# Package hvfloat Controlling captions, fullpage and doublepage floats ver 2.31

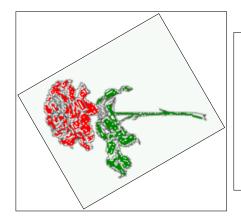
Herbert Voß\*

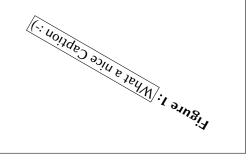
June 26, 2021

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

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

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





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## 1 The package options

The objects and captions are put into a \fbox command, like in this documenta-

tion. 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 Opt 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, expl3, multido, graphicx, xkeyval, ifoddpage, and afterpage.

## 2 The Macros and optional arguments

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

The star version is explained in section 11 on page 22 and 19.2 on page 48 and the optional **±** is explained in section 17.3 on page 37.

\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 LETEX; 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: <i>always</i> 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 (1)eft, (c)enter, (r)ight.
objectAngle	0	Integer value for the angle if the object should be rotated. Positive is counterclockwise.
floatCapSep	5pt	Additional space between the object and a left- or right-placed caption.
use0Box	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 counter is increased as usual and can be referenced.  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}
```

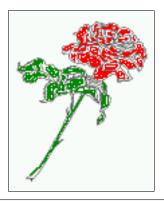


Fig. 2

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

#### Code for figure 2:

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

#### Code for table 3:

Tab. 3

hvFloat[capPos=top]{table}{%

begin{tabularx}{\textwidth}{<>{\ttfamily}|||X}

rmfamily Name & Type & Description\\hline

CMD{hvFloat} & command & places object and caption in different ways\\
hvFloatEnv & environment & places object and caption exactly Here\\
CMD{figcaption} & command & writes a figure caption in a non floating environment\\
CMD{tabcaption} & command & writes a table caption in a non floating environment\\
CMD{hvFloatSetDefaults} & command & sets all options to the defaults\\
CMD{hvDefFloatStyle} & command & define a user style
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	Туре	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

- {With the only Option  $\text{textt}\{\text{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.

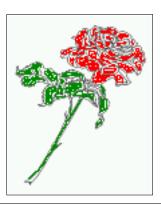
## 4 Caption width

#### 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}}%
- {Default caption width setting, which is the natural width with respect to the current linewidth.}{fig:width0}

Fig. 3

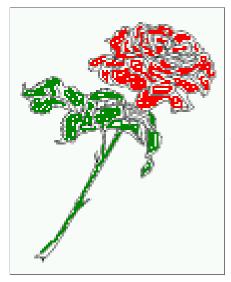


**Figure 3:** Default caption width setting, which is the natural width with respect to the current linewidth.

!! 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,
- the separation between object and caption, and the current linewidth.}{fig:widthl}



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

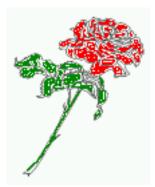
#### 4.2 Relative linewidth

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

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

{Caption below with a width of 0.9 of the current line width (column width), which is
in this special case \textbf{the\linewidth}. Divide it by 28.82 to get cm.}{fig:width2}
```

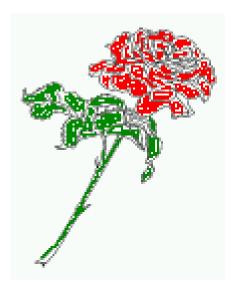
Fig. 5



**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:

Fig. 6

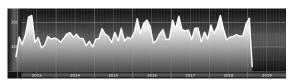


**Figure 6:** Caption right beside with a width setting of 0.9\linewidth which is too big for this example and therefore corrected by the macro to the maximal width.

#### 4.3 Identical object and caption width

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

- 2 {Caption below with a width of the given object which may be a problem
- 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
- 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:

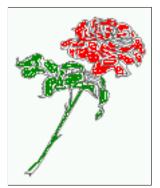
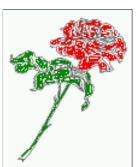


Figure 8: Caption beside with a width of the given object height which may be a problem if it is a very small object.

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





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

#### 5.2 Caption left and rotated

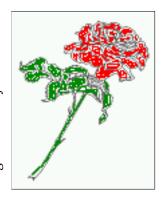
#### Code for figure 10:

```
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

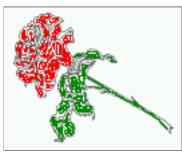


Figure 11: Caption vertically centered right beside the float with a caption width of the height of the image and a rotation of the caption and the object.

# 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
```

Fig. 12

**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*.

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

Fig. 13

Fig. 14



**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:

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

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

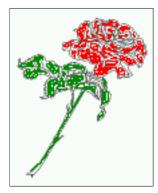
The code for figure 16:

```
hvFloat[%
floatPos=htb,%
capWidth=0.25,%
capPos=right,%
capVPos=bottom,%

{figure}{\frame{\includegraphics{images/rose}}}{Caption at bottom right beside the float}{fig:4}
```

#### Fig. 16 The code for figure 17:

```
hvFloat[%
floatPos=htb,
capWidth=0.25,
```



**Figure 16:** Caption at bottom right beside the float

- capPos=right,
- 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

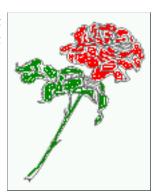
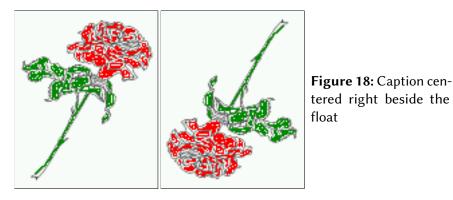


Fig. 17

The code for figure 18:





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

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..

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

Fig. 19

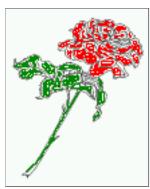


Figure 19

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.

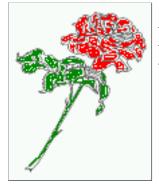
### 9 Horizontal Position of the Float

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 21 on the next page).

The code for figure 20:

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

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

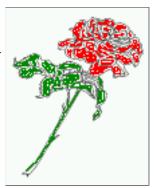


Fig. 21

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:

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

**Figure 22:** Caption at top left beside the float and object position right

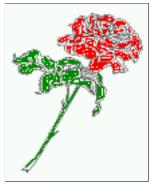


Fig. 22

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

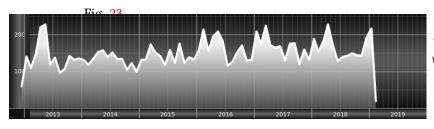
the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

#### 10 Wide floats

With the optional argument wide the width of the defined  $\mbox{marginparwidth}$  is added to the allowed horizontal width of the float.

The code for figure 23:

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

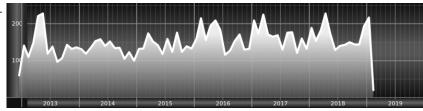


**Figure 23:** Caption at top right beside the float and object position left and the option wide.

#### The code for figure 24:

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

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



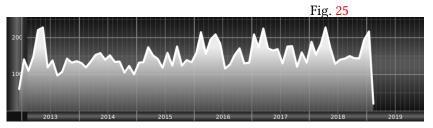
#### For a twosided document it will place the object always in the margin.

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

```
hvFloat[wide,
capPos=inner,
capVPos=top,

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

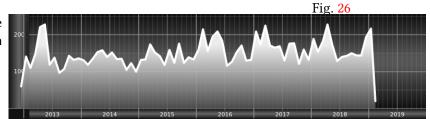
**Figure 25:** Caption at top and inner beside the float and object position right and the option wide.



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.

**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:

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

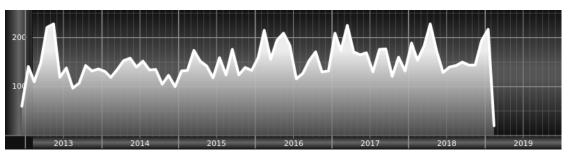


Fig. 27
Figure 27:
Caption at top inner beside the float and object position right and the option wide.

#### 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 28) is:

```
hvFloat*[capPos=right]{figure}%

{\includegraphics{images/frose}}%

[A float with the default caption setting]%

{A default caption of a ''' object with the default setting, which

is a ''left'' caption which means that it always appears before the object.

This can be an even or odd page. And some more text which has no

real meaning because it fills only the space for a long caption.}%

{fig:0}
```

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

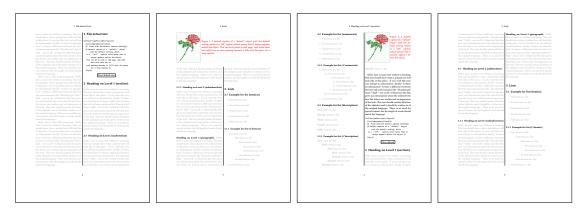


Figure 28: Output of default1s2c (pages 2 -5)

## 12 Full Page Width in Landscape Mode

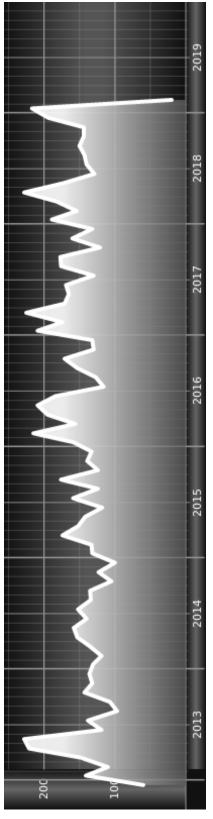
If you do not want to load the package lscape (or pdflscape) you can use the floatPos=p option to put the image on an own page and rotated by 90 degrees (figure 29).

Code for figure 29:

```
1 \hvFloat[%
2    floatPos=p,
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

Fig. 29 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



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 look. This text should contain all letters of the alphabet and it should be written in of the This text should show what a printed text will look like at this place. If you read this text, you you information about the selected font, how the letters are written and an impression of the Figure 29: Caption and object in landscape mode. Hello, here is some text without a meaning. original language. There is no need for special content, but the length of words should match the language.

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 30:

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

Fig. 30 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.

# 13 The nonFloat Option

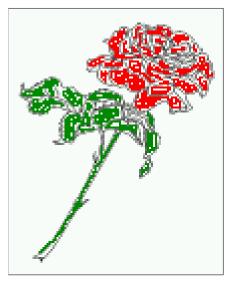
Sometimes it is better to put a "float" in a specific position of the page. This is possible with the nonfloat package and the keyword nonFloat.

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

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

Fig. 31

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 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 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 the original language. There is no need for special content, but the length of words should match the language. 2019



**Figure 31:** Caption of a "nonfloat" Object, using the nonfloat Package

Some nonsense text after the preceding non floating object.

The image 31 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.

```
\savebox{\hv0Box}{%

\begin{tabular}{>\small\tfamily}||||}\hline

\rmfamily Name & Type & Description\\hline

\CMD{hvFloat} & command & places object and caption in different ways\\

hvFloatEnv & environment & places object and caption exactly Here\\

\CMD{figcaption} & command & writes a figure caption in a non floating environment\\

\CMD{tabcaption} & command & writes a table caption in a non floating environment\\

\CMD{hvFloatSetDefaults} & command & sets all options to the defaults\\hline

\end{tabular}%

\}
```

The code for table 4 and 5 is:

```
\hvFloat[%
floatPos=!hb,
```

```
capPos=top,
3
      useOBox=true]{table}{}{Demonstration of the \texttt{useOBox} Parameter}{table:1}
4
5
6
    \marginnote{Tab.~\ref{table:2}}
8
    \hvFloat[%
9
      floatPos=hb,
10
      useOBox=true,
11
      objectAngle=90,
12
      capPos=right,
13
      capVPos=top,
14
      capWidth=0.3] \{table\} \{\} \{Another\ demonstration\ of\ the\ \ \texttt{texttt} \{use0Box\}\ Parameter\} \{table:2\} \}
15
```

In this case leave the third parameter empty.

 Table 4: Demonstration of the use0Box Parameter

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

Tab. 5

Tab. 4

# 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 keyword is used.

The code for figure 15:

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

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

Fig. 15

Type command places object and caption in different ways environment places object and caption exactly Here command writes a figure caption in a non floating environment writes a table caption in a non floating environment sets all options to the defaults

**Table 5:** Demonstration of the use0Box Parameter

#### 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:

\hvFloatSetDefaults

Name
\hvFloat
hvFloatEnv
\figcaption
\tabcaption

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

Table 6: A caption for a nice table

left	center	right
L	C	R

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

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

Figure 32 on the next page shows the meaning of the optional arguments fullpage, FullPage, and FULLPAGE for  $\[ \]$  { tiger}.

#### 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 preceding 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
```

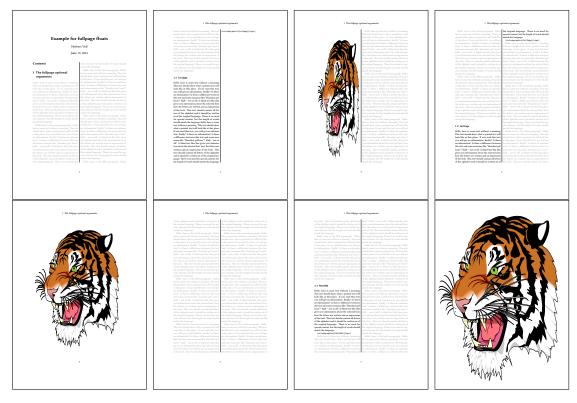


Figure 32: Output of fullpage1s2c (pages 1-8)

- is a ''left'' caption which means that it always appears ''before'' the object.
  - This can be an even or odd page. And some more text whch has no
- real meaning because it fills only the space for a long caption.}%
- 9 {fig:fullpage0}

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

Name	Туре	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 sec-
		tion 17.3 on page 37.
subFloat	true false	For multiple objects with one main and more subcaptions. See
		section 18 on page 39.
separatorLine	true	Put a line with a predefined width of 0.4pt between the text and
		the caption. Only valid for the keyword 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 33 on the facing 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 on the preceding page shows the valid optional arguments for a full page floating object.



Figure 33: 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.

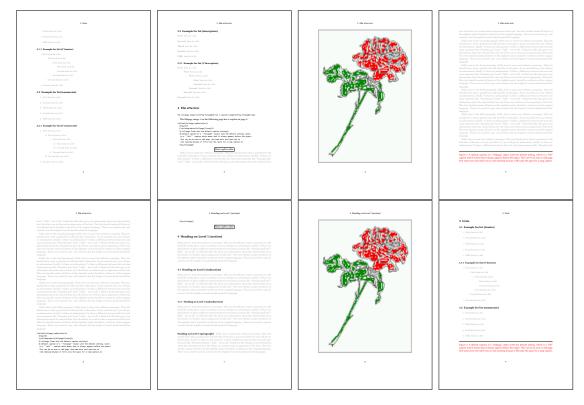


Figure 34: Output of after1s1c (pages 2-9)

#### 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!

hvFloat[fullpage, capPos=evenPage]%

{figure}%

{\includegraphics[fullpage]{images/frose}}%

[A float whith a caption on an even page (left)]%

{A caption on an even (left) page of a ''fullpage'' object.. \blindtext}

{fig:fullpage3}

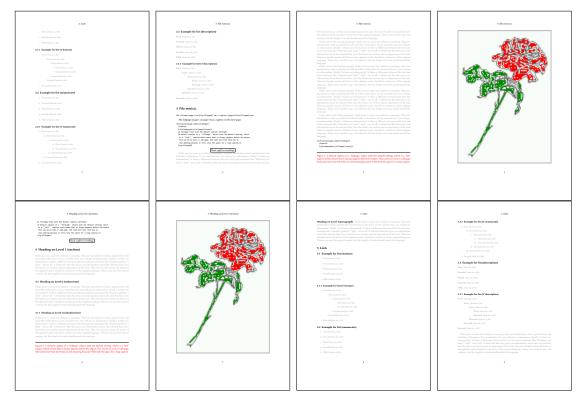


Figure 35: Output of even1s1c (pages 2-9)

#### 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.

hvFloat[fullpage, capPos=oddPage]%

{figure}%

{\includegraphics[fullpage]{images/frose}}%

[A float which needs the complete page width and height.]%

{A Caption on an odd page of a ''fullpage'' object, which follows on the next page.

This can be an even or odd page. And some more text which has no
real meaning because it fills only the space for a long caption.}

{fig:fullpage2}

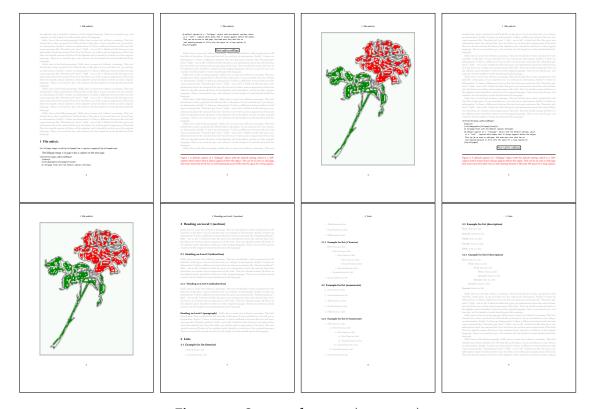


Figure 36: Output of odd1s1c (pages 2-9)

#### 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}

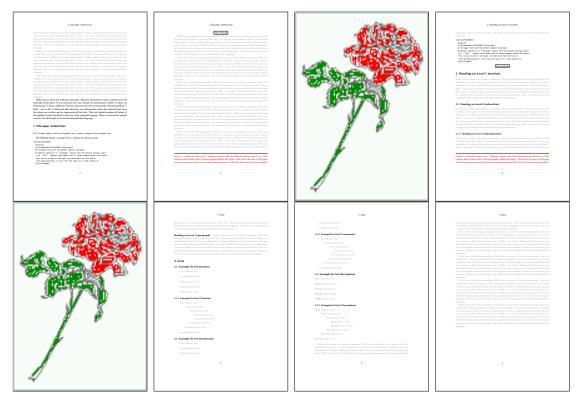


Figure 37: Output of paper-default1s1c (pages 2-9)

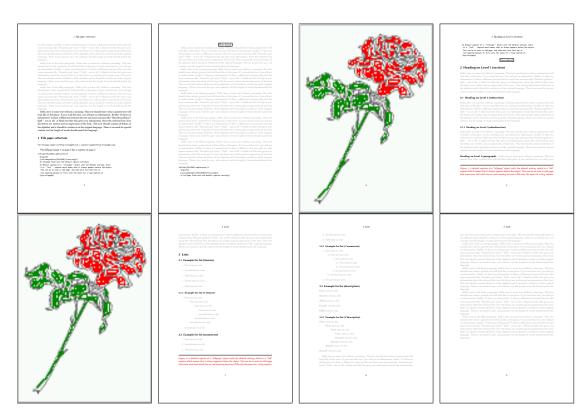


Figure 38: Output of paper-after1s1c (pages 2-9)

#### 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:

