     {A Caption B of a ``fullpage'' sub object.}%  subcaption
10     {}%
11    +{}{\includegraphics[width=\linewidth]{images/CTAN}}%
12     {A Caption C of a ``fullpage'' object, which follows on the left or right column.}%
13     {sub:demo1}
14    +{}{\includegraphics[width=\linewidth]{images/CTAN}}%
15     {A Caption D of a ``fullpage'' object}{sub:demo2}
16    +{}{\includegraphics[width=\linewidth]{images/CTAN}}%
17     {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*].
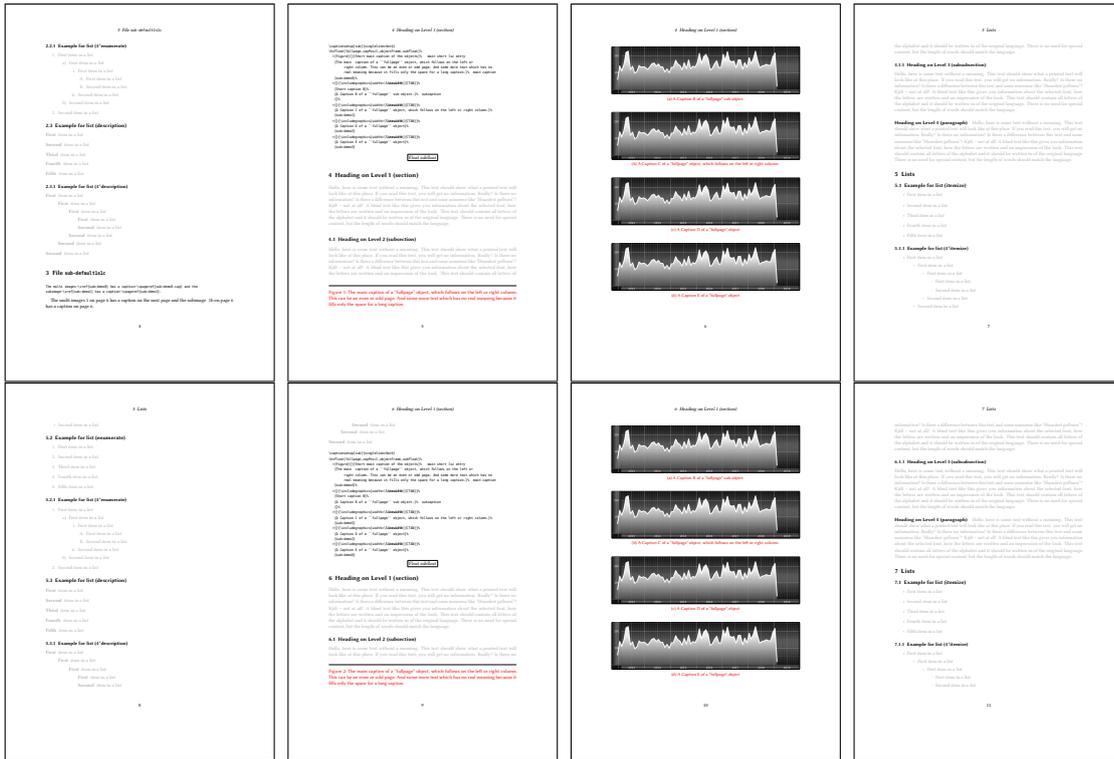
Figure 42: Output of `sub-default1s1c` (pages 4–11)
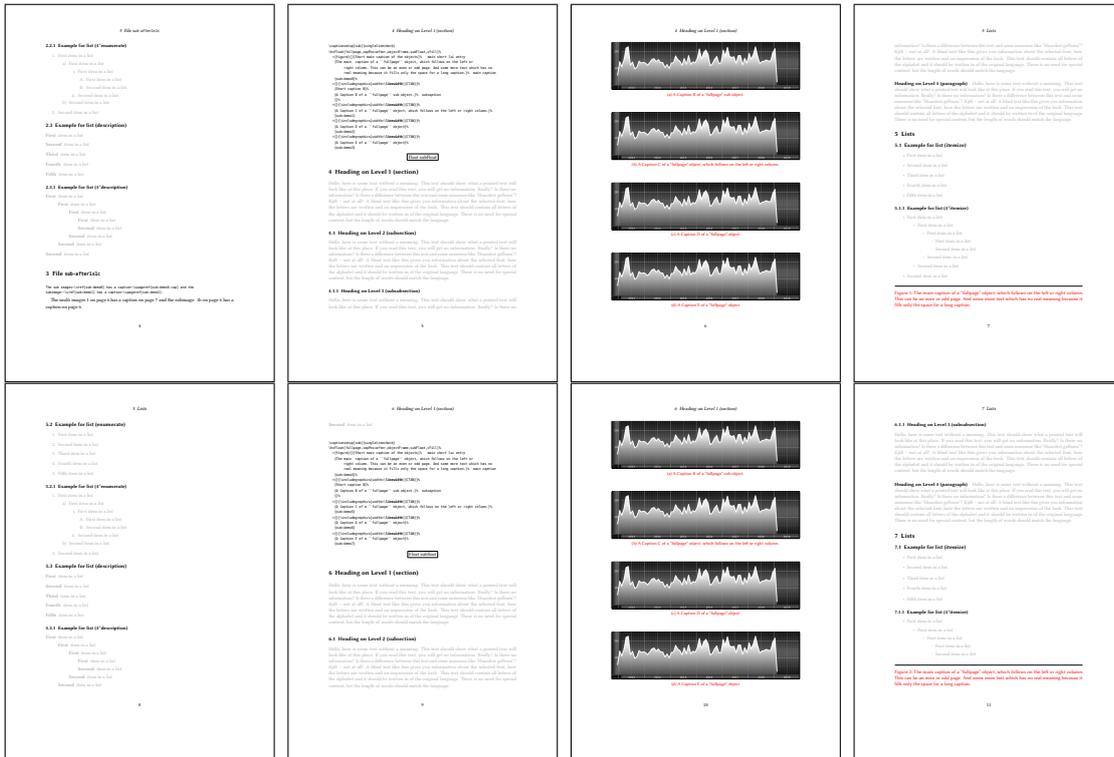
Figure 43: Output of `sub-after1s1c` (pages 4–11)

19 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.

19.1 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 44).
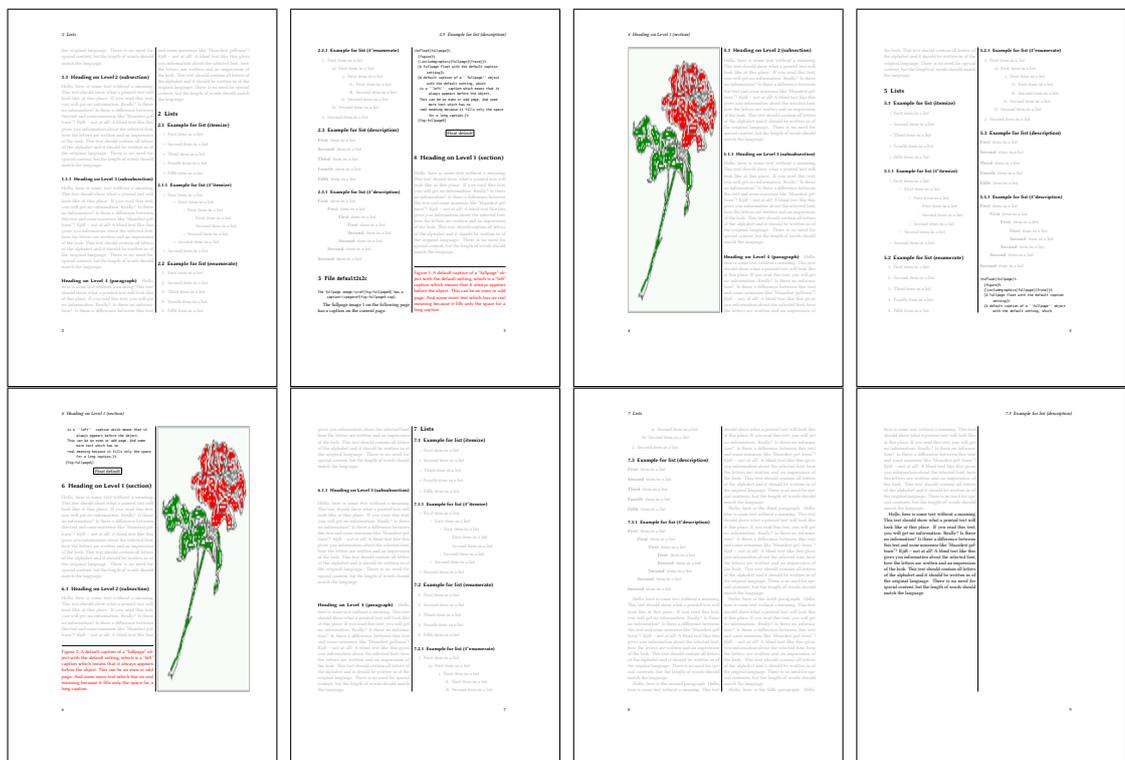
Figure 44: Output of `default2s2c` (pages 2–9)

```
1  \hvFloat[fullpage]{figure}%
2    {\includegraphics[width=\columnwidth,height=0.9\textheight]{images/frose}}%
3    [A float which needs the complete column width and height.]%
4    {A Caption of a ``fullpage'' object, which follows on the next column.
5     This is always the right column on an even or odd page. And some more
6     text which has no real meaning because it fills only the space for a long
7     caption.}%
8    {fig:fullpage0-2}
```

The example 44 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 45).

Figure 45: Output of `left2s2c` (pages 2–9)

19.1.1 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 47 on the next page)

```
1  \hvFloat[fullpage, capPos=after]{figure}%
2    {\includegraphics[fullpage]{images/rose}}%
3    [A float which needs the complete column width and height.]%
4    {A Caption of a ``fullpage'' object, which is on the left column.
5     This is always the right column on an even or odd page. And some more
6     text which has no real meaning because it fills only the space for a long
7     caption.}%
8    {fig:fullpage1-2}
```

The caption and the object can be on different pages (Figure 46 on the following page). 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 46: Output of `after2s2c` (pages 2–9)
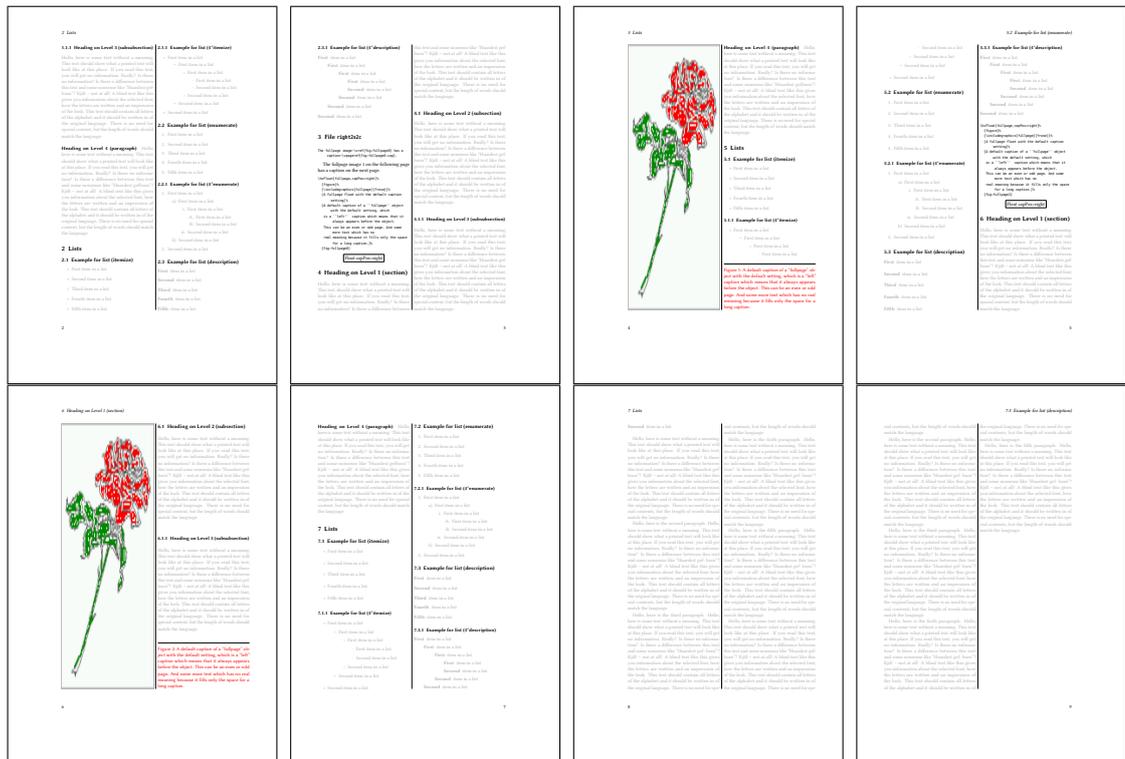
Figure 47: Output of `right2s2c` (pages 2–9)

19.1.2 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`.
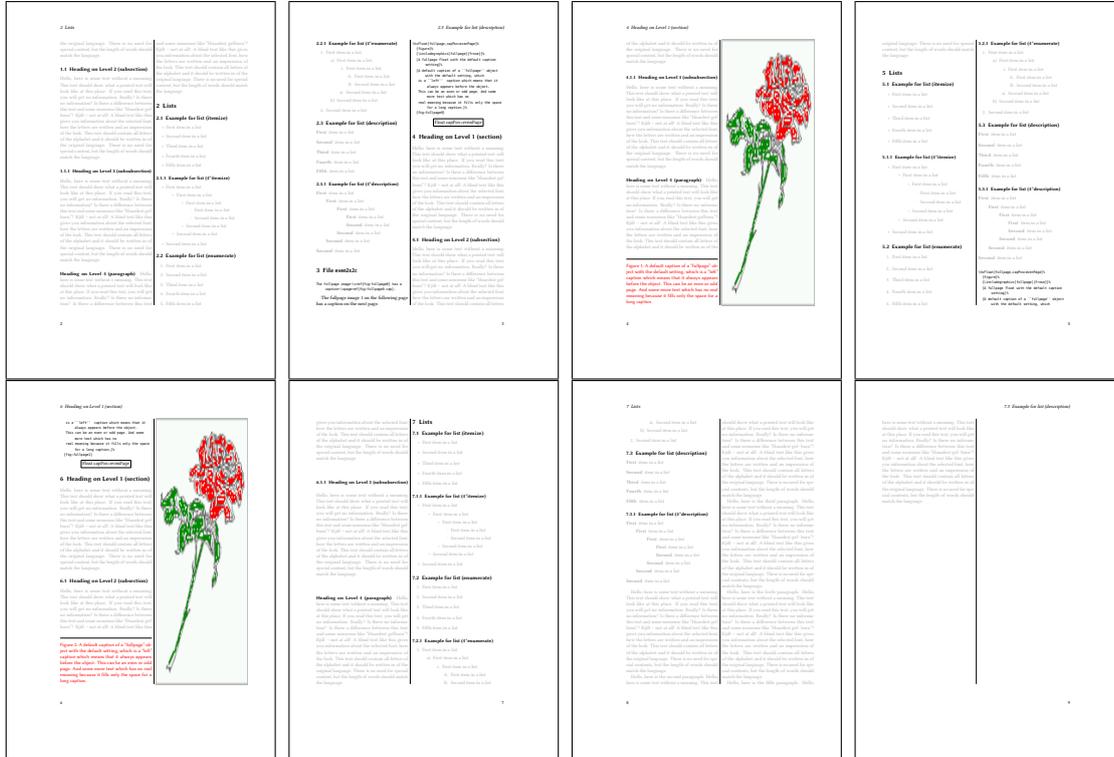
Figure 48: Output of even2s2c (pages 2–9)

19.1.3 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 `hvfloat`.
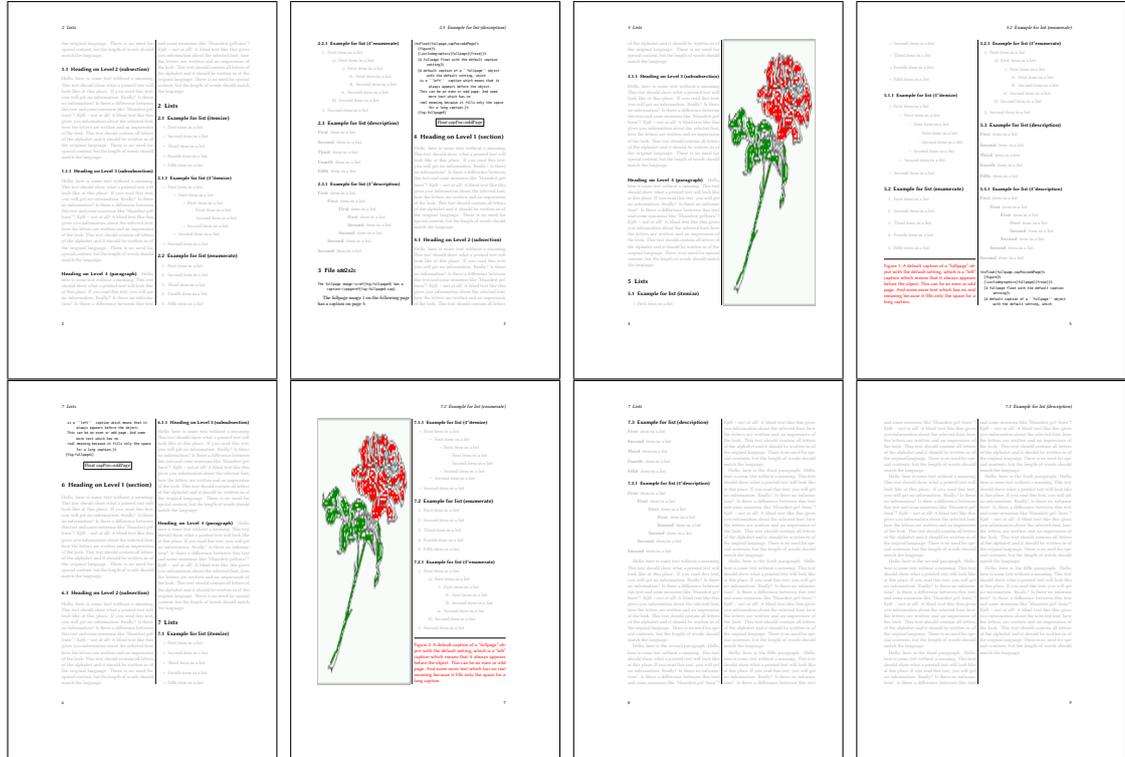
Figure 49: Output of `odd2s2c` (pages 2–9)

19.1.4 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.

