Package hvfloat Controlling captions, fullpage and doublepage floats ver 2.33

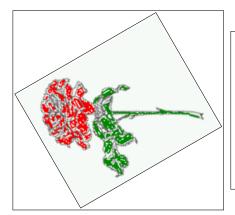
Herbert Voß*

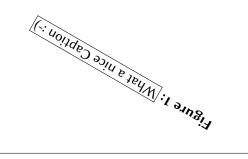
July 14, 2021

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}
```

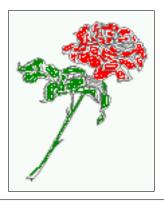


Fig. 2

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

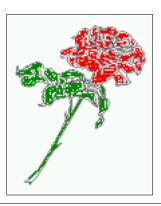


Figure 3: Default caption width setting, which is the natural width with respect to the current linewidth.

!! 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}

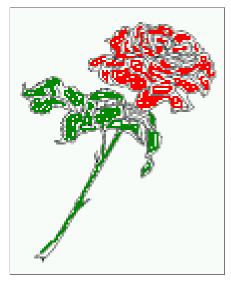


Figure 4: Caption right beside with a *natural* width, which is given by the width of the object, the separation between object and caption, and the current linewidth.

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

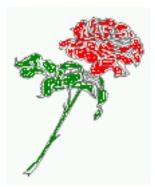


Figure 5: Caption below with a width of 0.9 of the current line width (column width), which is in this special case 376.42744pt. Divide it by 28.82 to get cm.

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

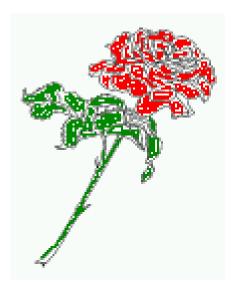


Figure 6: Caption right beside with a width setting of 0.9\linewidth which is too big for this example and therefore corrected by the macro to the maximal width.

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}

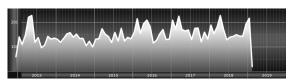


Figure 7: Caption below with a width of the given object which may be a problem if it is a very small object.

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:

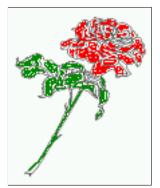


Figure 8: Caption beside with a width of the given object height which may be a problem if it is a very small object.

```
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}
```



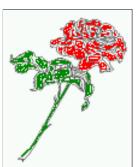


Figure 9: Caption vertically centered right beside the float with a natural caption width (the default). Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? 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

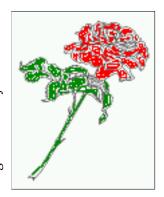
Code for figure 10:

```
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

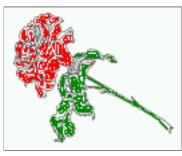


Figure 11: Caption vertically centered right beside the float with a caption width of the height of the image and a rotation of the caption and the object.

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:

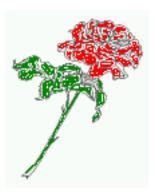
```
hvFloat[capPos=inner]{figure}{\includegraphics{images/rose}}%

[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,
```

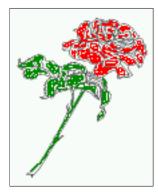


Figure 16: Caption at bottom right beside the float

- 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

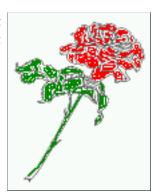
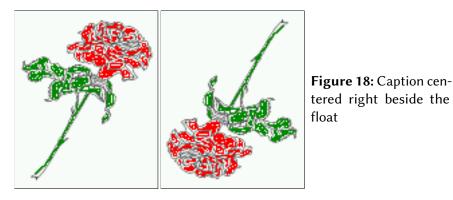


Fig. 17

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

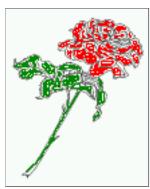


Figure 19

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

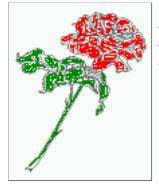


Figure 20: Caption at top right beside the float and object position left

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

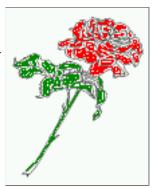


Fig. 21

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

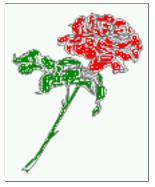


Fig. 22

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}
```

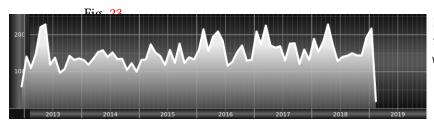
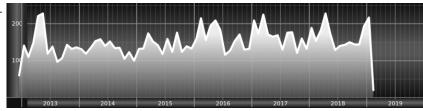


Figure 23: Caption at top right beside the float and object position left and the option wide.

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.



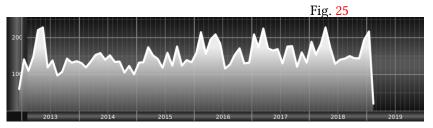
For a twosided document it will place the object always in the margin.

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}
```

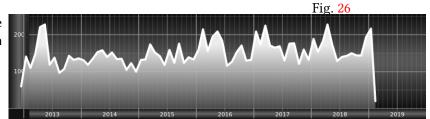
Figure 25: Caption at top and inner beside the float and object position right and the option wide.



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}

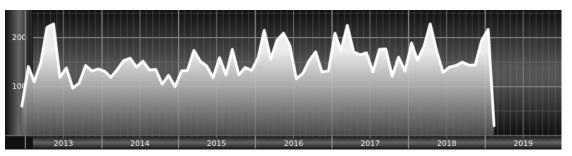


Fig. 27
Figure 27:
Caption at top inner beside the float and object position right and the option wide.

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.

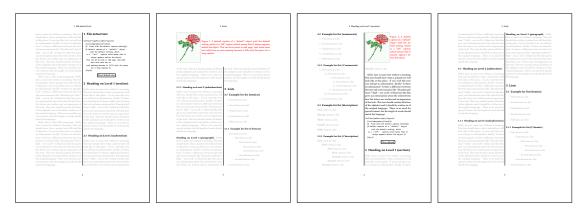


Figure 28: Output of default1s2c (pages 2 -5)

12 Full Page Width in Landscape Mode

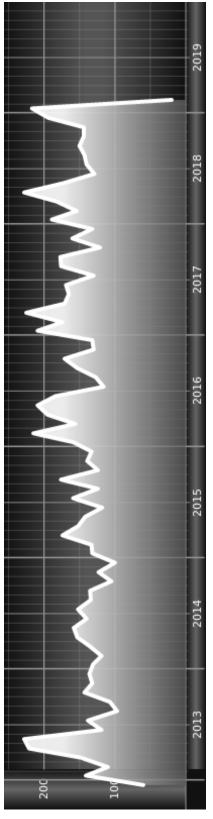
If you do not want to load the package lscape (or pdflscape) you can use the floatPos=p option to put the image on an own page and rotated by 90 degrees (figure 29).

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

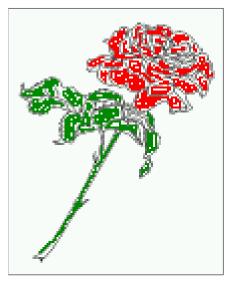


Figure 31: Caption of a "nonfloat" Object, using the nonfloat Package

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
```

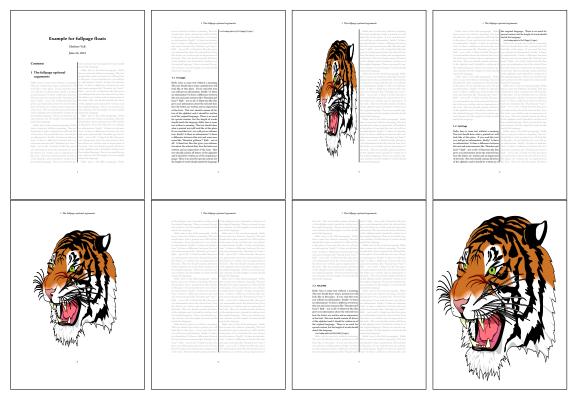


Figure 32: Output of fullpage1s2c (pages 1-8)

- 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 which 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.

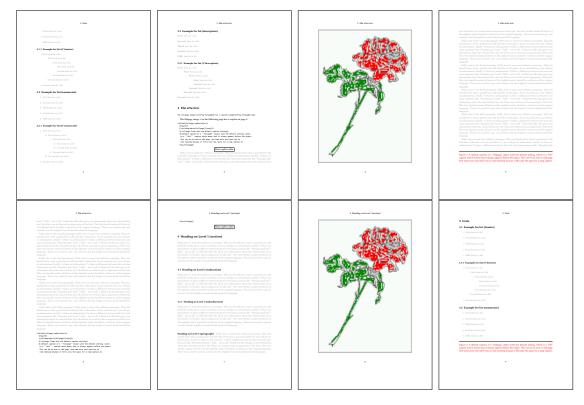


Figure 34: Output of after1s1c (pages 2-9)

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}

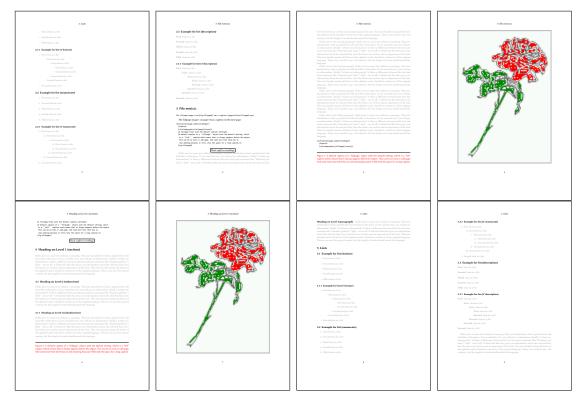


Figure 35: Output of even1s1c (pages 2-9)

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}

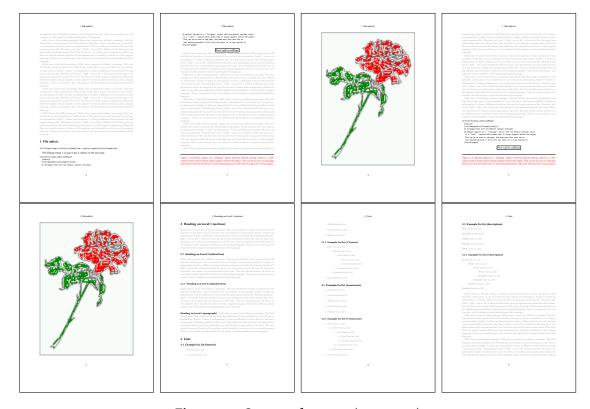


Figure 36: Output of odd1s1c (pages 2-9)

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}

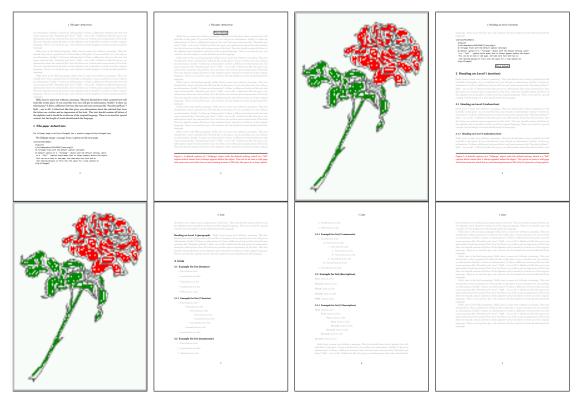


Figure 37: Output of paper-default1s1c (pages 2-9)

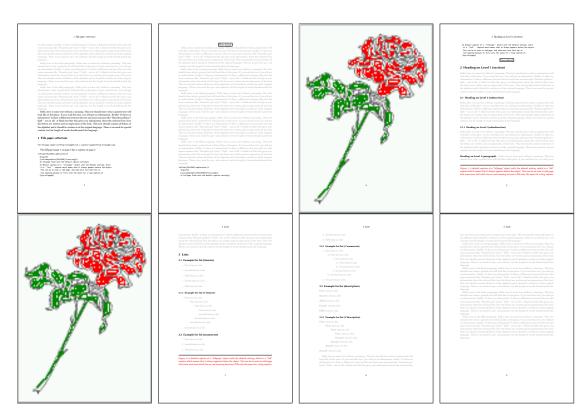


Figure 38: Output of paper-after1s1c (pages 2-9)

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

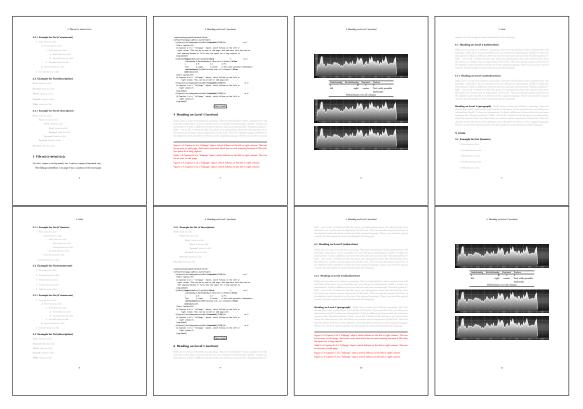


Figure 39: Output of multi-default1s1c (pages 4-11)

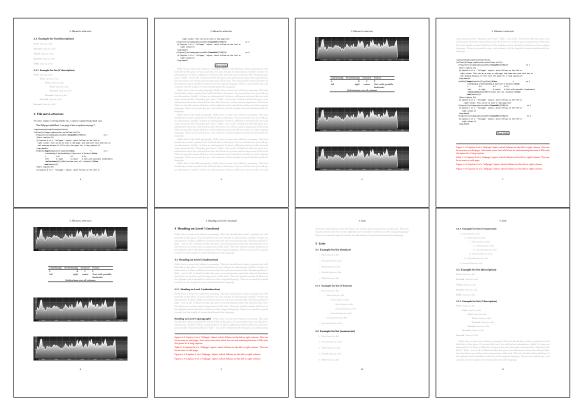


Figure 40: Output of multi-after1s1c (pages 4-11)

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}
```