```
\captionsetup{singlelinecheck=false}
   \hvFloat[fullpage,capPos=before,multiFloat,vFill]%
2
     +{figure}{\includegraphics[width=\linewidth]{images/CTAN}}%%
                                                                                     no 1
      [Short caption A1%
4
      {A Caption A of a ''fullpage'' object, which follows on the left or
       right column. This can be an even or odd page. And some more text which has no
       real meaning because it fills only the space for a long caption.}%
     +{table}{\begin{tabular}{lrcp{3cm}}\hline
                                                                                     no 2
               Linksbündig & Rechtsbündig & Zentriert & Parbox\\\hline
               1
                                        & C & P\\
                           & R
11
               left
                                          & center & Text with possible linebreaks\\
                           & right
12
               \multicolumn{4}{c}{Multicolumn over all columns}\\\hline
13
              \end{tabular}}%
14
       [Short Caption B]%
15
      {A Caption B of a ''fullpage'' object, which follows on the left or
16
           right column. This can be an even or odd page.}{}%
17
18
     +{figure}{\includegraphics[width=\linewidth]{images/CTAN}}%%
                                                                                      no 3
       {A Caption C of a ''fullpage'' object, which follows on the left or
19
20
         right column.}%
21
      {ima:demo1}
     +{figure}{\includegraphics[width=\linewidth]{images/CTAN}}%%
22
                                                                                      no 4
      {A Caption C of a ''fullpage'' object, which follows on the left or
23
         right column.}%
24
      {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 18 on page 39. The setting \captionsetup{singlelinecheck=false} is needed if you want the captions always left aligned.

## 17 Full page objects in onecolumn mode

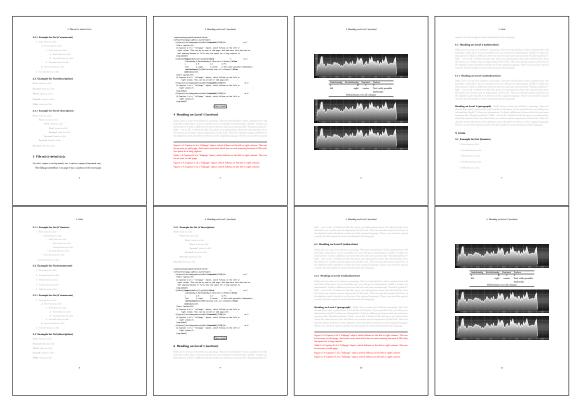
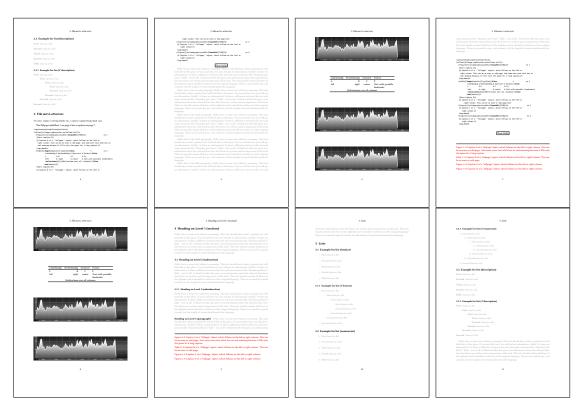


Figure 39: Output of multi-default1s1c (pages 4-11)



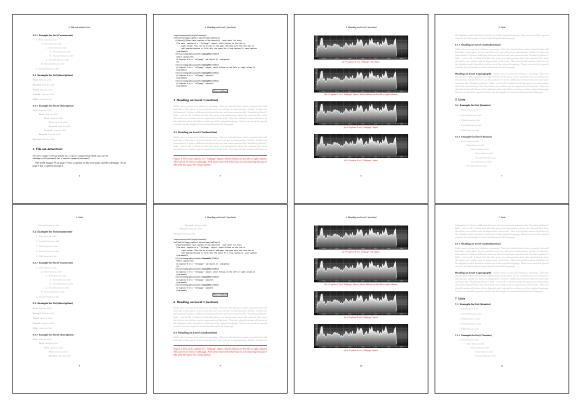
**Figure 40:** Output of multi-after1s1c (pages 4-11)

# 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:

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.

```
\hvFloat[fullpage,capPos=before,objectFrame,subFloat,vFill]%
     +{figure}{}[Short main caption of the objects]% main short lsi entry
2
       {The main caption of a ''fullpage'' object, which follows on the left or
3
            right column. This can be an even or odd page. And some more text which has no
4
            real meaning because it fills only the space for a long caption.}% main caption
      {sub:demo0}%
     +{}{\includegraphics[width=\linewidth]{images/CTAN}}%
      [Short caption B]%
      {A Caption B of a ''fullpage'' sub object.}% subcaption
      {}%
10
      +{}{\includegraphics[width=\linewidth]{images/CTAN}}%
11
      {A Caption C of a ''fullpage'' object, which follows on the left or right column.}%
12
13
     + \{\} \{ \texttt{\linewidth} \} \{ \texttt{\linewidth} \} \{ \texttt{\linewidth} \} \} 
14
      {A Caption D of a ''fullpage'' object}{sub:demo2}
15
     +{}{\includegraphics[width=\linewidth]{images/CTAN}}%
      {A Caption E of a ''fullpage'' object}{sub:demo3}
```



**Figure 41:** Output of sub-default1s1c (pages 4–11)

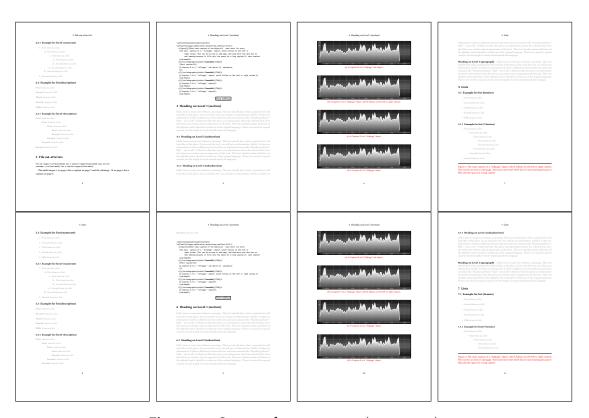


Figure 42: Output of sub-after1s1c (pages 4–11)

# 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 30 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 43).

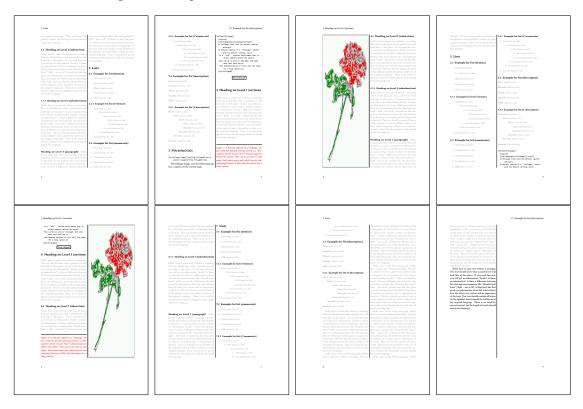


Figure 43: Output of default2s2c (pages 2-9)

```
hvFloat[fullpage]{figure}%
{\includegraphics[width=\columnwidth,height=0.9\textheight]{images/frose}}%

[A float which needs the complete column width and height.]%

{A Caption of a ''fullpage'' object, which follows on the next column.

This is always the right column on an even or odd page. And some more
text which has no real meaning because it fills only the space for a long
caption.}%

{fig:fullpage0-2}
```

The example 43 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 44).

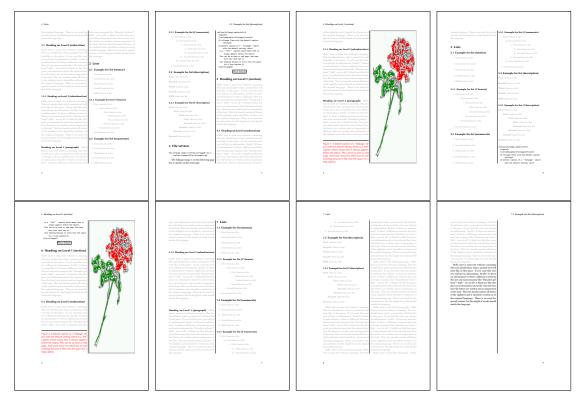


Figure 44: Output of left2s2c (pages 2-9)

#### 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 46 on the next page)

```
hvFloat[fullpage, capPos=after]{figure}%

{\includegraphics[fullpage]{images/rose}}%

[A float which needs the complete column width and height.]%

{A Caption of a ''fullpage'' object, which is on the left column.

This is always the right column on an even or odd page. And some more text which has no real meaning because it fills only the space for a long caption.}%

{fig:fullpage1-2}
```

The caption and the object can be on different pages (Figure 45 on the facing 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.

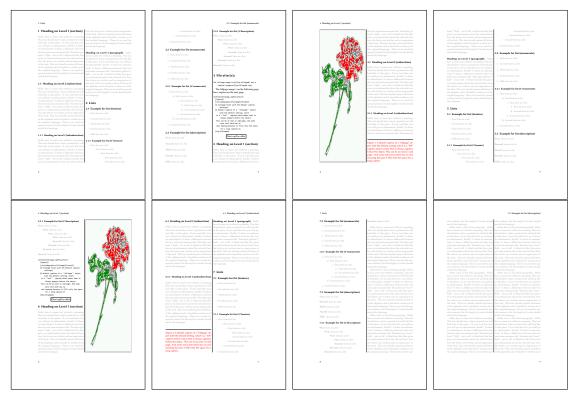
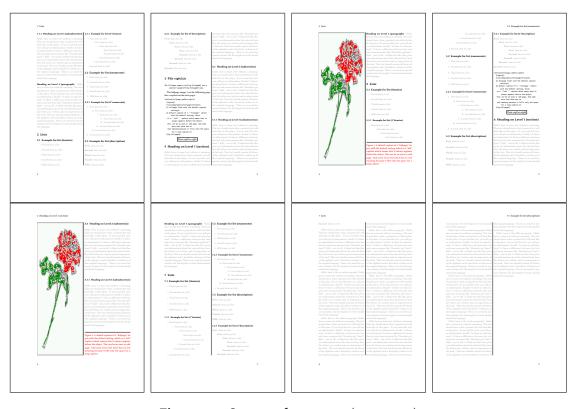


Figure 45: Output of after2s2c (pages 2–9)



**Figure 46:** 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.

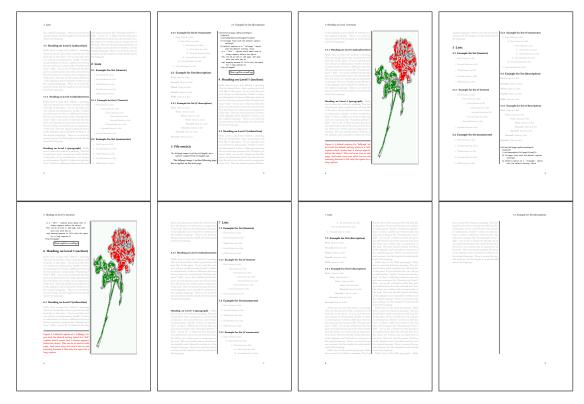


Figure 47: Output of even2s2c (pages 2-9)

## 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.

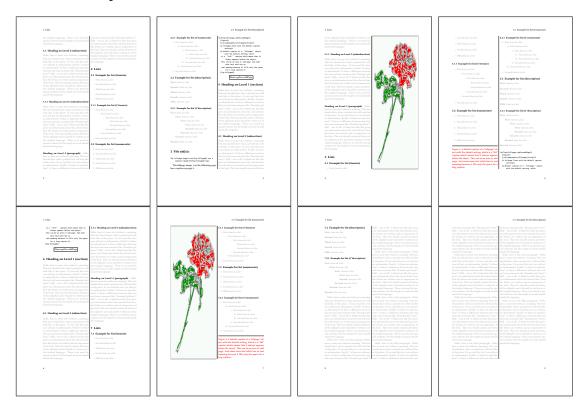


Figure 48: Output of odd2s2c (pages 2-9)

## 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.

- \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.
- This can be an even or odd page. And some more text whch has no
- real meaning because it fills only the space for a long caption.}{fig:fullpage3-2}

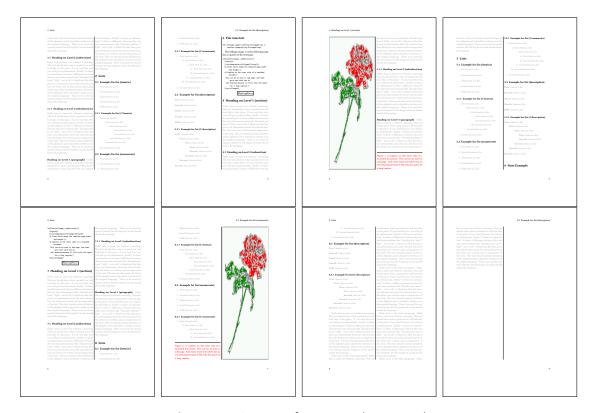


Figure 49: Output of inner2s2c (pages 2-9)