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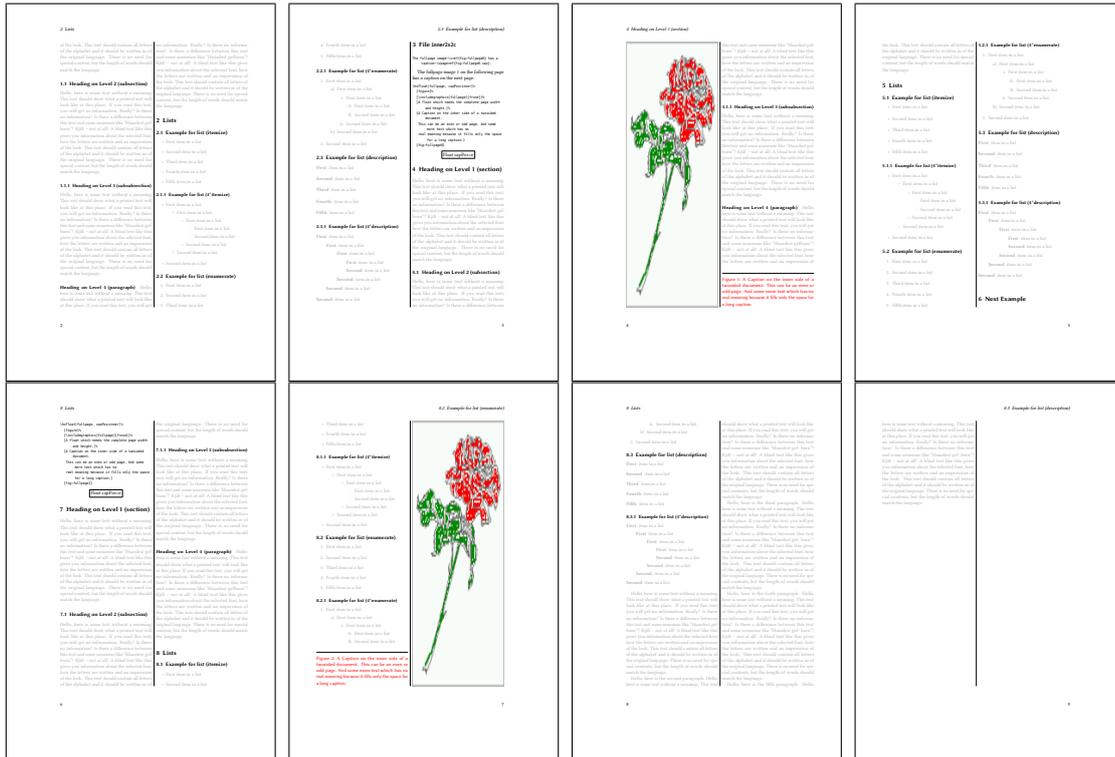

Figure 50: Output of `inner2s2c` (pages 2–9)

19.1.5 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.

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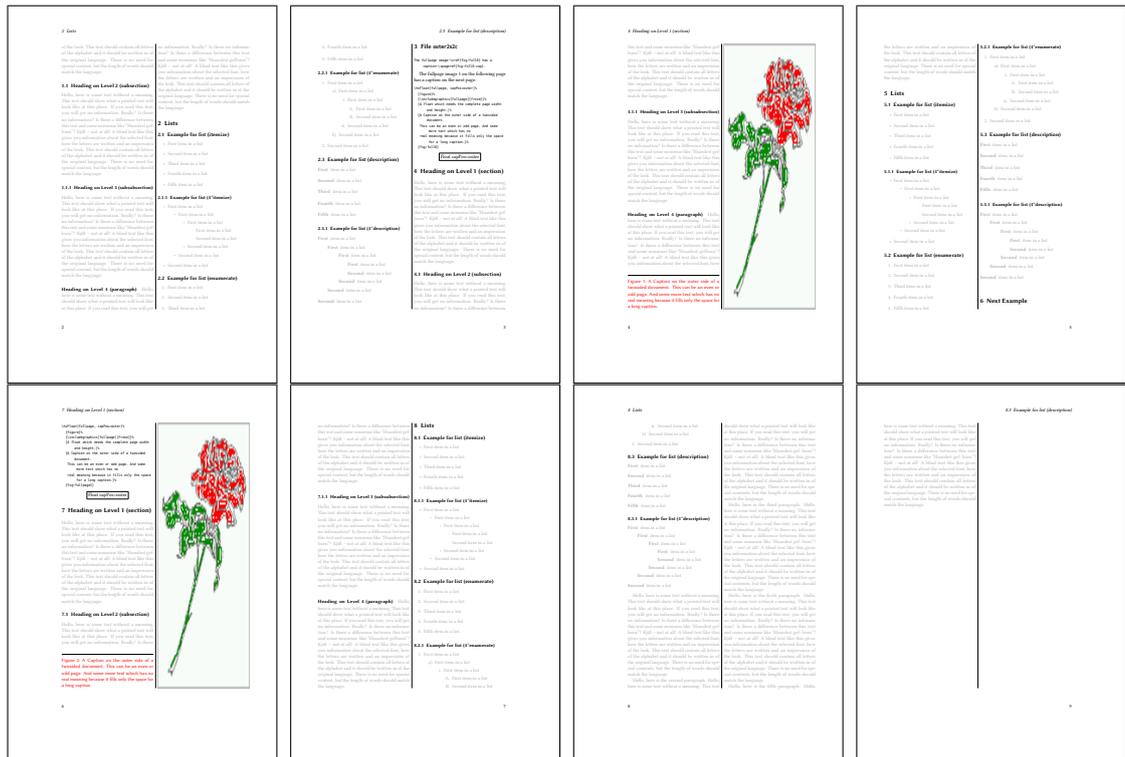

Figure 51: Output of `outer2s2c` (pages 2–9)

19.2 Using full page in twocolumn mode

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

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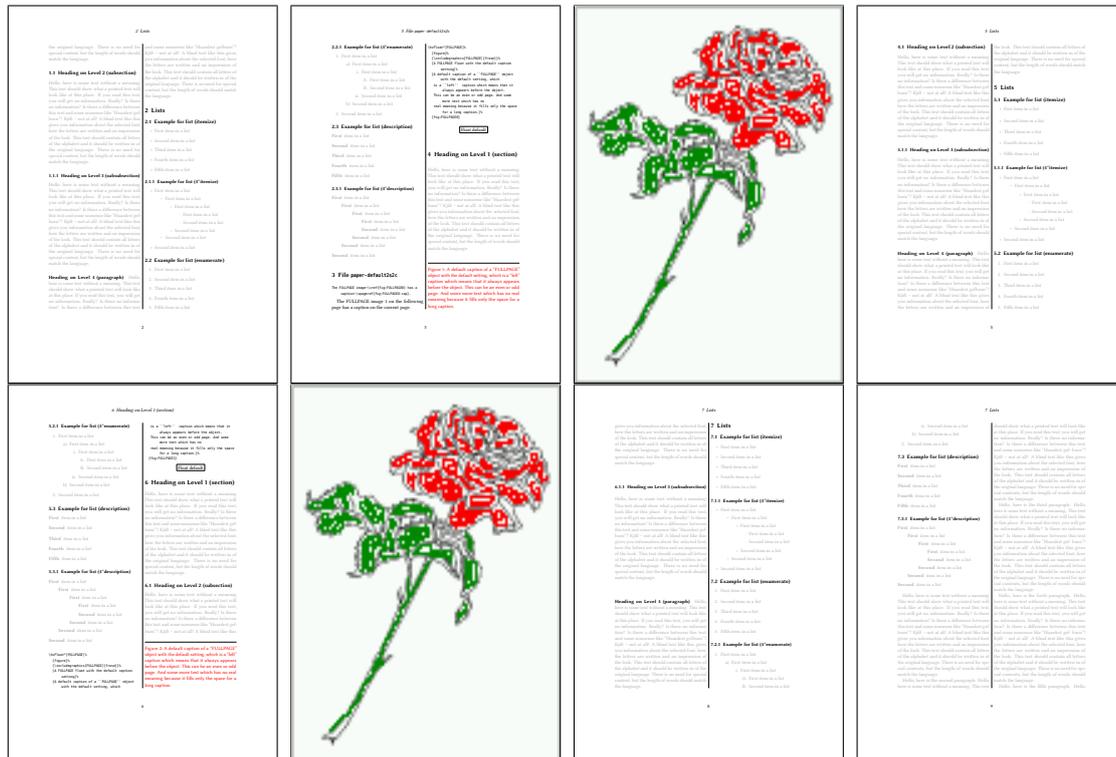

Figure 52: Output of paper-default2s2c (pages 2–9)
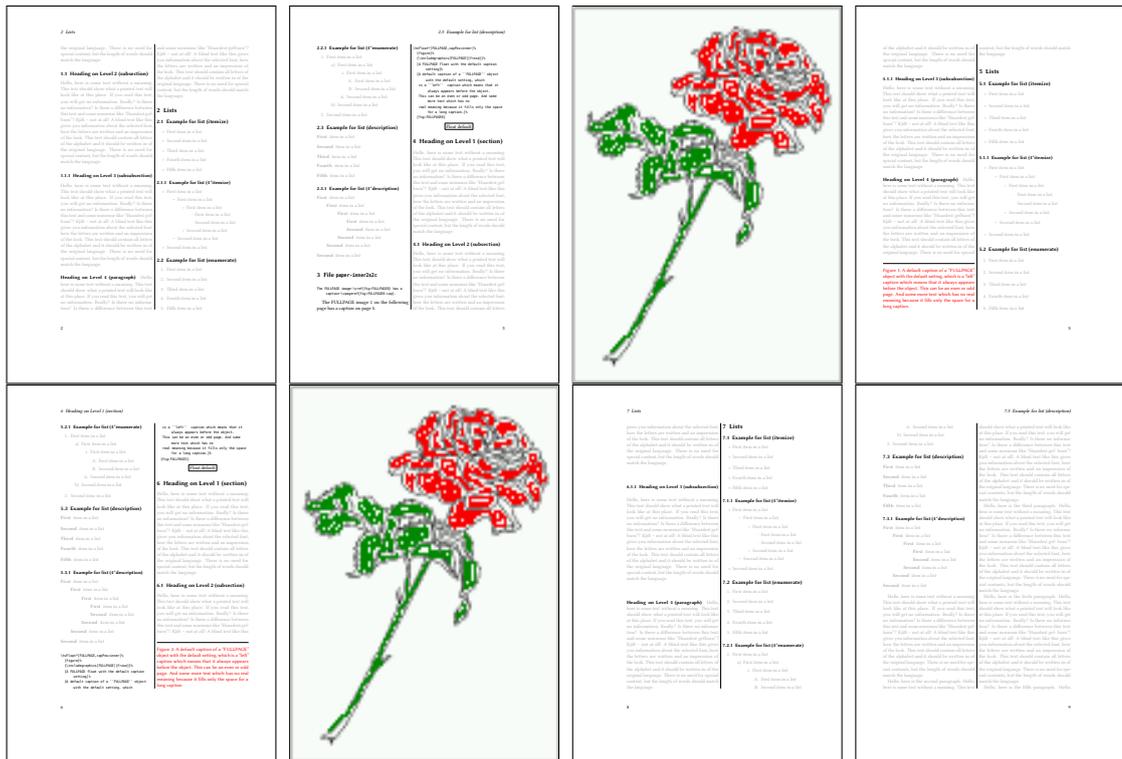
Figure 53: Output of paper-inner2s2c (pages 2–9)

19.3 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:

```
1  \captionsetup{singlelinecheck=false}
2  \hvFloat[fullpage,multiFloat,capPos=inner,vFill]%
3    +{figure}{\includegraphics[height=0.4\textheight]{images/rose}}%%  no 1
4    [Short caption A]%
5    {A Caption A of a ``fullpage'' object, which follows on the left or
6     right column. This can be an even or odd page. And some more text which has no
7     real meaning because it fills only the space for a long caption.}%
8    {multi:demo0}%
9    +{table}{\begin{tabular}{lr}\hline                % no 2
10          Linksbündig & Rechtsbündig\\
11          L          & R          \\
12          left       & right      \\
13          \multicolumn{2}{c}{Multicolumn}\\\hline
14         \end{tabular}}%
15    [Short Caption B]%
16    {A Caption B of a ``fullpage'' object, which follows on the left or
17        right column. This can be an even or odd page.}%
18    {}%
19    +{figure}{\includegraphics[height=0.4\textheight]{images/rose}}%%  no 3
20    {A Caption C of a ``fullpage'' object, which follows on the left or
21        right column.}%
22    {multi:demo1}
```

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 18 on page 40. The setting \captionsetup{*singlelinecheck=false* } is needed if you want the captions always left aligned.
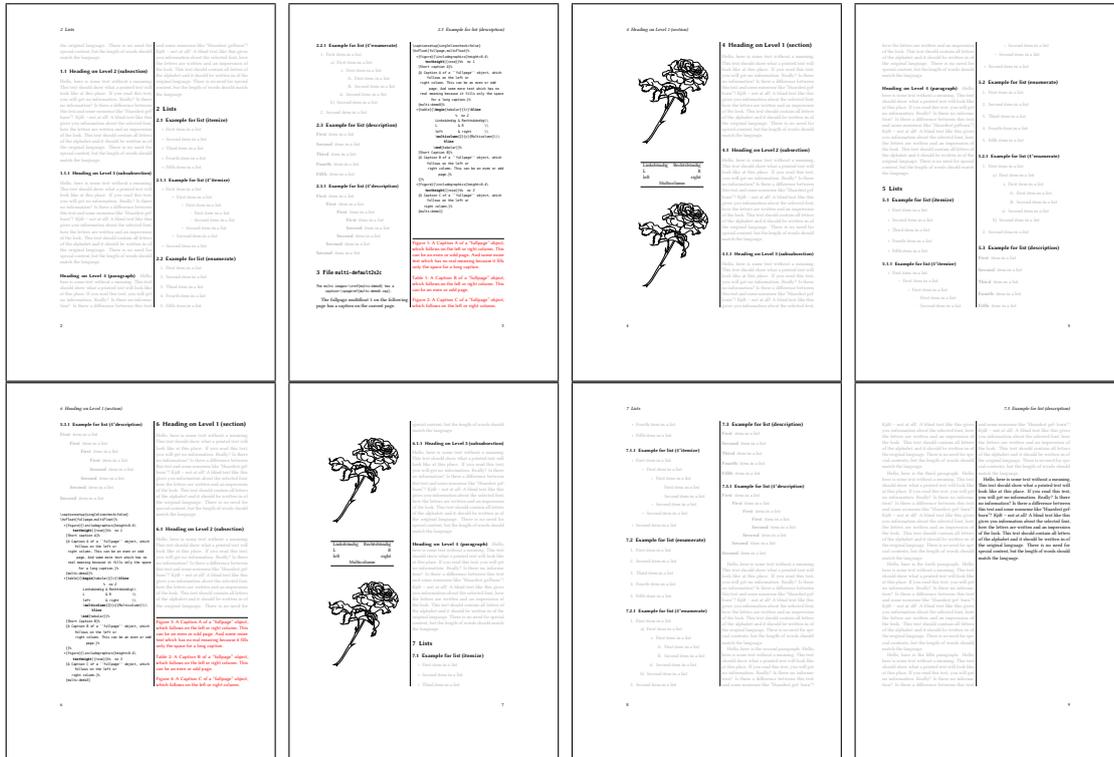
**Figure 54:** Output of `multi-default2s2c` (pages 2-9)

20 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 aditional lines will have the same float type, the reason why the float type entry is ignored.

```
1  \captionsetup[sub]{singlelinecheck}
2  \hvFloat[fullpage,capPos=before,objectFrame,subFloat,vFill]%
3    +{figure}{}[Short main caption of the objects]%   main short lsi entry
4     {The main  caption of a ``fullpage'' object, which follows on the left or
5          right column. This can be an even or odd page. And some more text which has no
6          real meaning because it fills only the space for a long caption.}%  main caption
7     {sub:demo00}%
8    +{}{\includegraphics[height=0.28\textheight]{images/rose}}%
9     [Short caption B]%
10    {A Caption B of a ``fullpage'' sub object.}%  subcaption
11    {}%
12   +{}{\includegraphics[height=0.28\textheight]{images/rose}}%
13    {A Caption C of a ``fullpage'' object, which follows on the left or right column.}%
14    {sub:demo10}
15   +{}{\includegraphics[height=0.28\textheight]{images/rose}}%
16    {A Caption D of a ``fullpage'' object}%
17    {sub:demo20}
```
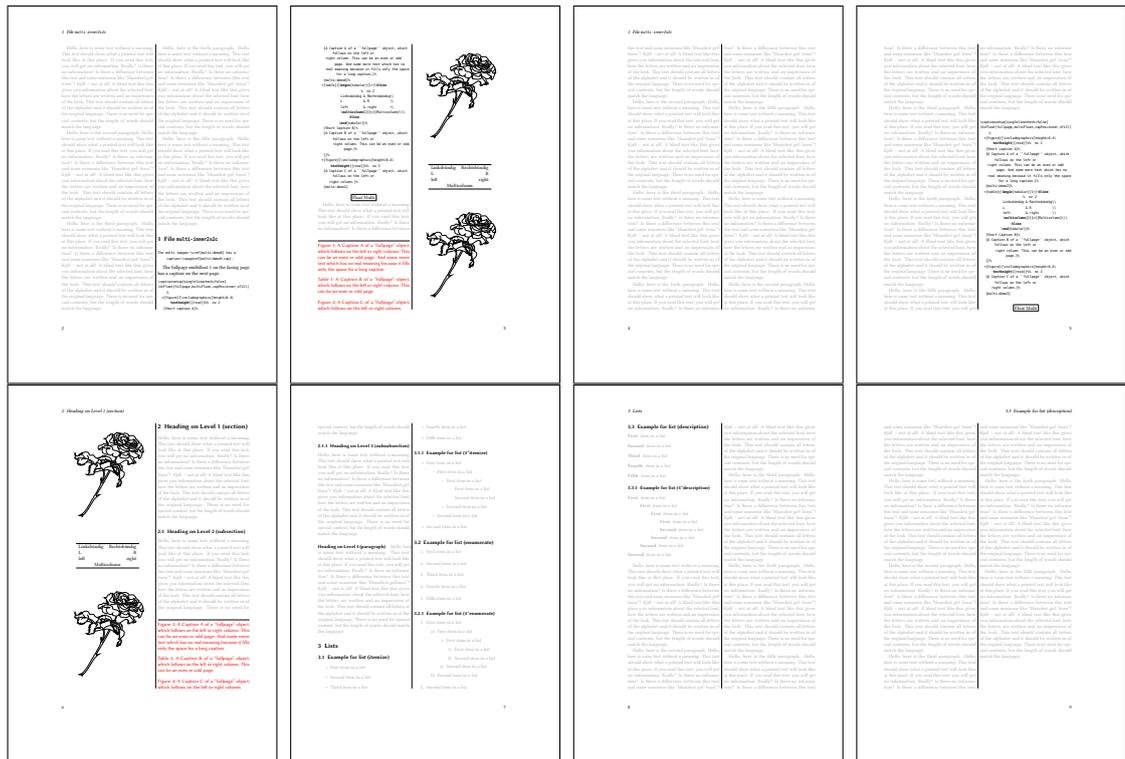
Figure 55: Output of `multi-inner2s2c` (pages 2-9)