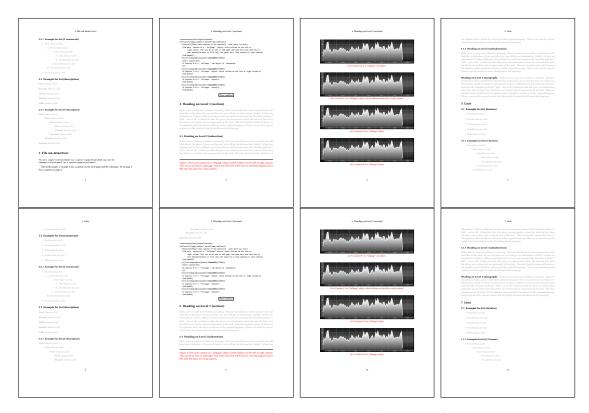


Figure 41: Output of sub-default1s1c (pages 4-11)

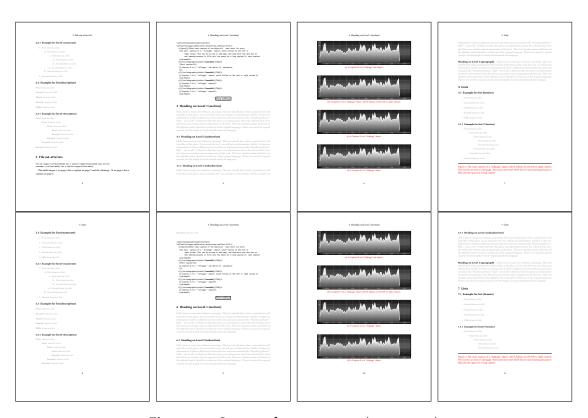


Figure 42: Output of sub-after1s1c (pages 4–11)

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).

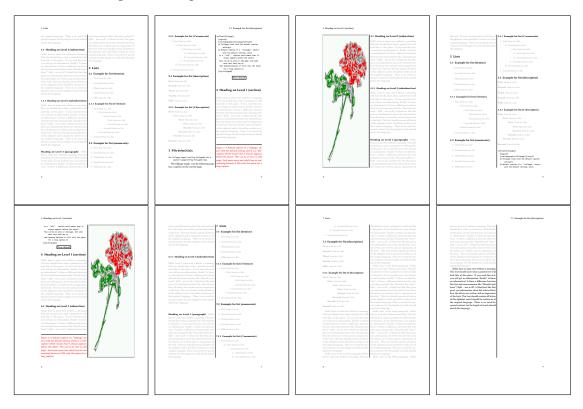


Figure 43: Output of default2s2c (pages 2-9)

```
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).

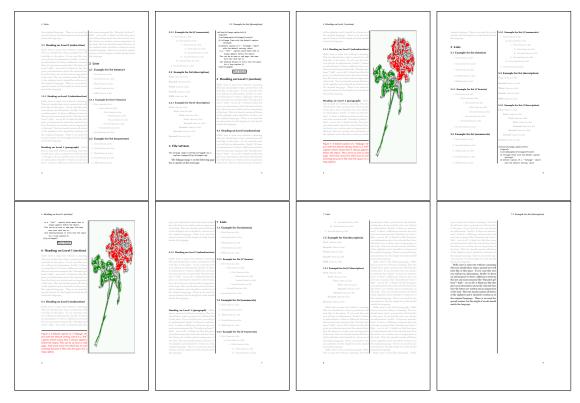


Figure 44: Output of left2s2c (pages 2-9)

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.

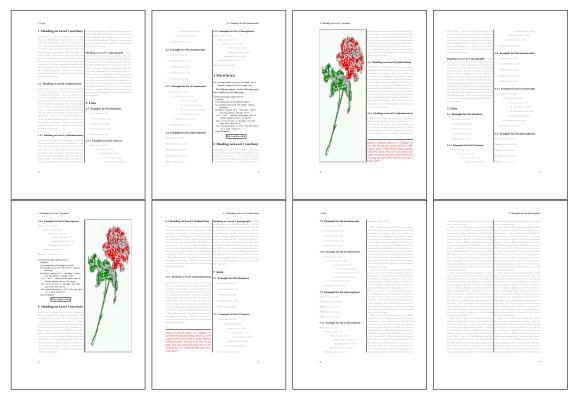


Figure 45: Output of after2s2c (pages 2–9)

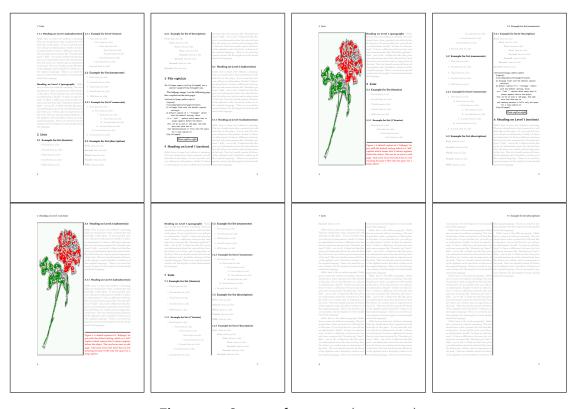


Figure 46: Output of right2s2c (pages 2–9)

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.

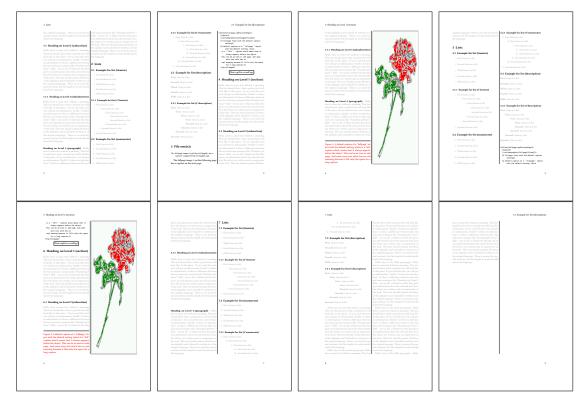


Figure 47: Output of even2s2c (pages 2-9)

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.

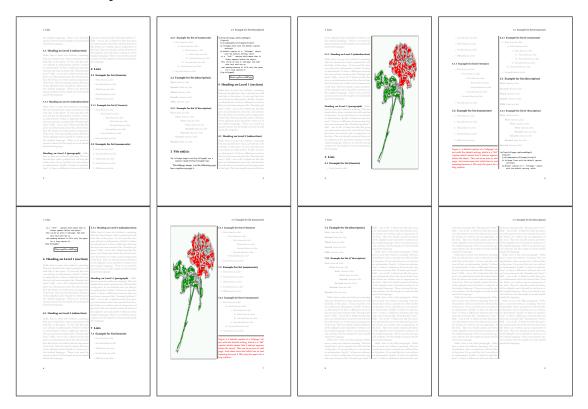


Figure 48: Output of odd2s2c (pages 2-9)

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}

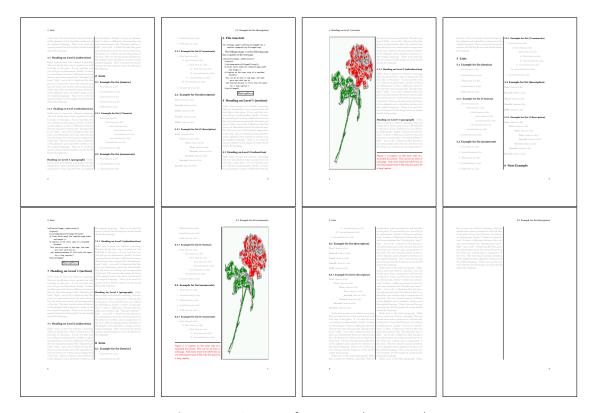


Figure 49: Output of inner2s2c (pages 2-9)

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}

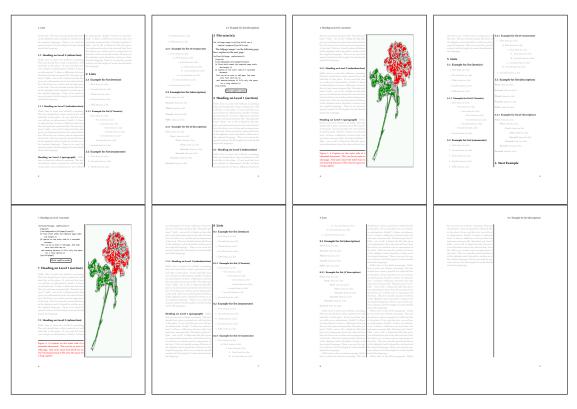


Figure 50: Output of outer2s2c (pages 2-9)

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}

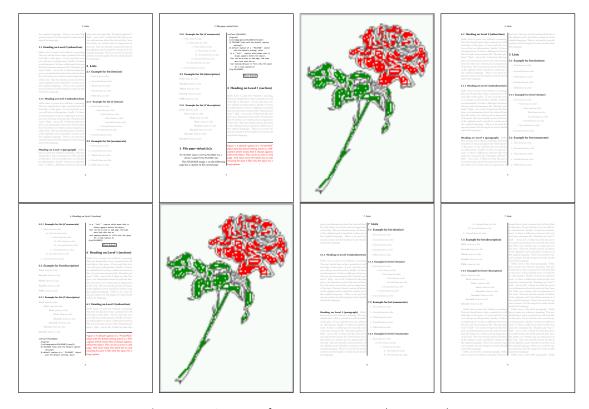


Figure 51: Output of paper-default2s2c (pages 2-9)

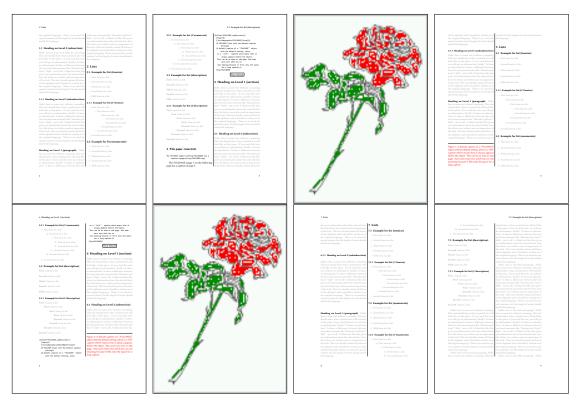


Figure 52: Output of paper-inner2s2c (pages 2-9)

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.

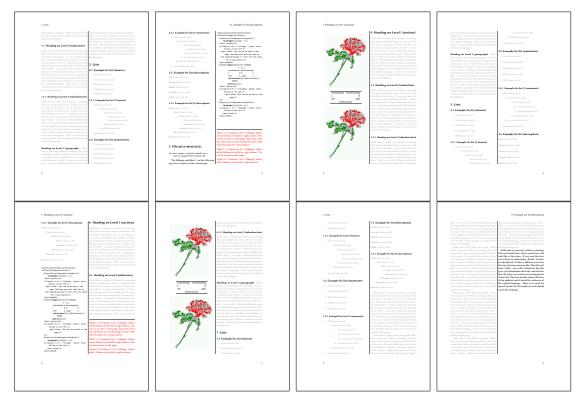


Figure 53: Output of multi-default2s2c (pages 2-9)

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
     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}
```

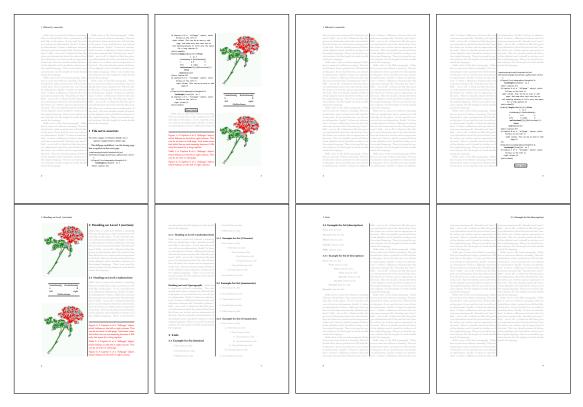


Figure 54: Output of multi-inner2s2c (pages 2-9)

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).