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

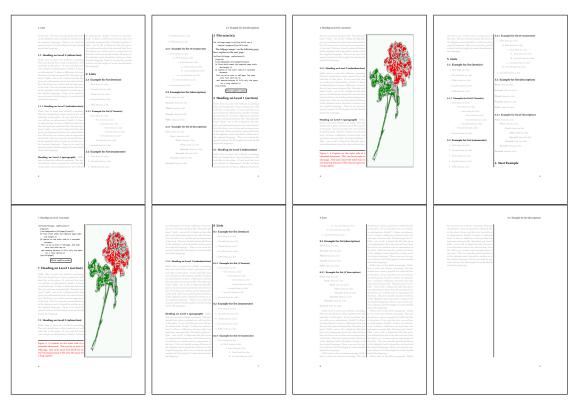


Figure 50: Output of outer2s2c (pages 2-9)

## 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}%
- {\includegraphics[FullPage]{images/rose}}%
- [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
- of \textbackslash hvFloat. The object goes over both columns.}{fig:two}

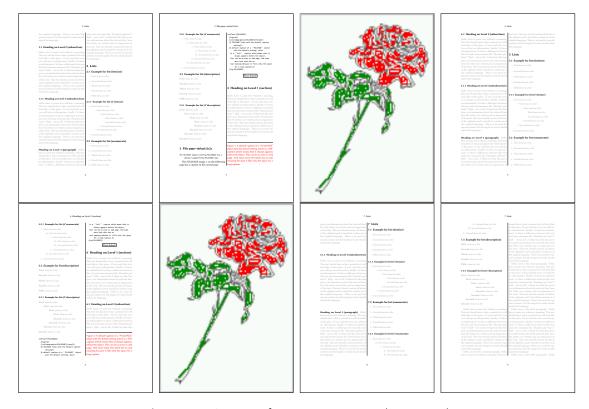


Figure 51: Output of paper-default2s2c (pages 2-9)

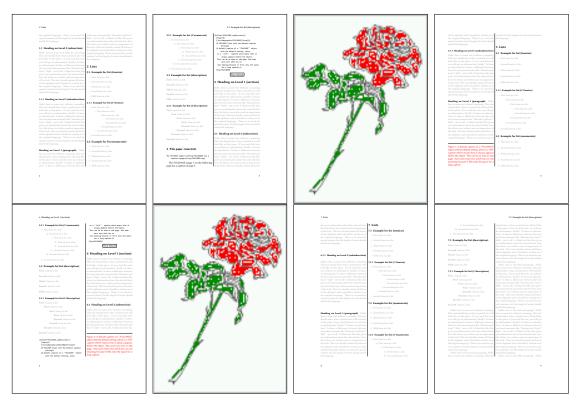


Figure 52: Output of paper-inner2s2c (pages 2-9)

#### 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:

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

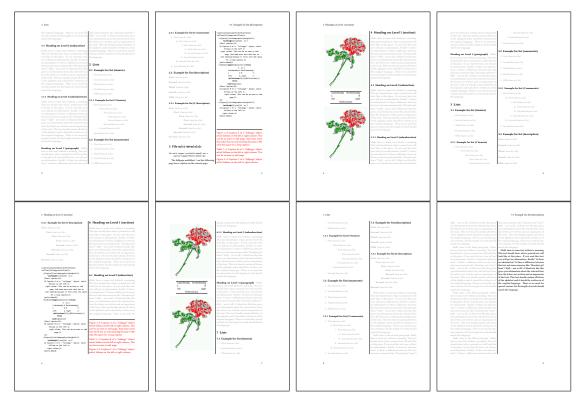


Figure 53: Output of multi-default2s2c (pages 2-9)

# 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.

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

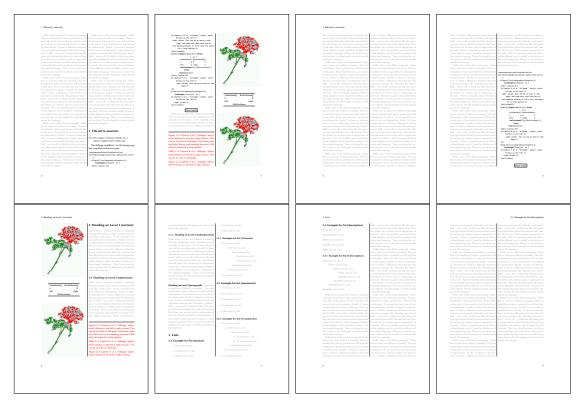


Figure 54: Output of multi-inner2s2c (pages 2-9)

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).

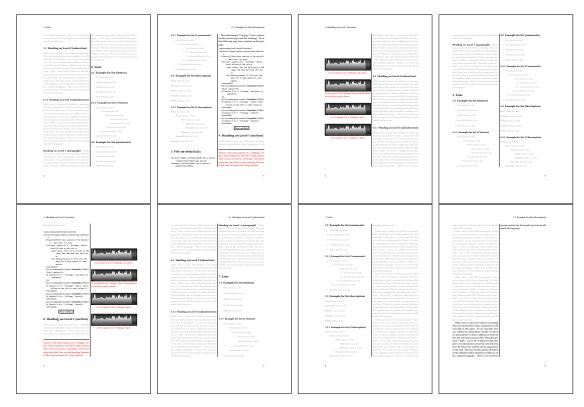


Figure 55: Output of sub-default2s2c (pages 2-9)

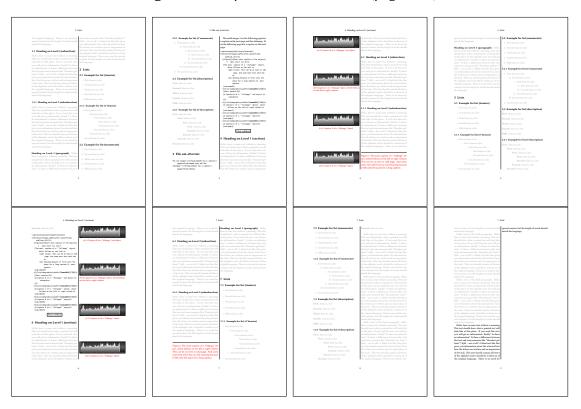


Figure 56: Output of sub-after2s2c (pages 2–9)

# 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.

hvFloat[doubleFULLPAGE, capPos=right, capAngle=90]%

{figure}%

{\includegraphics[angle=90,width=2\paperwidth]{images/r+j}}%

[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 \textt{doubleFULLPAGE}}%

{fig:doubleFULLPAGE0}

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.

Fig. 57





Figure 57: 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 double FULLPAGE

#### 21 Doublepage objects - images and/or tabulars

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

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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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=right, bindCorr=5mm]%

{figure}%

{\includegraphics[angle=90,width=2\paperwidth]{images/r+j}}%

[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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\hvFloat[doubleFULLPAGE,capPos=right]%

{figure}%

{\includegraphics[height=\paperheight]{images/rheinsberg}}%

{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 \textt{doubleFULLPAGE}}%

{fig:doubleFULLPAGE1}

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Fig. 59

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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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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 follwing 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 60 the caption is on page 70, the left image part on page 68 and the right part on page 69. In the follwoing example 61 the caption is on page 71, the left image part on page 72 and the right part on page 73. All three labels points to the same figure or table number:

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\label{eq:cap} $$ \left| \left| \left| \left| 60 \right| 60 \right| 60 \right| 60 \right| \  \  \right| \rightarrow 68 \ \left| 70 \right| 69 $$
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\hvFloat[doubleFULLPAGE,capPos=after]%
{figure}%
{\includegraphics[doubleFULLPAGE,
    keepaspectratio=false]{images/rheinsberg}}%
{A caption for a double-sided image that will be placed \textbf{after}
    the image. The image begins on the left edge of the paper.
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The parameter is \texttt{doubleFULLPAGE}}%
{foo}
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**Figure 60:** 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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\hvFloat[doubleFULLPAGE, capPos=before]%

{figure}%

{\includegraphics[height=\paperheight,width=2\paperwidth,

keepaspectratio=false]{images/rheinsberg}}%

{A caption for a double-sided image that will be placed \textbf{before}

the image. The image begins on the left edge of the paper.

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The parameter is \texttt{doubleFULLPAGE}}%

{bar}
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**Figure 61:** 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

Fig. 61





## 21 Doublepage objects - images and/or tabulars

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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#### 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 \textt{doublePAGE}}%
- 9 {fig:doublePAGE0}

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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Fig. 62





**Figure 62:** 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

## 21 Doublepage objects - images and/or tabulars

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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}%  ${\cluster {\tt width=2\textwidth]{images/sonne-meer}}\%}$ 3 [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}

After this fourth paragraph, we start a new paragraph sequence. Hello, here is some text Fig. 63 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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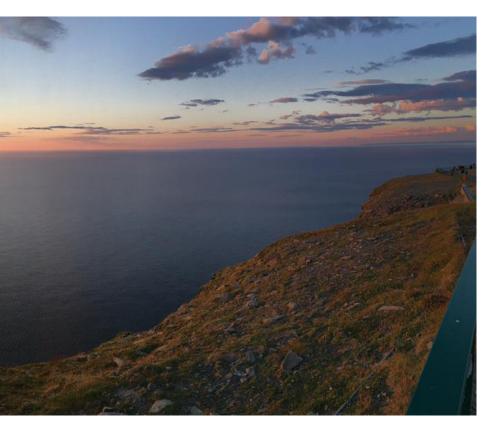


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**Figure 63:** A caption for a double-sided image that will be placed on the right side of the right-hand part of the illustration. The illustration begins on the left edge of the paper. A short form is used for the LOF. The parameter is doublePage

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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:doublePage0}
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Fig. 64

content, but the length of words should match the language.

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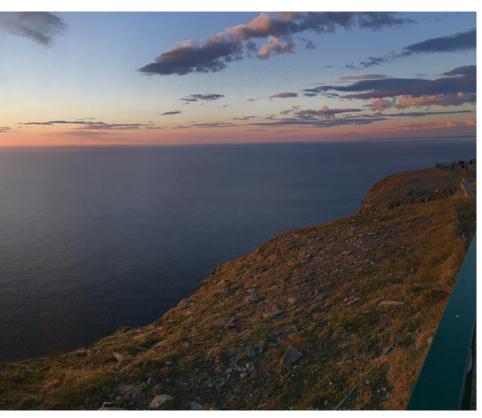


Figure 64: A caption for a double-sided image that will be placed on the right side of the right-hand part of the illustration. The illustration begins on the left edge of the paper. A short form is used for the LOF. The parameter is doublePage

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.

- 1 \hvFloat[doublePage,bindCorr=inner]%
- 2 {figure}%
- 3 {\includegraphics[width=2\textwidth]{images/sonne-meer}}%
- 4 [A doublepage image with a caption on the right side of the right part.]%
- 5 {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.
- 8 The parameter is \texttt{doublePage}}%
- 9 {fig:doublePage0sH2}

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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Fig. 65



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

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 Doublepage objects - images and/or tabulars

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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 column.

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

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

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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## 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 67 is on page 94, but the image itself is on page 95. 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 67 on page 95, which uses a correct page number of the floating object and not the caption pagenumber which is on the next page. The figure 67 is on page 95 and the caption on page 94

## 23 Defining a style

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

```
\verb|\hvDefFloatStyle{|}| name | \{setting \}|
```

### For example:



**Figure 66:** 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}
```

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.

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**Figure 67:** 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



### 24 Global float setting

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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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.

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•	<del>-</del> ·

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# 25 The Package Source

```
% $Id: hvfloat.sty 119 2021-06-20 13:28:09Z herbert $
1
2
3
    %% IMPORTANT NOTICE:
    % This is file 'hvfloat.sty',
7
 8
    % Herbert Voss <hvoss@tug.org>
    % This program can be redistributed and/or modified under the terms
10
    % of the LaTeX Project Public License Distributed from CTAN archives
11
    %% in directory macros/latex/base/lppl.txt.
12
13
    % DESCRIPTION:
14
         'hvfloat' offers rotating of captions and objects for floats
15
16
17
    \NeedsTeXFormat{LaTeX2e}
    \def\fileversion{2.31}
18
    \def\filedate{2021/06/26}
    %\message{'hvfloat' v\fileversion, \filedate\space (Herbert Voss)}
20
    \ProvidesPackage{hvfloat}[\filedate\space v\fileversion\space special floating objects (hv)]
21
    \let\hvFloatFileVersion\fileversion
22
    \newif\ifhv@fbox \hv@fboxfalse
24
    \newif\ifhv@hyperref \hv@hyperreffalse
25
    \newif\ifhv@nostfloats \hv@nostfloatsfalse
26
    \newif\ifhv@tugboat \hv@tugboatfalse
27
28
    \DeclareOption{fbox}{\hv@fboxtrue\setlength{\fboxsep}{1pt}}
29
    \DeclareOption{hyperref}{\hv@hyperreftrue}
30
    \DeclareOption{nostfloats}{\hv@nostfloatstrue}
31
    \DeclareOption{no-stfloats}{\hv@nostfloatstrue}
33
    \ProcessOptions
35
37
    \PassOptionsToPackage{hypcap}{caption}
    \RequirePackage{caption}
38
39
    \RequirePackage{varwidth}
    \DeclareCaptionBox{varwidth}{\varwidth[b]{#1}#2\endvarwidth}
40
41
    \PassOptionsToPackage{hypcap}{subcaption}
42
43
    \RequirePackage{subcaption}
    \RequirePackage{atbegshi}
44
    \RequirePackage{picture,trimclip}
46
    \RequirePackage{expl3,multido}
    \RequirePackage{graphicx}
48
    \RequirePackage{varwidth}
49
50
    \RequirePackage{xkeyval}
51
    \RequirePackage{ifoddpage}
52
    \RequirePackage{afterpage}
53
54
    \ifhv@hyperref
55
56
     \RequirePackage{hyperref}
    \fi
57
    \ifhv@nostfloats\else
58
     \RequirePackage{stfloats}% for bottom floats in a twocolumn mode
59
    \fi
60
61
62
63
    \providecommand*\LenToUnit[1]{\strip@pt\dimexpr#1*\p@/\unitlength}
```

```
65
    \newlength\hv0bjectWidth
66
    \newlength\hvCapWidth
67
    \newlength\hvWideWidth
68
69
    \newlength\hvMultiFloatSkip
    \newlength\hvMaxCapWidth
70
71
    %\AtBeginDocument{%
    % \setlength\hv@BottomSpace{\dimexpr\paperheight-lin-\topmargin-\headheight-\headsep-\textheight}}
72
73
    \newsavebox\hv0bjectBox
74
     \newsavebox\hvCaptionBox
75
    \newsavebox\hv0Box
76
    \newsavebox\@tempbox
    \newsavebox\hv@caption@box
78
    \newsavebox\hv@leftBox
79
80
    \newsavebox\hv@rightBox
81
82
    \newif\ifhv@capbeside \hv@capbesidefalse
    \newif\ifhv@switchType
83
    \def\hv@Top{top}
85
    \def\hv@Bottom{bottom}
    \def\hv@After{after}
87
    \def\hv@Before{before}
    \def\hv@Right{right}
89
    \def\hv@Left{left}
91
    \def\hv@Center{center}
92
    \def\hv@Outer{outer}
    \def\hv@Inner{inner}
93
    \def\hv@Even{evenPage}
94
95
    \def\hv@0dd{oddPage}
    \def\hv@Natural{n}
96
    \def\hv@Width{w}
    \def\hv@Height{h}
98
    \def\hv@Zero{0}
100
    \def\hv@figure{figure}
101
102
103
    \define@key{hvSet}{floatPos}[tbp]{% LaTeX's position parameters htbp
       \def \hvSet@floatPos{\#1}\%
104
105
    \define@key{hvSet}{rotAngle}[0]{%
106
                                           rotates caption AND image together
       \def\hvSet@rotAngle{#1}%
107
108
    \define@key{hvSet}{capWidth}[n]{%
                                           (n)atural width|object (w)idth)|object (h)eight|<scale of \
109
         columnwidth>
       \def\hvSet@capWidth{#1}%
110
111
    \define@key{hvSet}{capAngle}[0]{%
                                           -360..+360, only integers
112
113
       \def \hvSet@capAngle{#1}%
114
115
    116
         oddPage}[bottom]{%
      \def\hvSet@capPos{#1}%
                                     it is relativ to the object, (e),(d) only valid for fullpage float
117
      \ifcase\nr\relax
118
119
        \hv@capbesidefalse
      \or
120
121
        \hv@capbesidefalse
      \else
122
123
        \hv@capbesidetrue
      \fi
124
    }{\PackageWarning{hvfloat}{erroneous input (#1) for capPos ignored. Using bottom.}%
125
      \def\hvSet@capPos{bottom}%
                                      it is relativ to the object, (e),(d) only valid for fullpage float
126
127
      \hv@capbesidefalse
128
129
```