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).
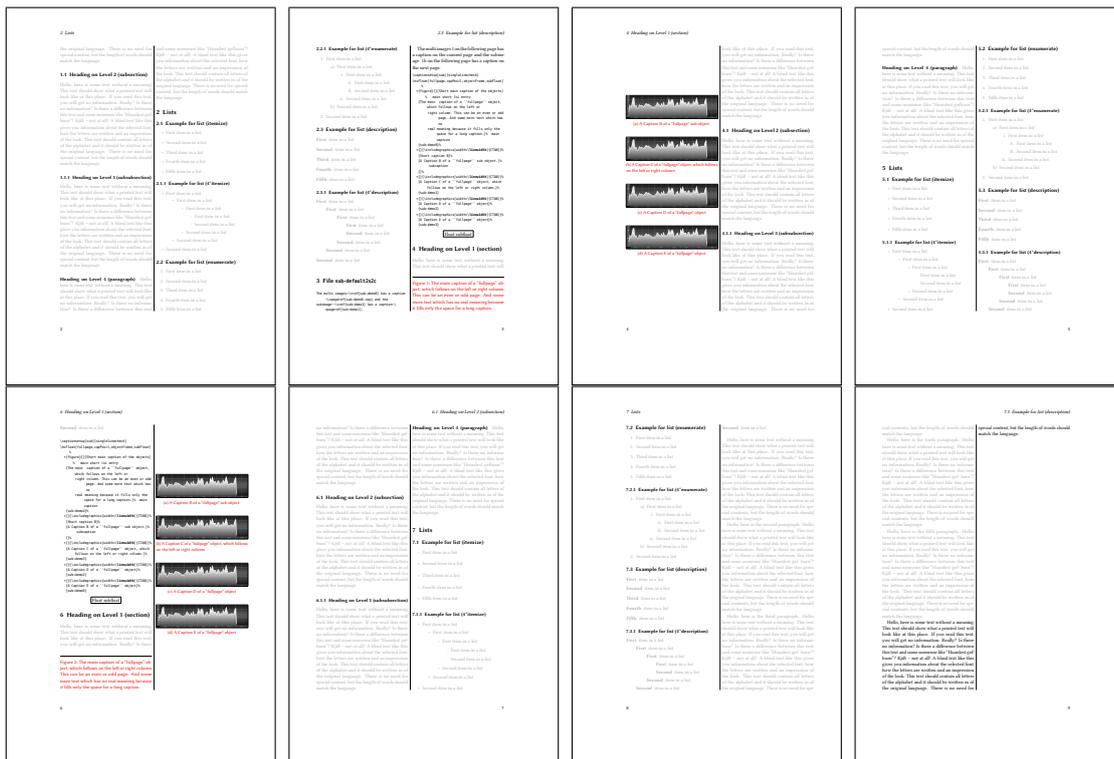
Figure 56: Output of `sub-default2s2c` (pages 2–9)
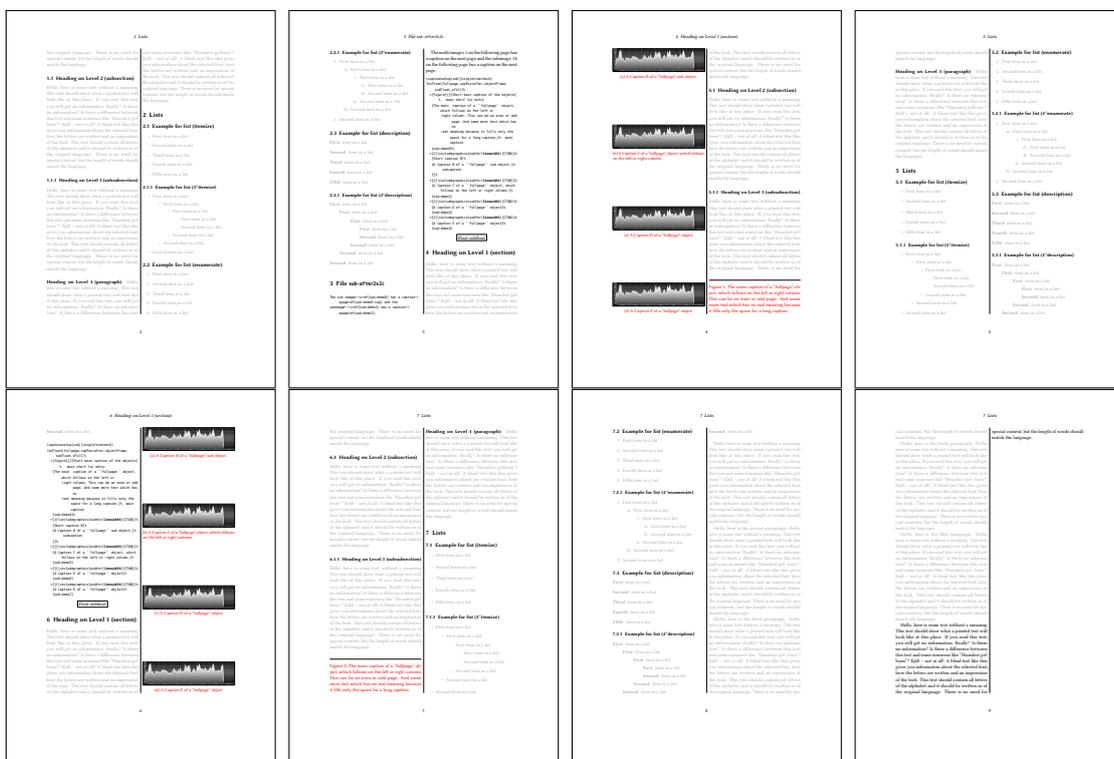
Figure 57: Output of `sub-after2s2c` (pages 2–9)

21 Doublepage objects – images and/or tabulars

If an image or a tabular or any other object is too big for one page, it can be split over two pages (left – right). It is obvious that this makes only sense for twoside documents. There are three optional arguments:

doublePage A splitted object with or without a caption on top of a double page, beginning in the left top text area. The user has to scale the image to be sure that the object will not be greater than 2\paperwidth-4\margin. The caption can be rotated on the right side of the right object part or under the right part.

doublePAGE A splitted object with or without a caption on top of a double page, beginning at the left side of the paper area and top of the text area. The user has to scale the image to be sure that the object will not be greater than 2\paperwidth. The caption can only be under the right part of the object. The will be *no additional text* on the double page.

doubleFULLPAGE A splitted object with or without a caption on the right or below of a double page. The object can fill the complete double page. The user has to scale the image to be sure that the object will not be greater than 2\paperwidth. A caption will be rotated and written *over* the object, or if possible, at the right. The user has to take care for a correct text color.

21.1 doubleFULLPAGE

The scaling of the image is left to the user. If the proportion of the object doesn't fit 2*paperwidth/paperheight, then there can be a white part on the top or bottom of the object. A pagenumber will not be printed. In this documentation you'll find a marginnote where the following full doublepage image is defined. It appears on the the next following even page and following text will be placed *before* the object.

```
1  \hvFloat[doubleFULLPAGE,capPos=right,capAngle=90]%
2    {figure}%
3    {\includegraphics[width=2\paperwidth]{images/r+j2}}%
4    [A doublepage image with a caption on the image.]%
5    {A caption for a double-sided image that will be placed below the right-hand
6     part of the illustration. The illustration begins on the left edge of the paper.
7     No further text is placed on the pages. A short form is used for the LOF.
8     The parameter is \texttt{doubleFULLPAGE}}%
9    {fig:doubleFULLPAGE0}
```

Fig. 58   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.

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

Figure 58: A caption for a double-sided image that will be placed on the right-hand part of the illustration. The illustration begins on the left edge of the paper. No further text is placed on the pages. A short form is used for the LOF. The parameter is doubleFULLPAGE

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.

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.

It is also possible to take a bind correction into account with e.g. `binCorr=5mm`, which reserves whitespace of 5mm in the inner margin on both pages.

```
\hvFloat[doubleFULLPAGE,capPos=after,bindCorr=5mm]%
  {figure}%
  {\includegraphics[width=2\paperwidth]{images/r+j3}}%
  [A doublepage image with a caption on the image.]%
  {A caption for a double-sided image that will be placed below the right-hand
   part of the illustration. The illustration begins on the left edge of the paper.
   No further text is placed on the pages. A short form is used for the LOF.
   The parameter is \texttt{doubleFULLPAGE}}%
  {fig:doubleFULLPAGE0a}
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Fig. 59

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.

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Figure 59: A caption for a double-sided image that will be placed on the right-hand part of the illustration. The illustration begins on the left edge of the paper. No further text is placed on the pages. A short form is used for the LOF. The parameter is `doubleFULLPAGE`

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```
1  \hvFloat[doubleFULLPAGE,capPos=right]%
2    {figure}%
3    {\includegraphics[height=\paperheight]{images/rheinsberg-1000}}%
4    {A caption for a double-sided image that will be placed on the right-hand
5     part of the illustration. The illustration begins on the left edge of the paper.
6     No further text is placed on the pages. A short form is used for the LOF.
7     The parameter is \texttt{doubleFULLPAGE}}%
8    {fig:doubleFULLPAGE1}
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Fig. 60

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Figure 60: A caption for a double-sided image that will be placed on the right-hand part of the illustration. The illustration begins on the left edge of the paper. No further text is placed on the pages. A short form is used for the LOF. The parameter is doubleFULLPAGE

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Placing the caption on the image itself is not the best solution. With the optional arguments before and after for capPos, the caption can be placed on the bottom of the preceding or following page of the doublepage object. A givel label, e.g. foo will always point to the page with the left part of the object. Internally are two additional labels defined: foo-cap points to the caption and foo-2 points to the right part of the doublepage object.

In the follwoing example 61 the caption is on page 70, the left image part on page 68 and the right part on page 69. In the follwoing example 62 the caption is on page 73, the left image part on page 74 and the right part on page 75. All three labels points to the same figure or table number:

\ref{foo} | \ref{foo-cap} | \ref{foo-2} → 61 | 61 | 61

\pageref{foo} | \pageref{foo-cap} | \pageref{foo-2} → 68 | 70 | 69

```
1  \hvFloat[doubleFULLPAGE,capPos=after]%
2   {figure}%
3   {\includegraphics[doubleFULLPAGE,
4    keepaspectratio=false]{images/rheinsberg-1000}}%
5   {A caption for a double-sided image that will be placed \textbf{after}
6    the image. The image begins on the left edge of the paper.
7    No further text is placed on the pages. A short form is used for the LOF.
8    The parameter is \texttt{doubleFULLPAGE}}%
9   {foo}
```

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Figure 61: A caption for a double-sided image that will be placed **after** the image. The image begins on the left edge of the paper. No further text is placed on the pages. A short form is used for the LOF. The parameter is `doubleFULLPAGE`

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```
1  \hvFloat[doubleFULLPAGE,capPos=before]%
2   {figure}%
3   {\includegraphics[height=\paperheight,width=2\paperwidth,
4     keepaspectratio=false]{images/rheinsberg-1000}}%
5   {A caption for a double-sided image that will be placed \textbf{before}
6    the image. The image begins on the left edge of the paper.
7    No further text is placed on the pages. A short form is used for the LOF.
8    The parameter is \texttt{doubleFULLPAGE}}%
9   {bar}
```

Fig. 62   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.

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Figure 62: A caption for a double-sided image that will be placed **before** the image. The image begins on the left edge of the paper. No further text is placed on the pages. A short form is used for the LOF. The parameter is `doubleFULLPAGE`

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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21.2 `doublePAGE`

With this option the object also starts at the left paper margin but on the top of the text area. There will be pagenumbers and a caption can be rotated on the right of the object or under it.

```
1  \hvFloat[doublePAGE]%
2    {figure}%
3    {\includegraphics[width=\dimexpr2\textwidth+2in]{images/seiser}}%
4    [A doublepage image with a caption below the right part.]%
5    {A caption for a double-sided image that will be placed below the right-hand
6     part of the illustration. The illustration begins on the left edge of the paper.
7     No further text is placed on the pages. A short form is used for the LOF.
8     The parameter is \texttt{doublePAGE}}%
9    {fig:doublePAGE0}
```

Fig. 63   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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Figure 63: A caption for a double-sided image that will be placed below the right-hand part of the illustration. The illustration begins on the left edge of the paper. No further text is placed on the pages. A short form is used for the LOF. The parameter is `doublePAGE`

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21.3 `doublePage`

With this option the object also starts at the left top of the text area. There will be pagenumbers and a caption can be rotated on the right of the object or under it and the rest of the text area is filled with text.

```
\hvFloat[doublePage,sameHeight]%
  {figure}%
  {\includegraphics[doublefullPage]{images/sonne-meer}}%
  [A doublepage image with a caption on the right side of the right part.]%
  {A caption for a double-sided image that will be placed on the right side of the
   right-hand part of the illustration. The illustration begins on the left edge of
   the paper. A short form is used for the LOF.
   The parameter is \texttt{doublePage}}%
  {fig:doublePage0sH}
```

Fig. 64   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.

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Figure 64: A caption for a double-sided image that will be placed on the right side of the right-hand part of the illustration. The illustration begins on the left edge of the paper. A short form is used for the LOF. The parameter is `doublePage`

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```
\hvFloat[doublePage,capPos=right,capVPos=top]%
  {figure}%
  {\includegraphics[width=2\textwidth]{images/sonne-meer}}%
  [A doublepage image with a caption on the right side of the right part.]%
  {A caption for a double-sided image that will be placed on the right side of the
   right-hand part of the illustration. The illustration begins on the left edge of
   the paper. A short form is used for the LOF.
   The parameter is \texttt{doublePage}}%
  {fig:doublePage1}
```

Fig. 65   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.

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Figure 65: A caption for a double-sided image that will be placed on the right side of the right-hand part of the illustration. The illustration begins on the left edge of the paper. A short form is used for the LOF. The parameter is `doublePage`

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```
\hvFloat[doublePage,bindCorr=inner]%
  {figure}%
  {\includegraphics[width=2\textwidth]{images/sonne-meer}}%
  [A doublepage image with a caption on the right side of the right part.]%
  {A caption for a double-sided image that will be placed on the right side of the
   right-hand part of the illustration. The illustration begins on the left edge of
   the paper. A short form is used for the LOF.
   The parameter is \texttt{doublePage}}%
  {fig:doublePage0sH2}
```

Fig. 66   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

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Figure 66: A caption for a double-sided image that will be placed on the right side of the right-hand part of the illustration. The illustration begins on the left edge of the paper. A short form is used for the LOF. The parameter is `doublePage`

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21.4 Tabulars

In General there is no difference in an imgage or tabular or simple text. The object will be saved in a box and then clipped. If the object is a tabular one might modify the tabular if it will be split in the middle of a column. In such a case one can insert some additional horizontal space for this coloumn.

The tabular itself can be saved into the internal box \hv0Box or put directly as parameter into the macro.

```
1   \global\savebox\hv0Box{%
2   \begin{tabular}{l*{18}r} \toprule
3    & \textbf{1972} & \textbf{1973} & \textbf{1974} & \textbf{1975} & \textbf{1976}
4    & \textbf{1977} & \textbf{1978} & \textbf{1979} & \textbf{1980}  & \textbf{1981} & \textbf{1982} & \
        textbf{1983} & \textbf{1984} & \textbf{1985}
5    & \textbf{1986} & \textbf{1987} & \textbf{1988} & \textbf{1989}
6   \\\midrule
7   \addlinespace[3pt]
8   Zeile 1 & 1 & 3 & 1 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 0 & 0 &20 & 0 & 2 & 2 & 2 & 1\\\addlinespace[3pt]
9   Zeile 2 & 1 & 1 & 3 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 2 & 1 & 3 & 4 & 4 & 6 & 4 & 2\\\addlinespace[3pt]
10  Zeile 3 & 2 & 1 & 2 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 5 & 3 & 1 & 7 & 7 & 3\\\addlinespace[3pt]
11  Zeile 4 & 1 & 0 & 5 & 1 & 2 & 0 & 0 & 0 & 0 & 2 & 1 & 0 & 1 & 0 & 3 & 7 & 2 & 1\\\addlinespace[3pt]
12  Zeile 6 & 2 & 1 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 2 & 0 & 5 & 2 & 2 & 5 & 4 & 2\\\addlinespace[3pt]
13  Zeile 5 & 0 & 0 & 4 & 2 & 1 & 2 & 2 & 1 & 0 & 0 & 0 & 1 & 1 & 0 & 2 & 5 & 4 & 3\\\addlinespace[3pt]
14  Zeile 8 & 0 & 1 & 1 & 0 & 0 & 0 & 1 & 1 & 0 & 3 & 2 & 1 & 2 & 1 & 3 & 5 & 3 & 4\\\addlinespace[3pt]
15  Zeile 9 & 0 & 0 & 0 & 0 & 1 & 2 & 1 & 0 & 0 & 0 & 0 & 4 & 2 & 1 & 4 & 5 & 2\\\addlinespace[3pt]
16  Zeile10 & 0 & 1 & 3 & 0 & 1 & 0 & 1 & 0 & 0 & 1 & 1 & 0 & 1 & 1 & 1 & 4 & 4 & 1\\\addlinespace[3pt]
17  Zeile11 & 0 & 2 & 2 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 2 & 6 & 1 & 0 & 2 & 1 & 1 \\\addlinespace[3pt]
18  Zeile12 & 2 & 0 & 2 & 4 & 1 & 0 & 4 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 3\\\addlinespace[3pt]
19  Lärm    & 2 & 3 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 2 & 0 & 0 & 2 & 2 & 2\\\addlinespace[3pt]
20  Zeile13 & 0 & 1 & 0 & 0 & 1 & 0 & 3 & 0 & 0 & 0 & 0 & 0 & 2 & 0 & 1 & 3 & 0 & 2\\\addlinespace[3pt]
21  Zeile14 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 3 & 3 & 2 & 1 & 1 & 0\\\addlinespace[3pt]
22  Zeile15 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 4 & 0 & 0 & 3 & 1 & 1\\\addlinespace[3pt]
23  Zeile16 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 3 & 5 & 0 & 1\\\addlinespace[3pt]\
        midrule
24  Artikel gesamt & 2 & 6 & 13 & 8 & 4 & 3 & 5 & 4 & 0 & 6 & 3 & 5 &23 &10 & 8 & 15 & 13 &1 \\
25  \bottomrule
26  \end{tabular}}
27
28  \Blindtext
29
30  \hvFloat[doublePage,capPos=right,capVPos=top,floatCapSep=12pt]%
31    {table}%
32    {\usebox\hv0Box}%%%%%%%%%%%%%%
33    [A doublepage tabular with a caption on the right side of the right part.]%
34    {A caption for a double-sided tabular that will be placed on the right side of the
35     right-hand part of the illustration. The illustration begins on the left edge of
36     the paper. A short form is used for the LOF.
37     The parameter is \texttt{doublePage}}%
38    {tab:doublePage3}
```

Tab. 9

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	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	198
Zeile 1	1	3	1	1	1	0	1	1	0	0	0	
Zeile 2	1	1	3	1	0	0	0	0	0	0	2	
Zeile 3	2	1	2	1	0	0	0	0	0	0	0	
Zeile 4	1	0	5	1	2	0	0	0	0	2	1	
Zeile 6	2	1	1	0	0	0	0	0	0	1	2	
Zeile 5	0	0	4	2	1	2	2	1	0	0	0	
Zeile 8	0	1	1	0	0	0	1	1	0	3	2	
Zeile 9	0	0	0	0	0	1	2	1	0	0	0	
Zeile10	0	1	3	0	1	0	1	0	0	1	1	
Zeile11	0	2	2	1	1	0	1	0	0	0	0	
Zeile12	2	0	2	4	1	0	4	0	0	0	0	
Lärm	2	3	0	0	0	0	0	0	0	0	1	
Zeile13	0	1	0	0	1	0	3	0	0	0	0	
Zeile14	0	1	0	0	0	0	0	0	0	0	0	
Zeile15	0	0	0	0	0	0	0	0	0	1	0	
Zeile16	0	0	0	0	0	1	0	0	0	0	0	
Artikel gesamt	2	6	13	8	4	3	5	4	0	6	3	

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83	1984	1985	1986	1987	1988	1989
0	20	0	2	2	2	1
1	3	4	4	6	4	2
1	5	3	1	7	7	3
0	1	0	3	7	2	1
0	5	2	2	5	4	2
1	1	0	2	5	4	3
1	2	1	3	5	3	4
0	4	2	1	4	5	2
0	1	1	1	4	4	1
2	6	1	0	2	1	1
0	0	0	0	1	0	3
0	2	0	0	2	2	2
0	2	0	1	3	0	2
0	3	3	2	1	1	0
0	4	0	0	3	1	1
0	0	0	3	5	0	1
5	23	10	8	15	13	1

Table 9: A caption for a double-sided tabular that will be placed on the right side of the right-hand part of the illustration. The illustration begins on the left edge of the paper. A short form is used for the LOF. The parameter is `doublePage`

words should match the language.