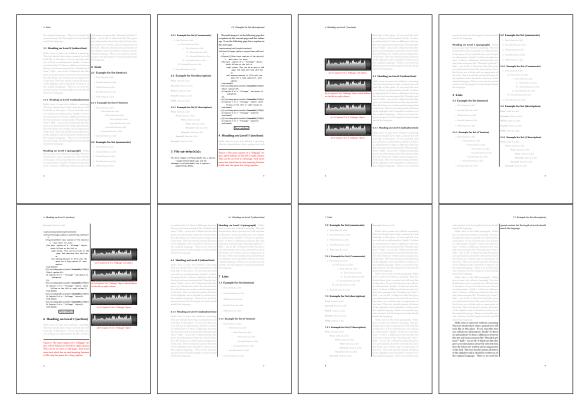


Figure 55: Output of sub-default2s2c (pages 2-9)

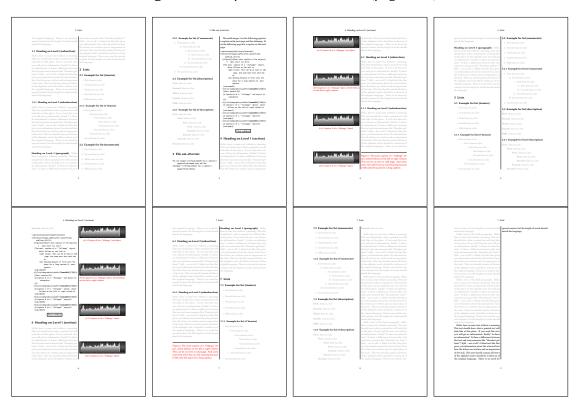


Figure 56: Output of sub-after2s2c (pages 2–9)

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.

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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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-1000}}%

{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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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 following example 60 the caption is on page 70, the left image part on page 68 and the right part on page 69. In the following 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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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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1 \hvFloat[doubleFULLPAGE,capPos=before]%
2 {figure}%
3 {\includegraphics[height=\paperheight,width=2\paperwidth,
4 keepaspectratio=false]{images/rheinsberg-1000}}%
5 {A caption for a double-sided image that will be placed \textbf{before}
6 the image. The image begins on the left edge of the paper.
7 No further text is placed on the pages. A short form is used for the LOF.
8 The parameter is \texttt{doubleFULLPAGE}}%
9 {bar}
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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

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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}% {\includegraphics[doublefullPage]{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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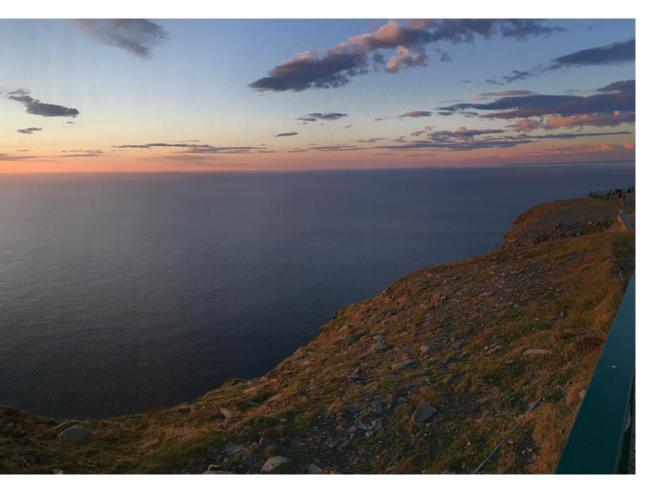


Figure 63: A caption for a double-sided image that will be placed on the right side of the right-hand part of the illustration. The illustration begins on the left edge of the paper. A short form is used for the LOF. The parameter is doublePage

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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

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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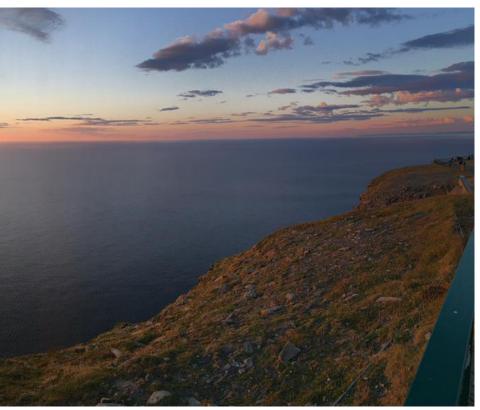


Figure 64: A caption for a double-sided image that will be placed on the right side of the right-hand part of the illustration. The illustration begins on the left edge of the paper. A short form is used for the LOF. The parameter is doublePage

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1 \hvFloat[doublePage,bindCorr=inner]%
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- {figure}%
- 3 {\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}}%
- 9 {fig:doublePage0sH2}

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Fig. 65



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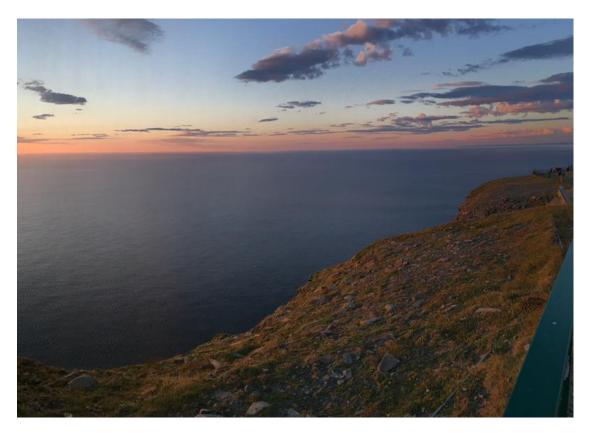


Figure 65: A caption for a double-sided image that will be placed on the right side of the right-hand part of the illustration. The illustration begins on the left edge of the paper. A short form is used for the LOF. The parameter is doublePage

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21.4 Tabulars

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

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

```
\global\savebox\hv0Box{%
  \begin{tabular}{l*{18}r} \toprule
  & \textbf{1972} & \textbf{1973} & \textbf{1974} & \textbf{1975} & \textbf{1976}
  & \textbf{1977} & \textbf{1978} & \textbf{1979} & \textbf{1980} & \textbf{1981} & \textbf{1982} & \textbf{1982} & \textbf{1982} & \textbf{1980}
     textbf{1983} & \textbf{1984} & \textbf{1985}
  & \textbf{1986} & \textbf{1987} & \textbf{1988} & \textbf{1989}
  \\\midrule
  \addlinespace[3pt]
  Zeile 2 & 1 & 1 & 3 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 2 & 1 & 3 & 4 & 4 & 6 & 4 & 2\\\addlinespace[3pt]
11 Zeile 4 & 1 & 0 & 5 & 1 & 2 & 0 & 0 & 0 & 0 & 2 & 1 & 0 & 3 & 7 & 2 & 1\\addlinespace[3pt]
  12
  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]
15 Zeile 9 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 2 & 1 & 0 & 0 & 0 & 4 & 2 & 1 & 4 & 5 & 2\\addlinespace[3pt]
  16
  19
```

```
22
   23
       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
27
   \Blindtext
28
29
   \hvFloat[doublePage,capPos=right,capVPos=top,floatCapSep=12pt]%
30
31
    32
    [A doublepage tabular with a caption on the right side of the right part.]%
    {A caption for a double-sided tabular that will be placed on the right side of the
34
35
     right-hand part of the illustration. The illustration begins on the left edge of
     the paper. A short form is used for the LOF.
36
     The parameter is \texttt{doublePage}}%
37
    {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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And after the second paragraph follows the third paragraph. Hello, here is some text

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

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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 page 94. 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:

```
\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}

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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24 Global float setting

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float (package), <mark>26</mark>	M
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	- oddPage, 29, 34, 45
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\tabcaptionhelow, 7	
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u U 1 // /	