```
\define@choicekey*+{hvSet}{capVPos}[\val\nr]{bottom,center,top}[center]{%
130
      \def\hvSet@capVPos{#1}%
                                  it is relativ to the object
131
      \ifcase\nr\relax
132
133
        \def\hv@@capVPos{b}%
134
      \or
        \def\hv@@capVPos{c}%
135
136
      \else
        \def\hv@@capVPos{t}%
137
      \fi
138
    }{\PackageWarning{hvfloat}{erroneous input (#1) for capVPos ignored. Using center.}%
139
      \def\hvSet@capVPos{center}%
                                     it is relativ to the object
140
141
     \define@choicekey*+{hvSet}{allHPos}[\val\nr]{left,center,right}[center]{%
143
      \def\hvSet@allHPos{#1}%
144
145
      \ifcase\nr\relax
        \gdef\hv@@allHPos{l}%
146
147
      \or
        \gdef\hv@@allHPos{c}%
148
149
      \else
        \gdef\hv@@allHPos{r}%
150
      \fi
    }{\PackageWarning{hvfloat}{erroneous input (#1) for allHPos ignored. Using center.}%
152
153
      \def\hvSet@capVPos{center}%
                                  it is relativ to the object
154
155
     \define@choicekey*+{hvSet}{objectPos}[\val\nr]{left,center,right,inner,outer}[center]{%
156
157
      \def\hvSet@objectPos{#1}%
                                 it is relativ to the object
    {\c objectPos ignored. Using center.}%
158
      \def\hvSet@capVPos{center}% it is relativ to the object
159
160
    \define@key{hvSet}{objectAngle}[0]{%
                                            -360..+360
161
162
       \def\hvSet@objectAngle{#1}%
163
    \define@key{hvSet}{floatCapSep}[5pt]{% a width with the unit pt
164
       \def\hvSet@floatCapSep{#1}%
165
166
    167
168
       \setlength\hvMultiFloatSkip{#1}%
169
    \define@boolkey{hvSet}[hv@]{use0Box}[true]{}%
                                                    use of the hvOBox contents
170
    \define@boolkey{hvSet}[hv@]{nonFloat}[true]{}%
171
                                                    Do not use float environment
    \define@boolkey{hvSet}[hv@]{onlyText}[true]{}%
                                                    Write the caption only as text
172
    \define@boolkey{hvSet}[hv@]{wide}[true]{}%
                                                 Write the caption only as text
173
    \define@boolkey\{hvSet\}[hv@]\{twoColumnCaption\}[true]\\
174
         caption only as text
    \define@boolkey[hvSet][hv@]{sameHeight}[true]{\define@boolkey[hvSet][hv@]}
175
    \define@boolkey{hvSet}[hv@]{Debug}[true]{}%
                                                 give more infos in the terminal
177
178
    \newif\ifhv@fullpage
179
    \newif\ifhv@FULLPAGE
180
    \newif\ifhv@doubleFULLPAGE
181
    \newif\ifhv@doublePAGE
182
183
    \newif\ifhv@doublePage
    \newif\ifhv@setObjectLabel
184
185
    \newif\ifhv@global@sameHeight
186
    \newlength\hvSet@bindCorrection
    \newlength\hvSet@sepLineskip
188
    \newlength\hv@leftPageObjectWidth% for doublepage images
    \newlength\hv@tempWidthA
190
    \newlength\hv@tempWidthB
    \newlength\hv@minTextlines
192
    \newlength\hv@floatCapSep
    \newlength\hvSet@bindCorr
194
195
```

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

```
\else
260
       \hv@tugboattrue % special page handling
261
       \hv@typeout{>>> we are using a TUGboat class}%
262
263
264
     \newcommand\reset@special@float{%
265
266
       \hv@set{subFloat=false,%fullpage=false,
               multiFloat=false,%FULLPAGE=false
267
268
269
     \def\hv@vskip{\vspace{\hvMultiFloatSkip}}
270
271
     \newlength\hvAboveCaptionSkip
273
274
     \newlength\hvBelowCaptionSkip
     \newcount\hv@@capPos
275
276
     \newlength\fboxlinewidth
277
     \AtBeginDocument{%
278
       \label{linewidth-2} $$\operatorname{hoxrule-2} fboxrule-2 fboxsep} % $$
279
280
     \setlength\belowcaptionskip{\abovecaptionskip}% it is in latex.ltx = 0pt
281
     \newcommand\saveCaptionSkip{%
282
        \setlength{\hvAboveCaptionSkip}{\abovecaptionskip}%
        \setlength{\hvBelowCaptionSkip}{\belowcaptionskip}%
284
        \setlength{\abovecaptionskip}{0pt}%
285
        \setlength{\belowcaptionskip}{0pt}%
286
287
     \newcommand\restoreCaptionSkip{%
288
       \setlength\abovecaptionskip{\hvAboveCaptionSkip}%
289
       \setlength\belowcaptionskip{\hvBelowCaptionSkip}%
290
291
292
     \providecommand\figcaption[2][]{}%
293
     \providecommand\tabcaption[2][]{}%
     \providecommand\tabcaptionbelow[2][]{}%
295
     \renewcommand\figcaption[2][]{%
297
298
       \begingroup
       \def\@captype{figure}%
299
       \ifx\relax\hv@caption@format\relax\else\expandafter\captionsetup\expandafter{\hv@caption@format}\fi
300
       \ifx\relax#1\relax \caption{#2}\else\caption[#1]{#2}\fi
301
       \endgroup}
302
303
     \renewcommand\tabcaption[2][]{%
       \begingroup
304
305
       \def\@captype{table}%
       \expandafter\captionsetup\expandafter{\hv@caption@format,position=top}%
306
       \ifx\relax#1\relax \caption{#2}\else\caption[#1]{#2}\fi
       \endaroup}
308
     \renewcommand\tabcaptionbelow[2][]{%
       \beaingroup
310
       \def\@captype{table}%
311
       \expandafter\captionsetup\expandafter{\hv@caption@format,position=below}
312
       \ifx\relax#1\relax \caption{#2}\else\caption[#1]{#2}\fi
313
314
       \endgroup}
315
     \newlength\hv@maxImageWidth
316
     \AtBeginDocument{\hv@maxImageWidth=\columnwidth}
317
318
     \define@key{Gin}{columnWidth}[true]{%
319
320
      \def\Gin@ewidth{\columnwidth}%
     % \def\Gin@eheight{lex}%
321
       \Gin@boolkey{true}{iso}%
323
     \define@key{Gin}{fullpage}[true]{%
       \def\Gin@ewidth{\columnwidth}%
325
       \def\Gin@eheight{\textheight}%
```

```
\Gin@boolkey{false}{iso}%
327
328
                  \define@key{Gin}{FullPage}[true]{%
329
                          \def\Gin@ewidth{\textwidth}%
330
331
                          \label{lem:def-Gin-Qeheight} $$ \def \Gin\end{\colored} $$ \def \Cin\end{\colored} $$ \def \Cin\end{
                          \Gin@boolkey{false}{iso}%
332
333
                  \define@key{Gin}{FULLPAGE}[true]{%
334
335
                          \def\Gin@ewidth{\paperwidth}\%
                          \def\Gin@eheight{\paperheight}%
336
                          \Gin@boolkey{false}{iso}%
337
338
                   \define@key{Gin}{doubleFULLPAGE}[true]{%
339
                          \def\Gin@ewidth{2\paperwidth}%
340
                          \def\Gin@eheight{\paperheight}%
341
342
                          \Gin@boolkey{false}{iso}%
343
                  \define@key{Gin}{doubleFULLPAGEbindCorr}[true]{%
344
                          345
346
                          \def\Gin@eheight{\paperheight}%
                          \Gin@boolkey{false}{iso}%
347
348
349
350
                   \newcommand\IncludeGraphics[2][]{%
                          \vspace*{\the\dimexpr-lin-\voffset+\topskip-\headheight-0.5\baselineskip}%
351
                          \leavevmode\checkoddpage
352
353
                          \ifoddpage
                                  \hspace*{\dimexpr-\oddsidemargin-\parindent-lin}%
354
355
                                  \hspace*{\dimexpr-\evensidemargin-\parindent-lin}%
356
357
                          \fi\noindent
                          \includegraphics[#1,width=\paperwidth,height=\paperheight,keepaspectratio=false]{#2}%
358
359
360
                   \newcommand\put@CaptionBox[1][0]{%
361
362
                          \ifcase#1
                                  \ifhv@fbox
363
                                         364
365
366
                                         \parbox{\wd\hvCaptionBox}{\usebox{\hvCaptionBox}}%
                                 \fi
367
368
                          \or
                                 \ifhv@fbox
369
370
                                         \fbox{\raisebox{-\height}{\usebox{\hvCaptionBox}}}%
371
                                         \raisebox{-\height}{\usebox{\hvCaptionBox}}%
                                 \fi
373
374
                                 \label{lem:linear_linear} $$  \| \operatorname{loc}_{\operatorname{hvCaptionBox}} \le \operatorname{loc}_{\operatorname{hvCaptionBox}} fi $$  \| \operatorname{loc}_{\operatorname{hvCaptionBox}} \| fi \|_{\operatorname{hvCaptionBox}} \|
375
376
                          \fi
377
378
379
                  \newcommand\put@ObjectBox[1][0]{%
                          \ightharpoonup1 \int if case #1
380
381
                                 \ifhv@fbox
                                         \fbox{\parbox{\wd\hv0bjectBox}{\usebox{\hv0bjectBox}}}%
382
383
                                         384
                                 \fi
385
386
                                 \ifhv@fbox
387
                                         \fbox{\raisebox{-\height}{\usebox{\hv0bjectBox}}}%
388
389
                                         \raisebox{-\height}{\ifhv@objectFrame\frame{\usebox{\hv0bjectBox}}\else\usebox{\hv0bjectBox}\fi}%
390
                                 \fi
391
392
                          \or
```

```
\ifhv@fbox
393
          \fbox{\usebox{\hv0bjectBox}}%
394
        \else
395
          % rotated object with a depth need to raise up the \depth
396
          397
398
399
      \fi
400
401
402
     \def\drawSepLine{%
403
      \par\noindent
404
      \if@twocolumn
        \ifhv@twoColumnCaption
406
407
          \mathbf{vule}_{\linewidth}_{0.4pt}\\\[-2.5ex]
        \else
408
          \rule{\columnwidth}{0.4pt}\\[-2.5ex]
409
410
        \fi
      \else
411
412
        \mathbf{0.4pt} \leq \mathbf{0.4pt} 
413
      \vspace{\hv@sepLineskip}%
415
416
    \newcounter{hv@tempCNTfigA}%
417
    \newcounter{hv@tempCNTfigB}%
418
    \newcounter{hv@tempCNTtabA}%
419
    \newcounter{hv@tempCNTtabB}%
420
    \newcounter{hv@pfigure}%
421
    \newcounter{hv@ptable}%
422
423
    \newcounter{subhv@pfigure}%
    \newcounter{subhv@ptable}%
424
425
    \newif\ifhv@star
426
    \newif\if@hvsubstar
427
    \setDefaults
428
429
430
431
    %\newcommand*{\hvFloat}[5][]+{%
    % [#1}: keyvalues
432
    % #2: type figure | table | ...
433
    % #3: float contents
434
    % [#4]: short caption
435
436
    % #5: caption
    % #6: label
437
438
439
    \def\hvFloat{\@ifnextchar*%
                                   Main macro
      {\global\hv@startrue\hv@maxImageWidth=\textwidth\hvFloat@i}%
441
442
      443
444
    \def\hvFloat@i*{\@ifnextchar[{\do@hvFloat}{\do@hvFloat[]}}
445
    \def\do@hvFloat[#1]{%
446
      \beaingroup
447
      \setlength\hvWideWidth{\dimexpr\columnwidth+\marginparwidth+\marginparsep}%
448
    % \setlength\hvWideWidth{\dimexpr\textwidth+\marginparwidth+\marginparsep}%
449
    % \setlength\hvWideWidth{\dimexpr\linewidth+\marginparwidth}%
450
      \hv@maxImageWidth=\textwidth
451
      \reset@special@float
452
453
      \global\setcounter{hv@pfigure}{\value{figure}}%
      \global\setcounter{hv@ptable}{\value{table}}%
454
      \setcounter{hv@tempCNTfigA}{\value{figure}}%
      \setcounter{hv@tempCNTfigB}{\value{figure}}%
456
      \setcounter{hv@tempCNTtabA}{\value{table}}%
      \setcounter{hv@tempCNTtabB}{\value{table}}%
458
      \gdef\hv@save@setting{#1}% for later use after \endgroup inside figure/table env
```

```
\ifx\relax#1\relax\else\setkeys{hvSet}{#1}\fi
460
                       461
                       \ifx\hv@subcaption@format\@empty\else
462
                                    \expandafter
463
                                    \verb|\captionsetup| \textbf{expandafter} | \textbf{expandafter s} \textbf{expandafter u} \textbf{expandafter b} \textbf{expandafter} | \textbf{expandafter s} \textbf{expandafter b} \textbf{expandafter s} | \textbf{expand
464
                                                                                                                  {\hv@subcaption@format}%
465
466
                       \gdef\hv@floatType{figure}% presetting
467
468
                       \@ifnextchar+{\do@multiFloat}{\hvFloat@ii[#1]}%
469
470
                \ExplSyntax0n
471
472
                \def\do@multiFloat+#1#2{%
473
474
                       \clist_set:Nn\l_clist_Type{{#1}}%
                       \clist_set:Nn\l_clist_Object{{#2}}%
475
                       \@ifnextchar[\do@multiFloat@i{\do@multiFloat@i[]}%
476
477
                \def\do@multiFloat@i[#1]#2#3{% lof-caption, caption, label
478
479
                       \ifx\relax#1\relax
                              \clist_set:Nn\l_clist_LofCaption{{}}%
480
481
                             \verb|\clist_set:Nn\l_clist_LofCaption{{#1}}%
482
483
                       \fi
                       \clist_set:Nn\l_clist_Caption{{#2}}%
484
                       \ifx\relax#3\relax
485
486
                              \verb|\clist_set:Nn| \mathbf{l}_{clist}_{Label\{\{\}\}\%}
487
                       \else
                              \verb|\clist_set:Nn\\| \textbf{l}_clist_Label{{#3}}|
488
489
490
                       \@ifnextchar+{\do@multiFloat@ii}{}%
491
492
                 \def\do@multiFloat@ii+#1#2{%
                       \verb|\clist_put_right:Nn\\ \label{lem:nt_right} $$ \clist_Type{$\#1$}
493
                       \clist_put_right:Nn\l_clist_Object{{#2}}%
494
                       \@ifnextchar[\do@multiFloat@iii{\do@multiFloat@iii[]}%
495
497
498
                   def\do@multiFloat@iii[#1]#2#3{% lof-caption, caption, label
499
                       \ifx\relax#1\relax
                              \clist_put_right:Nn\l_clist_LofCaption{{}}%
500
501
                       \else
                              \clist put right:Nn\l clist LofCaption{{#1}}%
502
503
                       \fi
                       \clist_put_right:Nn\l_clist_Caption{{#2}}%
504
505
                       \ifx\relax#3\relax
                              \verb|\clist_put_right:Nn| \label{local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_loca
506
507
                              \clist_put_right:Nn\l_clist_Label{{#3}}%
508
509
                       \fi
                       \@ifnextchar+\do@multiFloat@ii%
510
                              {\def}\hvSet@CapWidth{n}%
511
                                  \do@@@hvFloat}%
512
513
514
                \ExplSyntaxOff
515
516
                \newcount\hv@cnta
517
                  \newcount\hv@cntb
518
519
520
                \def\hvFloat@ii[#1]#2#3{%
                                                                                                                    #1: key/value, #2: floattype, #3: object
                      \hv@maxImageWidth=\textwidth
521
                          \ifx\relax#1\relax\else\setkeys{hvSet}{#1}\fi
522
                       \gdef\hv@floatType{#2}%
523
                       \ifx\relax#2\relax
524
                              \setkeys{hvSet}{nonFloat,onlyText}%
525
                              \xspace \xdef\hv@save@setting{\hv@save@setting,nonFloat,onlyText}% for later use after \endgroup inside
526
```