22 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 refence to the page where the object is set. Let's assume that we use something like

```
\hvFloatSetDefaults
\hvFloat[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 68 is on page 97, but the image itself is on page 98. With package varioref it is:

```
Whith the package \Lpack{varioref} (\url{https://ctan.org/pkg/varioref})
one can get something like: see figure~\vref{demo:fullpage}, which uses a
^correct page number of the floatinmg 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}
```

Whith the package varioref (https://ctan.org/pkg/varioref) one can get something like: see figure 68 on page 98, which uses a correct page number of the floating object and not the caption pagenumber which is on the next page. The figure 68 is on page 98 and the caption on page 97

23 Defining a style

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

| \hvDefFloatStyle{*name*}{*setting*} |

For example:

```
1  \hvDefFloatStyle{RightCaption}{floatPos=htb, capWidth=0.5, capPos=after,
2                                 capVPos=bottom, objectPos=center}
3
4  \hvFloat[style=RightCaption]{figure}{\includegraphics{images/rose}}%
5    {Caption vertically centered right beside the float with a caption width of
6     \texttt{0.5\textbackslash columnwidth}.}{fig:style}
```


Figure 67: Caption at bottom right beside the float with a caption width of `0.5\columnwidth`.

24 Global float setting

Instead of writing the following sequence into the preamble:

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

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

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

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Figure 68: 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

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Index

25 The Package Source

```
1   %% $Id: hvfloat.sty 596 2022-09-01 13:15:38Z herbert $
2   %%
3   %%
4   %% IMPORTANT NOTICE:
5   %%
6   %% This is file `hvfloat.sty',
7   %%
8   %% Herbert Voss <hvoss@tug.org>
9   %% Copyright (C) 2003-22
10  %%
11  %% This program can be redistributed and/or modified under the terms
12  %% of the LaTeX Project Public License Distributed from CTAN archives
13  %% in directory macros/latex/base/lppl.txt.
14  %%
15  %% DESCRIPTION:
16  %%   `hvfloat' offers rotating of captions and objects for floats
17  %%
18  \NeedsTeXFormat{LaTeX2e}
19  \def\fileversion{2.42}
20  \def\filedate{2022/10/02}
21  \ProvidesPackage{hvfloat}[\filedate\space v\fileversion\space special floating objects (hv)]
22  \let\hvFloatFileVersion\fileversion
23  %
24  \newif\ifhv@fbox \hv@fboxfalse
25  \newif\ifhv@hyperref \hv@hyperreffalse
26  \newif\ifhv@nostfloats \hv@nostfloatsfalse
27  \newif\ifhv@tugboat \hv@tugboatfalse
28
29  \DeclareOption{fbox}{\hv@fboxtrue\setlength\fboxsep{1pt}}
30  \DeclareOption{hyperref}{\hv@hyperreftrue}
31  \DeclareOption{nostfloats}{\hv@nostfloatstrue}
32  \DeclareOption{no-stfloats}{\hv@nostfloatstrue}
33
34  \ProcessOptions
35
36
37  \PassOptionsToPackage{hypcap}{caption}
38  \RequirePackage{caption}
39  \RequirePackage{varwidth}
40  \DeclareCaptionBox{varwidth}{\varwidth[b]{#1}#2\endvarwidth}
41
42  \PassOptionsToPackage{hypcap}{subcaption}
43  \RequirePackage{subcaption}
44  \RequirePackage{atbegshi}
45  \RequirePackage{picture,trimclip}
46
47  \RequirePackage{expl3,multido}
48  \RequirePackage{graphicx}
49  \RequirePackage{varwidth}
50
51  \RequirePackage{xkeyval}
52  \RequirePackage{ifoddpage}
53  \RequirePackage{afterpage}
54
55  \ifhv@hyperref
56    \RequirePackage{hyperref}
57  \fi
58
59  \ifhv@nostfloats
60  \else
61    \RequirePackage{stfloats}%  for bottom floats in a twocolumn mode
62  % \RequirePackage{floatpag}%  for bottom floats in a twocolumn mode
63  \fi
64  %
```

```
65  %\def\hv@thisfloatpagestyle#1{%
66  %  \global\@namedef{\number\@currbox @float}{\thispagestyle{#1}}\relax
67  %}
68
69  \providecommand*\LenToUnit[1]{\strip@pt\dimexpr#1*\p@/\unitlength}
70
71  \newlength\hvObjectWidth
72  \newlength\hvCapWidth
73  \newlength\hvWideWidth
74  \newlength\hvMultiFloatSkip
75  \newlength\hvMaxCapWidth
76  \newlength\hvFloatFullWidth % only for user purpose
77  \AtBeginDocument{\hvFloatFullWidth=\the\dimexpr\textwidth+\marginparwidth+\marginparsep\relax}
78
79
80  \newsavebox\hvObjectBox
81  \newsavebox\hvCaptionBox
82  \newsavebox\hvOBox
83  \newsavebox\@tempbox
84  \newsavebox\hv@caption@box
85  \newsavebox\hv@leftBox
86  \newsavebox\hv@rightBox
87
88  \newif\ifhv@capbeside \hv@capbesidefalse
89  \newif\ifhv@switchType
90
91  \def\hv@Top{top}
92  \def\hv@Bottom{bottom}
93  \def\hv@After{after}
94  \def\hv@Before{before}
95  \def\hv@Right{right}
96  \def\hv@Left{left}
97  \def\hv@Center{center}
98  \def\hv@Outer{outer}
99  \def\hv@Inner{inner}
100 \def\hv@Even{evenPage}
101 \def\hv@Odd{oddPage}
102 \def\hv@Natural{n}
103 \def\hv@LineWidth{l}
104 \def\hv@Width{w}
105 \def\hv@Height{h}
106 \def\hv@Zero{0}
107 %
108 \def\hv@figure{figure}
109 %
110 \define@key{hvSet}{floatPos}[tbp]{%      LaTeX's position parameters htbp
111    \def\hvSet@floatPos{#1}%
112 }
113 \define@key{hvSet}{rotAngle}[0]{%        rotates caption AND image together
114    \def\hvSet@rotAngle{#1}%
115 }
116 \define@key{hvSet}{capWidth}[n]{%        (l)inewidth|(n)atural width|object (w)idth)|object (h)eight|<scale
         of \columnwidth>
117    \def\hvSet@capWidth{#1}%
118 }
119 \define@key{hvSet}{capAngle}[0]{%        -360..+360, only integers
120    \def\hvSet@capAngle{#1}%
121 }
122
123 \define@choicekey*+{hvSet}{capPos}[\val\nr]{bottom,top,left,before,right,after,inner,outer,evenPage,
         oddPage}[bottom]{%
124    \def\hvSet@capPos{#1}%             it is relativ to the object, (e),(d) only valid for fullpage float
125    \ifcase\nr\relax
126       \hv@capbesidefalse
127    \or
128       \hv@capbesidefalse
129    \else
```

```latex
130        \hv@capbesidetrue
131      \fi
132 }{\PackageWarning{hvfloat}{erroneous input (#1) for capPos ignored. Using bottom.}%
133      \def\hvSet@capPos{bottom}%          it is relativ to the object, (e),(d) only valid for fullpage float
134      \hv@capbesidefalse
135  }
136
137 \define@choicekey*+{hvSet}{capVPos}[\val\nr]{bottom,center,top}[center]{%
138      \def\hvSet@capVPos{#1}%          it is relativ to the object
139      \ifcase\nr\relax
140        \def\hv@@capVPos{b}%
141      \or
142        \def\hv@@capVPos{c}%
143      \else
144        \def\hv@@capVPos{t}%
145      \fi
146 }{\PackageWarning{hvfloat}{erroneous input (#1) for capVPos ignored. Using center.}%
147      \def\hvSet@capVPos{center}%          it is relativ to the object
148  }
149
150 \define@choicekey*+{hvSet}{capHPos}[\val\nr]{left,center,right}[center]{%
151      \def\hvSet@capHPos{#1}%
152      \ifcase\nr\relax
153        \gdef\hv@@caoHPos{l}%
154      \or
155        \gdef\hv@@capHPos{c}%
156      \else
157        \gdef\hv@@capHPos{r}%
158      \fi
159 }{\PackageWarning{hvfloat}{erroneous input (#1) for capHPos ignored. Using center.}%
160      \def\hvSet@capHPos{center}%          it is relativ to the object
161  }
162
163 \define@choicekey*+{hvSet}{objectPos}[\val\nr]{left,center,right,inner,outer}[center]{%
164      \def\hvSet@objectPos{#1}%          it is relativ to the object
165 }{\PackageWarning{hvfloat}{erroneous input (#1) for objectPos ignored. Using center.}%
166      \def\hvSet@capVPos{center}%          it is relativ to the object
167  }
168 \define@key{hvSet}{objectAngle}[0]{%          -360..+360
169      \def\hvSet@objectAngle{#1}%
170 }
171 \define@key{hvSet}{floatCapSep}[5pt]{%    a width with the unit pt
172      \def\hvSet@floatCapSep{#1}%
173 }
174 \define@key{hvSet}{multiFloatSkip}[\normalbaselineskip]{% a width with the unit pt
175      \setlength\hvMultiFloatSkip{#1}%
176 }
177 \define@boolkey{hvSet}[hv@]{useOBox}[true]{}%          use of the hvOBox contents
178 \define@boolkey{hvSet}[hv@]{nonFloat}[true]{}%          Do not use float environment
179 \define@boolkey{hvSet}[hv@]{onlyText}[true]{}%          Write the caption only as text
180 \define@boolkey{hvSet}[hv@]{wide}[true]{}%          Write the caption only as text
181 \define@boolkey{hvSet}[hv@]{twoColumnCaption}[true]\global\@nameuse{hv@twoColumnCaption#1}{}%          Write the
          caption only as text
182 \define@boolkey{hvSet}[hv@]{sameHeight}[true]{\@nameuse{hv@sameHeight#1}}% Write the caption only as text
183 \define@boolkey{hvSet}[hv@]{Debug}[true]{}%          give more infos in the terminal
184
185 \newif\ifhv@fullpage
186 \newif\ifhv@FULLPAGE
187 \newif\ifhv@doubleFULLPAGE
188 \newif\ifhv@doublePAGE
189 \newif\ifhv@doublePage
190 \newif\ifhv@setObjectLabel
191 \newif\ifhv@global@sameHeight
192 \newif\ifhv@forceOutput
193
194
195 \newlength\hvSet@bindCorrection
```

```
196  \newlength\hvSet@sepLineskip
197  \newlength\hv@leftPageObjectWidth%  for doublepage images
198  \newlength\hv@tempWidthA
199  \newlength\hv@tempWidthB
200  \newlength\hv@minTextlines
201  \newlength\hv@floatCapSep
202  \newlength\hvSet@bindCorr
203
204  \define@key{hvSet}{fullpage}[true]{\global\@nameuse{hv@fullpage#1}}%
205  \define@key{hvSet}{FULLPAGE}[true]{\global\@nameuse{hv@FULLPAGE#1}}
206  \define@key{hvSet}{doubleFULLPAGE}[true]{\global\@nameuse{hv@doubleFULLPAGE#1}\hv@doublePagefalse\
          hv@doublePAGEfalse}
207  \define@key{hvSet}{doublePAGE}[true]{\global\@nameuse{hv@doublePAGE#1}\hv@doublePagefalse\
          hv@doubleFULLPAGEfalse}
208  \define@key{hvSet}{doublePage}[true]{\global\@nameuse{hv@doublePage#1}\hv@doublePAGEfalse\
          hv@doubleFULLPAGEfalse}
209  \define@key{hvSet}{bindCorr}[0pt]{%
210    \def\hv@temp{#1}%
211    \ifx\hv@temp\hv@Inner
212      \hvSet@bindCorr=\the\dimexpr1in+\oddsidemargin\relax
213    \else
214      \setlength\hvSet@bindCorr{#1}%
215    \fi
216  }
217  %\setlength\hvSet@bindCorrection{#1}}%  for doublepage objects
218
219  \define@boolkey{hvSet}[hv@]{subFloat}[true]{%        typeset values as subfloats
220      \ifhv@subFloat\setkeys{hvSet}{multiFloat=false}\fi%
221  }%
222  \define@boolkey{hvSet}[hv@]{multiFloat}[true]{%      typeset values as continous floats
223      \ifhv@multiFloat\setkeys{hvSet}{subFloat=false}\fi
224  }%
225  \define@boolkey{hvSet}[hv@]{vFill}[true]{}%        \vfill between multifloat objects
226
227  \define@boolkey{hvSet}[hv@]{separatorLine}[true]{}%   separator line for caption of a full page float
228  \define@key{hvSet}{sepLineskip}{\def\hv@sepLineskip{#1}}%
229  \define@key{hvSet}{minTextlines}{\setlength\hv@minTextlines{#1\baselineskip}}%
230  \define@boolkey{hvSet}[hv@]{objectFrame}[true]{}%  a frame around the object with no separation
231  \define@key{hvSet}{style}{%
232    \@ifundefined{hv@#1}%
233      {\errmessage{Custom style `#1' undefined}}%
234      {\begingroup
235       \edef\x{\endgroup\noexpand\setkeys{hvSet}{\@nameuse{hv@#1}}}\x}%   use a defined style
236  }
237  \define@key{hvSet}{capFormat}{\def\hv@caption@format{#1}}%
238  \define@key{hvSet}{subcapFormat}{\def\hv@subcaption@format{#1}}%
239  \define@boolkey{hvSet}[hv@]{forceOutput}[true]{%
240    \ifhv@forceOutput\hv@nonFloattrue\fi}%  immediate output, no floating!
241
242  \def\hv@set#1{\begingroup\edef\x{\endgroup\noexpand\setkeys{hvSet}{#1}}\x}
243  \let\hvFloatSet\hv@set
244  %
245  \def\defhvstyle#1#2{\@namedef{hv@#1}{#2}}
246  \let\hvDefFloatStyle\defhvstyle   % better name
247  %
248  \newcommand\setDefaults{%
249    \hv@set{%
250      floatPos=, rotAngle=0, capWidth=n, capAngle=0, objectAngle=0,
251      capPos=bottom, capVPos=center, objectPos=center, capHPos=center,
252      floatCapSep=5pt, useOBox=false,
253      onlyText=false, wide=false, fullpage=false, FULLPAGE=false,
254      doubleFULLPAGE=false, doublePage=false, doublePAGE=false,
255          multiFloat=false,subFloat=false,
256      separatorLine,objectFrame=false,multiFloatSkip=\normalbaselineskip,
257      capFormat={}, subcapFormat={}, twoColumnCaption=false,
258      sameHeight=false,
259      bindCorr=\z@,sepLineskip=0pt,
```

```
260    vFill=false, minTextlines=2,
261    forceOutput=false, nonFloat=false,
262 }%
263 }
264
265 \let\hvFloatSetDefaults\setDefaults
266 \hvFloatSetDefaults%  onyl for first loading of the package
267
268 \providecommand\hv@typeout[1]{\ifhv@Debug\typeout{>>>> #1}\fi}
269
270 \providecommand\@tugclass{\@empty}
271 \ifx\@tugclass\@empty
272 \else
273   \hv@tugboattrue  % special page handling
274   \hv@typeout{>>> we are using a TUGboat class}%
275 \fi
276
277 \newcommand\reset@special@float{%
278   \hv@set{subFloat=false,%fullpage=false,
279           multiFloat=false,%FULLPAGE=false
280 }}
281
282 \def\hv@vskip{\vspace{\hvMultiFloatSkip}}
283 %
284 \newlength\hvAboveCaptionSkip
285 \newlength\hvBelowCaptionSkip
286 \newlength\hv@dblfptop
287 \newlength\hv@fptop
288 \newcount\hv@@capPos
289
290 \newlength\fboxlinewidth
291 \AtBeginDocument{%
292   \fboxlinewidth=\the\dimexpr\linewidth-2\fboxrule-2\fboxsep\relax
293 }
294
295 \setlength\belowcaptionskip{\abovecaptionskip}% it is in latex.ltx = 0pt
296 \newcommand\saveCaptionSkip{%
297   \setlength{\hvAboveCaptionSkip}{\abovecaptionskip}%
298   \setlength{\hvBelowCaptionSkip}{\belowcaptionskip}%
299   \setlength{\abovecaptionskip}{0pt}%
300   \setlength{\belowcaptionskip}{0pt}%
301 }
302 \newcommand\restoreCaptionSkip{%
303   \setlength\abovecaptionskip{\hvAboveCaptionSkip}%
304   \setlength\belowcaptionskip{\hvBelowCaptionSkip}%
305 }
306
307 \newcommand\hv@set@noverticalSpace{%   no space on top for a float page
308   \let\hv@dblfptop\@dblfptop
309   \let\hv@fptop\@fptop
310   \global\@dblfptop=0\p@
311   \global\@fptop=0\p@
312 }
313
314 \newcommand\hv@reset@noverticalSpace{%
315   \global\@dblfptop=\hv@dblfptop
316   \global\@fptop=\hv@fptop
317 }
318
319 \providecommand\figcaption[2][]{}%
320 \providecommand\tabcaption[2][]{}%
321 \providecommand\tabcaptionbelow[2][]{}%
322 %
323 \renewcommand\figcaption[2][]{%
324   \begingroup
325   \def\@captype{figure}%
326   \ifx\relax\hv@caption@format\relax\else\expandafter\captionsetup\expandafter{\hv@caption@format}\fi
```

```
327     \ifx\relax#1\relax \caption{#2}\else\caption[#1]{#2}\fi
328     \endgroup}
329 \renewcommand\tabcaption[2][]{%
330     \begingroup
331     \def\@captype{table}%
332     \expandafter\captionsetup\expandafter{\hv@caption@format,position=top}%
333     \ifx\relax#1\relax \caption{#2}\else\caption[#1]{#2}\fi
334     \endgroup}
335 \renewcommand\tabcaptionbelow[2][]{%
336     \begingroup
337     \def\@captype{table}%
338     \expandafter\captionsetup\expandafter{\hv@caption@format,position=below}
339     \ifx\relax#1\relax \caption{#2}\else\caption[#1]{#2}\fi
340     \endgroup}
341
342 %
343 \newlength\hv@maxImageWidth
344 \AtBeginDocument{\setlength\hv@maxImageWidth{\columnwidth}}
345
346 \define@key{Gin}{columnWidth}[true]{%
347     \def\Gin@ewidth{\columnwidth}%
348 %   |def\Gin@eheight{1ex}%
349     \Gin@boolkey{true}{iso}%
350 }
351 \define@key{Gin}{fullpage}[true]{%
352     \def\Gin@ewidth{\columnwidth}%
353     \def\Gin@eheight{\textheight}%
354     \Gin@boolkey{false}{iso}%
355 }
356 \define@key{Gin}{FullPage}[true]{%
357     \def\Gin@ewidth{\textwidth}%
358     \def\Gin@eheight{\textheight}%
359     \Gin@boolkey{false}{iso}%
360 }
361 \define@key{Gin}{FULLPAGE}[true]{%
362     \def\Gin@ewidth{\paperwidth}%
363     \def\Gin@eheight{\paperheight}%
364     \Gin@boolkey{false}{iso}%
365 }
366 \define@key{Gin}{doubleFULLPAGE}[true]{%
367     \def\Gin@ewidth{2\paperwidth}%
368     \def\Gin@eheight{\paperheight}%
369     \Gin@boolkey{false}{iso}%
370 }
371 \define@key{Gin}{doublefullPage}[true]{%
372     \def\Gin@ewidth{\the\dimexpr2\paperwidth-2in-2\evensidemargin}%
373 %   |def\Gin@eheight{\paperheight}%
374     \Gin@boolkey{true}{iso}%
375 }
376 \define@key{Gin}{doubleFULLPAGEbindCorr}[true]{%
377     \def\Gin@ewidth{\the\dimexpr2\paperwidth-2\hvSet@bindCorrection\relax}%
378     \def\Gin@eheight{\paperheight}%
379     \Gin@boolkey{false}{iso}%
380 }
381
382 \newcommand\IncludeGraphics[2][]{%
383     \vspace*{\the\dimexpr-1in-\voffset+\topskip-\headheight-0.5\baselineskip}%
384     \leavevmode\checkoddpage
385     \ifoddpage
386        \hspace*{\dimexpr-\oddsidemargin-\parindent-1in}%
387     \else
388        \hspace*{\dimexpr-\evensidemargin-\parindent-1in}%
389     \fi\noindent
390     \includegraphics[#1,width=\paperwidth,height=\paperheight,keepaspectratio=false]{#2}%
391 }
392
393     \newcommand\put@CaptionBox[1][0]{%
```