25 The Package Source

```
%% $Id: hvfloat.sty 126 2021-06-29 12:56:04Z herbert $
1
2
   99
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{2.33}
18
   \def\filedate{2021/07/14}
   %\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
   29
    \DeclareOption{hyperref}{\hv@hyperreftrue}
   \DeclareOption{nostfloats}{\hv@nostfloatstrue}
31
    \DeclareOption{no-stfloats}{\hv@nostfloatstrue}
33
    \ProcessOptions
35
37
   \PassOptionsToPackage{hypcap}{caption}
    \RequirePackage{caption}
38
39
    \RequirePackage{varwidth}
   \PassOptionsToPackage{hypcap}{subcaption}
42
    \RequirePackage{subcaption}
   \RequirePackage{atbegshi}
44
    \RequirePackage{picture,trimclip}
46
    \RequirePackage{expl3,multido}
   \RequirePackage{graphicx}
48
    \RequirePackage{varwidth}
50
    \RequirePackage{xkeyval}
51
    \RequirePackage{ifoddpage}
52
    \RequirePackage{afterpage}
53
54
   \ifhv@hyperref
55
     \RequirePackage{hyperref}
56
57
    \ifhv@nostfloats\else
     \RequirePackage{stfloats}% for bottom floats in a twocolumn mode
59
    \fi
60
61
   62
63
   \newlength\hv0bjectWidth
```

```
\newlength\hvCapWidth
65
     \newlength\hvWideWidth
66
     \newlength\hvMultiFloatSkip
67
     \newlength\hvMaxCapWidth
68
     %\AtBeginDocument{%
69
     % \setlength\hv@BottomSpace{\dimexpr\paperheight-lin-\topmargin-\headheight-\headsep-\textheight}}
70
71
     \newsavebox\hv0bjectBox
72
73
     \newsavebox\hvCaptionBox
     \newsavebox\hv0Box
74
     \newsavebox\@tempbox
     \newsavebox\hv@caption@box
76
     \newsavebox\hv@leftBox
     \newsavebox\hv@rightBox
78
     \newif\ifhv@capbeside \hv@capbesidefalse
80
     \newif\ifhv@switchType
81
82
     \def\hv@Top{top}
83
     \def\hv@Bottom{bottom}
84
     \def\hv@After{after}
85
     \def\hv@Before{before}
     \def\hv@Right{right}
87
     \def\hv@Left{left}
    \def\hv@Center{center}
89
     \def\hv@Outer{outer}
91
    \def\hv@Inner{inner}
92
     \def\hv@Even{evenPage}
     \def\hv@0dd{oddPage}
93
     \def\hv@Natural{n}
94
95
     \def\hv@Width{w}
     \def\hv@Height{h}
96
97
     \def\hv@Zero{0}
98
99
     \def\hv@figure{figure}
100
     101
        \def \hvSet@floatPos{#1}%
102
103
     \define@key{hvSet}{rotAngle}[0]{%
                                            rotates caption AND image together
104
105
        \def\hvSet@rotAngle{#1}%
106
     \define@key{hvSet}{capWidth}[n]{%
                                            (n)atural width|object (w)idth)|object (h)eight|<scale of \
107
          columnwidth>
        \def\hvSet@capWidth{#1}%
108
109
     \define@key{hvSet}{capAngle}[0]{%
                                            -360..+360, only integers
110
        \label{lem:defhvSet@capAngle} $$ \def\hvSet@capAngle{#1}% $$
112
113
     \define@choicekey*+{hvSet}{capPos}[\val\nr]{bottom,top,left,before,right,after,inner,outer,evenPage,
114
          oddPage}[bottom]{%
115
       \def\hvSet@capPos{#1}%
                                      it is relativ to the object, (e),(d) only valid for fullpage float
       \ifcase\nr\relax
116
117
         \hv@capbesidefalse
118
         \hv@capbesidefalse
119
120
       \else
121
         \hv@capbesidetrue
122
123
     }{\PackageWarning{hvfloat}{erroneous input (#1) for capPos ignored. Using bottom.}%
       \def\hvSet@capPos{bottom}%
                                        it is relativ to the object, (e),(d) only valid for fullpage float
124
       \hv@capbesidefalse
125
126
127
     \define@choicekey*+{hvSet}{capVPos}[\val\nr]{bottom,center,top}[center]{%
128
     \def\hvSet@capVPos{#1}%
129
                                      it is relativ to the object
```

```
\ifcase\nr\relax
130
        \def\hv@@capVPos{b}%
131
132
      \or
        \def\hv@@capVPos{c}%
133
134
      \else
        \def\hv@@capVPos{t}%
135
      \fi
136
    }{\PackageWarning{hvfloat}{erroneous input (#1) for capVPos ignored. Using center.}%
137
      \def\hvSet@capVPos{center}%
                                     it is relativ to the object
138
139
140
    \define@choicekey*+{hvSet}{allHPos}[\val\nr]{left,center,right}[center]{%
141
      \def\hvSet@allHPos{#1}%
142
      \ifcase\nr\relax
143
        \gdef\hv@@allHPos{l}%
144
145
      \or
        \gdef\hv@allHPos{c}%
146
147
      \else
        \gdef\hv@@allHPos{r}%
148
      \fi
149
    }{\PackageWarning{hvfloat}{erroneous input (#1) for allHPos ignored. Using center.}%
150
      \def\hvSet@capVPos{center}%
                                     it is relativ to the object
151
152
153
    \define@choicekey*+{hvSet}{objectPos}[\val\nr]{left,center,right,inner,outer}[center]{%
154
155
      \def\hvSet@objectPos{#1}%
                                     it is relativ to the object
156
    {\c objectPos ignored. Using center.}%
157
      \def\hvSet@capVPos{center}%
                                     it is relativ to the object
158
    \define@key{hvSet}{objectAngle}[0]{%
                                            -360..+360
159
       \def\hvSet@objectAngle{#1}%
160
161
162
    \define@key{hvSet}{floatCapSep}[5pt]{%
                                           a width with the unit pt
       \def\hvSet@floatCapSep{#1}%
163
164
    \define@key{hvSet}{multiFloatSkip}[\normalbaselineskip]{% a width with the unit pt
165
       \setlength\hvMultiFloatSkip{#1}%
166
167
    \define@boolkey{hvSet}[hv@]{use0Box}[true]{}%
                                                    use of the hvOBox contents
168
    \define@boolkey{hvSet}[hv@]{nonFloat}[true]{}%
                                                    Do not use float environment
169
    \define@boolkey{hvSet}[hv@]{onlyText}[true]{}%
                                                    Write the caption only as text
170
                                                Write the caption only as text
171
    \define@boolkey{hvSet}[hv@]{wide}[true]{}%
    172
         caption only as text
    \define@boolkey{hvSet}[hv@]{sameHeight}[true]{\@nameuse{hv@sameHeight#1}}% Write the caption only as text
173
    \define@boolkey{hvSet}[hv@]{Debug}[true]{}%
                                                 give more infos in the terminal
174
175
    \newif\ifhv@fullpage
176
    \newif\ifhv@FULLPAGE
177
178
     \newif\ifhv@doubleFULLPAGE
    \newif\ifhv@doublePAGE
179
    \newif\ifhv@doublePage
180
181
    \newif\ifhv@setObiectLabel
    \newif\ifhv@global@sameHeight
182
183
    \newlength\hvSet@bindCorrection
184
185
    \newlength\hvSet@sepLineskip
    \newlength\hv@leftPageObjectWidth% for doublepage images
186
     \newlength\hv@tempWidthA
187
    \newlength\hv@tempWidthB
188
189
    \newlength\hv@minTextlines
    \newlength\hv@floatCapSep
190
     \newlength\hvSet@bindCorr
191
192
    \define@key{hvSet}{fullpage}[true]{\global\@nameuse{hv@fullpage#1}}%
193
    \define@key{hvSet}{FULLPAGE}[true]{\global\@nameuse{hv@FULLPAGE#1}}
194
    195
```

```
hv@doublePAGEfalse}
    196
         hv@doubleFULLPAGEfalse}
    197
        hv@doubleFULLPAGEfalse}
    \define@key{hvSet}{bindCorr}[0]{%
198
      \def\hv@temp{#1}%
199
     \ifx\hv@temp\hv@Inner
200
        \setlength\hvSet@bindCorr{\dimexprlin+\oddsidemargin}%
201
      \else
202
        \setlength\hvSet@bindCorr{#1}%
203
     \fi
204
    %\setlength\hvSet@bindCorrection{#1}}% for doublepage objects
206
207
    \define@boolkey{hvSet}[hv@]{subFloat}[true]{%
208
                                                typeset values as subfloats
209
       \ifnv@subFloat\setkeys{hvSet}{multiFloat=false}\fi%
210
    \define@boolkey{hvSet}[hv@]{multiFloat}[true]{%
                                                typeset values as continous floats
211
       \ifhv@multiFloat\setkeys{hvSet}{subFloat=false}\fi
212
213
    \define@boolkey{hvSet}[hv@]{vFill}[true]{}%
                                             \vfill between multifloat objects
214
215
216
    \define@boolkey{hvSet}[hv@]{separatorLine}[true]{}% separator line for caption of a full page float
    \define@key{hvSet}{sepLineskip}{\def\hv@sepLineskip{#1}}%
217
    218
219
    \define@key{hvSet}{style}{%
220
      \@ifundefined{hv@#1}%
221
        {\errmessage{Custom style '#1' undefined}}%
222
223
        {\begingroup
        \edef\x{\endgroup\noexpand\setkeys{hvSet}{\@nameuse{hv@#1}}}\x}% use a defined style
224
225
    \define@kev{hvSet}{capFormat}{\def\hv@caption@format{#1}}%
226
    \define@key{hvSet}{subcapFormat}{\def\hv@subcaption@format{#1}}%
228
    \let\hvFloatSet\hv@set
230
231
    \def\def\hvstyle#1#2{\def}hv@#1}{#2}}
232
    \let\hvDefFloatStyle\defhvstyle % better name
233
234
    \newcommand\setDefaults{%
235
236
      \hv@set{%
       floatPos=, rotAngle=0, capWidth=n, capAngle=0, objectAngle=0,
237
       capPos=bottom, capVPos=center, objectPos=center, allHPos=center,
238
       floatCapSep=5pt, useOBox=false, nonFloat=false,
239
       onlyText=false, wide=false, fullpage=false, FULLPAGE=false,
       doubleFULLPAGE=false, doublePage=false, doublePAGE=false,
241
242
           multiFloat=false, subFloat=false,
       separatorLine,objectFrame=false,multiFloatSkip=\normalbaselineskip,
243
       capFormat={}, subcapFormat={}, twoColumnCaption=false,
244
       sameHeight=false,
245
       bindCorr=\z@,sepLineskip=0pt,
246
247
       vFill=false, minTextlines=2,
    1%
248
249
250
    \let\hvFloatSetDefaults\setDefaults
252
253
    \newcommand\hv@typeout[1]{\ifhv@Debug\typeout{>>>> #1}\fi}
254
    \providecommand\@tugclass{\@empty}
255
    \ifx\@tugclass\@empty
256
257
      \hv@tugboattrue % special page handling
258
     \hv@typeout{>>> we are using a TUGboat class}%
```

```
\fi
260
261
     \newcommand\reset@special@float{%
262
       \hv@set{subFloat=false,%fullpage=false,
263
               multiFloat=false,%FULLPAGE=false
264
     }}
265
266
     \def\hv@vskip{\vspace{\hvMultiFloatSkip}}
267
268
     \newlength\hvAboveCaptionSkip
269
      \newlength\hvBelowCaptionSkip
270
     \newlength\hv@dblfptop
271
     \newlength\hv@fptop
     \newcount\hv@@capPos
273
274
     \newlength\fboxlinewidth
275
276
     \AtBeginDocument{%
       \label{linewidth-2} $$ \operatorname{linewidth-2} fboxrule-2 fboxsep} % $$
277
278
279
     \setlength\belowcaptionskip{\abovecaptionskip}% it is in latex.ltx = 0pt
     \newcommand\saveCaptionSkip{%
280
        \setlength{\hvAboveCaptionSkip}{\abovecaptionskip}%
281
        \setlength{\hvBelowCaptionSkip}{\belowcaptionskip}%
282
        \setlength{\abovecaptionskip}{0pt}%
        \setlength{\belowcaptionskip}{0pt}%
284
285
286
     \newcommand\restoreCaptionSkip{%
       \setlength\abovecaptionskip{\hvAboveCaptionSkip}%
287
       \setlength\belowcaptionskip{\hvBelowCaptionSkip}%
288
     }
289
290
     \newcommand\hv@set@noverticalSpace{% no space on top for a float page
291
292
       \let\hv@dblfptop\@dblfptop
       \let\hv@fptop\@fptop
293
       \global\setlength{\@dblfptop}{0\p@}%
294
       \label{lem:lemgth} $$ \global\setlength{\ensuremath{\ensuremath{\ensuremath{0}} ptop}{\{0\perbs}\%$} $$
295
297
298
     \newcommand\hv@reset@noverticalSpace{%
       \global\setlength{\@dblfptop}{\hv@dblfptop}%
299
       \global\setlength{\@fptop}{\hv@fptop}%
300
301
302
303
     \providecommand\figcaption[2][]{}%
     \providecommand\tabcaption[2][]{}%
304
305
     \providecommand\tabcaptionbelow[2][]{}%
306
     \renewcommand\figcaption[2][]{%
307
       \begingroup
308
309
       \def\@captype{figure}%
       \ifx\relax\hv@caption@format\relax\else\expandafter\captionsetup\expandafter{\hv@caption@format}\fi
310
       \ifx\relax#1\relax \caption{#2}\else\caption[#1]{#2}\fi
311
312
       \endgroup}
      renewcommand\tabcaption[2][]{%
313
314
       \begingroup
       \def\@captype{table}%
315
       \expandafter\captionsetup\expandafter{\hv@caption@format,position=top}%
316
       \ifx\relax#1\relax \caption{#2}\else\caption[#1]{#2}\fi
317
       \endgroup}
     \renewcommand\tabcaptionbelow[2][]{%
319
320
       \begingroup
       \def\@captvpe{table}%
321
       \expandafter\captionsetup\expandafter{\hv@caption@format,position=below}
322
       \ifx\relax#1\relax \caption{#2}\else\caption[#1]{#2}\fi
323
324
325
     \newlength\hv@maxImageWidth
```

```
\AtBeginDocument{\hv@maxImageWidth=\columnwidth}
327
328
               \define@key{Gin}{columnWidth}[true]{%
329
                    \def\Gin@ewidth{\columnwidth}%
330
               % \def\Gin@eheight{1ex}%
331
                   \Gin@boolkey{true}{iso}%
332
333
               \define@key{Gin}{fullpage}[true]{%
334
335
                     \def\Gin@ewidth{\columnwidth}%
                     \def\Gin@eheight{\textheight}%
336
337
                     \Gin@boolkey{false}{iso}%
338
               \define@key{Gin}{FullPage}[true]{%
                     \def\Gin@ewidth{\textwidth}%
340
                     \def\Gin@eheight{\textheight}%
341
                     \Gin@boolkey{false}{iso}%
342
343
               \define@key{Gin}{FULLPAGE}[true]{%
344
                     \def\Gin@ewidth{\paperwidth}%
345
346
                     \Gin@boolkey{false}{iso}%
347
               \define@key{Gin}{doubleFULLPAGE}[true]{%
349
                     \def\Gin@ewidth{2\paperwidth}%
                     \def\Gin@eheight{\paperheight}%
351
                     \Gin@boolkey{false}{iso}%
352
353
               \define@key{Gin}{doublefullPage}[true]{%
354
                     355
                    \def\Gin@eheight{\paperheight}%
356
357
                    \Gin@boolkey{true}{iso}%
358
               \define@key{Gin}{doubleFULLPAGEbindCorr}[true]{%
359
                     360
                     \def\Gin@eheight{\paperheight}%
361
                     \Gin@boolkey{false}{iso}%
362
363
364
               \newcommand\IncludeGraphics[2][]{%
365
                     \vspace*{\the\dimexpr-lin-\voffset+\topskip-\headheight-0.5\baselineskip}%
366
                     \leavevmode\checkoddpage
367
                     \ifoddpage
368
                           \hspace*{\dimexpr-\oddsidemargin-\parindent-lin}%
369
370
                     \else
                           \hspace*{\dimexpr-\evensidemargin-\parindent-lin}%
371
372
                     \fi\noindent
                     373
374
375
376
                \newcommand\put@CaptionBox[1][0]{%
                     \ifcase#1
377
378
                                 \fbox{\parbox{\wd\hvCaptionBox}{\usebox{\hvCaptionBox}}}%
379
380
                                 \parbox{\wd\hvCaptionBox}{\usebox{\hvCaptionBox}}%
381
                           \fi
382
383
                     \or
                           \ifhv@fbox
384
385
                                 \fbox{\raisebox{-\height}{\usebox{\hvCaptionBox}}}%
386
387
                                 \raisebox{-\height}{\usebox{\hvCaptionBox}}%
                           \fi
388
                           \label{lem:linear_linear} $$  \| \nabla_{\mathbf{box}} \nabla_{\mathbf{box}} \nabla_{\mathbf{box}} \| \nabla_{\mathbf{box}} \nabla_{\mathbf{box
390
                    \fi
391
392
393
```

```
\newcommand\put@ObjectBox[1][0]{%
394
395
                   \ifhv@fbox
396
                       \fbox{\parbox{\wd\hv0bjectBox}{\usebox{\hv0bjectBox}}}%
397
398