```
figure/table env
527
               528
             \gdef\hv@floatObject{#3}%
529
             530
531
532
          \def\do@dhvFloat[#1]#2#3{%
                                                                     #1: listof caption, #2. long caption #3: label
533
534
             \gdef\hv@shortCap{#1}%
             \gdef\hv@longCap{#2}%
535
             \gdef\hv@label{#3}%
             537
             \verb|\global| setlength| hvSet@bindCorrection{\hvSet@bindCorr} % \textit{ for doublepage objects} \\
539
540
             \global\setlength\hv@floatCapSep{\hvSet@floatCapSep}%
541
542
             \ifhv@fullpage
543
                 \def\hvSet@CapWidth{n}% relative value
                 \do@@@hvFloat% fullpage with caption on other page
544
545
                 \ifhv@FULLPAGE
546
                     \def\hvSet@CapWidth{n}% relative value
                     \do@@@hvFloat% fullpage with caption on other page
548
                     \ifhv@doubleFULLPAGE
550
                         \setlength\hvCapWidth{\textheight}%
551
                         \expandafter\do@hvFloat@doubleFULLPAGE\@@temp% fullpage with caption rotated or under on an odd
552
                                   page
                     \else
553
                         \ifhv@doublePAGE
554
                             \verb|\expandafter| do@hvFloat@doublePAGE| @ temp% fullpage with caption rotated or under on an odd in the continuous content of the content of
555
                                      page
556
                         \else
                             \ifhv@doublePage
557
                                \expandafter\do@hvFloat@doublePage\@demp% fullpage with caption rotated or under on an odd
558
                            \else
559
                                \do@@dhvFloat
560
                            \fi
561
                         \fi
562
                     \fi
563
564
                 \fi
             \fi
565
566
567
          \def\do@@ehvFloat{% no special float page, caption and image on top of each other or side by side
568
             \def\@tempa{90}%
569
             \setlength\hvMaxCapWidth{\textheight}%
571
572
                 \strut_{\norm{1}}\
573
             \fi
574
575
         % First we save the object in \hvObjectBox
576
577
             \ifnum\hvSet@objectAngle=0 % rotate the object?
578
579
                 \ifhv@useOBox
                     \let\hv0bjectBox\hv0Box
580
581
                 \else
                     \savebox\hv0bjectBox{\hv@float0bject}%
582
583
                 \fi
             \else
584
                 \savebox\hv0bjectBox{%
585
                     \rotatebox{\hvSet@objectAngle}{%
586
                         \ifhv@useOBox\usebox{\hvOBox}\else\hv@floatObject\fi
587
                    }%
588
589
```

```
\fi
590
                           \setlength\hv0bjectWidth{\wd\hv0bjectBox}%
591
592
                   % Now we save the caption with its defined \hvCapWidth
593
594
                           \ifx\hvSet@capWidth\hv@Width%
                                                                                                                                                                                                             captionwidth=objectwidth
595
596
                                   \setlength\hvCapWidth{\hvObjectWidth}%
                           \else
597
598
                                   \ifx\hvSet@capWidth\hv@Height%
                                                                                                                                                                                                              captionwidth=objectheight
                                           \setlength\hvCapWidth{\ht\hvObjectBox}%
599
                                           \ifx\hvSet@capWidth\hv@Natural%
                                                                                                                                                                                                             captionwidth=\linewidth-\objectwidth-separation
601
                                                   \ifhv@capbeside
602
                                                          \ifhv@wide
603
                                                                  \verb|\colored| \label{the} \label{the} $$ \operatorname{cont}_{\operatorname{cont}} \operatorname{\colored} \label{the} $$ \operatorname{\colored}_{\operatorname{cont}} \operatorname{\colored} \label{the} $$ \operatorname{\colored}_{\operatorname{cont}} \operatorname{\colored} \label{the} $$ \operatorname{\colored}_{\operatorname{colored}} \label{the} \label{the} $$ \operatorname{\colored}_{\operatorname{colored}} \label{the} $$ \operatorname{\colored
604
605
                                                          \else
                                                                   \ifhv@star
606
                                                                           607
608
                                                                           \setlength\hvCapWidth{\the\dimexpr\linewidth-\hvObjectWidth-\hv@floatCapSep\relax}%
609
                                                                 \fi
610
                                                          \fi
611
                                                   \else
612
613
                                                          \setlength\hvCapWidth{\columnwidth}%
                                                  \fi
614
                                           \else
615
616
                                                   \ifhv@capbeside
                                                          \ifhv@wide
617
                                                                  \setlength\hvCapWidth{\hvSet@capWidth\hvWideWidth}%
618
                                                                  \setlength\@tempdima{\the\dimexpr\hvWideWidth-\hv0bjectWidth-\hv@floatCapSep\relax}%
619
620
                                                           \else
                                                                  \setlength\hvCapWidth{\hvSet@capWidth\columnwidth}%
621
622
                                                                   \setlength\@tempdima{\the\dimexpr\columnwidth-\hv0bjectWidth-\hv@floatCapSep\relax}%
                                                          \fi
623
                                                          \ifdim\hvCapWidth>\@tempdima
624
                                                                  \setlength\hvCapWidth{\@tempdima}%
625
                                                          \fi
626
                                                   \else
627
                                                           \ifhv@wide
628
                                                                 \setlength\hvCapWidth{\hvSet@capWidth\hvWideWidth}%
629
630
                                                                  \setlength\hvCapWidth{\hvSet@capWidth\columnwidth}%
631
                                                           \fi
632
633
                                                  \fi
                                           \fi
634
                                   \fi
                           \fi
636
                           \saveCaptionSkip% we put this space ourselve
637
                           \ifnum\hvSet@capAngle=0 % need rotation?
638
639
                                    \savebox\hvCaptionBox{% NO rotation
                                           \minipage[b]{\hvCapWidth}%% minipage, to get hyphenation
640
                                                   \ifhv@nonFloat
641
642
                                        \ifhv@onlvText
                                               \hv@longCap
643
644
                                        \else
                                               \ifx\hv@floatType\hv@figure
645
646
                                                      \ifx\relax\hv@shortCap\relax
                                                              647
                                                      \else
                                                              \label{$$ \figcaption[\hv@shortCap]{\hv@longCap\ifx\hv@label\empty\else\label{hv@label}$$
649
                                                      \fi
                                               \else
651
                                                       \ifx\relax\hv@shortCap\relax
652
                                                              \label{$$ \tilde{\hv@longCap}ifx\hv@label\end{\hv@label} if i} % $$ $$ $$ in $\mathbb{T}_{\mathbb{T}}^{n} $$
653
654
                                                              655
656
```

```
\fi
657
                   \fi
658
               \else
659
                   \ifhv@onlyText
660
661
                      \hv@longCap
                   \else
662
663
                                \let\@captype\hv@floatType
                                \ifx\hv@shortCap\@empty\caption{\hv@longCap}\else\caption[\hv@shortCap]{\hv@longCap}\fi
664
665
                                \fi
666
667
               \fi
                     \endminipage
668
                 }%
670
             \else
671
                 \savebox\hvCaptionBox{%
672
                     \rotatebox{\hvSet@capAngle}{%
                         \minipage[b]{\hvCapWidth}% minipage, to get hyphenation
673
674
                   \label{linear_loss} $$ \inf_{x \in \mathbb{R}^n} \sup_{x \in \mathbb{R}^n} e^{x \cdot x} \exp(-x) = \frac{1}{n} \left( \frac{1}{n} \right) e^{x} e
                   \ifhv@nonFloat
675
676
                       \ifhv@onlyText
                          \hv@longCap
677
                                \else
678
                           \ifx\hv@floatType\hv@figure
679
                              \else
681
                              682
                          \fi
683
                       \fi
684
                   \else
685
                       \ifhv@onlyText
686
687
                          \hv@longCap
                                \else
688
689
                                    \let\@captype\hv@floatType
                                    690
691
                                    \fi
                                \fi
692
693
                            \fi
                            694
695
                         \endminipage
                    }% rotatebox
696
697
                 }% \sbox
            \fi
698
699
700
         % now we have the object and the caption with the right
         % rotated angles saved in different boxes
701
702
            \restoreCaptionSkip% save old values
703
               \ifx\hvSet@floatPos\@empty
                                                                         % use type default
705
706
                 707
             \fi
708
             \ifhv@nonFloat
709
                 \noindent
710
711
                 \begingroup%
                                                       Start the nonfloat part
             \else
712
713
                 \ifhv@star
                     \ifx\hvSet@floatPos\hv@floatBottom
714
                                                                                         Start the floating environment *******************
715
                         \else
716
717
                         \@nameuse{\hv@floatType*}%
                     \fi
718
719
                     \begin{\hv@floatType}%
                                                                        Start the floating environment
720
                 \fi
721
             \fi
722
723
             \checkoddpage
```

```
\ifx\hvSet@objectPos\hv@Right\raggedleft\fi
724
       \ifx\hvSet@objectPos\hv@Center
725
         \verb| \ifhv@nonFloat| \textbf{hspace} * {\fill} \le \verb| \centering| fi | \\
726
727
       \fint \mathbf{x}\ hvSet@objectPos\hv@Outer
728
         \ifoddpage\raggedleft\fi
729
730
       \fi
       \ifx\hvSet@objectPos\hv@Inner
731
732
         \verb|\ifoddpage| else| raggedleft| fi
       \fi
733
734
     % to rotate object and caption together, we save all in another box
735
     % the caption comes first, if its on the left or the top
     % O caption left, inner and odd page, oneside inner
737
738
        1 caption top
     % 2 caption right, inner and even page, oneside outer
739
740
     % 3 caption bottom
741
       \ifx\hvSet@capPos\hv@Left
742
743
         \hv@@capPos=0
       \else
744
745
         \ifx\hvSet@capPos\hv@Top
           \hv@@capPos=1
746
747
            \ifx\hvSet@capPos\hv@Right
748
              \hv@@capPos=2
749
750
            \else
              \ifx\hvSet@capPos\hv@Bottom
751
752
                \hv@@capPos=3
              \else
753
                \ifx\hvSet@capPos\hv@Inner
754
                  \ifoddpageoroneside\hv@@capPos=0\else\hv@@capPos=2\fi
755
756
                \else
                  \ifx\hvSet@capPos\hv@Outer
757
758
                     \label{lem:condition} $$ \if oddpageoroneside \hv@capPos=2\else\hv@capPos=0\fi $$
759
                  \else
                     \ifx\hvSet@capPos\hv@Before
760
                       \hv@@capPos=0% same as cappos=right
761
762
                       \ifx\hvSet@capPos\hv@After
763
                         \hv@@capPos=2% same as capPos=right
764
765
                       \fi
                    \fi
766
                  \fi
767
                \fi
768
769
              \fi
            \fi
770
771
         \fi
       \fi
772
773
                                                       ***** @tempbox start
       \savebox{\@tempboxa}{%
774
         \expandafter\ifcase\the\hv@@capPos% 0 is LEFT START \ifcase
775
776
            \ifx\hvSet@capVPos\hv@Center
              \put@CaptionBox
777
              \hspace{\hv@floatCapSep}% capfloatsep
778
              \put@ObjectBox
779
780
            \else
              \ifx\hvSet@capVPos\hv@Top% caption and object at top aligned
781
782
                \put@CaptionBox[1]%
                \hspace{\hv@floatCapSep}% capfloatsep
783
784
                \put@ObjectBox[1]%
              \else% caption on bottom
785
                \put@CaptionBox[2]%
786
                \hspace{\hv@floatCapSep}% capfloatsep
787
                \put@ObjectBox[2]%
788
              \fi
789
            \fi% end caption left
790
```

```
\or%1 is top
791
           \ifdim\wd\hvCaptionBox>\wd\hvObjectBox
792
       \begin{minipage}{\wd\hvCaptionBox}%
793
794
           \else
       \begin{minipage}{\wd\hv0bjectBox}\%
795
           \fi
796
797
           \centering
           \ifhv@fbox
798
       799
        \fbox{\usebox{\hv0bjectBox}}%
800
       \usebox{\hvCaptionBox}\\[0.5\hvBelowCaptionSkip]%
802
       \usebox{\hv0bjectBox}%
           \fi
804
805
           \end{minipage}%
         \or%2 is right
806
           \ifx\hvSet@capVPos\hv@Center
807
808
             \put@ObjectBox
        \hspace{\hv@floatCapSep}%
809
810
       \put@CaptionBox
           \else
811
       \ifx\hvSet@capVPos\hv@Top
               \put@ObjectBox[1]%
813
               \hspace{\hv@floatCapSep}% capfloatsep
               \put@CaptionBox[1]%
815
       \else
816
817
               \put@ObjectBox[2]%
               \hspace{\hv@floatCapSep}% capfloatsep
818
               \put@CaptionBox[2]%
819
       \fi
820
           \fi
821
         \or%3 bottom
822
           \ifdim\wd\hvCaptionBox>\wd\hvObjectBox
823
             \begin{minipage}{\wd\hvCaptionBox}%
824
825
           \else
             \begin{minipage}{\wd\hv0bjectBox}%
826
827
           \fi
           \centering
828
829
           \ifhv@fbox
            \fbox{\usebox{\hv0bjectBox}}\\[0.5\hvAboveCaptionSkip]%
830
              \fbox{\usebox{\hvCaptionBox}}%
831
             \else
832
               \finv@objectFrame\frame{\usebox{\hv0bjectBox}}\else\usebox{\hv0bjectBox}\finv@objectBox}
833
                    hvAboveCaptionSkip]%
              \usebox{\hvCaptionBox}%
834
            \fi
835
           \end{minipage}%
836
837
        }% End savebox Object and caption
                                                    %%%%%%%%%%%%%%% @tempboxa
838
839
    % now we rotate the object and caption, if needed
840
841
842
      \ifhv@wide
        \ifoddpageoroneside
843
           \if@twocolumn
844
             \if@firstcolumn
845
846
               \noindent
               \hspace*{\dimexpr-\marginparwidth-\marginparsep}% oddpage first column
847
848
            \fi
          \fi
849
850
         \else
           \ifoddpage
851
            \if@twocolumn
              \if@firstcolumn
853
854
                \hspace*{\dimexpr-\marginparwidth-\marginparsep}% oddpage first column
855
856
```

```
\fi
857
          \else% evenpage
858
            \if@firstcolumn
859
              \noindent
860
             861
            \fi
862
863
          \fi
        \fi
864
      \fi
865
      \ifx\hvSet@rotAngle\hv@Zero
866
        \usebox{\@tempboxa}%
867
      \else
868
        \rotatebox{\hvSet@rotAngle}{\usebox{\@tempboxa}}%
869
      \fi
870
871
      \ifhv@nonFloat
        \ifx\hvSet@objectPos\hv@Center
872
           \ifhv@nonFloat
873
874
         \hspace{\fill}%
           \fi
875
        \fi
876
        \endgroup% End the nonfloat part
877
878
        \ifhv@star
879
          \@nameuse{end\hv@floatType*}% End the floating environment
        \else
881
          \end{\hv@floatType}% End the floating environment
882
        \fi
883
      \fi
884
      \endgroup% startet at main \hvFloat
885
886
887
    \newenvironment{hvFloatEnv}[1][\textwidth]
888
889
      {\minipage{#1}}
      {\endminipage}
890
891
892
    \ExplSyntax0n
    \let\clist@item@Nn\clist_item:Nn
894
895
    \let\l@clist@Type\l_clist_Type
    896
    \let\l@clist@Label\l_clist_Label
897
898
    \let\clist@count@N\clist_count:N
    \ExplSyntax0ff
899
900
    \def\do@@@hvFloat{% special float page: caption <-> fullpage images
901
902
      \fint {\bf fx} \
      \else
903
904
        \fint {\bf x}\hvSet@capPos\hv@Even \global\hv@ecapPos=2}
        \else
905
906
          \fint {\bf ylobal} \
          \else
907
            \ifx\hvSet@capPos\hv@Inner \global\hv@@capPos=4
908
909
            \else
              \ifx\hvSet@capPos\hv@Outer
                                        \global\hv@@capPos=5
910
911
              \else
                \ifx\hvSet@capPos\hv@Right
                                          \global\hv@@capPos=6% only for twocolumn mode
912
913
                \else
                                            \global\hv@@capPos=7% only for twocolumn mode
                  \ifx\hvSet@capPos\hv@Left
914
915
                  \else
                    \global\hv@@capPos=0
916
                 \fi
917
               \fi
918
             \fi
919
            \fi
920
          \fi
921
        \fi
922
      \fi
923
```