```latex
394    \ifcase#1
395      \ifhv@fbox
396        \fbox{\parbox{\wd\hvCaptionBox}{\usebox{\hvCaptionBox}}}%
397      \else
398        \parbox{\wd\hvCaptionBox}{\usebox{\hvCaptionBox}}%
399      \fi
400    \or
401      \ifhv@fbox
402        \fbox{\raisebox{-\height}{\usebox{\hvCaptionBox}}}%
403      \else
404        \raisebox{-\height}{\usebox{\hvCaptionBox}}%
405      \fi
406    \or
407      \ifhv@fbox\fbox{\usebox{\hvCaptionBox}}\else\usebox{\hvCaptionBox}\fi
408    \fi
409 }
410
411 \newcommand\put@ObjectBox[1][0]{%
412    \ifcase#1
413      \ifhv@fbox
414        \fbox{\parbox{\wd\hvObjectBox}{\usebox{\hvObjectBox}}}%
415      \else
416        \parbox{\wd\hvObjectBox}{\ifhv@objectFrame\frame{\usebox{\hvObjectBox}}\else\usebox{\hvObjectBox}\fi
            }%
417      \fi
418    \or
419      \ifhv@fbox
420        \fbox{\raisebox{-\height}{\usebox{\hvObjectBox}}}%
421      \else
422        \raisebox{-\height}{\ifhv@objectFrame\frame{\usebox{\hvObjectBox}}\else\usebox{\hvObjectBox}\fi}%
423      \fi
424    \or
425      \ifhv@fbox
426        \fbox{\usebox{\hvObjectBox}}%
427      \else
428        % rotated object with a depth need to raise up the \depth
429        \ifhv@objectFrame\frame{\usebox{\hvObjectBox}}\else\raisebox{\depth}{\usebox{\hvObjectBox}}\fi%
430      \fi
431    \fi
432 }
433
434 \def\drawSepLine{%
435    \par\noindent
436    \if@twocolumn
437      \ifhv@twoColumnCaption
438        \rule{\linewidth}{0.4pt}\\[-2.5ex]
439      \else
440        \rule{\columnwidth}{0.4pt}\\[-2.5ex]
441      \fi
442    \else
443      \rule{\linewidth}{0.4pt}\\[-2.5ex]
444    \fi
445    \vspace{\hv@sepLineskip}%
446 }
447
448 \newcounter{hv@tempCNTfigA}%
449 \newcounter{hv@tempCNTfigB}%
450 \newcounter{hv@tempCNTtabA}%
451 \newcounter{hv@tempCNTtabB}%
452 \newcounter{hv@pfigure}%
453 \newcounter{hv@ptable}%
454 \newcounter{subhv@pfigure}%
455 \newcounter{subhv@ptable}%
456 \newcount\hv@tempcnt
457
458 \newif\ifhv@star
459 \newif\if@hvsubstar
```

```
460  \setDefaults
461
462
463  %\newcommand*{\hvFloat}[5][]+{%
464  % [#1]: keyvalues
465  % #2: type  figure | table | ...
466  % #3: float contents
467  % [#4]: short caption
468  % #5: caption
469  % #6: label
470  %
471
472
473  \def\hvFloat{\@ifnextchar*%      Main macro
474    {\global\hv@startrue\hv@maxImageWidth=\textwidth\hvFloat@i}%
475    {\global\hv@starfalse\hv@maxImageWidth=\columnwidth\hvFloat@i*}%
476  }
477
478  \def\hvFloat@i*{\@ifnextchar[{\do@hvFloat}{\do@hvFloat[]}}
479  \def\do@hvFloat[#1]{%
480    \begingroup
481    \hvWideWidth=\the\dimexpr\columnwidth+\marginparwidth+\marginparsep\relax%
482  % \setlength\hvWideWidth{\dimexpr\textwidth+\marginparwidth+\marginparsep}%
483  % \setlength\hvWideWidth{\dimexpr\linewidth+\marginparwidth}%
484    \hv@maxImageWidth=\textwidth
485    \reset@special@float
486    \global\setcounter{hv@pfigure}{\value{figure}}%
487    \global\setcounter{hv@ptable}{\value{table}}%
488    \setcounter{hv@tempCNTfigA}{\value{figure}}%
489    \setcounter{hv@tempCNTfigB}{\value{figure}}%
490    \setcounter{hv@tempCNTtabA}{\value{table}}%
491    \setcounter{hv@tempCNTtabB}{\value{table}}%
492    \gdef\hv@save@setting{#1}%  for later use after \endgroup inside figure/table env
493    \ifx\relax#1\relax\else\setkeys{hvSet}{#1}\fi
494    \ifx\hv@caption@format\@empty\else\expandafter\captionsetup\expandafter{\hv@caption@format}\fi
495    \ifx\hv@subcaption@format\@empty\else
496        \expandafter
497        \captionsetup\expandafter[\expandafter s\expandafter u\expandafter b\expandafter]\expandafter
498                        {\hv@subcaption@format}%
499    \fi
500    \gdef\hv@floatType{figure}%  presetting
501    \@ifnextchar+{\do@multiFloat}{\hvFloat@ii[#1]}%
502  }
503
504  \ExplSyntaxOn
505
506  \def\do@multiFloat+#1#2{%
507    \clist_set:Nn\l_clist_Type{{#1}}%
508    \clist_set:Nn\l_clist_Object{{#2}}%
509    \@ifnextchar[\do@multiFloat@i{\do@multiFloat@i[]}%
510  }
511  \def\do@multiFloat@i[#1]#2#3{%  lof-caption, caption,label
512    \ifx\relax#1\relax
513      \clist_set:Nn\l_clist_LofCaption{{}}%
514    \else
515      \clist_set:Nn\l_clist_LofCaption{{#1}}%
516    \fi
517    \clist_set:Nn\l_clist_Caption{{#2}}%
518    \ifx\relax#3\relax
519      \clist_set:Nn\l_clist_Label{{}}%
520    \else
521      \clist_set:Nn\l_clist_Label{{#3}}%
522    \fi
523    \@ifnextchar+{\do@multiFloat@ii}{}%
524  }
525  \def\do@multiFloat@ii+#1#2{%
526    \clist_put_right:Nn\l_clist_Type{{#1}}%
```

```
527    \clist_put_right:Nn\l_clist_Object{{#2}}%
528    \@ifnextchar[\do@multiFloat@iii{\do@multiFloat@iii[]}%
529  }
530
531  \def\do@multiFloat@iii[#1]#2#3{%  lof-caption, caption, label
532    \ifx\relax#1\relax
533      \clist_put_right:Nn\l_clist_LofCaption{{}}%
534    \else
535      \clist_put_right:Nn\l_clist_LofCaption{{#1}}%
536    \fi
537    \clist_put_right:Nn\l_clist_Caption{{#2}}%
538    \ifx\relax#3\relax
539      \clist_put_right:Nn\l_clist_Label{{}}%
540    \else
541      \clist_put_right:Nn\l_clist_Label{{#3}}%
542    \fi
543    \@ifnextchar+\do@multiFloat@ii%
544      {\def\hvSet@CapWidth{n}%
545       \do@@@@hvFloat}%
546  }
547  \ExplSyntaxOff
548
549
550  \newcount\hv@cnta
551  \newcount\hv@cntb
552
553  \def\hvFloat@ii[#1]#2#3{%      #1: key/value, #2: floattype, #3: object
554    \hv@maxImageWidth=\textwidth
555  % \ifx\relax#1\relax\else\setkeys{hvSet}{#1}\fi
556    \gdef\hv@floatType{#2}%
557    \ifx\relax#2\relax
558      \setkeys{hvSet}{nonFloat,onlyText}%
559      \xdef\hv@save@setting{\hv@save@setting,nonFloat,onlyText}%  for later use after \endgroup inside
                figure/table env
560    \fi
561  % \xdef\hv@floatListOfExt{\@nameuse{ext@\hv@floatType}}%
562    \gdef\hv@floatObject{#3}%
563    \@ifnextchar[{\do@@hvFloat}{\do@@hvFloat[]}%
564  }
565
566  \def\do@@hvFloat[#1]#2#3{%       #1: listof caption,  #2. long caption  #3: label
567    \gdef\hv@shortCap{#1}%
568    \gdef\hv@longCap{#2}%
569    \gdef\hv@label{#3}%
570    \ifhv@capbeside\def\@@temp{1}\else\def\@@temp{0}\fi
571    \ifhv@sameHeight\global\hv@global@sameHeighttrue\else\global\hv@global@sameHeightfalse\fi
572    \global\hvSet@bindCorrection=\hvSet@bindCorr%  for doublepage objects
573    \global\hv@floatCapSep=\hvSet@floatCapSep%
574  %
575    \ifhv@fullpage
576      \def\hvSet@CapWidth{n}%  relative value
577      \do@@@@hvFloat%  fullpage with caption on other page
578    \else
579      \ifhv@FULLPAGE
580        \def\hvSet@CapWidth{n}%  relative value
581        \do@@@@hvFloat%  fullpage with caption on other page
582      \else
583        \ifhv@doubleFULLPAGE
584          \setlength\hvCapWidth{\textheight}%
585          \expandafter\do@hvFloat@doubleFULLPAGE\@@temp%  fullpage with caption rotated or under on an odd
                  page
586        \else
587          \ifhv@doublePAGE
588            \expandafter\do@hvFloat@doublePAGE\@@temp%  fullpage with caption rotated or under on an odd
                    page
589          \else
590            \ifhv@doublePage
```

```
591          \expandafter\do@hvFloat@doublePage\@@temp%   fullpage with caption rotated or under on an odd
                 page
592        \else
593          \do@@@hvFloat
594        \fi
595      \fi
596    \fi
597    \fi
598  \fi
599 }
600 %
601 \def\do@@@hvFloat{%   no special float page, caption and image on top of each other or side by side
602   \def\@tempa{90}%
603   \ifx\hvSet@rotAngle\@tempa
604     \setlength\hvMaxCapWidth{\textheight}%
605   \else
606     \setlength\hvMaxCapWidth{\hvWideWidth}%
607   \fi
608 %
609 % First we save the object in \hvObjectBox
610 %
611   \ifnum\hvSet@objectAngle=0 % rotate the object?
612     \ifhv@useOBox
613       \let\hvObjectBox\hvOBox
614     \else
615       \savebox\hvObjectBox{\hv@floatObject}%
616     \fi
617   \else
618     \savebox\hvObjectBox{%
619       \rotatebox{\hvSet@objectAngle}{%
620         \ifhv@useOBox\usebox{\hvOBox}\else\hv@floatObject\fi
621       }%
622     }%
623   \fi
624   \setlength\hvObjectWidth{\wd\hvObjectBox}%
625 %
626 % Now we save the caption with its defined \hvCapWidth
627 %
628   \ifx\hvSet@capWidth\hv@Width%               captionwidth=objectwidth
629     \setlength\hvCapWidth{\hvObjectWidth}%
630   \else
631     \ifx\hvSet@capWidth\hv@Height%             captionwidth=objectheight
632       \setlength\hvCapWidth{\ht\hvObjectBox}%
633     \else
634       \ifx\hvSet@capWidth\hv@LineWidth%             captionwidth=objectheight
635         \setlength\hvCapWidth{\linewidth}%
636       \else
637         \ifx\hvSet@capWidth\hv@Natural%           captionwidth=\linewidth-\objectwidth-separation
638           \ifhv@capbeside
639             \ifhv@wide
640               \hvCapWidth=\the\dimexpr\hvWideWidth-\hvObjectWidth-\hv@floatCapSep\relax
641             \else
642               \ifhv@star
643                 \hvCapWidth=\the\dimexpr\textwidth-\hvObjectWidth-\hv@floatCapSep\relax
644               \else
645                 \hvCapWidth=\the\dimexpr\linewidth-\hvObjectWidth-\hv@floatCapSep\relax
646               \fi
647             \fi
648           \else
649             \setlength\hvCapWidth{\columnwidth}%
650           \fi
651         \else
652           \ifhv@capbeside
653             \ifhv@wide
654               \setlength\hvCapWidth{\hvSet@capWidth\hvWideWidth}%
655               \@tempdima=\the\dimexpr\hvWideWidth-\hvObjectWidth-\hv@floatCapSep\relax
656             \else
```

```
657        \setlength\hvCapWidth{\hvSet@capWidth\columnwidth}%
658        \@tempdima=\the\dimexpr\columnwidth-\hvObjectWidth-\hv@floatCapSep\relax
659      \fi
660      \ifdim\hvCapWidth>\@tempdima
661        \hvCapWidth=\@tempdima
662      \fi
663    \else
664      \ifhv@wide
665        \setlength\hvCapWidth{\hvSet@capWidth\hvWideWidth}%
666      \else
667        \setlength\hvCapWidth{\hvSet@capWidth\columnwidth}%
668      \fi
669    \fi
670  \fi
671  \fi
672  \fi
673  \fi
674  \saveCaptionSkip% we put this space ourselve
675  \ifnum\hvSet@capAngle=0 % need rotation?
676    \savebox\hvCaptionBox{%   NO rotation
677      \minipage[b]{\hvCapWidth}%% minipage, to get hyphenation
678  %    \ifx\relax\hv@caption@format\relax\else\expandafter\captionsetup\expandafter{\hv@caption@format}\fi
679      \ifhv@nonFloat
680    \ifhv@onlyText
681      \hv@longCap
682    \else
683      \ifx\hv@floatType\hv@figure
684        \ifx\relax\hv@shortCap\relax
685          \figcaption{\hv@longCap\ifx\hv@label\@empty\else\label{\hv@label}\fi}%
686        \else
687          \figcaption[\hv@shortCap]{\hv@longCap\ifx\hv@label\@empty\else\label{\hv@label}\fi}%
688        \fi
689      \else
690        \ifx\relax\hv@shortCap\relax
691          \tabcaption{\hv@longCap\ifx\hv@label\@empty\else\label{\hv@label}\fi}%
692        \else
693          \tabcaption[\hv@shortCap]{\hv@longCap\ifx\hv@label\@empty\else\label{\hv@label}\fi}%
694        \fi
695      \fi
696    \fi
697  \else
698    \ifhv@onlyText
699      \hv@longCap
700    \else
701        \let\@captype\hv@floatType
702        \ifx\hv@shortCap\@empty\caption{\hv@longCap}\else\caption[\hv@shortCap]{\hv@longCap}\fi
703        \ifx\hv@label\@empty\else\label{\hv@label}\fi
704      \fi
705  \fi
706      \endminipage
707    }%     end CaptionBox without rotation
708  \else
709    \savebox\hvCaptionBox{%   with Rotation
710      \rotatebox{\hvSet@capAngle}{%
711        \minipage[b]{\hvCapWidth}%% minipage, to get hyphenation
712  %    \ifx\relax\hv@caption@format\relax\else\expandafter\captionsetup\expandafter{\hv@caption@format}\fi
713      \ifhv@nonFloat
714        \ifhv@onlyText
715          \hv@longCap
716            \else
717        \ifx\hv@floatType\hv@figure
718          \ifx\hv@shortCap\@empty \figcaption{\hv@longCap}\else\figcaption[\hv@shortCap]{\hv@longCap}\fi
719        \else
720          \ifx\hv@shortCap\@empty \tabcaption{\hv@longCap}\else\tabcaption[\hv@shortCap]{\hv@longCap}\fi
721        \fi
722      \fi
723    \else
```

```
724        \ifhv@onlyText
725          \hv@longCap
726            \else
727              \let\@captype\hv@floatType
728              \ifx\hv@shortCap\@empty \caption{\hv@longCap}\else\caption[\hv@shortCap]{\hv@longCap}%
729              \fi
730            \fi
731          \fi
732          \ifx\hv@label\@empty\else\label{\hv@label}\fi
733        \endminipage
734      }% rotatebox
735    }% \sbox
736  \fi
737 %
738 % now we have the object and the caption with the right
739 % rotated angles saved in different boxes
740 %%
741  \restoreCaptionSkip% save old values
742 % \def\fps@figure{\hvSet@floatPos}%
743  \ifx\hvSet@floatPos\@empty      % use type default
744  \else
745    \@namedef{fps@\hv@floatType}{\hvSet@floatPos}%
746  \fi
747  \ifhv@nonFloat
748    \noindent
749    \begingroup%          Start the nonfloat part
750  \else
751    \ifhv@star
752      \ifx\hvSet@floatPos\hv@floatBottom
753        \@nameuse{\hv@floatType*}[b]%     Start the floating environment ****************************
754      \else
755        \@nameuse{\hv@floatType*}%
756      \fi
757    \else
758      \begin{\hv@floatType}%       Start the floating environment
759    \fi
760  \fi
761  \checkoddpage
762  \ifx\hvSet@objectPos\hv@Right\raggedleft\fi
763  \ifx\hvSet@objectPos\hv@Center
764    \ifhv@nonFloat\hspace*{\fill}\else\centering\fi
765  \fi
766  \ifx\hvSet@objectPos\hv@Outer
767    \ifoddpage\raggedleft\fi
768  \fi
769  \ifx\hvSet@objectPos\hv@Inner
770    \ifoddpage\else\raggedleft\fi
771  \fi
772 %
773 % to rotate object and caption together, we save all in another box
774 % the caption comes first, if its on the left or the top
775 % 0 caption left, inner and odd page, oneside inner
776 % 1 caption top
777 % 2 caption right, inner and even page, oneside outer
778 % 3 caption bottom
779 %
780  \ifx\hvSet@capPos\hv@Left
781    \hv@@capPos=0
782  \else
783    \ifx\hvSet@capPos\hv@Top
784      \hv@@capPos=1
785    \else
786      \ifx\hvSet@capPos\hv@Right
787        \hv@@capPos=2
788      \else
789        \ifx\hvSet@capPos\hv@Bottom
790          \hv@@capPos=3
```

```
791        \else
792          \ifx\hvSet@capPos\hv@Inner
793            \ifoddpageoroneside\hv@@capPos=0\else\hv@@capPos=2\fi
794          \else
795            \ifx\hvSet@capPos\hv@Outer
796              \ifoddpage\hv@@capPos=2\else\hv@@capPos=0\fi
797 %              \ifoddpageoroneside\hv@@capPos=2\else\hv@@capPos=0\fi
798              %   even page (left=0) | odd page (oneside) (right=2)
799            \else
800              \ifx\hvSet@capPos\hv@Before
801                \hv@@capPos=0% same as cappos=left
802              \else
803                \ifx\hvSet@capPos\hv@After
804                  \hv@@capPos=2% same as capPos=right
805                \fi
806              \fi
807            \fi
808          \fi
809        \fi
810      \fi
811    \fi
812  \fi
813 %%%%
814 %\typeout{>>>>>>>>>Pos: \the\hv@@capPos}%
815   \savebox{\@tempboxa}{%                        ***** @tempbox   start
816     \expandafter%
817     \ifcase\the\hv@@capPos % 0 is LEFT      START \ifcase
818        \ifx\hvSet@capVPos\hv@Center
819          \put@CaptionBox
820          \hspace{\hv@floatCapSep}% capfloatsep
821          \put@ObjectBox
822        \else
823          \ifx\hvSet@capVPos\hv@Top% caption and object at top aligned
824            \put@CaptionBox[1]%
825            \hspace{\hv@floatCapSep}% capfloatsep
826            \put@ObjectBox[1]%
827          \else% caption on bottom
828            \put@CaptionBox[2]%
829            \hspace{\hv@floatCapSep}% capfloatsep
830            \put@ObjectBox[2]%
831          \fi
832        \fi%  end caption left
833     \or%1 is top
834        \ifdim\wd\hvCaptionBox>\wd\hvObjectBox
835     \begin{minipage}{\wd\hvCaptionBox}%
836        \else
837     \begin{minipage}{\wd\hvObjectBox}%
838        \fi
839        \ifx\hvSet@capHPos\hv@Left% horizontal justification
840          \raggedright
841        \else
842          \ifx\hvSet@capHPos\hv@Center
843            \centering
844          \else
845            \raggedleft
846          \fi
847        \fi
848        \ifhv@fbox
849     \fbox{\usebox{\hvCaptionBox}}\\[0.5\hvBelowCaptionSkip]%
850     \fbox{\usebox{\hvObjectBox}}%
851        \else
852     \usebox{\hvCaptionBox}\\[0.5\hvBelowCaptionSkip]%
853     \usebox{\hvObjectBox}%
854        \fi
855        \end{minipage}%
856     \or%2 is right
857        \ifx\hvSet@capVPos\hv@Center
```