                       \label{thm:linear_notation} $$ \operatorname{hvObjectBox}_{\dot hvObjectBox} \hat \hvObjectBox} \ if i (hvObjectBox) $$ in the notation of the normal department o
399
                  \fi
400
401
              \or
                   \ifhv@fbox
402
                       \fbox{\raisebox{-\height}{\usebox{\hv0bjectBox}}}%
403
404
                       405
                   \fi
406
407
              \or
                   \ifhv@fbox
408
                       \fbox{\usebox{\hv0bjectBox}}%
409
410
                       % rotated object with a depth need to raise up the \depth
411
412
                       \fi
413
              \fi
414
415
416
417
          \def\drawSepLine{%
418
419
              \par\noindent
              \if@twocolumn
420
                   \ifhv@twoColumnCaption
421
                       \mathbf{0.4pt} \ [-2.5ex]
422
423
                   \else
                       \mathbf{0.4pt} \leq \mathbf{0.4pt} \setminus [-2.5ex]
424
                   \fi
425
              \else
426
427
                   \mathbf{0.4pt} \ [-2.5ex]
              \fi
428
429
              \vspace{\hv@sepLineskip}%
430
431
          \newcounter{hv@tempCNTfigA}%
432
          \newcounter{hv@tempCNTfigB}%
433
434
           \newcounter{hv@tempCNTtabA}%
          \newcounter{hv@tempCNTtabB}%
435
436
          \newcounter{hv@pfigure}%
          \newcounter{hv@ptable}%
437
438
            newcounter{subhv@pfigure}%
          \newcounter{subhv@ptable}%
439
          \newif\ifhv@star
441
442
           \newif\if@hvsubstar
          \setDefaults
443
444
445
          %\newcommand*{\hvFloat}[5][]+{%
446
447
          % [#1}: keyvalues
          % #2: type figure | table | ...
448
449
          % #3: float contents
          % [#4]: short caption
450
451
          % #5: caption
          % #6: label
452
453
454
           \def\hvFloat{\@ifnextchar*%
                                                                               Main macro
455
              {\global\hv@startrue\hv@maxImageWidth=\textwidth\hvFloat@i}%
456
              457
458
459
```

```
\def\hvFloat@i*{\@ifnextchar[{\do@hvFloat}{\do@hvFloat[]}}
460
                 \def\do@hvFloat[#1]{%
461
                      \begingroup
462
                      \setlength\hvWideWidth{\dimexpr\columnwidth+\marginparwidth+\marginparsep}%
463
                % \setlength\hvWideWidth{\dimexpr\textwidth+\marginparwidth+\marginparsep}%
464
                         \setlength\hvWideWidth{\dimexpr\linewidth+\marginparwidth}%
465
                      \hv@maxImageWidth=\textwidth
                      \reset@special@float
467
                      \global\setcounter{hv@pfigure}{\value{figure}}%
468
                       \global\setcounter{hv@ptable}{\value{table}}%
469
                       \setcounter{hv@tempCNTfigA}{\value{figure}}%
470
                      \setcounter{hv@tempCNTfigB}{\value{figure}}%
471
                      \setcounter{hv@tempCNTtabA}{\value{table}}%
                      473
                       \gdef\hv@save@setting{#1}% for later use after \endgroup inside figure/table env
                      475
                      \label{limit} $$ \inf_{\boldsymbol{\omega}\in \mathbb{R}^{n}} \exp(\boldsymbol{\omega}) = \sup_{\boldsymbol{\omega}\in \mathbb{R}^{n}} \exp(\boldsymbol{\omega}) = \inf_{\boldsymbol{\omega}\in \mathbb{R}^{n}} \exp(\boldsymbol{\omega})
476
477
                      \ifx\hv@subcaption@format\@empty\else
                                    \expandafter
478
479
                                   \captionsetup\expandafter[\expandafter s\expandafter u\expandafter b\expandafter]\expandafter
                                                                                                              {\hv@subcaption@format}%
480
481
                       \qdef\hv@floatType{figure}% presetting
482
483
                      \@ifnextchar+{\do@multiFloat}{\hvFloat@ii[#1]}%
484
485
                 \ExplSyntax0n
486
487
                \def\do@multiFloat+#1#2{%
488
                      \clist set:Nn\l clist Type{{#1}}%
489
490
                      \clist_set:Nn\l_clist_Object{{#2}}%
                      \@ifnextchar[\do@multiFloat@i{\do@multiFloat@i[]}%
491
492
                \def\do@multiFloat@i[#1]#2#3{% lof-caption, caption, label
493
                      \ifx\relax#1\relax
494
                             \clist_set:Nn\l_clist_LofCaption{{}}%
495
                      \else
496
                             \verb|\clist_set:Nn| \mathbf{l}_{clist} LofCaption \{ \{\#1\} \} \%
497
498
                      \fi
                      \clist_set:Nn\l_clist_Caption{{#2}}%
499
                      \ifx\relax#3\relax
500
                             \clist_set:Nn\l_clist_Label{{}}%
501
                       \else
502
503
                             \clist_set:Nn\l_clist_Label{{#3}}%
504
505
                      \@ifnextchar+{\do@multiFloat@ii}{}%
506
                 \def\do@multiFloat@ii+#1#2{%
507
                      \clist_put_right:Nn\l_clist_Type{{#1}}%
508
509
                      \verb|\clist_put_right:Nn\\ \label{logict} $$ \clist_Object{$\#2$} $
                      \@ifnextchar[\do@multiFloat@iii{\do@multiFloat@iii[]}%
510
511
512
                 \def\do@multiFloat@iii[#1]#2#3{% lof-caption, caption, label
513
                      \ifx\relax#1\relax
514
                             \clist put right:Nn\l clist LofCaption{{}}%
515
516
                      \else
517
                             \clist_put_right:Nn\l_clist_LofCaption{{#1}}%
                      \fi
518
                      \verb|\clist_put_right:Nn| \textbf{l}_clist_Caption \{ \{\#2\} \} \%
519
520
                      \ifx\relax#3\relax
                            \clist_put_right:Nn\l_clist_Label{{}}%
521
                            \verb|\clist_put_right:Nn| \textbf{l}_clist_Label{{#3}} %
523
                      \@ifnextchar+\do@multiFloat@ii%
525
                             {\def\hvSet@CapWidth{n}%
```

```
\do@@@dhvFloat}%
527
528
                  \ExplSyntaxOff
529
530
531
                  \newcount\hv@cnta
532
533
                    \newcount\hv@cntb
534
                  \def\hvFloat@ii[#1]#2#3{%
                                                                                                                                    #1: key/value, #2: floattype, #3: object
535
                         \hv@maxImageWidth=\textwidth
536
                             \ifx\relax#1\relax\else\setkeys{hvSet}{#1}\fi
537
                          \gdef\hv@floatType{#2}%
538
                          \ifx\relax#2\relax
539
                                  \setkeys{hvSet}{nonFloat,onlyText}%
540
                                  \xspace \textbf{X} \textbf{def} \cap \textbf{S} \textbf{def} \xspace \textbf{def} 
541
                                                      figure/table env
                         \fi
542
543
                          \xdef\hv@floatListOfExt{\@nameuse{ext@\hv@floatType}}%
                          \gdef\hv@floatObject{#3}%
544
545
                          546
547
                                                                                                                                        #1: listof caption, #2. long caption #3: label
                  \def\do@dhvFloat[#1]#2#3{%
548
                          \gdef\hv@shortCap{#1}%
                          \gdef\hv@longCap{#2}%
550
                          \gdef\hv@label{#3}%
551
                          552
                          553
                          \verb|\global| setlength| hvSet@bindCorrection{\hvSet@bindCorr} % \textit{ for doublepage objects} \\
554
                          \global\setlength\hv@floatCapSep{\hvSet@floatCapSep}%
555
556
                          \ifhv@fullpage
557
558
                                  \def\hvSet@CapWidth{n}% relative value
                                  \do@@@dvFloat% fullpage with caption on other page
559
                          \else
560
                                  \ifhv@FULLPAGE
561
                                          \def\hvSet@CapWidth{n}% relative value
562
                                         \verb|\do@@@hvFloat%| fullpage with caption on other page|
563
564
                                         \ifhv@doubleFULLPAGE
565
                                                 \setlength\hvCapWidth{\textheight}%
566
                                                 \expandafter\do@hvFloat@doubleFULLPAGE\@@temp% fullpage with caption rotated or under on an odd
567
                                                                     page
568
                                         \else
                                                  \ifhv@doublePAGE
569
                                                        \verb|\expandafter| do@hvFloat@doublePAGE| @ temp% fullpage with caption rotated or under on an odd in the continuous content of the content of
                                                \else
                                                        \ifhv@doublePage
572
573
                                                                 \expandafter\do@hvFloat@doublePage\@@temp% fullpage with caption rotated or under on an odd
                                                        \else
574
                                                                 \do@@@hvFloat
575
                                                         \fi
576
                                                 \fi
577
                                         \fi
578
579
                                  \fi
                          \fi
580
581
582
583
                  \def\do@@@hvFloat{% no special float page, caption and image on top of each other or side by side
                          \def\@tempa{90}%
584
                          \ifx\hvSet@rotAngle\@tempa
585
                                  \setlength\hvMaxCapWidth{\textheight}%
586
587
                                  \setlength\hvMaxCapWidth{\hvWideWidth}%
588
589
```

```
590
         % First we save the object in \hvObjectBox
591
592
             \ifnum\hvSet@objectAngle=0 % rotate the object?
593
                  \ifhv@useOBox
594
                      \let\hv0bjectBox\hv0Box
595
596
                  \else
                      \savebox\hv0bjectBox{\hv@float0bject}%
597
598
                  \fi
             \else
599
                  \savebox\hv0bjectBox{%
600
                      \rotatebox{\hvSet@objectAngle}{%
601
                          \ifhv@useOBox\usebox{\hvOBox}\else\hv@floatObject\fi
                     }%
603
604
             \fi
605
             \setlength\hv0bjectWidth{\wd\hv0bjectBox}%
606
607
         % Now we save the caption with its defined \hvCapWidth
608
609
             \ifx\hvSet@capWidth\hv@Width%
                                                                                                        captionwidth=objectwidth
610
                 \setlength\hvCapWidth{\hvObjectWidth}%
611
             \else
612
613
                  \ifx\hvSet@capWidth\hv@Height%
                                                                                                        captionwidth=objectheight
                      \setlength\hvCapWidth{\ht\hvObjectBox}%
614
615
                      \ifx\hvSet@capWidth\hv@Natural%
616
                                                                                                        captionwidth=\linewidth-\objectwidth-separation
                          \ifhv@capbeside
617
                             \ifhv@wide
618
                                 619
620
                              \else
                                 \ifhv@star
621
                                     622
                                 \else
623
                                      \setlength\hvCapWidth{\the\dimexpr\linewidth-\hvObjectWidth-\hv@floatCapSep\relax}%
624
                                 \fi
625
                             \fi
                          \else
627
628
                              \setlength\hvCapWidth{\columnwidth}%
                          \fi
629
                      \else
630
                          \ifhv@capbeside
631
                             \ifhv@wide
632
633
                                  \setlength\hvCapWidth{\hvSet@capWidth\hvWideWidth}%
                                 \setlength\@tempdima{\the\dimexpr\hvWideWidth-\hvObjectWidth-\hv@floatCapSep\relax}%
634
635
                                  \setlength\hvCapWidth{\hvSet@capWidth\columnwidth}%
636
                                 \verb|\dimexpr| column width- \verb|\hv0bjectWidth-\hv@floatCapSep| relax| \% in the linear column width with the linear column wi
                              \fi
638
639
                              \ifdim\hvCapWidth>\@tempdima
                                 \setlength\hvCapWidth{\@tempdima}%
640
                             \fi
641
                          \else
642
643
                                 \setlength\hvCapWidth{\hvSet@capWidth\hvWideWidth}%
644
645
646
                                 \setlength\hvCapWidth{\hvSet@capWidth\columnwidth}%
647
                              \fi
                          \fi
648
                      \fi
649
650
                 \fi
651
              \saveCaptionSkip% we put this space ourselve
652
             \ifnum\hvSet@capAngle=0 % need rotation?
653
                  \savebox\hvCaptionBox{% NO rotation
654
                      \minipage[b]{\hvCapWidth}% minipage, to get hyphenation
655
656
```

```
\ifhv@onlyText
657
                                                                               \hv@longCap
658
                                                                  \else
659
                                                                               \ifx\hv@floatType\hv@figure
660
661
                                                                                          \int Telax \rightarrow TCap \end{television} \label{fig:shortCap}
                                                                                                       \label{$$ \figcaption{\hv@longCap\ifx\hv@label\end{\hv@label} $$ i} % $$ $$ if $x \mapsto (e^{i} x + i) $$ if $x \in \mathbb{R}^{n} $$ if 
662
                                                                                          \else
663
                                                                                                       \label{$$ \figcaption[\hv@shortCap]{\hv@longCap\ifx\hv@label\empty\else\label{hv@label}$$ fi} $$ $$ \end{area} $$ \end{area} $$ $$ \end{area} $$ \end{area
664
                                                                                          \fi
                                                                               \else
666
                                                                                          \ifx\relax\hv@shortCap\relax
667