```
\checkoddpage
924
       \set@caption@object{\hv@floatType}% set caption and object into a box
925
      \ifcase\hv@@capPos% caption before object 0-> _always_ left
926
        \setBottomCaption\setPageObject
927
                            caption after object 1-> _always_ right
928
      \or%
        \setPageObject\setBottomCaption
929
930
      \or%
                            caption on even page 2-> left page
        \ifoddpage
931
932
          \afterpage{\setBottomCaption\setPageObject}%
        \else% we are on an even page
933
934
          \setBottomCaption\setPageObject
        \fi
935
                          caption on odd page 3->right page
936
        \if@twoside
937
938
          \if@twocolumn
939
            \ifoddpage
              \if@firstcolumn% on right side
940
941
                \setBottomCaption\setPageObject
              \else
942
943
                \fi
944
            \else% left (even) page
              \if@firstcolumn
946
                \afterpage{\setPageObject\setBottomCaption}% start next column
              \else
948
                \setPageObject\setBottomCaption
949
950
              \fi
            \fi
951
          \else% onecolumn
952
            \ifoddpage
953
              \setPageObject\setBottomCaption
954
            \else% even page
955
              \afterpage{\setPageObject\setBottomCaption}%
956
            \fi
957
958
          \fi
        \else% oneside
959
          \if@twocolumn
960
            \ifoddpage
961
              \if@firstcolumn% on right side
962
                \setBottomCaption\setPageObject
963
964
                \setPageObject\setBottomCaption
965
966
967
            \else
              \if@firstcolumn% on left side
968
969
                \afterpage{\setPageObject\setBottomCaption}%
              \else
970
971
                \verb|\setPageObject\setBottomCaption| \\
              \fi
972
973
            \fi
          \else % onecolumn
974
            \ifoddpage
975
              \setBottomCaption\setPageObject
976
977
            \else
              \afterpage{\setBottomCaption\setPageObject}%
978
            \fi
979
980
          \fi
        \fi
981
982
      \or%
                          caption on the inner column 4->inner
         \set@caption@object
983
984
        \if@twocolumn
          \ifoddpage
985
             \if@firstcolumn% on right side
986
         \setBottomCaption\setPageObject
987
                           % right column on right side
988
              989
990
```

```
\else
  991
                                       \if@firstcolumn% on left side
  992
                                            \verb|\afterpage{\afterpage{\afterpage{\below}}| start\ next\ page/first\ column | leading to the column
  993
                                       \else% left page/column
  994
                                           \setBottomCaption\setPageObject% start on same page/column
  995
                                      \fi
  996
                                 \fi
  997
                           \else% onecolumn
  998
  999
                                 \setBottomCaption\setPageObject
                           \fi
1000
                                                                              caption on the outer column 5->outer
 1001
                              \set@caption@object
1002
                           \if@twocolumn
1003
1004
                                 \ifoddpage
                                      \if@firstcolumn
1005
                                           \afterpage{\afterpage{\setBottomCaption\setPageObject}}%
1006
1007
1008
                                            \afterpage{\setBottomCaption\setPageObject}%
                                      \fi
1009
1010
                                 \else% even page (left)
                                      \if@firstcolumn
1011
                                           \setBottomCaption\setPageObject
1012
                                      \else
1013
1014
               %%%
                                                                   !!!! to-do: !!!!
                                      \fi
1015
                                 \fi
1016
1017
                           \else% onecolumn
                                 \setBottomCaption\setPageObject
1018
                           \fi
1019
                     \or%
                                                                              caption after object on same page 6->right for twocolumn
1020
                           \if@twocolumn
1021
                                 \if@firstcolumn
1022
1023
                                      \afterpage{\setPageObject\setBottomCaption}%
                                 \else
1024
1025
                                       \setPageObject\setBottomCaption
                                 \fi
1026
                           \else% always caption _after_ object for onecolumn
1027
1028
                                 \setPageObject\setBottomCaption
1029
                           \fi
                                                                              caption before object on same page 7->left for twocolumn
1030
                     \or%
                            \if@twocolumn
1031
1032
                                 \if@firstcolumn
                                      \setBottomCaption\setPageObject
1033
1034
                                 \else
                                      \afterpage{\setBottomCaption\setPageObject}%
1035
                                 \fi
 1036
                                                                  onecolumn -> same as before
                           \else%
1037
                                 \setBottomCaption\setPageObject
1038
                           \fi
1039
1040
                     \endgroup% startet at main \hvFloat
1041
1042
1043
1044
1045
                % ------ the doublepage obejcts ------
1046
1047
               % || lin+evenside --- |lin+oddside --- ||
1048
                \def\doghvFloat@doublePage\#1\{\%\ image\ on\ left\ and\ right\ page\ with\ caption\ on\ the\ right\ page
1049
                     % #1-> 0/1 caption under/right
1050
1051
                     1052
                     \xspace{$\times$def}\nowed for mat@temp{\hv@caption@format}}\ it\ gets\ lost\ otherwise\ for\ next\ afterpage\ it\ gets\ lost\ otherwise\ for\ next\ afterpage\ for\ next\ afterpag
1053
                     \qlobal\hv@switchTypefalse
1054
                     \endgroup% started at main macro \hvFloat
1055
                     \setcounter{hv@tempCNTfigA}{\value{figure}}%
1056
                     \setcounter{hv@tempCNTfigB}{\value{figure}}%
1057
```

```
\setcounter{hv@tempCNTtabA}{\value{table}}%
1058
      \setcounter{hv@tempCNTtabB}{\value{table}}%
1059
      \savebox\hvCaptionBox{% NO rotation
1060
       \minipage{\textwidth}% minipage, to get hyphenation
1061
1062
         \let\@captype\hv@floatType
         \caption*{\hv@longCap}%
1063
1064
       \endminipage}%
      1065
      \ifnum#1=0\relax
                     % no rotation, caption below
1066
       \hv@typeout{Texthöhe: \the\textheight}%
1067
       \hv@typeout{Objekth\"ohe: $$ \the \ht\hvObjectBox}%
       \hv@typeout{Captionhöhe: \the\ht\hvCaptionBox}%
1069
       \@tempdima=\dimexpr\ht\hvObjectBox+\ht\hvCaptionBox+\abovecaptionskip+\belowcaptionskip +\textfloatsep
1070
           \relax%+\floatsep\relax
1071
       \hv@typeout{Summe: \the\@tempdima}%
       \ifdim\@tempdima > \dimexpr\textheight-\hv@minTextlines\relax
1072
         \hv@typeout{hvfloat: switched to floattype p}%
1073
1074
         \hv@switchTypetrue
       \fi
1075
      \fi
1076
      \hv@typeout{do@hvFloat@doublePage:hv@tempWidthA=\the\hv@tempWidthA}%
1077
1078
      \ifoddpage
1079
       \if@twocolumn
         \if@firstcolumn
1081
          \ifhv@switchType
1082
            \afterpage{\do@hvFloat@doublePAGECaptionRight{#1}}%
1083
1084
            1085
          \fi
1086
1087
         \else
          \ifhv@tugboat
1088
1089
            \do@hvFloat@doublePageCaptionRight{#1}%
          \else
1090
            \ifhv@switchType
1091
             \do@hvFloat@doublePAGECaptionRight{#1}%
1092
            \else
             1094
1095
            \fi
          \fi
1096
         \fi
1097
1098
       \else
         \ifhv@switchType
1099
1100
          \do@hvFloat@doublePAGECaptionRight{#1}%
         \else
1101
          1102
         \fi
1103
       \fi
1104
      \else% we have an even page
1105
1106
       \if@twocolumn
         \if@firstcolumn
1107
1108
            1109
          \else
1110
            1111
          \fi
1112
1113
         \else% second column
1114
          \ifhv@switchType
1115
            \else
1116
1117
            \fi
1118
         \fi
1119
       \else% onecolumn
1120
1121
          1122
1123
```

```
\afterpage{\afterpage{\do@hvFloat@doublePageCaptionRight{#1}}}%
1124
                                           \fi
1125
                                   \fi
1126
                            \fi
1127
1128
                            \let\c@fptop\hv@fptop
                         \endgroup% started at main macro \hvFloat
1129
 1130
1131
                     \def\do@hvFloat@doublePageCaptionRight#1{% image on left and right page with caption on the right page
1132
                            \do@hvFloat@doublePageCaptionRightObjectLeft{Opt}%
                            \afterpage{\do@hvFloat@doublePageCaptionRightObjectRight{#1}}%
1134
1135
1136
                      \def\do@hvFloat@doublePageCaptionRightObjectLeft#1{%    left part of the object
1137
1138
                            \begin{\hv@floatType*}[!t]
                                   \hfuzz=\maxdimen
1139
1140
                                   \let\c@hv@tempCNTfigA\c@figure
                                   \let\c@hv@tempCNTtabA\c@table
1141
                                   \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1142
                                   \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1143
                                   \hv@typeout{Floatpositionsparameter: !t}%
1144
                                   1145
                                   \verb|\clipbox*{0 -\depth{} \hv@leftPageObjectWidth{} \height}{\usebox}\hvObjectBox{}% | \clipbox{\clipbox*{0 -\depth{} \hv@leftPageObjectWidth{}}} | \clipbo
                                   \ifx\hv@label\@empty
1147
                                   \else
1148
1149
                                           \ifx\hv@floatType\hv@figure
                                                   \global\refstepcounter{hv@tempCNTfigA}%
1150
1151
                                           \else
                                                   \global\refstepcounter{hv@tempCNTtabA}% before caption
1152
1153
                                           \fi
                                           \label{\hv@label}%
1154
1155
                                   \fi
                                   \ifhv@qlobal@sameHeight
1156
                                           \hv@typeout{text should be of same height of both pages}%
1157
                                           \par\phantom{\parbox{\textwidth}{\caption*{\hv@longCap}}}%
1158
 1159
                                               \vspace{\textfloatsep}%
                                   \fi
1160
                            \ensuremath{\mbox{\ensuremath{\mbox{\sc hv@floatType}^*}}\%
1161
1162
                     \def\do@hvFloat@doublePageCaptionRightObjectRight#1{% right part of the object
1163
 1164
                            \begin{\hv@floatType*}[!t]
                                   \hfuzz=\maxdimen
1165
1166
                                   \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
                                   \global\savebox\hv0bjectBox{\ifhv@use0Box\usebox{\hv0Box}\else\hv@float0bject\fi}%
1167
                                   \hspace*{-\hv@tempWidthA}%
                                   1169
                                                       hv0bjectBox}}%
                                               1170
                                                                  oddsidemargin-\hv@floatCapSep\relax}%
                                               \hv@typeout{Height of right box: \the\ht\hv@rightBox}%
1171
                                               \hv@typeout{Depth of right box : \the\dp\hv@rightBox}%
1172
                                              \int \int d\mathbf{p} \cdot d\mathbf{p}
1173
                                                              \raisebox{\depth}{\usebox\hv@rightBox}%
1174
1175
                                               \else
                                                      \usebox\hv@riahtBox
1176
1177
                                               \fi
                                               \c@hv@tempCNTfigB=\numexpr\c@figure-1\relax
1178
                                               \c@hv@tempCNTtabB=\numexpr\c@table-1\relax
                                               \ifx\hv@label\@empty\else
1180
1181
                                                      \ifx\hv@floatType\hv@figure
                                                             \refstepcounter{hv@tempCNTfigB}%
1182
1183
                                                             \refstepcounter{hv@tempCNTtabB}% before caption
1184
                                                      \fi
1185
                                                      \label{\hv@label-2}%
1186
1187
```

```
\ifx\hv@caption@format@temp\@empty\else
1188
                                                    \expandafter\captionsetup\expandafter{\hv@caption@format@temp}%
1189
                                             \fi
1190
                                             \c@figure=\numexpr\c@hv@tempCNTfigB-1\relax
1191
1192
                                              \c@table=\numexpr\c@hv@tempCNTtabB-1\relax
                                              \ifnum#1>\z@
                                                                                                     % caption on the right
1193
1194
                                                    \hv@typeout{doublePage: capAngle=\hvSet@capAngle}%
                                                    \ifnum\hvSet@capAngle > \z@
1195
                                                           \hspace{\hv@floatCapSep}%
1196
                                                           \rdet{the} \rdet{the} {\rdet{the} {\parbox[b]{\the} \rdet{the} \
1197
                                                                  \abovecaptionskip=0pt% local inside parbox
1198
                                                                  \belowcaptionskip=0pt% local inside parbox
1199
                                                                  \ifx\relax\hv@shortCap\relax
1200
                                                                          \caption{\hv@longCap}%
1201
                                                                  \else
1202
1203
                                                                          \caption[\hv@shortCap]{\hv@longCap}%
                                                                  \fi
1204
1205
                                                           }}}%
                                                           \ifx\hv@label\@empty\else\label{\hv@label-cap}\fi
1206
                                                    \else
1207
                                                           1208
                                                                              {\bf oddsidemargin} \hbox{-} \verb|\hv@floatCapSep| \verb| relax| } \%
                                                           \hspace{\hv@floatCapSep}%
1209
1210
                                                           \rdet{$\rdet{thmp}{\parbox[b][\dimexpr}$} \rdet{$\rdet{thmp}} \rdet{\rdet{thmp}} \rdet{
                                                                  \abovecaptionskip=0pt% local inside parbox
1211
                                                                  \belowcaptionskip=0pt% local inside parbox
1212
1213
                                                                  \ifx\hv@shortCap\@empty
1214
                                                                          \caption{\hv@longCap}%
1215
                                                                  \else
                                                                          \caption[\hv@shortCap]{\hv@longCap}%
1216
                                                                  \fi
1217
                                                           }}%
1218
1219
                                                           \ifx\hv@label\end{hv@label-cap}\fi
                                                   \fi
1220
                                              \else % #1 = 0 \ caption \ below
1221
1222
                                                    \ifx\relax\hv@shortCap\relax
                                                           \caption{\hv@longCap}%
1223
                                                    \else
1224
1225
                                                           \caption[\hv@shortCap]{\hv@longCap}%
                                                    \fi
1226
1227
                                                    \ifx\hv@label\@empty\else\label{\hv@label-cap}\fi
                                             \fi
1228
                                  \vspace{0pt}%
1229
1230
                           \end{\hv@floatType*}
1231
1232
                    \newsavebox\hv@boxLeftPage
1233
                    \newsavebox\hv@boxRightPage
1235
1236
                   % ||1in+evenside --- |1in+oddside ---||
1237
1238
1239
                     ar{def}doar{dh}hvFloatar{dh}doublePAGE#1\{\% image on left and right page with caption on the right
1240
                           % #1-> 0/1 caption under/right
                           \global\ \setlength\hv@tempWidthA{\the\dimexprlin+\oddsidemargin-\hvSet@bindCorrection}%
1241
                           \global\setlength\hv@leftPageObjectWidth{\the\dimexpr\paperwidth-lin-\evensidemargin-\
1242
                                              hvSet@bindCorrection}%
                           1243
                                             }\else\hv@floatObject\fi}%
1244
                           \label{lem:condition} $$\operatorname{cxpandafter}_{\colored{condition}} \exp \operatorname{cxpandafter}_{\colored{condition}} -\operatorname{colored{condition}} $$\operatorname{cxpandafter}_{\colored{condition}} = \operatorname{cxpandafter}_{\colored{condition}} = \operatorname{cxpand
                                              hv@leftPageObjectWidth{} \height}{\usebox\hvObjectBox}}%
                           \expandafter\global\expandafter\savebox\expandafter\hv@boxRightPage\expandafter{\clipbox*{\
1245
                                              \label{lem:lem:lem:hv@leftPageObjectWidth{} -\depth{} \width{} \height}{\usebox}\hvObjectBox{}\}% $$
1246
                          \endgroup% started at main macro \hvFloat
                       \checkoddpage
1247
1248
                          \ifoddpage
```