```
858           \put@ObjectBox
859       \hspace{\hv@floatCapSep}%
860       \put@CaptionBox
861         \else
862       \ifx\hvSet@capVPos\hv@Top
863           \put@ObjectBox[1]%
864           \hspace{\hv@floatCapSep}% capfloatsep
865           \put@CaptionBox[1]%
866       \else
867           \put@ObjectBox[2]%   bottom
868           \hspace{\hv@floatCapSep}% capfloatsep
869           \put@CaptionBox[2]%
870       \fi
871         \fi
872     \or%3 bottom
873       \ifdim\wd\hvCaptionBox>\wd\hvObjectBox
874         \begin{minipage}{\wd\hvCaptionBox}%
875       \else
876         \begin{minipage}{\wd\hvObjectBox}%
877       \fi
878       \ifx\hvSet@capHPos\hv@Left% horizontal justification
879         \raggedright
880       \else
881         \ifx\hvSet@capHPos\hv@Center
882           \centering
883         \else
884           \raggedleft
885         \fi
886       \fi
887       \ifhv@fbox
888         \fbox{\usebox{\hvObjectBox}}\\[0.5\hvAboveCaptionSkip]%
889           \fbox{\usebox{\hvCaptionBox}}%
890         \else
891           \ifhv@objectFrame\frame{\usebox{\hvObjectBox}}\else\usebox{\hvObjectBox}\fi\\[0.5\
                  hvAboveCaptionSkip]%
892           \usebox{\hvCaptionBox}%
893         \fi
894       \end{minipage}%
895     \fi%   \ifcase\the\hv@@capPos
896   }% End savebox Object and caption            %%%%%%%%%%%%%%%%  @tempboxa
897 %
898 % now we rotate the object and caption, if needed
899 %
900   \ifhv@wide
901     \ifoddpageoroneside
902       \if@twocolumn
903         \if@firstcolumn
904           \noindent
905           \hspace*{\dimexpr-\marginparwidth-\marginparsep}% oddpage first column
906         \fi
907       \fi
908     \else
909       \ifoddpage
910         \if@twocolumn
911           \if@firstcolumn
912             \noindent
913             \hspace*{\dimexpr-\marginparwidth-\marginparsep}% oddpage first column
914           \fi
915         \fi
916       \else% evenpage
917         \if@firstcolumn
918           \noindent
919           \hspace*{\dimexpr-\marginparwidth-\marginparsep}%   <- for wide and left page
920         \fi
921       \fi
922     \fi
923   \fi
```

```
924    \ifx\hvSet@rotAngle\hv@Zero
925      \usebox{\@tempboxa}%
926    \else
927      \rotatebox{\hvSet@rotAngle}{\usebox{\@tempboxa}}%
928    \fi
929    \ifhv@nonFloat
930      \ifx\hvSet@objectPos\hv@Center
931 %        \ifhv@nonFloat
932      \hspace{\fill}%
933 %        \fi
934      \fi
935      \endgroup% End the nonfloat part
936    \else
937      \ifhv@star
938        \@nameuse{end\hv@floatType*}% End the floating environment
939      \else
940        \end{\hv@floatType}% End the floating environment
941      \fi
942    \fi
943    \endgroup% startet at main \hvFloat
944 }
945 %
946 \newenvironment{hvFloatEnv}[1][\textwidth]
947    {\minipage{#1}}
948    {\endminipage}
949 %
950
951 \ExplSyntaxOn
952 \let\clist@item@Nn\clist_item:Nn
953 \let\l@clist@Type\l_clist_Type
954 \let\l@clist@LofCaption\l_clist_LofCaption
955 \let\l@clist@Label\l_clist_Label
956 \let\clist@count@N\clist_count:N
957 \ExplSyntaxOff
958
959 \def\do@@@@hvFloat{% special float page: caption <-> fullpage images
960    \ifx\hvSet@capPos\hv@After \global\hv@@capPos=1
961    \else
962      \ifx\hvSet@capPos\hv@Even   \global\hv@@capPos=2
963      \else
964        \ifx\hvSet@capPos\hv@Odd    \global\hv@@capPos=3
965        \else
966          \ifx\hvSet@capPos\hv@Inner    \global\hv@@capPos=4
967          \else
968            \ifx\hvSet@capPos\hv@Outer    \global\hv@@capPos=5
969            \else
970              \ifx\hvSet@capPos\hv@Right    \global\hv@@capPos=6% only for twocolumn mode
971              \else
972                \ifx\hvSet@capPos\hv@Left    \global\hv@@capPos=7% only for twocolumn mode
973                \else
974                  \global\hv@@capPos=0
975                \fi
976              \fi
977            \fi
978          \fi
979        \fi
980      \fi
981    \fi
982    \checkoddpage
983    \set@caption@object{\hv@floatType}% set caption and object into a box
984    \ifcase\hv@@capPos% caption before object 0-> _always_ left
985      \setBottomCaption\setPageObject
986    \or%                    caption after object 1-> _always_ right
987      \setPageObject\setBottomCaption
988    \or%                    caption on even page 2-> left page
989      \ifoddpage
990        \afterpage{\setBottomCaption\setPageObject}%
```

```
991       \else% we are on an even page
992         \setBottomCaption\setPageObject
993       \fi
994   \or%                caption on odd page  3->right page
995     \if@twoside
996       \if@twocolumn
997         \ifoddpage
998           \if@firstcolumn%  on right side
999             \setBottomCaption\setPageObject
1000          \else
1001            \afterpage{\setPageObject\setBottomCaption}% start next column
1002          \fi
1003        \else% left (even) page
1004          \if@firstcolumn
1005            \afterpage{\setPageObject\setBottomCaption}% start next column
1006          \else
1007            \setPageObject\setBottomCaption
1008          \fi
1009        \fi
1010      \else% onecolumn
1011        \ifoddpage
1012          \setPageObject\setBottomCaption
1013        \else%  even page
1014          \afterpage{\setPageObject\setBottomCaption}%
1015        \fi
1016      \fi
1017    \else% oneside
1018      \if@twocolumn
1019        \ifoddpage
1020          \if@firstcolumn%  on right side
1021            \setBottomCaption\setPageObject
1022          \else
1023            \setPageObject\setBottomCaption
1024          \fi
1025        \else
1026          \if@firstcolumn%  on left side
1027            \afterpage{\setPageObject\setBottomCaption}%
1028          \else
1029            \setPageObject\setBottomCaption
1030          \fi
1031        \fi
1032      \else % onecolumn
1033        \ifoddpage
1034          \setBottomCaption\setPageObject
1035        \else
1036          \afterpage{\setBottomCaption\setPageObject}%
1037        \fi
1038      \fi
1039    \fi
1040  \or%                caption on the inner column 4->inner
1041 %    \set@caption@object
1042    \if@twocolumn
1043      \ifoddpage
1044        \if@firstcolumn%  on right side
1045      \setBottomCaption\setPageObject
1046        \else           % right column on right side
1047          \setPageObject\setBottomCaption%  start next firstcolumn next page
1048        \fi
1049      \else
1050        \if@firstcolumn%  on left side
1051          \afterpage{\afterpage{\setBottomCaption\setPageObject}}% start next page/first column
1052        \else% left page/column
1053          \setBottomCaption\setPageObject% start on same page/column
1054        \fi
1055      \fi
1056    \else% onecolumn
1057      \setBottomCaption\setPageObject
```

```
1058        \fi
1059      \or%                    caption on the outer column  5->outer
1060  %      \set@caption@object
1061        \if@twocolumn
1062          \ifoddpage
1063            \if@firstcolumn
1064              \afterpage{\afterpage{\setBottomCaption\setPageObject}}%
1065            \else
1066              \afterpage{\setBottomCaption\setPageObject}%
1067            \fi
1068          \else% even page (left)
1069            \if@firstcolumn
1070              \setBottomCaption\setPageObject
1071            \else
1072  %%%                    !!!!  to-do: !!!!
1073            \fi
1074          \fi
1075        \else% onecolumn
1076          \setBottomCaption\setPageObject
1077        \fi
1078      \or%                    caption after object on same page 6->right for twocolumn
1079        \if@twocolumn
1080          \if@firstcolumn
1081            \afterpage{\setPageObject\setBottomCaption}%
1082          \else
1083            \setPageObject\setBottomCaption
1084          \fi
1085        \else% always caption _after_ object for onecolumn
1086          \setPageObject\setBottomCaption
1087        \fi
1088      \or%                    caption before object on same page 7->left for twocolumn
1089        \if@twocolumn
1090          \if@firstcolumn
1091            \setBottomCaption\setPageObject
1092          \else
1093            \afterpage{\setBottomCaption\setPageObject}%
1094          \fi
1095        \else%          onecolumn -> same as before
1096          \setBottomCaption\setPageObject
1097        \fi
1098      \fi
1099      \endgroup% startet at main \hvFloat
1100  }
1101  %
1102
1103
1104  %% ------------------------------- the doublepage obejcts --------------------------
1105  %% ||1in+evenside --- |1in+oddside ---||
1106  %
1107  \def\do@hvFloat@doublePage#1{%  image on left and right page with caption on the right page
1108    % #1-> 0/1 caption under/right
1109    \hv@typeout{>>>doublePage: start with definitions of \hv@floatObject}%
1110    \global\hv@leftPageObjectWidth=\the\dimexpr\paperwidth-1in-\evensidemargin-\hvSet@bindCorrection\relax
1111    \global\hv@tempWidthA=\the\dimexpr1in+\oddsidemargin-\hvSet@bindCorrection\relax
1112    \xdef\hv@caption@format@temp{\hv@caption@format}%  it gets lost otherwise for next afterpage
1113    \@dblfpbot=0\p@ \@plus 1fil%
1114    \global\hv@switchTypefalse
1115    \setcounter{hv@tempCNTfigA}{\value{figure}}%
1116    \setcounter{hv@tempCNTfigB}{\value{figure}}%
1117    \setcounter{hv@tempCNTtabA}{\value{table}}%
1118    \setcounter{hv@tempCNTtabB}{\value{table}}%
1119    \savebox\hvCaptionBox{%   NO rotation
1120      \minipage{\textwidth}%% minipage, to get hyphenation
1121        \let\@captype\hv@floatType
1122        \caption*{\hv@longCap}%
1123      \endminipage}%
1124    \savebox\hvObjectBox{\ifhv@useOBox\usebox{\hvOBox}\else\hv@floatObject\fi}%
```

```
1125      \ifnum#1=0\relax      % no rotation, caption below
1126        \hv@typeout{Texthöhe: \the\textheight}%
1127        \hv@typeout{Objekthöhe: \the\ht\hvObjectBox}%
1128        \hv@typeout{Captionhöhe: \the\ht\hvCaptionBox}%
1129        \@tempdima=\dimexpr\ht\hvObjectBox+\ht\hvCaptionBox+\abovecaptionskip+\belowcaptionskip +\textfloatsep
                  \relax%+\floatsep\relax
1130        \hv@typeout{Summe: \the\@tempdima}%
1131        \ifdim\@tempdima > \dimexpr\textheight-\hv@minTextlines\relax
1132          \hv@typeout{hvfloat: switched to floattype p}%
1133          \hv@switchTypetrue
1134        \fi
1135      \fi
1136      \hv@typeout{do@hvFloat@doublePage:hv@tempWidthA=\the\hv@tempWidthA}%
1137      \ifhv@forceOutput
1138        \do@hvFloat@doublePAGECaptionRight{#1}%    no cheque
1139      \else
1140      \checkoddpage
1141      \ifoddpage
1142        \if@twocolumn
1143          \if@firstcolumn
1144            \hv@typeout{do@hvFloat@doublePage:oddpage->twocolumn->firstcolumn}%
1145            \ifhv@switchType
1146              \hv@typeout{hvfloat: switched to floattype p}%
1147              \afterpage{\do@hvFloat@doublePAGECaptionRight{#1}}%
1148            \else
1149              \hv@typeout{calling do@hvFloat@doublePageCaptionRight}%
1150              %\afterpage{
1151              \afterpage{\do@hvFloat@doublePageCaptionRight{#1}}%}%
1152            \fi
1153          \else
1154            \hv@typeout{do@hvFloat@doublePage:oddpage->twocolumn->secondcolumn}%
1155            \ifhv@tugboat
1156              \do@hvFloat@doublePageCaptionRight{#1}%
1157            \else
1158              \ifhv@switchType
1159                \do@hvFloat@doublePAGECaptionRight{#1}%
1160              \else
1161                \afterpage{\do@hvFloat@doublePageCaptionRight{#1}}%
1162              \fi
1163            \fi
1164          \fi
1165        \else
1166          \ifhv@switchType
1167            \do@hvFloat@doublePAGECaptionRight{#1}%
1168          \else
1169            \afterpage{\do@hvFloat@doublePageCaptionRight{#1}}%
1170          \fi
1171        \fi
1172      \else% we have an even page
1173        \if@twocolumn
1174          \if@firstcolumn
1175            \ifhv@switchType
1176              \afterpage{\afterpage{\do@hvFloat@doublePAGECaptionRight{#1}}}%
1177            \else
1178              \afterpage{\afterpage{\afterpage{\do@hvFloat@doublePageCaptionRight{#1}}}}%
1179            \fi
1180          \else% second column
1181            \ifhv@switchType
1182              \afterpage{\do@hvFloat@doublePAGECaptionRight{#1}}%
1183            \else
1184              \afterpage{\afterpage{\do@hvFloat@doublePageCaptionRight{#1}}}%
1185            \fi
1186          \fi
1187        \else% onecolumn
1188          \ifhv@switchType
1189            \afterpage{\do@hvFloat@doublePAGECaptionRight{#1}}%
1190          \else
```

```
1191        \afterpage{\afterpage{\do@hvFloat@doublePageCaptionRight{#1}}}%
1192      \fi
1193    \fi
1194  \fi
1195  \let\c@fptop\hv@fptop
1196  \fi
1197  \endgroup% started at main macro \hvFloat
1198 }
1199 %
1200 \def\do@hvFloat@doublePageCaptionRight#1{% image on left and right page with caption on the right page
          ----------------------------------
1201  \hv@typeout{do@hvFloat@doublePageCaptionRight->start}%
1202  \do@hvFloat@doublePageCaptionRightObjectLeft{0pt}%
1203  \afterpage{\do@hvFloat@doublePageCaptionRightObjectRight{#1}}%
1204 }
1205 %
1206 \def\do@hvFloat@doublePageCaptionRightObjectLeft#1{% left part of the object
1207  \begin{\hv@floatType*}[!t]
1208    \hv@typeout{>>>doublePage: start with left side of the object \hv@floatObject}%
1209    \hv@set@noverticalSpace
1210    \hfuzz=\maxdimen
1211    \let\c@hv@tempCNTfigA\c@figure
1212    \let\c@hv@tempCNTtabA\c@table
1213    \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1214    \hv@typeout{Float position parameter is for left page: !t}%
1215    \global\savebox{\hvObjectBox}{\ifhv@useOBox\usebox{\hvOBox}\else\hv@floatObject\fi}%
1216    \clipbox*{0 -\depth{} \hv@leftPageObjectWidth{} \height}{\usebox\hvObjectBox}%
1217    \ifx\hv@label\@empty
1218    \else
1219      \ifx\hv@floatType\hv@figure
1220        \global\refstepcounter{hv@tempCNTfigA}%
1221      \else
1222        \global\refstepcounter{hv@tempCNTtabA}%  before caption
1223      \fi
1224      \label{\hv@label}%
1225    \fi
1226    \ifhv@global@sameHeight
1227      \hv@typeout{text should be of same height of both pages}%
1228      \par\noindent\phantom{\parbox{\textwidth}{\caption*{\hv@longCap}}}%
1229 %       \vspace{-2pt}%
1230    \fi
1231    \hv@reset@noverticalSpace
1232  \end{\hv@floatType*}%
1233 }
1234 \def\do@hvFloat@doublePageCaptionRightObjectRight#1{% right part of the object
1235  \begin{\hv@floatType*}[!t]
1236    \hv@typeout{>>>doublePage: start with right side of the object \hv@floatObject}%
1237    \hv@set@noverticalSpace
1238    \hfuzz=\maxdimen
1239    \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1240    \savebox\hvObjectBox{\ifhv@useOBox\usebox{\hvOBox}\else\hv@floatObject\fi}%
1241    \hv@tempWidthA=\the\dimexpr1in+\oddsidemargin-\hvSet@bindCorrection\relax%  FÜR DTK
1242    \hspace*{-\hv@tempWidthA}%
1243    \hv@leftPageObjectWidth=\the\dimexpr\paperwidth-1in-\evensidemargin-\hvSet@bindCorrection\relax%  FÜR
                FTK
1244    \savebox\hv@rightBox{\clipbox*{\hv@leftPageObjectWidth{} -\depth{} \width{} \height{}}{\usebox\
                hvObjectBox}}%
1245    \hv@tempWidthB=\dimexpr\textwidth-\wd\hv@rightBox-\hvSet@bindCorrection+1in+\oddsidemargin-\
                hv@floatCapSep\relax
1246    \hv@typeout{Height of right box: \the\ht\hv@rightBox}%
1247    \hv@typeout{Depth of right box : \the\dp\hv@rightBox}%
1248      \ifdim\dp\hv@rightBox > \z@
1249        \raisebox{\depth}{\usebox\hv@rightBox}%
1250      \else
1251        \usebox\hv@rightBox
1252      \fi
1253      \c@hv@tempCNTfigB=\numexpr\c@figure-1\relax
```

```
1254          \c@hv@tempCNTtabB=\numexpr\c@table-1\relax
1255          \ifx\hv@label\@empty\else
1256            \ifx\hv@floatType\hv@figure
1257              \refstepcounter{hv@tempCNTfigB}%
1258            \else
1259              \refstepcounter{hv@tempCNTtabB}%    before caption
1260            \fi
1261            \label{\hv@label-2}%
1262          \fi
1263          \ifx\hv@caption@format@temp\@empty\else
1264            \expandafter\captionsetup\expandafter{\hv@caption@format@temp}%
1265          \fi
1266          \c@figure=\numexpr\c@hv@tempCNTfigB-1\relax
1267          \c@table=\numexpr\c@hv@tempCNTtabB-1\relax
1268          \ifnum#1>\z@      % caption on the right
1269            \hv@typeout{doublePage: capAngle=\hvSet@capAngle}%
1270            \ifnum\hvSet@capAngle > \z@
1271              \hspace{\hv@floatCapSep}%
1272              \rlap{\rotatebox{\hvSet@capAngle}{\parbox[b]{\the\dimexpr\ht\hvObjectBox+\dp\hvObjectBox}{%
1273                \abovecaptionskip=0pt% local inside parbox
1274                \belowcaptionskip=0pt% local inside parbox
1275                \ifx\relax\hv@shortCap\relax
1276                  \caption{\hv@longCap}%
1277                \else
1278                  \caption[\hv@shortCap]{\hv@longCap}%
1279                \fi
1280              }}}%
1281              \ifx\hv@label\@empty\else\label{\hv@label-cap}\fi
1282            \else
1283              \hv@tempWidthB=\dimexpr\textwidth-\wd\hv@rightBox-\hvSet@bindCorrection+1in+\oddsidemargin-\
                      hv@floatCapSep\relax
1284              \hspace{\hv@floatCapSep}%
1285              \rlap{\parbox[b][\dimexpr\ht\hv@rightBox+\dp\hv@rightBox][\hv@@capVPos]{\hv@tempWidthB}{%
1286                \abovecaptionskip=0pt % local inside parbox
1287                \belowcaptionskip=0pt % local inside parbox
1288                \ifx\hv@shortCap\@empty
1289                  \caption{\hv@longCap}%
1290                \else
1291                  \caption[\hv@shortCap]{\hv@longCap}%
1292                \fi
1293              }}%
1294              \ifx\hv@label\@empty\else\label{\hv@label-cap}\fi
1295            \fi
1296          \else % #1 = 0 caption below
1297            \ifx\relax\hv@shortCap\relax
1298              \caption{\hv@longCap}%
1299            \else
1300              \caption[\hv@shortCap]{\hv@longCap}%
1301            \fi
1302            \ifx\hv@label\@empty\else\label{\hv@label-cap}\fi
1303          \fi
1304        \vspace{0pt}%
1305        \hv@reset@noverticalSpace
1306      \end{\hv@floatType*}
1307 }
1308 %
1309 \newsavebox\hv@boxLeftPage
1310 \newsavebox\hv@boxRightPage
1311 %
1312 %% ||1in+evenside --- |1in+oddside ---||
1313 %
1314
1315 \def\do@hvFloat@doublePAGE#1{%  image on left and right page with caption on the right
          --------------------------------
1316   % #1-> 0/1 caption under/right
1317   % \global\setlength\hv@tempWidthA{\the\dimexpr1in+\oddsidemargin-\hvSet@bindCorrection}%
1318   % \global\setlength\hv@leftPageObjectWidth{\the\dimexpr\paperwidth-1in-\evensidemargin-\
```