                                                                                                       \label{$\vec{\hat{h}}$ if $x \mapsto \langle \hat{f}i \rangle $$ $$ \tilde{f}i \in \mathbb{T}^{\hat{h}} $$ $$ $$ $$ is $x \mapsto \langle \hat{f}i \rangle $$ $$ $$ is $x \mapsto \langle \hat{f}i \rangle $$ $$ $$ $$ $$ is $x \mapsto \langle \hat{f}i \rangle $$ $$ $$ is $x \mapsto \langle \hat{f}i \rangle $$ $$ $$ is $x \mapsto \langle \hat{f}i \rangle $$ $$ $$ is $x \mapsto \langle \hat{f}i \rangle $$ $$ $$ is $x \mapsto \langle \hat{f}i \rangle $$ $$ $$ is $x \mapsto \langle \hat{f}i \rangle $$ $$ $$ is $x \mapsto \langle \hat{f}i \rangle $$ 
668
669
                                                                                                       \label{$$ \tilde{\hv@longCap}ifx\hv@label\empty\else\label\hv@label} $$ is $$ \tilde{\hv@label} \tilde{\hv@label} \tilde{\hv@label} $$ is 
670
                                                                                          \fi
671
                                                                            \fi
672
                                                                \fi
673
674
                                                   \else
                                                                  \ifhv@onlyText
675
                                                                               \hv@longCap
                                                                \else
677
                                                                                                               \let\@captype\hv@floatType
678
                                                                                                              679
                                                                                                               \ifx\hv@label\end{hv@label}\fi
                                                                                               \fi
681
682
683
                                                                        \endminipage
                                                          }%
684
685
                                             \else
                                                          \savebox\hvCaptionBox{% Rotation
686
687
                                                                       \rotatebox{\hvSet@capAngle}{%
                                                                                     \minipage[b]{\hvCapWidth}%% minipage, to get hyphenation
688
689
                                                                  \ifhv@nonFloat
690
                                                                               \ifhv@onlyText
692
                                                                                          \hv@longCap
                                                                                                              \else
                                                                                          \fint \mathbf{x} \cdot \mathbf{floatType} \cdot \mathbf{figure}
694
                                                                                                       695
696
                                                                                          \else
                                                                                                       697
698
                                                                                          \fi
                                                                             \fi
699
700
                                                                  \else
                                                                               \ifhv@onlyText
701
                                                                                          \hv@longCap
702
                                                                                                               \else
703
                                                                                                                            \let\@captype\hv@floatType
704
                                                                                                                            \ifx\hv@shortCap\@empty \caption{\hv@longCap}\else\caption[\hv@shortCap]{\hv@longCap}%
705
706
                                                                                                                            \fi
                                                                                                            \fi
707
                                                                                                 \fi
708
709
                                                                                                 \  \ifx \ \end{\hv@label} fi
                                                                                    \endminipage
710
                                                                     }% rotatebox
711
                                                          }% \sbox
712
713
                                            \fi
714
715
                               % now we have the object and the caption with the right
                               % rotated angles saved in different boxes
716
717
                                          \restoreCaptionSkip% save old values
718
                                                  \def\fps@figure{\hvSet@floatPos}%
719
                                             \ifx\hvSet@floatPos\@empty
                                                                                                                                                                                                                                                           % use type default
720
721
                                                          \@namedef{fps@\hv@floatType}{\hvSet@floatPos}%
722
723
```

```
\ifhv@nonFloat
724
         \noindent
725
                             Start the nonfloat part
         \begingroup%
726
727
      \else
         \ifhv@star
728
          \ifx\hvSet@floatPos\hv@floatBottom
729
                                               Start the floating environment *******************
730
             \@nameuse{\hv@floatType*}[b]%
           \else
731
732
             \fi
733
734
         \else
           \begin{\hv@floatType}%
                                     Start the floating environment
735
        \fi
736
      \fi
737
738
       \checkoddpage
      \verb|\ifx| hvSet@objectPos| hv@Right| raggedleft| fi
739
      \ifx\hvSet@objectPos\hv@Center
740
         \ifhv@nonFloat\hspace*{\fill}\else\centering\fi
741
742
743
      \ifx\hvSet@objectPos\hv@Outer
        \ifoddpage\raggedleft\fi
744
745
      \fi
      \ifx\hvSet@objectPos\hv@Inner
746
747
        \ifoddpage\else\raggedleft\fi
      \fi
748
749
750
    % to rotate object and caption together, we save all in another box
    % the caption comes first, if its on the left or the top
751
    % O caption left, inner and odd page, oneside inner
752
    % 1 caption top
753
    % 2 caption right, inner and even page, oneside outer
754
    % 3 caption bottom
755
756
      \ifx\hvSet@capPos\hv@Left
757
758
        \hv@@capPos=0
759
      \else
760
         \ifx\hvSet@capPos\hv@Top
           \hv@@capPos=1
761
762
           \ifx\hvSet@capPos\hv@Right
763
            \hv@@capPos=2
764
           \else
765
             \ifx\hvSet@capPos\hv@Bottom
766
767
              \hv@@capPos=3
             \else
768
769
               \ifx\hvSet@capPos\hv@Inner
                \verb|\ifoddpageoroneside| hv@@capPos=0\\else\\hv@@capPos=2\\fi
770
                \ifx\hvSet@capPos\hv@Outer
772
773
                  \else
774
                   \ifx\hvSet@capPos\hv@Before
775
776
                    \hv@@capPos=0% same as cappos=right
777
                     \ifx\hvSet@capPos\hv@After
778
                       \hv@@capPos=2% same as capPos=right
779
780
                     \fi
                   \fi
781
782
                \fi
              \fi
783
784
             \fi
           \fi
785
         \fi
786
      \fi
787
788
      \savebox{\@tempboxa}{%
                                                  **** @tempbox start
789
         \expandafter\ifcase\the\hv@@capPos% 0 is LEFT
                                                           START \ifcase
790
```

```
\ifx\hvSet@capVPos\hv@Center
791
            \put@CaptionBox
792
            \hspace{\hv@floatCapSep}% capfloatsep
793
            \put@ObjectBox
794
795
          \else
            \ifx\hvSet@capVPos\hv@Top% caption and object at top aligned
796
797
              \put@CaptionBox[1]%
              \hspace{\hv@floatCapSep}% capfloatsep
798
799
              \put@ObjectBox[1]%
            \else% caption on bottom
800
              \put@CaptionBox[2]%
801
              \hspace{\hv@floatCapSep}% capfloatsep
802
              \put@ObjectBox[2]%
803
            \fi
804
          \fi% end caption left
805
806
        \or%1 is top
          \ifdim\wd\hvCaptionBox>\wd\hvObjectBox
807
808
       \begin{minipage}{\wd\hvCaptionBox}%
          \else
809
810
       \begin{minipage}{\wd\hv0bjectBox}\%
          \fi
811
          \centering
812
          \ifhv@fbox
813
814
       \fbox{\usebox{\hvCaptionBox}}\\[0.5\hvBelowCaptionSkip]%
       \fbox{\usebox{\hv0bjectBox}}%
815
          \else
816
       817
       \usebox{\hv0bjectBox}%
818
819
          \end{minipage}%
820
821
        \or%2 is right
          \ifx\hvSet@capVPos\hv@Center
822
823
            \put@ObjectBox
       \hspace{\hv@floatCapSep}%
824
825
       \put@CaptionBox
826
          \else
       \ifx\hvSet@capVPos\hv@Top
827
              \put@ObjectBox[1]%
828
829
              \hspace{\hv@floatCapSep}% capfloatsep
830
              \put@CaptionBox[1]%
       \else
831
              \put@ObjectBox[2]%
832
              \hspace{\hv@floatCapSep}% capfloatsep
833
834
              \put@CaptionBox[2]%
835
          \fi
        \or%3 bottom
837
          \ifdim\wd\hvCaptionBox>\wd\hvObjectBox
838
            \begin{minipage}{\wd\hvCaptionBox}{\%}
839
840
          \else
            \begin{minipage}{\wd\hv0bjectBox}%
841
          \fi
842
843
          \centering
          \ifhv@fbox
844
            \float{\usebox{\hvObjectBox}}\\\[0.5\hvAboveCaptionSkip]%
845
              \fbox{\usebox{\hvCaptionBox}}%
846
847
            \else
              848
                   hvAboveCaptionSkip]%
              \usebox{\hvCaptionBox}%
849
            \fi
          \end{minipage}%
851
        \fint fi \ifcase\the\hv@@capPos
852
      }% End savebox Object and caption
                                                  853
854
    % now we rotate the object and caption, if needed
855
856
```

```
\ifhv@wide
857
                     \ifoddpageoroneside
858
                          \if@twocolumn
859
                              \if@firstcolumn
860
861
                                   \noindent
                                   \hspace*{\dimexpr-\marginparwidth-\marginparsep}% oddpage first column
862
863
                              \fi
                         \fi
864
865
                     \else
                          \ifoddpage
866
867
                              \if@twocolumn
                                  \if@firstcolumn
868
                                       \noindent
                                       \hspace*{\dimexpr-\marginparwidth-\marginparsep}% oddpage first column
870
871
                             \fi
872
                          \else% evenpage
873
874
                              \if@firstcolumn
                                  \noindent
875
                                  \hspace*{\dimexpr-\marginparwidth-\marginparsep}% <- for wide and left page
876
                             \fi
877
878
                          \fi
                     \fi
879
880
                \fi
                \ifx\hvSet@rotAngle\hv@Zero
881
                    \usebox{\@tempboxa}%
882
883
                \else
                     \rotatebox{\hvSet@rotAngle}{\usebox{\@tempboxa}}%
884
                \fi
885
                \ifhv@nonFloat
886
                     \ifx\hvSet@objectPos\hv@Center
887
                           \ifhv@nonFloat
888
889
                       \hspace{\fill}%
                           ١fi
890
891
                    \fi
                     \endgroup% End the nonfloat part
892
893
894
895
                          \@nameuse{end\hv@floatType*}% End the floating environment
896
897
                          \end{\hv@floatType}% End the floating environment
                     \fi
898
                \fi
899
900
                \endgroup% startet at main \hvFloat
901
902
           \newenvironment{hvFloatEnv}[1][\textwidth]
903
                {\minipage{#1}}
               {\endminipage}
905
906
907
           \ExplSyntax0n
908
           \let\clist@item@Nn\clist_item:Nn
909
           \let\l@clist@Type\l clist Type
910
           \let\l@clist@LofCaption\\lambda_clist_LofCaption
911
           \let\l@clist@Label\l clist Label
912
913
           \let\clist@count@N\clist_count:N
           \ExplSyntaxOff
914
915
           \def\do@@@hvFloat{% special float page: caption <-> fullpage images
916
917
               \else
918
                     \fint {\bf x} \ \ \fint {\bf y} \ \ \fint {\bf y
919
                     \else
920
                          \ifx\hvSet@capPos\hv@0dd
                                                                                      \global\hv@@capPos=3
921
                          \else
922
                              \ifx\hvSet@capPos\hv@Inner \global\hv@@capPos=4
923
```

```
\else
924
               \ifx\hvSet@capPos\hv@Outer
                                              \global\hv@@capPos=5
925
               \else
926
                                                \global\hv@@capPos=6% only for twocolumn mode
                  \ifx\hvSet@capPos\hv@Right
927
928
                 \else
                    \ifx\hvSet@capPos\hv@Left
                                                 \global\hv@@capPos=7% only for twocolumn mode
929
930
                    \else
                      \global\hv@@capPos=0
931
                   \fi
932
                 \fi
933
934
               \fi
             \fi
935
           \fi
         \fi
937
       \fi
938
       \checkoddpage
939
       \set@caption@object{\hv@floatType}% set caption and object into a box
940
941
       \ifcase\hv@@capPos% caption before object 0-> _always_ left
         \setBottomCaption\setPageObject
942
943
                              caption after object 1-> _always_ right
         \setPageObject\setBottomCaption
944
945
                              caption on even page 2-> left page
         \ifoddpage
946
947
           \afterpage{\setBottomCaption\setPageObject}%
         \else% we are on an even page
948
           \setBottomCaption\setPageObject
949
         \fi
950
                            caption on odd page 3->right page
951
       \or%
         \if@twoside
952
           \if@twocolumn
953
954
             \ifoddpage
               \if@firstcolumn% on right side
955
956
                 \setBottomCaption\setPageObject
               \else
957
958
                 \verb|\afterpage| \end{|} \$ \textit{ start next column} \\