```
\if@twocolumn
1249
                                 \if@firstcolumn
1250
                                      \verb|\afterpage{\documents|} Afterpage{\documents|} Afterpage{\docume
1251
                                 \else
1252
                                      \do@hvFloat@doublePAGECaptionRight{#1}%
1253
                                \fi
1254
1255
                           \else
                                \do@hvFloat@doublePAGECaptionRight{#1}%
1256
1257
                           \fi
                     \else
1258
                           \if@twocolumn
1259
                                \if@firstcolumn
1260
                                     1261
1262
                                \else
                                      1263
                                \fi
1264
                           \else
1265
1266
                                 \afterpage{\do@hvFloat@doublePAGECaptionRight{#1}}%
                           \fi
1267
1268
                     \fi
                     \endgroup% startet at main macro
1269
1270
1271
1272
               \def\do@hvFloat@doublePAGECaptionRight#1{% image on left and right page with caption on the right
                    % #1-> 0/1 caption under/right
1273
1274
                           \afterpage{%
                                 \hfuzz=\maxdimen
1275
                                 \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1276
                                 \global\savebox{\hv0bjectBox}{\ifhv@use0Box\usebox{\hv0Box}\else\hv@float0bject\fi}%
1277
1278
                                 \noindent
                                 \clipbox*{0 -\depth{} \hv@leftPageObjectWidth{} \height}{\usebox\hvObjectBox}%
1279
1280
                                 \null\newpage\if@twocolumn\null\newpage\fi
                                 \expandafter\global\expandafter\savebox\expandafter\hv0bjectBox\expandafter{\ifhv@use0Box\usebox{\
1281
                                               hv0Box}\else\hv@float0bject\fi}%
1282
                                 \noindent
                                 \hspace*{\dimexpr-\hv@tempWidthA}%
                                      \label{limits} $$ \clipbox*{\the} \rightarrow \clipbox*{\the} \rightarrow \clipbox*{\the} \clipb
1284
1285
                                 \begingroup
                                            \ifnum#1>0
1286
                                                  \medskip
1287
1288
                                                  \ifdim\dp\hv0bjectBox > \z@
                                                       \rotatebox[origin=c]{90}{\parbox{\the\dimexpr\ht\hv0bjectBox+\dp\hv0bjectBox}{%
1289
1290
                                                             \ifx\relax\hv@shortCap\relax
                                                                   \captionof{\hv@floatType}{\hv@longCap}%
1291
                                                             \else
                                                                   \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1293
                                                             \fi
1294
                                                       }}%
1295
1296
                                                       \ifx\hv@label\end{whv@label}\fi
                                                  \else
1297
                                                       \rotatebox{90}{\parbox{\the}\dimexpr\ht\hv0bjectBox+\dp\hv0bjectBox}{\%}
1298
1299
                                                             \ifx\relax\hv@shortCap\relax
                                                                   \captionof{\hv@floatType}{\hv@longCap}%
1300
1301
                                                             \else
                                                                   \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1302
                                                             \fi
1303
                                                       }}%
1304
                                                       1305
                                                 \fi
1306
1307
                                      \else% caption not rotated
                                            \par\noindent
1308
                                            \parbox{\textwidth}{%
1309
                                                       \ifx\relax\hv@shortCap\relax
1310
                                                             \captionof{\hv@floatType}{\hv@longCap}%
1311
                                                       \else
1312
                                                             \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1313
```

```
1314
                                                    \ifx\hv@label\@empty\else\label{\hv@label}\fi
1315
                                              }%
1316
                                    \fi
1317
1318
                                    \endgroup
                                    \newpage\if@twocolumn\null\newpage\fi
1319
1320
                   }%
1321
1322
              % ||1in+evenside --- |1in+oddside ---||
1323
              \def\do@hvFloat@doubleFULLPAGE#1{% image on left and right page with caption before/below/right/after
1325
1326
                    % #1-> 0/1 caption under/right
                    \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1327
                    \ifx\hvSet@capPos\hv@After \global\hv@@capPos=1
1328
1329
                    \else
1330
                         \ifx\hvSet@capPos\hv@Before \global\hv@@capPos=0
1331
                         \else
                               \global\hv@@capPos=2 % other caption type
1332
1333
                    \fi\fi
                    \checkoddpage
1334
                    1335
                    \global\setlength\hv@tempWidthA{\dimexpr-\oddsidemargin-lin-\parindent+\hvSet@bindCorrection}% the
1336
                                  width of the right side offset
                    1337
                    \verb|\global| setlength| hv@leftPageObjectWidth{\dimexpr\\paperwidth-\hvSet@bindCorrection}| % in the property of the property o
1338
1339
                      \savebox\hv@rightBox{\clipbox*{\the\hv@leftPageObjectWidth{} \depth{} \width{} \height}{\usebox\
1340
                             hv0bjectBox}}%
                   \expandafter\captionsetup\expandafter{\hv@caption@format}%
1341
1342
                    \ifoddpage
                         \ifcase\hv@@capPos % =0 Caption before
1343
                               \if@twocolumn
1344
                                    \if@firstcolumn
1345
                                         \ifhv@twoColumnCaption
1346
                                              \set@Normal@Bottom@Caption*
1347
                                               \verb|\afterpage{\do@hvFloat@doubleFULLPAGE@CaptionBefore}| % \label{log:background} % \label{log:
                                         \else
1349
1350
                                              \fi
1351
                                    \else% \if@firstcolumn
1352
1353
                                         \set@Normal@Bottom@Caption
                                         \do@hvFloat@doubleFULLPAGE@CaptionBefore
1354
1355
                                    \fi
                               \else% \if@twocolumn
1356
                                    \set@Normal@Bottom@Caption
1357
                                    \do@hvFloat@doubleFULLPAGE@CaptionBefore
1358
                               \fi
1359
                         \or % =1 Caption after
1360
1361
                               \ifhv@twoColumnCaption
                                    \if@firstcolumn
1362
                                         \afterpage{\do@hvFloat@doubleFULLPAGE@CaptionAfterTwoCol}%
1363
1364
                                    \else
                                         \do@hvFloat@doubleFULLPAGE@CaptionAfterTwoCol
1365
                                   \fi
1366
                               \else
1367
1368
                                    \if@twocolumn
                                         \if@firstcolumn
1369
                                              \afterpage{\do@hvFloat@doubleFULLPAGE@CaptionAfter}%
1370
                                         \else
1371
1372
                                               \verb|\do@hvFloat@doubleFULLPAGE@CaptionAfter||
                                         \fi
1373
                                     \else
1374
                                         \do@hvFloat@doubleFULLPAGE@CaptionAfter
1375
                                    \fi
1376
                               \fi
1377
1378
                         \else% \ifcase >1 all other Captions
```

```
\if@twocolumn
1379
          \if@firstcolumn
1380
           1381
1382
            \do@hvFloat@doubleFULLPAGE@CaptionOther{#1}%
1383
          \fi
1384
1385
        \else % \if@twocolumn
          \do@hvFloat@doubleFULLPAGE@CaptionOther{#1}%
1386
1387
        \fi
       \fi% \ifcase
1388
     \else% we have an even page
1389
       \ifcase\hv@@capPos% Before
1390
1391
         \if@twocolumn
1392
          \if@firstcolumn
           \ifhv@twoColumnCaption
1393
             1394
                 do@hvFloat@doubleFULLPAGE@CaptionBefore{#1}}}%
1395
           \else
             \afterpage{\afterpage{\set@Normal@Bottom@Caption\
1396
                 do@hvFloat@doubleFULLPAGE@CaptionBefore{#1}}}%
           \fi
1397
          \else
1398
           1399
          \fi
1400
        \else% \if@twocolumn
1401
          \afterpage{\set@Normal@Bottom@Caption\do@hvFloat@doubleFULLPAGE@CaptionBefore}%
1402
1403
        \fi
       \or % capPos after
1404
1405
        \if@twocolumn
          \if@firstcolumn
1406
1407
            \ifhv@twoColumnCaption
             1408
1409
           \else
             1410
           \fi
1411
1412
          \else
            \ifhv@twoColumnCaption
1413
             1414
1415
             \afterpage{\do@hvFloat@doubleFULLPAGE@CaptionAfter{#1}}}%
1416
1417
          \fi
1418
        \else% \if@twocolumn
1419
1420
          \afterpage{\do@hvFloat@doubleFULLPAGE@CaptionAfter}%
1421
       \else % \ifcase Any other caption
         \if@twocolumn
1423
          \if@firstcolumn
           1425
1426
           1427
          \fi
1428
1429
        \else
          \afterpage{\do@hvFloat@doubleFULLPAGE@CaptionOther{#1}}%
1430
        \fi
1431
       \fi% \ifcase
1432
1433
     \fi% main ifoddpage
     \endgroup% started at main macro \hvFloat
1434
1435
1436
1437
    \def\set@Normal@Bottom@Caption@{%
1438
       \begin{\hv@floatType}[!b]
1439
         \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1440
         \ifhv@separatorLine\drawSepLine\fi
1441
         \label{lem:captionsetup} $$ \operatorname{captionsetup} \exp \operatorname{dafter} \hv@\operatorname{caption} \operatorname{dformat} \% $$
1442
         \ifx\hv@shortCap\@empty
1443
```

```
\captionof{\hv@floatType}{\hv@longCap}%
1444
                    \else
1445
                        \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1446
1447
                    \fi
                    1448
                 \end{\hv@floatType}%
1449
1450
         \def\set@Normal@Bottom@CaptionStar*{%
1451
                 \begin{\hv@floatType*}[!b]
1452
                    \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1453
                    \ifhv@separatorLine\drawSepLine\fi
1454
                      \expandafter\captionsetup\expandafter{\hv@caption@format}%
1455
1456
                    \ifx\hv@shortCap\@empty
                       \captionof{\hv@floatType}{\hv@longCap}{%}
1457
1458
1459
                       \caption of {\hv@floatType} [\hv@shortCap] {\hv@longCap} % The continuous c
1460
1461
                    \ifx\hv@label\@empty\else\label{\hv@label-cap}\fi
                 \end{\hv@floatType*}%
1462
1463
1464
          \def\do@hvFloat@doubleFULLPAGE@CaptionBefore{%
1465
             \afterpage{%
1466
1467
                 \hfuzz=\maxdimen
                 1468
                 \label{lineskip} $$\operatorname{the}\dim \exp^-1\inf^-\operatorname{lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}^* $$no^-1$.
1469
                          interlineskip
1470
                 \hspace*{\the\dimexpr-\evensidemargin-\parindent-lin}%
1471
                 \thispagestyle{empty}%
                 \ifx\hv@floatType\hv@figure
1472
1473
                    \global\refstepcounter{hv@tempCNTfigB}%
                 \else
1474
1475
                    \global\refstepcounter{hv@tempCNTtabB}%
                                                                                              before caption
                 \fi
1476
                 \expandafter\label\expandafter{\hv@label}%
1477
                 \clipbox*{0 0 \the\hv@leftPageObjectWidth{} \height}{\usebox\hvObjectBox}%
1478
                    \if@twocolumn\newpage\null\newpage\fi
1480
                    1481
1482
                    \thispagestyle{empty}%
                    \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}%
1483
                             -0.5\paperheight+0.5\ht\hv0bjectBox
                    \hspace*{\hv@tempWidthA}%
1484
1485
                    \global\savebox{\hv0bjectBox}{\ifhv@use0Box\usebox{\hv0Box}\else\hv@float0bject\fi}%
                    \clipbox*{\the\hv@leftPageObjectWidth{} \dp\hvObjectBox{} \wd\hvObjectBox{} \ht\hvObjectBox}{\usebox
1486
                              \hv0bjectBox}%
                    \ifx\hv@floatType\hv@figure
1487
                        \global\refstepcounter{hv@tempCNTfigA}%
1488
                    \else
1489
1490
                        \global\refstepcounter{hv@tempCNTtabA}% before caption
                    \fi
1491
                    \expandafter\label\expandafter{\hv@label-2}%
1492
1493
                    \newpage if @twocolumn null newpage fi
            }}%
1494
1495
1496
1497
          \newif\ifhv@temp
1498
          \def\do@hvFloat@doubleFULLPAGE@CaptionAfter{%
1499
             \afterpage{%
1500
1501
                 \global\savebox{\hv0bjectBox}{\ifhv@use0Box\usebox{\hv0Box}\else\hv@float0bject\fi}%
1502
                 \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}% no
1503
                          interlineskip
1504
                 \hspace*{\the\dimexpr-\evensidemargin-\parindent-lin}%
                 \thispagestyle{empty}%
1505
1506
                 \clipbox*{0 \the\dp\hv0bjectBox{} \the\hv@leftPage0bjectWidth{} \the\ht\hv0bjectBox}{\usebox\
```

```
hv0biectBox}%
               \ifx\hv@floatType\hv@figure
1507
                  \refstepcounter{hv@tempCNTfigA}%
1508
1509
1510
                  \refstepcounter{hv@tempCNTtabA}% before caption
               \fi
1511
               \ifx\hv@label\ellower=\hv@label\hv@label\fi
1512
1513
                 \afterpage{%
                  \newpage\if@twocolumn\null\newpage\fi
1514
                  1515
1516
                  \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}%
1517
                           -0.5\paperheight+0.5\ht\hv0bjectBox
1518
                  \hspace*{\hv@tempWidthA}%
                  1519
1520
                  \hv0bjectBox}%
1521
                  \ifx\hv@floatType\hv@figure
                     \refstepcounter{hv@tempCNTfigB}%
1522
                  \else
                     \refstepcounter{hv@tempCNTtabB}% before caption
1524
                  \fi
1525
                  \expandafter\label\expandafter{\hv@label-2}%
1526
1527
                   \newpage\if@twocolumn\null\newpage\fi
                  \begin{\hv@floatType}[!b]
1528
                      \ifhv@separatorLine\drawSepLine\fi
1529
1530
                       \label{lem:captionsetup} $$ \operatorname{captionsetup} \exp \operatorname{dafter} \hv@\operatorname{caption} \end{array} $$
                      \ifx\hv@shortCap\@empty
1531
1532
                         \captionof{\hv@floatType}{\hv@longCap}%
                      \else
1533
                         \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1534
                      \fi
1535
1536
                     \ifx\hv@label\ellower=\hv@label\hv@label-cap}\fi
                  \end{\hv@floatType}%
1537
           }%}%
1538
1539
         \def\do@hvFloat@doubleFULLPAGE@CaptionAfterTwoCol{%
1541
            \afterpage{%
1542
               1543
               \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}% no
1544
                       interlineskip
               \hspace*{\the\dimexpr-\evensidemargin-\parindent-lin}%
1545
               \thispagestyle{empty}%
1546
               \ifx\hv@floatType\hv@figure
1547
                  \refstepcounter{hv@tempCNTfigA}%
               \else
1549
                  \refstepcounter{hv@tempCNTtabA}% before caption
               \fi
1551
1552
               \ifx\hv@label\end{whv@label}\fi
               1553
                  \newpage\if@twocolumn\null\newpage\fi
1554
1555
                  \global\savebox{\hv0bjectBox}{\ifhv@use0Box\usebox{\hv0Box}\else\hv@float0bject\fi}%
                  \thispagestyle{empty}%
1556
                  \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}%
1557
                           -0.5\paperheight+0.5\ht\hv0bjectBox
1558
                  \hspace*{\hv@tempWidthA}%
                  1559
                  \label{limits} $$ \clipbox*{\he} \elbel{limits} $$ \elbel{limits} $$ \clipbox*{\he} \elbel{limits} $$ \clipbox*{\he} \elbel{limits} $$ \clipbox*{\he} \elbel{limits} $$ \clipbox*{\he} \elbel{limits} $$ \elbel{
                           \hv0bjectBox}%
1561
                  \ifx\hv@floatType\hv@figure
                     \refstepcounter{hv@tempCNTfigB}%
1562
1563
                     \refstepcounter{hv@tempCNTtabB}% before caption
1564
                  \fi
1565
                  \ifx\hv@label\@empty\else\label{\hv@label-2}\fi
1566
1567
```