```
             hvSet@bindCorrection}%
1319    \expandafter\global\expandafter\savebox\expandafter\hvObjectBox\expandafter{\ifhv@useOBox\usebox{\hvOBox
             }\else\hv@floatObject\fi}%
1320    \expandafter\global\expandafter\savebox\expandafter\hv@boxLeftPage\expandafter{\clipbox*{0 -\depth{} \
             hv@leftPageObjectWidth{} \height}{\usebox\hvObjectBox}}%
1321    \expandafter\global\expandafter\savebox\expandafter\hv@boxRightPage\expandafter{\clipbox*{\
             hv@leftPageObjectWidth{} -\depth{} \width{} \height}{\usebox\hvObjectBox}}%
1322    \checkoddpage
1323    \ifoddpage
1324      \hv@typeout{do@hvFloat@doublePAGE: oddpage}%
1325      \if@twocolumn
1326        \if@firstcolumn
1327          \hv@typeout{do@hvFloat@doublePAGE: ifoddpage->twocolumn->firstcolumn}%
1328          \afterpage{\do@hvFloat@doublePAGECaptionRight{#1}}%
1329        \else
1330          \hv@typeout{do@hvFloat@doublePAGE: ifoddpage->twocolumn->secondcolumn}%
1331          \do@hvFloat@doublePAGECaptionRight{#1}%
1332        \fi
1333      \else
1334        \do@hvFloat@doublePAGECaptionRight{#1}%
1335      \fi
1336    \else
1337      \hv@typeout{do@hvFloat@doublePAGE: evenpage}%
1338      \if@twocolumn
1339        \if@firstcolumn
1340          \afterpage{\afterpage{\afterpage{\do@hvFloat@doublePAGECaptionRight{#1}}}}%
1341        \else
1342          \afterpage{\afterpage{\do@hvFloat@doublePAGECaptionRight{#1}}}%
1343        \fi
1344      \else
1345        \afterpage{\do@hvFloat@doublePAGECaptionRight{#1}}%    onecolumn/left page
1346      \fi
1347    \fi
1348    \endgroup%  startet at main macro
1349  }
1350  %
1351  \def\do@hvFloat@doublePAGECaptionRight#1{%  image on left and right page with caption on the right
             ----------------------------------
1352    % #1-> 0/1 caption under/right
1353      \hv@typeout{do@hvFloat@doublePAGECaptionRight->start}%
1354      \afterpage{%
1355        \hfuzz=\maxdimen
1356        \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1357        \ifhv@useOBox
1358          \global\let\hvObjectBox\hvOBox
1359        \else
1360          \global\savebox\hvObjectBox{\hv@floatObject}%
1361        \fi
1362        \noindent
1363        \global\hv@tempWidthA=\the\dimexpr1in+\oddsidemargin-\hvSet@bindCorrection%
1364        \global\hv@leftPageObjectWidth=\the\dimexpr\paperwidth-1in-\evensidemargin-\hvSet@bindCorrection%
1365        \clipbox*{0 -\depth{} \hv@leftPageObjectWidth{} \height}{\usebox\hvObjectBox}%
1366        \null\newpage\if@twocolumn\null\newpage\fi
1367        \expandafter\global\expandafter\savebox\expandafter\hvObjectBox\expandafter{\ifhv@useOBox\usebox{\
             hvOBox}\else\hv@floatObject\fi}%
1368        \noindent
1369        \hspace*{\dimexpr-\hv@tempWidthA}%
1370        \clipbox*{\the\hv@leftPageObjectWidth{} -\depth{} \width{} \height{}}{\usebox\hvObjectBox}%
1371        \begingroup
1372          \ifnum#1>0
1373            \medskip
1374            \ifdim\dp\hvObjectBox > \z@
1375              \rotatebox[origin=c]{90}{\parbox{\the\dimexpr\ht\hvObjectBox+\dp\hvObjectBox}{%
1376                \ifx\relax\hv@shortCap\relax
1377                  \captionof{\hv@floatType}{\hv@longCap}%
1378                \else
1379                  \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
```

```
1380                    \fi
1381                  }}%
1382                \ifx\hv@label\@empty\else\label{\hv@label}\fi
1383              \else
1384                \rotatebox{90}{\parbox{\the\dimexpr\ht\hvObjectBox+\dp\hvObjectBox}{%
1385                  \ifx\relax\hv@shortCap\relax
1386                    \captionof{\hv@floatType}{\hv@longCap}%
1387                  \else
1388                    \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1389                  \fi
1390                }}%
1391                \ifx\hv@label\@empty\else\label{\hv@label}\fi
1392              \fi
1393          \else% caption not rotated
1394            \par\noindent
1395            \parbox{\textwidth}{%
1396                \ifx\relax\hv@shortCap\relax
1397                  \captionof{\hv@floatType}{\hv@longCap}%
1398                \else
1399                  \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1400                \fi
1401                \ifx\hv@label\@empty\else\label{\hv@label}\fi
1402            }%
1403          \fi
1404          \endgroup
1405          \newpage\if@twocolumn\null\newpage\fi
1406      }%
1407  }
1408  %
1409  %% ||1in+evenside --- |1in+oddside ---||
1410  %
1411  \def\do@hvFloat@doubleFULLPAGE#1{%  image on left and right page with caption before/below/right/after
1412    % #1-> 0/1 caption under/right
1413    \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1414    \ifx\hvSet@capPos\hv@After \global\hv@@capPos=1
1415    \else
1416      \ifx\hvSet@capPos\hv@Before  \global\hv@@capPos=0
1417      \else
1418        \global\hv@@capPos=2 % other caption type
1419    \fi\fi
1420    \checkoddpage
1421    \global\savebox{\hvObjectBox}{\ifhv@useOBox\usebox{\hvOBox}\else\hv@floatObject\fi}%
1422    \global\hv@tempWidthA=\dimexpr-\oddsidemargin-1in-\parindent+\hvSet@bindCorrection%  the width of the
             right side offset
1423    \global\hv@tempWidthB=\dimexpr\ht\hvCaptionBox+\wd\hvObjectBox+2\hvSet@bindCorrection%
1424    \global\hv@leftPageObjectWidth=\dimexpr\paperwidth-\hvSet@bindCorrection%
1425  % \savebox\hv@leftBox{\clipbox*{0 0 \the\hv@leftPageObjectWidth{} \height}{\usebox\hvObjectBox}}%
1426  % \savebox\hv@rightBox{\clipbox*{\the\hv@leftPageObjectWidth{} \depth{} \width{} \height}{\usebox\
         hvObjectBox}}%
1427  % \expandafter\captionsetup\expandafter{\hv@caption@format}%
1428    \ifoddpage
1429      \hv@typeout{do@hvFloat@doubleFULLPAGE: ifoddpage=true}%
1430      \ifcase\hv@@capPos % =0 Caption before
1431        \hv@typeout{do@hvFloat@doubleFULLPAGE: caption before}%
1432        \if@twocolumn
1433          \hv@typeout{do@hvFloat@doubleFULLPAGE: twocolumn=true}%
1434          \if@firstcolumn
1435            \hv@typeout{do@hvFloat@doubleFULLPAGE: firstcolumn=true}%
1436            \ifhv@twoColumnCaption
1437              \hv@typeout{do@hvFloat@doubleFULLPAGE: twoColumnCaption=true}%
1438              \set@Normal@Bottom@Caption*
1439              \afterpage{\do@hvFloat@doubleFULLPAGE@CaptionBefore}%
1440            \else
1441              \afterpage{\set@Normal@Bottom@Caption\do@hvFloat@doubleFULLPAGE@CaptionBefore}%
1442            \fi
1443          \else% \if@firstcolumn
1444            \set@Normal@Bottom@Caption
```

```
1445          \do@hvFloat@doubleFULLPAGE@CaptionBefore
1446        \fi
1447      \else% \if@twocolumn
1448        \set@Normal@Bottom@Caption
1449        \do@hvFloat@doubleFULLPAGE@CaptionBefore
1450      \fi
1451    \or  % =1 Caption after
1452      \hv@typeout{do@hvFloat@doubleFULLPAGE: caption after}%
1453      \ifhv@twoColumnCaption
1454        \hv@typeout{do@hvFloat@doubleFULLPAGE: twoColumnCaption=true}%
1455        \if@firstcolumn
1456          \hv@typeout{do@hvFloat@doubleFULLPAGE: firstcolumn=true}%
1457          \afterpage{\do@hvFloat@doubleFULLPAGE@CaptionAfterTwoCol}%
1458        \else
1459          \hv@typeout{do@hvFloat@doubleFULLPAGE: firstcolumn=false}%
1460          \do@hvFloat@doubleFULLPAGE@CaptionAfterTwoCol
1461        \fi
1462      \else
1463        \if@twocolumn
1464          \if@firstcolumn
1465            \afterpage{\do@hvFloat@doubleFULLPAGE@CaptionAfter}%
1466          \else
1467            \do@hvFloat@doubleFULLPAGE@CaptionAfter
1468          \fi
1469        \else
1470          \do@hvFloat@doubleFULLPAGE@CaptionAfter
1471        \fi
1472      \fi
1473    \else% \ifcase >1 all other Captions
1474      \if@twocolumn
1475        \if@firstcolumn
1476          \afterpage{\do@hvFloat@doubleFULLPAGE@CaptionOther{#1}}%
1477        \else
1478          \do@hvFloat@doubleFULLPAGE@CaptionOther{#1}%
1479        \fi
1480      \else % \if@twocolumn
1481        \do@hvFloat@doubleFULLPAGE@CaptionOther{#1}%
1482      \fi
1483    \fi% \ifcase
1484  \else% we have an even page
1485    \ifcase\hv@@capPos%   Before
1486      \if@twocolumn
1487        \if@firstcolumn
1488          \ifhv@twoColumnCaption
1489            \afterpage{\afterpage\set@Normal@Bottom@Caption*\afterpage{\
                    do@hvFloat@doubleFULLPAGE@CaptionBefore{#1}}}%
1490          \else
1491            \afterpage{\afterpage{\afterpage{\set@Normal@Bottom@Caption\
                    do@hvFloat@doubleFULLPAGE@CaptionBefore{#1}}}}%
1492          \fi
1493        \else
1494          \afterpage{\afterpage{\set@Normal@Bottom@Caption\do@hvFloat@doubleFULLPAGE@CaptionBefore{#1}}}%
1495        \fi
1496      \else% \if@twocolumn
1497        \afterpage{\set@Normal@Bottom@Caption\do@hvFloat@doubleFULLPAGE@CaptionBefore}%
1498      \fi
1499    \or % capPos after
1500      \if@twocolumn
1501        \if@firstcolumn
1502          \ifhv@twoColumnCaption
1503            \afterpage{\afterpage\afterpage{\do@hvFloat@doubleFULLPAGE@CaptionAfterTwoCol{#1}}}%
1504          \else
1505            \afterpage{\afterpage\afterpage{\do@hvFloat@doubleFULLPAGE@CaptionAfter{#1}}}%
1506          \fi
1507        \else
1508          \ifhv@twoColumnCaption
1509            \afterpage{\afterpage{\do@hvFloat@doubleFULLPAGE@CaptionAfterTwoCol{#1}}}%
```

```
1510          \else
1511            \afterpage{\afterpage{\do@hvFloat@doubleFULLPAGE@CaptionAfter{#1}}}%
1512          \fi
1513        \fi
1514      \else% \if@twocolumn
1515        \afterpage{\do@hvFloat@doubleFULLPAGE@CaptionAfter}%
1516      \fi
1517    \else % \ifcase Any other caption
1518      \if@twocolumn
1519        \if@firstcolumn
1520          \afterpage{\afterpage{\afterpage{\do@hvFloat@doubleFULLPAGE@CaptionOther{#1}}}}%
1521        \else
1522          \afterpage{\afterpage{\do@hvFloat@doubleFULLPAGE@CaptionOther{#1}}}%
1523        \fi
1524      \else
1525        \afterpage{\do@hvFloat@doubleFULLPAGE@CaptionOther{#1}}%
1526      \fi
1527    \fi% \ifcase
1528  \fi% main ifoddpage
1529  \endgroup% started at main macro \hvFloat
1530 }
1531
1532 \def\set@Normal@Bottom@Caption{\@ifnextchar*\set@Normal@Bottom@CaptionStar\set@Normal@Bottom@Caption@}
1533 \def\set@Normal@Bottom@Caption@{%
1534    \begin{\hv@floatType}[!b]
1535      \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1536      \ifhv@separatorLine\drawSepLine\fi
1537 %     \expandafter\captionsetup\expandafter{\hv@caption@format}%
1538      \ifhv@onlyText
1539        \hv@longCap
1540      \else
1541        \ifx\hv@shortCap\@empty
1542          \captionof{\hv@floatType}{\hv@longCap}%
1543        \else
1544          \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1545        \fi
1546      \fi
1547      \ifx\hv@label\@empty\else\label{\hv@label-cap}\fi
1548    \end{\hv@floatType}%
1549 }
1550 \def\set@Normal@Bottom@CaptionStar*{%
1551    \begin{\hv@floatType*}[!b]
1552      \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1553      \ifhv@separatorLine\drawSepLine\fi
1554 %     \expandafter\captionsetup\expandafter{\hv@caption@format}%
1555      \ifhv@onlyText
1556        \hv@longCap
1557      \else
1558        \ifx\hv@shortCap\@empty
1559          \captionof{\hv@floatType}{\hv@longCap}%
1560        \else
1561          \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1562        \fi
1563      \fi
1564      \ifx\hv@label\@empty\else\label{\hv@label-cap}\fi
1565    \end{\hv@floatType*}%
1566 }
1567
1568 \def\do@hvFloat@doubleFULLPAGE@CaptionBefore{%
1569  \afterpage{%
1570    \hfuzz=\maxdimen
1571    \global\savebox{\hvObjectBox}{\ifhv@useOBox\usebox{\hvOBox}\else\hv@floatObject\fi}%
1572    \vspace*{\the\dimexpr-1in-\voffset-\topmargin-\headheight-\headsep-\baselineskip-\parskip+1.5\lineskip
1573          }% no interlineskip
1574    \hspace*{\the\dimexpr-\evensidemargin-\parindent-1in}%
1575    \thispagestyle{empty}%
1576    \ifx\hv@floatType\hv@figure
```

```latex
1576        \global\refstepcounter{hv@tempCNTfigB}%
1577      \else
1578        \global\refstepcounter{hv@tempCNTtabB}%    before caption
1579      \fi
1580      \expandafter\label\expandafter{\hv@label}%
1581      \clipbox*{0 0 \the\hv@leftPageObjectWidth{} \height}{\usebox\hvObjectBox}%
1582      \afterpage{%
1583        \if@twocolumn\newpage\null\newpage\fi
1584        \global\savebox{\hvObjectBox}{\ifhv@useOBox\usebox{\hvOBox}\else\hv@floatObject\fi}%
1585        \thispagestyle{empty}%
1586        \vspace*{\the\dimexpr-1in-\voffset-\topmargin-\headheight-\headsep-\baselineskip-\parskip+1.5\
                lineskip}%     -0.5\paperheight+0.5\ht\hvObjectBox
1587        \hspace*{\hv@tempWidthA}%
1588        \global\savebox{\hvObjectBox}{\if@useOBox\usebox{\hvOBox}\else\hv@floatObject\fi}%
1589        \clipbox*{\the\hv@leftPageObjectWidth{} \dp\hvObjectBox{} \wd\hvObjectBox{} \ht\hvObjectBox}{\usebox
                \hvObjectBox}%
1590        \ifx\hv@floatType\hv@figure
1591          \global\refstepcounter{hv@tempCNTfigA}%
1592        \else
1593          \global\refstepcounter{hv@tempCNTtabA}%   before caption
1594        \fi
1595        \expandafter\label\expandafter{\hv@label-2}%
1596        \newpage\if@twocolumn\null\newpage\fi
1597    }}%
1598 }
1599
1600 \newif\ifhv@temp
1601
1602 \def\do@hvFloat@doubleFULLPAGE@CaptionAfter{%
1603    \afterpage{%
1604      \hfuzz=\maxdimen
1605      \global\savebox{\hvObjectBox}{\ifhv@useOBox\usebox{\hvOBox}\else\hv@floatObject\fi}%
1606      \vspace*{\the\dimexpr-1in-\voffset-\topmargin-\headheight-\headsep-\baselineskip-\parskip+1.5\lineskip
                }%  no interlineskip
1607      \hspace*{\the\dimexpr-\evensidemargin-\parindent-1in}%
1608      \thispagestyle{empty}%
1609      \clipbox*{0 \the\dp\hvObjectBox{} \the\hv@leftPageObjectWidth{} \the\ht\hvObjectBox}{\usebox\
                hvObjectBox}%
1610      \ifx\hv@floatType\hv@figure
1611        \refstepcounter{hv@tempCNTfigA}%
1612      \else
1613        \refstepcounter{hv@tempCNTtabA}%   before caption
1614      \fi
1615      \ifx\hv@label\@empty\else\label{\hv@label}\fi
1616        \newpage\if@twocolumn\null\newpage\fi
1617        \global\savebox{\hvObjectBox}{\ifhv@useOBox\usebox{\hvOBox}\else\hv@floatObject\fi}%
1618        \thispagestyle{empty}%
1619        \vspace*{\the\dimexpr-1in-\voffset-\topmargin-\headheight-\headsep-\baselineskip-\parskip+1.5\
                lineskip}%     -0.5\paperheight+0.5\ht\hvObjectBox
1620        \hspace*{\hv@tempWidthA}%
1621        \global\savebox{\hvObjectBox}{\ifhv@useOBox\usebox{\hvOBox}\else\hv@floatObject\fi}%
1622        \clipbox*{\the\hv@leftPageObjectWidth{} \dp\hvObjectBox{} \wd\hvObjectBox{} \ht\hvObjectBox}{\usebox
                \hvObjectBox}%
1623        \ifx\hv@floatType\hv@figure
1624          \refstepcounter{hv@tempCNTfigB}%
1625        \else
1626          \refstepcounter{hv@tempCNTtabB}%   before caption
1627        \fi
1628        \expandafter\label\expandafter{\hv@label-2}%
1629        \newpage\if@twocolumn\null\newpage\fi
1630        \begin{\hv@floatType}[!b]
1631          \ifhv@separatorLine\drawSepLine\fi
1632 %          \expandafter\captionsetup\expandafter{\hv@caption@format}%
1633          \ifhv@onlyText
1634            \hv@longCap
1635          \else
1636            \ifx\hv@shortCap\@empty
```