               \fi
959
             \else% left (even) page
960
               \if@firstcolumn
961
                 \afterpage{\setPageObject\setBottomCaption}% start next column
962
               \else
963
                 \setPageObject\setBottomCaption
964
965
               \fi
             \fi
966
967
           \else% onecolumn
             \ifoddpage
968
               \setPageObject\setBottomCaption
             \else% even page
970
971
               \afterpage{\setPageObject\setBottomCaption}%
             \fi
972
973
           \fi
         \else% oneside
974
           \if@twocolumn
975
976
             \ifoddpage
               \if@firstcolumn% on right side
977
978
                 \setBottomCaption\setPageObject
               \else
979
                 \setPageObject\setBottomCaption
980
               \fi
981
982
             \else
               \if@firstcolumn% on left side
983
984
                 \afterpage{\setPageObject\setBottomCaption}%
               \else
985
                 \setPageObject\setBottomCaption
               \fi
987
             \fi
988
           \else % onecolumn
989
             \ifoddpage
990
```

```
\setBottomCaption\setPageObject
991
992
              \else
                \afterpage{\setBottomCaption\setPageObject}%
993
              \fi
994
            \fi
995
          \fi
996
997
        \or%
                             caption on the inner column 4->inner
           \set@caption@object
998
999
          \if@twocolumn
            \ifoddpage
1000
              \if@firstcolumn% on right side
           \setBottomCaption\setPageObject
1002
                              % right column on right side
1003
                \setPageObject\setBottomCaption% start next firstcolumn next page
1004
1005
              \fi
            \else
1006
              \if@firstcolumn% on left side
1007
                \afterpage{\afterpage{\setBottomCaption\setPageObject}}% start next page/first column
1008
              \else% left page/column
1009
1010
                \setBottomCaption\setPageObject% start on same page/column
              \fi
1011
            \fi
1012
          \else% onecolumn
1013
1014
            \setBottomCaption\setPageObject
          \fi
1015
                             caption on the outer column 5->outer
        \or%
1016
1017
           \set@caption@object
1018
          \if@twocolumn
1019
            \ifoddpage
              \if@firstcolumn
1020
                \afterpage{\afterpage{\setBottomCaption\setPageObject}}%
1021
              \else
1022
1023
                \afterpage{\setBottomCaption\setPageObject}%
              \fi
1024
1025
            \else% even page (left)
1026
              \if@firstcolumn
1027
                \setBottomCaption\setPageObject
              \else
1028
1029
     %%
                         !!!! to-do: !!!!
              \fi
1030
            \fi
1031
          \else% onecolumn
1032
            \setBottomCaption\setPageObject
1033
1034
          \fi
                             caption after object on same page 6->right for twocolumn
        \or%
1035
          \if@twocolumn
            \if@firstcolumn
1037
              \afterpage{\setPageObject\setBottomCaption}%
            \else
1039
1040
              \setPageObject\setBottomCaption
            \fi
1041
          \else% always caption _after_ object for onecolumn
1042
1043
            \setPageObject\setBottomCaption
          \fi
1044
                             caption before object on same page 7->left for twocolumn
1045
        \or%
          \if@twocolumn
1046
1047
            \if@firstcolumn
              \setBottomCaption\setPageObject
1048
1049
            \else
              \afterpage{\setBottomCaption\setPageObject}%
1050
1051
            \fi
          \else%
                        onecolumn -> same as before
1052
            \setBottomCaption\setPageObject
1053
          \fi
1054
1055
        \endgroup% startet at main \hvFloat
1056
1057
```

```
1058
1059
1060
                   % ------ the doublepage obejcts ------
1061
1062
                   % ||1in+evenside --- |1in+oddside ---||
1063
1064
                   \def\do@hvFloat@doublePage#1{% image on left and right page with caption on the right page
                          % #1-> 0/1 caption under/right
1065
                          \global\setlength\hv@leftPageObjectWidth{\dimexpr\paperwidth-lin-\evensidemargin-\hvSet@bindCorrection}%
1066
                          \global\setlength\hv@tempWidthA{\the\dimexprlin+\oddsidemargin-\hvSet@bindCorrection}%
1067
                          \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
 1068
                                 \ensuremath{@dblfpbot{0\\p@ \ensuremath{@plus 1fil}%}
1069
                          \global\hv@switchTypefalse
1070
1071
                             \endgroup% started at main macro \hvFloat
                          \setcounter{hv@tempCNTfigA}{\value{figure}}%
1072
1073
                          \setcounter{hv@tempCNTfigB}{\value{figure}}%
1074
                          \setcounter{hv@tempCNTtabA}{\value{table}}%
1075
                          \setcounter{hv@tempCNTtabB}{\value{table}}%
                          \savebox\hvCaptionBox{%
                                                                                                                  NO rotation
1076
                                 \minipage{\textwidth}% minipage, to get hyphenation
1077
                                         \let\@captype\hv@floatType
1078
                                         \caption*{\hv@longCap}%
1079
                                 \endminipage}%
1080
 1081
                          \ifnum#1=0\relax
                                                                                           % no rotation, caption below
1082
                                 \hv@typeout{Texthöhe: \the\textheight}%
1083
1084
                                 \hv@typeout{Objekthöhe: \the\ht\hvObjectBox}%
                                  \hv@typeout{Captionhöhe: \the\ht\hvCaptionBox}%
1085
                                 \verb|\langle dtempdima=\rangle dimexpr| \textbf{ht} \\ \text{hv} \\ \textbf{0} \\ \text{below captions kip} + \\ \textbf{1} \\ \textbf{0} \\ \text{textfloatsep} \\ \textbf{1} \\ \textbf{2} \\ \textbf{3} \\ \textbf{4} \\ \textbf{5} \\ \textbf{6} \\
1086
                                                    \relax%+\floatsep\relax
1087
                                 \hv@typeout{Summe: \the\@tempdima}%
                                 \ifdim\@tempdima > \dimexpr\textheight-\hv@minTextlines\relax
1088
 1089
                                         \hv@typeout{hvfloat: switched to floattype p}%
                                         \hv@switchTypetrue
1090
                                 \fi
1091
                          \fi
1092
                          1094
                          \checkoddpage
1095
                          \ifoddpage
1096
                                 \if@twocolumn
                                         \if@firstcolumn
1097
1098
                                               \ifhv@switchType
                                                      \afterpage{\do@hvFloat@doublePAGECaptionRight{#1}}%
1099
1100
                                               \else
                                                      \afterpage{\afterpage{\do@hvFloat@doublePageCaptionRight{#1}}}%
1101
                                              \fi
 1102
                                         \else
1103
                                                \ifhv@tugboat
1104
                                                     \do@hvFloat@doublePageCaptionRight{#1}%
1105
1106
                                                \else
                                                      \ifhv@switchTvpe
1107
                                                             \do@hvFloat@doublePAGECaptionRight{#1}%
1108
1109
                                                      \else
                                                             \afterpage{\do@hvFloat@doublePageCaptionRight{#1}}%
1110
                                                     \fi
1111
                                              \fi
1112
                                        \fi
1113
                                  \else
1114
                                         \ifhv@switchType
1115
                                              \do@hvFloat@doublePAGECaptionRight{#1}%
1116
1117
                                         \else
                                               \afterpage{\do@hvFloat@doublePageCaptionRight{#1}}%
1118
                                        \fi
1119
                                 \fi
1120
                          \else% we have an even page
1121
                                 \if@twocolumn
1122
1123
                                        \if@firstcolumn
```

```
\ifhv@switchType
1124
             \afterpage{\afterpage{\do@hvFloat@doublePAGECaptionRight{#1}}}%
1125
            \else
1126
1127
             \fi
1128
          \else% second column
1129
1130
            \ifhv@switchType
             1131
            \else
1132
             1133
            \fi
1134
          \fi
1135
        \else% onecolumn
1136
          \ifhv@switchType
1137
1138
            1139
          \else
            \afterpage{\afterpage{\do@hvFloat@doublePageCaptionRight{#1}}}%
1140
1141
          \fi
        \fi
1142
      \fi
1143
      \let\c@fptop\hv@fptop
1144
     \endgroup% started at main macro \hvFloat
1145
1146
1147
     \def\do@hvFloat@doublePageCaptionRight#1{% image on left and right page with caption on the right page
1148
1149
      \do@hvFloat@doublePageCaptionRightObjectLeft{Opt}%
1150
      \afterpage{\do@hvFloat@doublePageCaptionRightObjectRight{#1}}%
1151
1152
     \def\do@hvFloat@doublePageCaptionRightObjectLeft#1{%    left part of the object
1153
      \begin{\hv@floatType*}[!t]
1154
1155
        \hv@set@noverticalSpace
        \hfuzz=\maxdimen
1156
        \let\c@hv@tempCNTfigA\c@figure
1157
        \let\c@hv@tempCNTtabA\c@table
1158
        \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
        \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1160
        \hv@typeout{Floatpositionsparameter: !t}%
1161
        1162
        \verb|\clipbox*{0 -\depth{} \hv@leftPageObjectWidth{} \height}{\usebox}\hvObjectBox{}% |
1163
1164
        \ifx\hv@label\@empty
        \else
1165
1166
          \ifx\hv@floatType\hv@figure
            \global\refstepcounter{hv@tempCNTfigA}%
1167
          \else
            \global\refstepcounter{hv@tempCNTtabA}% before caption
1169
          \fi
1170
          \label{\hv@label}%
1171
1172
        \fi
        \ifhv@global@sameHeight
1173
          \hv@typeout{text should be of same height of both pages}%
1174
1175
          \par\noindent\phantom{\parbox{\textwidth}{\caption*{\hv@longCap}}}%
           \vspace{-2pt}%
1176
        \fi
1177
        \hv@reset@noverticalSpace
1178
1179
      \end{\hv@floatType*}%
1180
     \def\do@hvFloat@doublePageCaptionRightObjectRight#1{% right part of the object
1181
      \begin{\hv@floatType*}[!t]
1182
1183
        \hv@set@noverticalSpace
        \hfuzz=\maxdimen
1184
        \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1185
        1186
1187
        \hspace*{-\hv@tempWidthA}%
        \savebox\hv@rightBox{\clipbox*{\hv@leftPageObjectWidth{} -\depth{} \width{} \height{}}{\usebox\
1188
             hv0bjectBox}}%
```

```
\global\setlength\hv@tempWidthB{\dimexpr\textwidth-\wd\hv@rightBox-\hvSet@bindCorrection+lin+\
1189
                                         oddsidemargin-\hv@floatCapSep\relax}%
                          1190
                          1191
1192
                                   \ifdim\dp\hv@rightBox > \z@
                                             \raisebox{\depth}{\usebox\hv@rightBox}%
1193
1194
                                   \else
                                        \usebox\hv@rightBox
1195
                                   \fi
1196
                                   \c@hv@tempCNTfigB=\numexpr\c@figure-1\relax
1197
                                   \c@hv@tempCNTtabB=\numexpr\c@table-1\relax
1198
                                   \ifx\hv@label\@empty\else
1199
                                        \ifx\hv@floatType\hv@figure
1200
                                             \verb|\refstepcounter| \{ hv@tempCNTfigB \} \%
1201
1202
1203
                                             \refstepcounter{hv@tempCNTtabB}%
                                                                                                                                          before caption
                                        \fi
1204
1205
                                        \label{\hv@label-2}%
                                   \fi
1206
                                   \ifx\hv@caption@format@temp\@empty\else
 1207
                                        \verb|\expandafter| captions etup| expandafter {\ensuremath{\c hv@caption@format@temp}} % \ensuremath{\c hv@caption@format@temp} % \ensuremath{\c hv@caption@formath@temp} % \en
1208
                                   \fi
1209
                                  \c@figure=\numexpr\c@hv@tempCNTfigB-1\relax
1210
                                   \c@table=\numexpr\c@hv@tempCNTtabB-1\relax
                                   \ifnum#1>\z@
                                                                                % caption on the right
1212
                                        \hv@typeout{doublePage: capAngle=\hvSet@capAngle}%
1213
1214
                                        \ifnum\hvSet@capAngle > \z@
1215
                                              \hspace{\hv@floatCapSep}%
                                             1216
                                                  \abovecaptionskip=0pt% local inside parbox
1217
1218
                                                  \belowcaptionskip=0pt% local inside parbox
                                                  \ifx\relax\hv@shortCap\relax
1219
1220
                                                        \caption{\hv@longCap}%
                                                  \else
1221
                                                         \caption[\hv@shortCap]{\hv@longCap}%
1222
                                                  \fi
1223
                                             }}}%
 1224
                                             1225
1226
                                             \verb|\global| setlength| hv@tempWidthB{\dimexpr\\textwidth-\wd\\hv@rightBox-\hvSet@bindCorrection+lin+\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hvBetwidth-\hv
1227
                                                           oddsidemargin-\hv@floatCapSep\relax}%
1228
                                             \hspace{\hv@floatCapSep}%
                                              \rlap{\parbox[b][\dimexpr\ht\hv@rightBox+\dp\hv@rightBox][\hv@@capVPos]{\hv@tempWidthB}{%
1229
1230
                                                  \abovecaptionskip=0pt% local inside parbox