```
\begin{\hv@floatType*}[!b]
1568
                      \hv@twoColumnCaptiontrue
1569
                     1570
                       \expandafter\captionsetup\expandafter{\hv@caption@format}%
1571
1572
                     \captionof{\hv@floatType}{\hv@longCap}%
1573
1574
                      \else
                        \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1575
                     \fi
1576
                     \ifx\hv@label\ensuremath{\hv@label-cap}\fi
1577
                  \end{\hv@floatType*}%
1578
           }%
1579
1580
1581
         \def\do@hvFloat@doubleFULLPAGE@CaptionOther#1{%
1582
1583
            \afterpage{%
               \hfuzz=\maxdimen
1584
1585
               \global\savebox{\hv0bjectBox}{\ifhv@use0Box\usebox{\hv0Box}\else\hv@float0bject\fi}%
               \thispagestyle{empty}%
1586
               \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}%
                                                                                                                                                                          -0.51
                       paperheight+0.5\ht\hv0bjectBox
               \hspace*{\the\dimexpr-\evensidemargin-\parindent-lin}%
1588
               1589
               \ifx\hv@floatType\hv@figure
1591
                  \refstepcounter{hv@tempCNTfigA}%
1592
1593
               \else
                  \refstepcounter{hv@tempCNTtabA}% before caption
1594
               \fi
1595
               \label{\hv@label}%
1596
1597
               \afterpage{%
                  \if@twocolumn\newpage\if@firstcolumn\else\null\newpage\fi\fi
1598
1599
                  \global\savebox{\hv0bjectBox}{\ifhv@use0Box\usebox{\hv0Box}\else\hv@float0bject\fi}%
                  \thispagestyle{empty}%
1600
                  \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}%
1601
                           -0.5\paperheight+0.5\ht\hv0bjectBox
                  \hspace*{\hv@tempWidthA}%
1603
                  hv0bjectBox}%
1604
                  \ifx\hv@floatType\hv@figure
                     \refstepcounter{hv@tempCNTfigB}%
1605
1606
                  \else
                     \refstepcounter{hv@tempCNTtabB}%
                                                                             before caption
1607
1608
                  \fi
                  \expandafter\label\expandafter{\hv@label-2}%
1609
                  \label{local-prob} $$\served \ \end{0.9} $$ \served \ \end{0.9} $$ \
                  % rotation with 90°
1611
                       \ifdim\hv@tempWidthB < 2\paperwidth
1613
1614
                        \label{lem:local_condition} $$\operatorname{congin=lb}_{90}_{\mathbf{0.8}}(paperheight]_{c}_{\mathbf{0.8}}^{0.8}ht\nv0bjectBox}_{\%}$$
1615
                             \expandafter\captionsetup\expandafter{\hv@caption@format}%
                            \ifx\hv@shortCap\@empty
1616
1617
                               \captionof{\hv@floatType}{\hv@longCap}%
                            \else
1618
1619
                               \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
                           \fi
1620
1621
                        }}}% rotatebox
                         \ifx\hv@label\@empty\else\label{\hv@label-cap}\fi
1622
                      \else% ifdim: no space left on page
                         1624
                                 centering
                            \parbox{0.8\textwidth}{%
1625
                               \ifx\hv@shortCap\@empty
                                  \captionof{\hv@floatType}{\hv@longCap}%
1627
1628
                                  \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1629
1630
```

```
1631
                                                           \ifx\hv@label\engty\else\label\hv@label-cap\fi
1632
                                                   \endminipage}}}%
1633
                                            \fi
1634
                                       \else% ifnum, caption not rotated, under or over the right page
1635
                                             \setlength\hv@tempWidthA{\dimexpr\paperheight-\ht\hv0bjectBox}%
1636
1637
                                             \ifdim\hv@tempWidthA > \ht\hvCaptionBox
                                            \else
1638
                                                    \put(\the\dimexpr1.5\paperwidth-\wd\hv0bjectBox-\hvSet@bindCorrection,\the\dimexpr\ht\
1639
                                                                     hv Caption Box + \ above captions kip + \ below captions kip) \\ \{\ makebox[\thetapt][c] \\ \{\ parbox \\ \{\ textwidth\} \\ \{\% \} \\ \{\ parbox \} \} \} \} \} \} \\ \}
                                                               \expandafter\captionsetup\expandafter{\hv@caption@format}%
                                                          \ifx\hv@shortCap\@emptv
1641
                                                                  \captionof{\hv@floatType}{\hv@longCap}%
1642
                                                          \else
1643
                                                                  \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1644
                                                          \fi
1645
                                                   }}}%
1646
                                                    1647
1648
1649
                                       \fi% end \ifnum#1>0
                                      \newpage if @two column \null \newpage fi
1650
                                }%
1651
                        }%
1652
1653
1654
1655
1656
                   \def\setBottomCaption{%
                         \begin{\hv@floatType}[!b]%
1657
                         \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1658
                         \ifhv@separatorLine\drawSepLine\fi
1659
1660
                         \usebox\hvCaptionBox
1661
1662
                         \end{\hv@floatType}%
1663
1664
                  \def\setPageObject{%
1665
                         \ifhv@star
1666
                                \begin{hv@floatType*}[p]% \end{pigning} \label{fig:pigning} \label{fig:pigning} \end{pigning} \label{fig:pigning} \begin{pigning} \end{pigning} \begin{pig
1667
1668
                                \begin{hv@floatType}[p]% \end{picture}
1669
                         \fi
1670
1671
                         \hfuzz=\maxdimen
                         \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1672
1673
                         \ifhv@FULLPAGE
                                \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep}\%-0.5\baselineskip\%
1674
                                \checkoddpage
                                \if@twoside
1676
                                      \ifoddpage
1677
                                            \hspace*{\the\dimexpr-\oddsidemargin-\parindent-lin}%
1678
1679
                                            \hspace*{\the\dimexpr-\evensidemargin-\parindent-lin}%
1680
                                      \fi
1681
1682
                                \else
                                       \hspace*{\the\dimexpr-\oddsidemargin-\parindent-lin}%
1683
1684
                                \AtBeginShipoutNext{\thispagestyle{empty}}%
1685
1686
                                \usebox\hv0bjectBox
                         \else
1687
                                \usebox\hv0bjectBox
                         \fi
1689
1690
                         \ifhv@star
                                \end{\hv@floatType*}%
1691
1692
                                \end{\hv@floatType}%
1693
                         \fi
1694
1695
1696
```

```
\ExplSyntax0n
1697
1698
          \def\getMultiCaptionAndLabel{%
1699
             \global\sbox\hvCaptionBox{\minipage[b]{\linewidth}%
1700
                 \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1701
                   1702
1703
                 \setlength\belowcaptionskip{5pt}%
                 \setlength\abovecaptionskip{0pt}%
1704
                 \hv@cntb=\clist_count:N\l_clist_Type
1705
                 \advance\hv@cntb by \@ne
1706
                 \hv@cnta=1
1707
                 \loon
1708
                    \edef\@captype{\clist_item:Nn\l_clist_Type{\hv@cnta}}%
1709
                    \edef\@tempa{\clist_item:Nn\l_clist_LofCaption{\hv@cnta}}%
1710
1711
                    \ifx\@tempa\@empty
                        \label{lem:Nnl_clist_Caption} $$ \operatorname{Caption}_{\operatorname{C}}^{\normalfont}(hv@cnta)} $$
1712
1713
                    \else
                        \expandafter\caption\expandafter[\@tempa]{\clist_item:Nn\l_clist_Caption{\hv@cnta}}%
1714
1715
1716
                    \edef\@tempa{\clist_item:Nn\l_clist_Label{\hv@cnta}}%
                    \ifx\@tempa\@empty
1717
                        \expandafter\label\expandafter{\clist item:Nn\l clist Label{\hv@cnta}-cap}\fi
1719
1720
                 \ifnum\hv@cnta<\hv@cntb
1721
1722
                 \repeat
1723
             \endminipage}%
1724
1725
          \def\getMultiObjectAndLabel{%
1726
1727
             \global\sbox\hv0bjectBox{%
                 \ifhv@vFill
1728
1729
                    \minipage[b][\textheight][s]{\columnwidth}%
                 \else
1730
                    \minipage{\columnwidth}%
1731
1732
                 \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1733
                   1734
1735
                 \ifx\hvSet@objectPos\hv@Right\raggedleft\else
1736
                    \ifx\hvSet@objectPos\hv@Left\raggedleft\else
1737
                        \ifx\hvSet@objectPos\hv@Center\centering
                 \fi\fi\fi
1738
                 \hv@cntb=\clist count:N\l clist Type
1739
1740
                 \advance\hv@cntb by \@ne
                 \hv@cnta=1
1741
                 \loop
1742
                    \def\@temp{\clist item:Nn\l clist Object{\hv@cnta}}%
1743
                    \label{$\endalign*} $$ \endalign* \endalig
1745
1746
                    \label{lem:nnl_clist_Type} $$ \end{ \clist_item:Nn\l_clist_Type_{\hv@cnta}} $$
                    \edef\@captype{hv@p\@tempb}%
1747
                    \ifx\@tempa\@empty
1748
1749
                    \else
                        \refstepcounter{\@captype}%
1750
                        \label{$\expandafter(\clist_item:Nn\l_clist_Label(\hv@cnta))}$
1751
                    \fi
1752
1753
                    \ifnum\hv@cnta<\clist_count:N\l_clist_Type\par\hv@vskip\fi
1754
                    \advance\hv@cnta by \@ne
1755
                 \ifnum\hv@cnta<\hv@cntb
                    \ifhv@vFill\vfill\fi
1756
1757
                 \repeat
             \endminipage}%
1758
1759
          \def\getMultiSubCaptionAndLabel{%
1760
             \global\sbox\hvCaptionBox{\minipage{\linewidth}%
1761
                 \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1762
1763
```

```
\setlength\belowcaptionskip{5pt}%
1764
                           \setlength\abovecaptionskip{0pt}%
1765
                           \label{lem:Nnlclist_Type{1}} % \ \ the \ same \ for \ all \ subfloats
1766
                           \label{lem:nnl_clist_lofCaption} $$\ef{$\mathbb{N}^l_{clist_LofCaption}_1} $$
1767
1768
                           \ifx\@tempa\@empty
                                 \caption{\clist item:Nn\l clist Caption{1}}%
1769
1770
                           \else
                                 \label{lem:nnl_clist_caption} $$ \operatorname{caption}\exp{\operatorname{andafter}[\ensuremanh{\mathchar`{1}}} $$
1771
1772
                           \fi
                           \edef\@tempa{\clist_item:Nn\l_clist_Label{1}}%
1773
                           \ifx\@tempa\@empty\else\expandafter\label\expandafter{\clist_item:Nn\l_clist_Label{1}-cap}\fi
1774
                     \endminipage}%
1775
1776
1777
1778
                \def\getMultiSubObjectAndLabel{%
1779
                     \global\sbox\hv0bjectBox{%
1780
                           \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1781
                           \ifhv@vFill
                                 \minipage[b][\textheight][s]{\columnwidth}%
1782
                           \else
1783
                                 \minipage{\columnwidth}%
1784
                           \fi
1785
                              \ifx\hv@subcaption@format\@empty\else
1786
                                   \verb| (caption setup) | expandafter | | expandafter | sexpandafter | u | expandafter | b | expandafter | sexpandafter | expandafter | sexpandafter | sexpanda
1788
1789
                                                                                                    {\hv@subcaption@format}%
1790
                           \ifx\hvSet@objectPos\hv@Right\raggedleft\else
1791
1792
                                 \ifx\hvSet@objectPos\hv@Left\raggedleft\else
                                       \ifx\hvSet@objectPos\hv@Center\centering
1793
                           \fi\fi\fi
1794
                           \hv@cntb=\clist count:N\l clist Caption
1795
1796
                           \advance\hv@cntb by \@ne
                           \hv@cnta=2
1797
                           \label{lem:Nnlclist_Type} $$ \end{array} $$ $$ \end{array} $$ the same for all subfloats $$ \end{array} $$
1798
1799
                           \ifx\@tempa\@empty
                           \else
                                    \refstepcounter{\@captype}%
1801
1802
                                    \expandafter\label\expandafter{\@tempa}%
                           \fi
1803
                           \loop
1804
                                 \def\@temp{\clist_item:Nn\l_clist_Object{\hv@cnta}}%
1805
                                 \ifhv@objectFrame\frame{\@temp}\else\@temp\fi
1806
1807
                                 \begingroup
                                 \edef\@tempa{\clist item:Nn\l clist LofCaption{\hv@cnta}}%
1808
                                 \ifx\@tempa\@empty
                                      \subcaption{\clist_item:Nn\l_clist_Caption{\hv@cnta}}%
1810
                                      \label{lem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:non
1812
1813
                                 \fi
                                 \label{$\endown} $$\endown $$ \operatorname{l_clist_Label}_{\endown} $$
1814
                                 \ifx\@tempa\@empty
1815
1816
                                 \else
                                       \expandafter\label\expandafter{\clist item:Nn\l clist Label{\hv@cnta}}%
1817
                                 \fi
1818
                                 \endaroup
1819
1820
                                 \ifnum\hv@cnta<\clist_count:N\l_clist_Type\par\hv@vskip\fi
                                 \advance\hv@cnta by \@ne
1821
                                 \ifnum\hv@cnta<\hv@cntb
 1822
                                 \ifhv@vFill\vfill\fi
1823
1824
                           \label{locality} $$ \ef{$\mathbb{N}_{\mathbb{L}}$ clist_Label{1}} $$
                                                                                                                                                                       the main label at the end
1825
                           \ifx\ensuremath{\mbox{dempty}}
1826
                           \else
1827
                                    \addtocounter{\@captype}{-1}%
                                                                                                                                         to get the same <object>-ref as "label"-cap
1828
                                 \edef\@temp{hv@p\@captype}%
1829
                                 \refstepcounter{\@temp}%
1830
```

```
\expandafter\label\expandafter{\@tempa}%
1831
          \fi
1832
       \endminipage}%
1833
1834
     \ExplSyntaxOff
1835
1836
1837
      \def\getSingleCaptionAndLabel{%
       \global\sbox\hvCaptionBox{\minipage{\linewidth}%
1838
1839
          \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
          \setlength\belowcaptionskip{5pt}%
1840
          \setlength\abovecaptionskip{0pt}%
          \edef\@captype{\hv@floatType}%
1842
          \expandafter\ifx\expandafter\relax\hv@shortCap\relax
1843
              \caption{\hv@longCap}%
1844
1845
              \color{caption[\hv@shortCap]{\hv@longCap}}
1846
1847
       1848
       \endminipage}%
1849
1850
1851
1852
      \def\set@caption@object#1{%
                                      first caption, then object #1=\hv@floatType
       \ifhv@multiFloat
1853
1854
          \setcounter{hv@pfigure}{\value{figure}}%
          \setcounter{hv@ptable}{\value{table}}%
1855
          \getMultiCaptionAndLabel
1856
1857
       \else
          \ifhv@subFloat
1858
            \setcounter{hv@pfigure}{\value{figure}}%
1859
            \setcounter{hv@ptable}{\value{table}}%
1860
1861
            \getMultiSubCaptionAndLabel
          \else
1862
1863
            \getSingleCaptionAndLabel
          \fi
1864
1865
       \fi
       \edef\@captype{hv@p#1}%
1866
       \ifhv@multiFloat
          \getMultiObjectAndLabel
1868
1869
          \ifhv@subFloat
1870
1871
            \getMultiSubObjectAndLabel
          \else
1872
            \global\sbox\hv0bjectBox{%
1873
1874
              \refstepcounter{\@captype}%
              \ifhv@objectFrame\frame{\hv@floatObject}\else\hv@floatObject\fi
1875
1876
              \expandafter\ifx\expandafter\relax\hv@label\relax
              \else
1877
1878
                \verb|\expandafter\\| abel\\| expandafter\\| hv@label\\| %
              \fi
1879
1880
         \fi
1881
       \fi
1882
1883
1884
     \endinput
1885
```