```
1637              \captionof{\hv@floatType}{\hv@longCap}%
1638            \else
1639              \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1640            \fi
1641          \fi
1642          \ifx\hv@label\@empty\else\label{\hv@label-cap}\fi
1643        \end{\hv@floatType}%
1644    }%
1645  }
1646
1647  \def\do@hvFloat@doubleFULLPAGE@CaptionAfterTwoCol{%
1648    \hv@typeout{do@hvFloat@doubleFULLPAGE@CaptionAfterTwoCol: start}  %
1649    \afterpage{%
1650      \hv@typeout{do@hvFloat@doubleFULLPAGE@CaptionAfterTwoCol: afterpage start}  %
1651      \global\savebox{\hvObjectBox}{\ifhv@useOBox\usebox{\hv0Box}\else\hv@floatObject\fi}%
1652      \vspace*{\the\dimexpr-1in-\voffset-\topmargin-\headheight-\headsep-\baselineskip-\parskip+1.5\lineskip
                }%  no interlineskip
1653      \hspace*{\the\dimexpr-\evensidemargin-\parindent-1in}%
1654      \thispagestyle{empty}%
1655      \ifx\hv@floatType\hv@figure
1656        \refstepcounter{hv@tempCNTfigA}%
1657      \else
1658        \refstepcounter{hv@tempCNTtabA}%   before caption
1659      \fi
1660      \ifx\hv@label\@empty\else\label{\hv@label}\fi
1661      \clipbox*{0 0 \the\hv@leftPageObjectWidth{} \height}{\usebox\hvObjectBox}%
1662      \newpage\if@twocolumn\null\newpage\fi
1663      \hv@typeout{do@hvFloat@doubleFULLPAGE@CaptionAfterTwoCol: insert newpage}  %
1664      \global\savebox{\hvObjectBox}{\ifhv@useOBox\usebox{\hv0Box}\else\hv@floatObject\fi}%
1665      \thispagestyle{empty}%
1666      \vspace*{\the\dimexpr-1in-\voffset-\topmargin-\headheight-\headsep-\baselineskip-\parskip+1.5\
                lineskip}%    -0.5\paperheight+0.5\ht\hvObjectBox
1667      \hspace*{\hv@tempWidthA}%
1668      \global\savebox{\hvObjectBox}{\ifhv@useOBox\usebox{\hv0Box}\else\hv@floatObject\fi}%
1669      \clipbox*{\the\hv@leftPageObjectWidth{} \dp\hvObjectBox{} \wd\hvObjectBox{} \ht\hvObjectBox}{\usebox
                \hvObjectBox}%
1670        \ifx\hv@floatType\hv@figure
1671          \refstepcounter{hv@tempCNTfigB}%
1672        \else
1673          \refstepcounter{hv@tempCNTtabB}%   before caption
1674        \fi
1675        \ifx\hv@label\@empty\else\label{\hv@label-2}\fi
1676        \newpage\if@twocolumn\null\newpage\fi
1677        \begin{\hv@floatType*}[!b]
1678          \hv@twoColumnCaptiontrue
1679          \ifhv@separatorLine\drawSepLine\fi
1680  %         \expandafter\captionsetup\expandafter{\hv@caption@format}%
1681          \ifhv@onlyText
1682            \hv@longCap
1683          \else
1684            \ifx\hv@shortCap\@empty
1685              \captionof{\hv@floatType}{\hv@longCap}%
1686            \else
1687              \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1688            \fi
1689          \fi
1690          \ifx\hv@label\@empty\else\label{\hv@label-cap}\fi
1691        \end{\hv@floatType*}%
1692    }%
1693    \hv@typeout{do@hvFloat@doubleFULLPAGE@CaptionAfterTwoCol: afterpage done}  %
1694  }
1695
1696  \def\do@hvFloat@doubleFULLPAGE@CaptionOther#1{%
1697    \afterpage{%
1698      \vspace*{\the\dimexpr-1in-\voffset-\topmargin-\headheight-\headsep-\baselineskip-\parskip+1.5\lineskip
                }%    -0.5\paperheight+0.5\ht\hvObjectBox
1699      \hspace*{\the\dimexpr-\evensidemargin-\parindent-1in}%
```

```
1700        \global\savebox{\hvObjectBox}{\ifhv@useOBox\usebox{\hvOBox}\else\hv@floatObject\fi}%
1701        \thispagestyle{empty}%
1702        \hfuzz=\maxdimen
1703        \global\savebox{\hvObjectBox}{\ifhv@useOBox\usebox{\hvOBox}\else\hv@floatObject\fi}%
1704        \clipbox*{0 \depth{} \hv@leftPageObjectWidth{} \height}{\usebox\hvObjectBox}%
1705        \ifx\hv@floatType\hv@figure
1706          \refstepcounter{hv@tempCNTfigA}%
1707        \else
1708          \refstepcounter{hv@tempCNTtabA}%    before caption
1709        \fi
1710        \label{hv@label}%
1711        \afterpage{%
1712          \if@twocolumn\newpage\if@firstcolumn\else\null\newpage\fi\fi
1713          \global\savebox{\hvObjectBox}{\ifhv@useOBox\usebox{\hvOBox}\else\hv@floatObject\fi}%
1714          \thispagestyle{empty}%
1715          \vspace*{\the\dimexpr-1in-\voffset-\topmargin-\headheight-\headsep-\baselineskip-\parskip+1.5\
                 lineskip}%    -0.5\paperheight+0.5\ht\hvObjectBox
1716          \hspace*{\hv@tempWidthA}%
1717          \clipbox*{\hv@leftPageObjectWidth{} \dp\hvObjectBox{} \wd\hvObjectBox{} \ht\hvObjectBox}{\usebox\
                 hvObjectBox}%
1718          \ifx\hv@floatType\hv@figure
1719            \refstepcounter{hv@tempCNTfigB}%
1720          \else
1721            \refstepcounter{hv@tempCNTtabB}%    before caption
1722          \fi
1723          \expandafter\label\expandafter{\hv@label-2}%
1724          \savebox\hvCaptionBox{\parbox{0.9\ht\hvObjectBox}{\captionof*{\hv@floatType}{\hv@longCap}}}%
1725          \ifnum#1 > 0\relax     % rotation with 90°
1726 %           \setlength\hv@tempWidthB{\dimexpr\ht\hvCaptionBox+\wd\hvObjectBox+2\hvSet@bindCorrection}%
1727            \ifdim\hv@tempWidthB < 2\paperwidth
1728              \rotatebox[origin=lb]{90}{\makebox[\paperheight][c]{\parbox{0.8\ht\hvObjectBox}{%
1729 %              \expandafter\captionsetup\expandafter{\hv@caption@format}%
1730                \ifhv@onlyText
1731                  \hv@longCap
1732                \else
1733                  \ifx\hv@shortCap\@empty
1734                    \captionof{\hv@floatType}{\hv@longCap}%
1735                  \else
1736                    \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1737                  \fi
1738                \fi
1739              }}}% rotatebox
1740              \ifx\hv@label\@empty\else\label{\hv@label-cap}\fi
1741            \else% ifdim: no space left on page
1742              \put(-2\ht\hvCaptionBox,0.5\ht\hvObjectBox){\makebox(0,0){\rotatebox{90}{\minipage{\textwidth}\
                   centering
1743                \parbox{0.8\textwidth}{%
1744                  \ifhv@onlyText
1745                \hv@longCap
1746              \else
1747                    \ifx\hv@shortCap\@empty
1748                      \captionof{\hv@floatType}{\hv@longCap}%
1749                    \else
1750                      \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1751                    \fi
1752                  \fi
1753                }%
1754                \ifx\hv@label\@empty\else\label{\hv@label-cap}\fi
1755              \endminipage}}}%
1756            \fi
1757          \else% ifnum, caption not rotated, under or over the right page
1758            \hv@tempWidthA=\the\dimexpr\paperheight-\ht\hvObjectBox\relax
1759            \ifdim\hv@tempWidthA > \ht\hvCaptionBox
1760            \else
1761              \put(\the\dimexpr1.5\paperwidth-\wd\hvObjectBox-\hvSet@bindCorrection,\the\dimexpr\ht\
                   hvCaptionBox+\abovecaptionskip+\belowcaptionskip){\makebox[0pt][c]{\parbox{\textwidth}{%%
1762 %              \expandafter\captionsetup\expandafter{\hv@caption@format}%
```

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```
1763          \ifhv@onlyText
1764            \hv@longCap
1765          \else
1766                  \ifx\hv@shortCap\@empty
1767                    \captionof{\hv@floatType}{\hv@longCap}%
1768                  \else
1769                    \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1770                  \fi
1771              \fi
1772            }}}%
1773              \ifx\hv@label\@empty\else\label{\hv@label-cap}\fi
1774          \fi
1775        \fi% end \ifnum#1>0
1776        \newpage\if@twocolumn\null\newpage\fi
1777      }%
1778    }%
1779  }
1780
1781
1782  \def\setBottomCaption{%
1783    \ifhv@twoColumnCaption
1784      \begin{\hv@floatType*}[!b]%
1785    \else
1786      \begin{\hv@floatType}[!b]%
1787    \fi
1788    \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1789    \ifhv@separatorLine\drawSepLine\fi
1790    \par
1791    \usebox\hvCaptionBox
1792    \ifhv@twoColumnCaption
1793      \end{\hv@floatType*}%
1794    \else
1795      \end{\hv@floatType}%
1796    \fi
1797  }
1798
1799  \def\setPageObject{%
1800    \ifhv@star
1801      \begin{\hv@floatType*}[p]%
1802    \else
1803      \begin{\hv@floatType}[p]%
1804    \fi
1805    \hv@tempcnt=\@floatpenalty% suppress "float too big" message
1806    \hfuzz=\maxdimen
1807    \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1808    \ifhv@FULLPAGE
1809      \@floatpenalty=\z@%   no message that float too large
1810      \vspace*{\the\dimexpr-1in-\voffset-\topmargin-\headheight-\headsep}%-0.5\baselineskip%
1811      \checkoddpage
1812      \if@twoside
1813        \ifoddpage
1814          \hspace*{\the\dimexpr-\oddsidemargin-\parindent-1in}%
1815        \else
1816          \hspace*{\the\dimexpr-\evensidemargin-\parindent-1in}%
1817        \fi
1818      \else
1819        \hspace*{\the\dimexpr-\oddsidemargin-\parindent-1in}%
1820      \fi
1821      \AtBeginShipoutNext{\thispagestyle{empty}}%  to prevent heading/footer
1822  %    \afterpage{\AddToHookNext{shipout/after}{\thispagestyle{empty}}}%
1823      \usebox\hvObjectBox
1824    \else
1825      \usebox\hvObjectBox
1826    \fi
1827    \ifhv@star
1828      \end{\hv@floatType*}%
1829    \else
```

```latex
1830        \end{\hv@floatType}%
1831      \fi
1832      \@floatpenalty=\hv@tempcnt%    restore
1833    }
1834
1835    \ExplSyntaxOn
1836
1837    \def\getMultiCaptionAndLabel{%
1838      \ifhv@twoColumnCaption\hv@tempWidthA=\textwidth \else \hv@tempWidthA=\linewidth\fi
1839      \global\sbox\hvCaptionBox{\minipage[b]{\hv@tempWidthA}%
1840        \captionsetup{aboveskip=\z@,belowskip=\z@,position=below,parbox=none}%,skip=-1ex}%
1841        \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1842        \parskip=-0.5\baselineskip
1843        \hv@cntb=\clist_count:N\l_clist_Type
1844        \advance\hv@cntb by \@ne
1845        \hv@cnta=1
1846        \loop
1847          \edef\@captype{\clist_item:Nn\l_clist_Type{\hv@cnta}}%
1848          \edef\@tempa{\clist_item:Nn\l_clist_LofCaption{\hv@cnta}}%
1849          \ifx\@tempa\@empty
1850            \caption{\clist_item:Nn\l_clist_Caption{\hv@cnta}}%
1851          \else
1852            \expandafter\caption\expandafter[\@tempa]{\clist_item:Nn\l_clist_Caption{\hv@cnta}}%
1853          \fi
1854          \edef\@tempa{\clist_item:Nn\l_clist_Label{\hv@cnta}}%
1855          \ifx\@tempa\@empty
1856          \else
1857            \expandafter\label\expandafter{\clist_item:Nn\l_clist_Label{\hv@cnta}-cap}\fi
1858          \advance\hv@cnta by \@ne
1859        \ifnum\hv@cnta<\hv@cntb
1860        \repeat
1861        \vspace{-\baselineskip}%  no vspace at the end
1862      \endminipage}%
1863    }
1864
1865    \def\getMultiObjectAndLabel{%
1866      \global\sbox\hvObjectBox{%
1867        \ifhv@vFill
1868          \minipage[b][\textheight][s]{\columnwidth}%
1869        \else
1870          \minipage{\columnwidth}%
1871        \fi
1872        \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1873        \ifx\hvSet@objectPos\hv@Right\raggedleft\else
1874          \ifx\hvSet@objectPos\hv@Left\raggedleft\else
1875            \ifx\hvSet@objectPos\hv@Center\centering
1876        \fi\fi\fi
1877        \hv@cntb=\clist_count:N\l_clist_Type
1878        \advance\hv@cntb by \@ne
1879        \hv@cnta=1
1880        \loop
1881          \def\@temp{\clist_item:Nn\l_clist_Object{\hv@cnta}}%
1882          \ifhv@objectFrame\frame{\@temp}\else\@temp\fi
1883          \edef\@tempa{\clist_item:Nn\l_clist_Label{\hv@cnta}}%
1884          \edef\@tempb{\clist_item:Nn\l_clist_Type{\hv@cnta}}%
1885          \edef\@captype{hv@p\@tempb}%
1886          \ifx\@tempa\@empty
1887          \else
1888            \refstepcounter{\@captype}%
1889            \expandafter\label\expandafter{\clist_item:Nn\l_clist_Label{\hv@cnta}}%
1890          \fi
1891          \ifnum\hv@cnta<\clist_count:N\l_clist_Type\par\hv@vskip\fi
1892          \advance\hv@cnta by \@ne
1893        \ifnum\hv@cnta<\hv@cntb
1894          \ifhv@vFill\vfill\fi
1895        \repeat
1896      \endminipage}%
```

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```
1897  }
1898  \def\getMultiSubCaptionAndLabel{%
1899    \global\sbox\hvCaptionBox{%
1900      \minipage{\linewidth}%
1901      \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1902      \setlength\belowcaptionskip{5pt}%
1903      \setlength\abovecaptionskip{0pt}%
1904      \xdef\@captype{\clist_item:Nn\l_clist_Type{1}}%  the same for all subfloats
1905      \edef\@tempa{\clist_item:Nn\l_clist_LofCaption{1}}%
1906      \ifx\@tempa\@empty
1907        \caption{\clist_item:Nn\l_clist_Caption{1}}%
1908      \else
1909        \expandafter\caption\expandafter[\@tempa]{\clist_item:Nn\l_clist_Caption{1}}%
1910      \fi
1911      \edef\@tempa{\clist_item:Nn\l_clist_Label{1}}%
1912      \ifx\@tempa\@empty\else\expandafter\label\expandafter{\clist_item:Nn\l_clist_Label{1}-cap}\fi
1913    \endminipage}%
1914  }
1915
1916  \def\getMultiSubObjectAndLabel{%
1917    \global\sbox\hvObjectBox{%
1918      \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1919      \ifhv@vFill
1920        \minipage[b][\textheight][s]{\columnwidth}%
1921        \captionsetup{belowskip=0pt}%
1922      \else
1923        \minipage{\columnwidth}%
1924      \fi
1925  %    \ifx\hv@subcaption@format\@empty\else
1926  %      \expandafter
1927  %      \captionsetup\expandafter[\expandafter s\expandafter u\expandafter b\expandafter]\expandafter
1928  %                         {\hv@subcaption@format}%
1929  %    \fi
1930      \ifx\hvSet@objectPos\hv@Right\raggedleft\else
1931        \ifx\hvSet@objectPos\hv@Left\raggedleft\else
1932          \ifx\hvSet@objectPos\hv@Center\centering
1933      \fi\fi\fi
1934      \hv@cntb=\clist_count:N\l_clist_Caption
1935      \advance\hv@cntb by \@ne
1936      \hv@cnta=2
1937      \edef\@captype{\clist_item:Nn\l_clist_Type{1}}%  the same for all subfloats
1938      \ifx\@tempa\@empty
1939      \else
1940  %      \refstepcounter{\@captype}%
1941  %      \expandafter\label\expandafter{\@tempa}%
1942      \fi
1943      \loop
1944        \def\@temp{\clist_item:Nn\l_clist_Object{\hv@cnta}}%
1945        \ifhv@objectFrame\frame{\@temp}\else\@temp\fi
1946        \begingroup
1947        \edef\@tempa{\clist_item:Nn\l_clist_LofCaption{\hv@cnta}}%
1948        \ifx\@tempa\@empty
1949          \subcaption{\clist_item:Nn\l_clist_Caption{\hv@cnta}}%
1950        \else
1951          \expandafter\subcaption\expandafter[\@tempa]{\clist_item:Nn\l_clist_Caption{\hv@cnta}}%
1952        \fi
1953        \edef\@tempa{\clist_item:Nn\l_clist_Label{\hv@cnta}}%
1954        \ifx\@tempa\@empty
1955        \else
1956          \expandafter\label\expandafter{\clist_item:Nn\l_clist_Label{\hv@cnta}}%
1957        \fi
1958        \endgroup
1959        \ifnum\hv@cnta<\clist_count:N\l_clist_Type\par\hv@vskip\fi
1960        \advance\hv@cnta by \@ne
1961        \ifnum\hv@cnta<\hv@cntb
1962        \ifhv@vFill\vfill\fi
1963      \repeat
```

```
1964        \edef\@tempa{\clist_item:Nn\l_clist_Label{1}}%     the  main label at the end
1965        \ifx\@tempa\@empty
1966        \else
1967          \edef\@temp{hv@p\@captype}%
1968          \refstepcounter{\@temp}%
1969          \expandafter\label\expandafter{\@tempa}%
1970        \fi
1971      \endminipage}%
1972  }
1973  \ExplSyntaxOff
1974
1975  \def\getSingleCaptionAndLabel{%
1976    \global\sbox\hvCaptionBox{\minipage{\linewidth}%
1977      \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1978      \setlength\belowcaptionskip{5pt}%
1979      \setlength\abovecaptionskip{0pt}%
1980      \ifhv@onlyText
1981        \hv@longCap
1982      \else
1983        \edef\@captype{\hv@floatType}%
1984        \expandafter\ifx\expandafter\relax\hv@shortCap\relax
1985            \caption{\hv@longCap}%
1986        \else
1987            \caption[\hv@shortCap]{\hv@longCap}%
1988        \fi
1989      \fi
1990      \ifx\hv@label\@empty\else\label{\hv@label-cap}\fi
1991    \endminipage}%
1992  }
1993
1994  \def\set@caption@object#1{%     first caption, then object  #1=\hv@floatType
1995    \ifhv@multiFloat
1996      \setcounter{hv@pfigure}{\value{figure}}%
1997      \setcounter{hv@ptable}{\value{table}}%
1998      \getMultiCaptionAndLabel
1999    \else
2000      \ifhv@subFloat
2001        \setcounter{hv@pfigure}{\value{figure}}%
2002        \setcounter{hv@ptable}{\value{table}}%
2003        \getMultiSubCaptionAndLabel
2004      \else
2005        \getSingleCaptionAndLabel
2006      \fi
2007    \fi
2008    \edef\@captype{hv@p#1}%
2009    \ifhv@multiFloat
2010      \getMultiObjectAndLabel
2011    \else
2012      \ifhv@subFloat
2013        \getMultiSubObjectAndLabel
2014      \else
2015        \global\sbox\hvObjectBox{%
2016          \refstepcounter{\@captype}%
2017          \ifhv@objectFrame\frame{\hv@floatObject}\else\hv@floatObject\fi
2018          \expandafter\ifx\expandafter\relax\hv@label\relax
2019          \else
2020            \expandafter\label\expandafter{\hv@label}%
2021          \fi
2022        }%
2023      \fi
2024    \fi
2025  }
2026  %
2027  \endinput
```