                                                  \belowcaptionskip=0pt% local inside parbox
1231
                                                   \ifx\hv@shortCap\@empty
                                                        \caption{\hv@longCap}%
1233
                                                        \caption[\hv@shortCap]{\hv@longCap}%
1235
1236
                                                  \fi
                                             }}%
1237
                                             \ifx\hv@label\ellower=\hv@label\hv@label-cap}\fi
1238
1239
                                        \fi
                                   \else % #1 = 0 caption below
1240
1241
                                        \ifx\relax\hv@shortCap\relax
                                             \caption{\hv@longCap}%
1242
1243
                                        \else
                                             \caption[\hv@shortCap]{\hv@longCap}%
1244
                                        \fi
 1245
                                        1246
1247
                                   \fi
1248
                          \vspace{0pt}%
                          \hv@reset@noverticalSpace
1249
                     \end{\hv@floatType*}
1250
1251
1252
               \newsavebox\hv@boxLeftPage
1253
```

```
\newsavebox\hv@boxRightPage
 1254
 1255
                                % ||1in+evenside --- |1in+oddside ---||
 1256
 1257
 1258
                                \def\do@hvFloat@doublePAGE#1{% image on left and right page with caption on the right
1259
                                          % #1-> 0/1 caption under/right
 1260
                                % \global\setlength\hv@tempWidthA{\the\dimexprlin+\oddsidemargin-\hvSet@bindCorrection}%
                                % \global\setlength\hv@leftPageObjectWidth{\the\dimexpr\paperwidth-lin-\evensidemargin-\
 1262
                                           \label{lem:condition} $$ \operatorname{lem:} \operatorname{l
 1263
                                                                          }\else\hv@floatObject\fi}%
                                           \label{lem:condition} $$\operatorname{cxpandafter}_{\colored{condition}} \exp \operatorname{cxpandafter}_{\colored{condition}} -\operatorname{colored{condition}} $$\operatorname{cxpandafter}_{\colored{condition}} = \operatorname{cxpandafter}_{\colored{condition}} = \operatorname{cxpand
 1264
                                                                          hv@leftPageObjectWidth{} \height}{\usebox\hvObjectBox}}%
                                           \verb|\expandafter\global| expandafter \\ savebox \\ expandafter \\ hv@boxRightPage \\ expandafter \\ \{\clipbox*{lightPage} \\ expandafter \\ \clipbox*{lightPage} \\ expandafter \\ \clipbox*{lightPage} \\ \clipbox*{lig
 1265
                                                                          hv@leftPageObjectWidth{} -\depth{} \width{} \height}{\usebox\hvObjectBox}}%
 1266
                                           \checkoddpage
                                            \ifoddpage
 1267
                                                        \if@twocolumn
  1268
                                                                   \if@firstcolumn
 1269
                                                                              1270
                                                                   \else
 1271
  1272
                                                                              \do@hvFloat@doublePAGECaptionRight{#1}%
                                                                   \fi
 1273
 1274
                                                        \else
 1275
                                                                   \do@hvFloat@doublePAGECaptionRight{#1}%
 1276
                                                        \fi
 1277
                                           \else
                                                        \if@twocolumn
 1278
 1279
                                                                   \if@firstcolumn
                                                                             1280
 1281
                                                                   \else
                                                                             1282
                                                                   \fi
 1283
 1284
                                                        \else
                                                                   1285
                                                        \fi
 1286
 1287
 1288
                                           \endgroup% startet at main macro
 1289
 1290
                                 \def\do@hvFloat@doublePAGECaptionRight#1{% image on left and right page with caption on the right
 1291
                                           % #1-> 0/1 caption under/right
 1292
                                                        \afterpage{%
                                                                   \hfuzz=\maxdimen
 1294
                                                                   \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
                                                                   \ifhv@use0Box
 1296
 1297
                                                                             \global\let \hv0bjectBox\hv0Box
                                                                   \else
 1298
                                                                              \global\savebox\hv0bjectBox{\hv@float0bject}%
 1299
                                                                   \fi
 1300
 1301
                                                                   1302
                                                                   \global\setlength\hv@leftPageObjectWidth{\the\dimexpr\paperwidth-lin-\evensidemargin-\
 1303
                                                                                                hvSet@bindCorrection}%
                                                                   \verb|\clipbox*{0 -\depth{} \hv@leftPageObjectWidth{} \height}{\usebox}\hvObjectBox}|%
 1304
                                                                   \null\newpage\if @twocolumn\null\newpage\fi
                                                                   \expandafter\global\expandafter\savebox\expandafter\hv0bjectBox\expandafter\\ifhv@use0Box\usebox{\
 1306
                                                                                                hv0Box\\ \textbf{else}\\ hv@float0bject\\ \textbf{fi}\\ \%
                                                                   \noindent
 1307
                                                                   \hspace*{\dimexpr-\hv@tempWidthA}%
                                                                   $$ \clipbox*{\the\the\tho(entropy)} $$ \clipbox*{\the\tho(entropy)} $$ \clipbox*{\tho(entropy)} $$ \clipbox*{\th
 1309
 1310
                                                                                         \ifnum#1>0
 1311
 1312
                                                                                                    \medskip
```

```
\ifdim\dp\hv0bjectBox > \z@
1313
                                  \rotatebox[origin=c]{90}{\parbox{\the\dimexpr\ht\hv0bjectBox+\dp\hv0bjectBox}{%
1314
                                     \ifx\relax\hv@shortCap\relax
1315
                                        \captionof{\hv@floatType}{\hv@longCap}%
1316
1317
                                     \else
                                        \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1318
1319
                                     \fi
                                 }}%
1320
                                 \ifx\hv@label\@empty\else\label{\hv@label}\fi
1321
                              \else
1322
                                 1323
                                     \ifx\relax\hv@shortCap\relax
1324
                                        \captionof{\hv@floatType}{\hv@longCap}%
1325
1326
                                     \else
                                         \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1327
                                     \fi
1328
                                 }}%
1329
1330
                                 \ifx\hv@label\end{hv@label}\fi
1331
                       \else% caption not rotated
1332
                           \par\noindent
1333
                           \parbox{\textwidth}{%
1334
                                 \ifx\relax\hv@shortCap\relax
1335
1336
                                     \captionof{\hv@floatType}{\hv@longCap}%
                                 \else
1337
                                     \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1338
                                 \fi
1339
                                 \ifx\hv@label\@empty\else\label{\hv@label}\fi
1340
1341
                              }%
                       \fi
1342
1343
                       \endgroup
                       \newpage\if@twocolumn\null\newpage\fi
1344
1345
            }%
1346
1347
         % || lin+evenside --- |lin+oddside --- ||
1348
         \def\doghvFloat@doubleFULLPAGE#1{\%} image on left and right page with caption before/below/right/after
1350
             % #1-> 0/1 caption under/right
1351
             \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1352
             \ifx\hvSet@capPos\hv@After \global\hv@@capPos=1
1353
1354
             \else
                \ifx\hvSet@capPos\hv@Before \global\hv@@capPos=0
1355
1356
                \else
                    \global\hv@@capPos=2 % other caption type
1357
             \fi\fi
1358
             \checkoddpage
1359
             1360
             1361
                     width of the right side offset
             \verb|\global| setlength| hv@tempWidthB{\dimexpr\\ht\\hvCaptionBox+\\wd\\hvObjectBox+2\\hvSet@bindCorrection}{\%} in the context of th
1362
             \global\setlength\hv@leftPageObjectWidth{\dimexpr\paperwidth-\hvSet@bindCorrection}%
1363
1364
              \savebox\hv@rightBox{\clipbox*{\the\hv@leftPageObjectWidth{} \depth{} \width{} \height}{\usebox\
1365
                  hv0bjectBox}}%
              \expandafter\captionsetup\expandafter{\hv@caption@format}%
1366
1367
             \ifoddpage
                \ifcase\hv@@capPos % =0 Caption before
1368
                    \if@twocolumn
                       \if@firstcolumn
1370
1371
                           \ifhv@twoColumnCaption
                              \set@Normal@Bottom@Caption*
1372
1373
                              \afterpage{\do@hvFloat@doubleFULLPAGE@CaptionBefore}%
                          \else
1374
                              \afterpage{\set@Normal@Bottom@Caption\do@hvFloat@doubleFULLPAGE@CaptionBefore}%
1375
                          \fi
1376
                       \else% \if@firstcolumn
1377
```

```
\set@Normal@Bottom@Caption
1378
            \do@hvFloat@doubleFULLPAGE@CaptionBefore
1379
          \fi
1380
         \else% \if@twocolumn
1381
          \set@Normal@Bottom@Caption
1382
          \do@hvFloat@doubleFULLPAGE@CaptionBefore
1383
1384
         \fi
       \or % =1 Caption after
1385
1386
         \ifhv@twoColumnCaption
          \if@firstcolumn
1387
            \else
1389
            \do@hvFloat@doubleFULLPAGE@CaptionAfterTwoCol
1390
          \fi
1391
1392
         \else
1393
          \if@twocolumn
            \if@firstcolumn
1394
1395
             \afterpage{\do@hvFloat@doubleFULLPAGE@CaptionAfter}%
1396
             \do@hvFloat@doubleFULLPAGE@CaptionAfter
1397
            \fi
1398
          \else
1399
            \do@hvFloat@doubleFULLPAGE@CaptionAfter
1400
1401
          \fi
         \fi
1402
       \else% \ifcase >1 all other Captions
1403
1404
         \if@twocolumn
1405
            1406
1407
            \label{lem:condition} $$\do@hvFloat@doubleFULLPAGE@CaptionOther{#1}% $$
1408
          \fi
1409
         \else % \if@twocolumn
1410
          \do@hvFloat@doubleFULLPAGE@CaptionOther{#1}%
1411
         \fi
1412
       \fi% \ifcase
1413
      \else% we have an even page
1414
       \ifcase\hv@@capPos% Before
1415
         \if@twocolumn
1416
          \if@firstcolumn
1417
            \ifhv@twoColumnCaption
1418
1419
             \afterpage{\afterpage\set@Normal@Bottom@Caption*\afterpage{\
                  do@hvFloat@doubleFULLPAGE@CaptionBefore{#1}}}%
1420
            \else
             \afterpage{\afterpage{\set@Normal@Bottom@Caption\
1421
                  do@hvFloat@doubleFULLPAGE@CaptionBefore{#1}}}}%
            \fi
1422
          \else
1423
            1424
1425
          \fi
         \else% \if@twocolumn
1426
          \afterpage{\set@Normal@Bottom@Caption\do@hvFloat@doubleFULLPAGE@CaptionBefore}%
1427
1428
         \fi
       \or % capPos after
1429
1430
         \if@twocolumn
          \if@firstcolumn
1431
1432
            \ifhv@twoColumnCaption
             1433
1434
            \else
             1435
1436
            \fi
          \else
1437
            \ifhv@twoColumnCaption
1438
             1439
1440
             1441
1442
```

```
\fi
1443
                              \else% \if@twocolumn
1444
                                   1445
                              \fi
1446
1447
                        \else % \ifcase Any other caption
                              \if@twocolumn
1448
                                   \if@firstcolumn
1449
                                        1450
                                   \else
1451
                                        \afterpage{\do@hvFloat@doubleFULLPAGE@CaptionOther{#1}}}%
1452
                                  \fi
1453
                              \else
1454
                                   \afterpage{\do@hvFloat@doubleFULLPAGE@CaptionOther{#1}}%
1455
                              \fi
1456
                         \fi% \ifcase
1457
1458
                   \fi% main ifoddpage
                   \endgroup% started at main macro \hvFloat
1459
1460
1461
               \def\set@Normal@Bottom@Caption{\@ifnextchar*\set@Normal@Bottom@CaptionStar\set@Normal@Bottom@Caption@}
1462
              \def\set@Normal@Bottom@Caption@{%
1463
                        \begin{\hv@floatType}[!b]
1464
                              \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1465
                              \ifhv@separatorLine\drawSepLine\fi
1466
                                1467
                              \ifx\hv@shortCap\@empty
1468
1469
                                   \captionof{\hv@floatType}{\hv@longCap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\cap}{\
                              \else
1470
                                   \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1471
                              \fi
1472
1473
                              \ifx\hv@label\@empty\else\label{\hv@label-cap}\fi
                        \end{\hv@floatType}%
1474
1475
               \def\set@Normal@Bottom@CaptionStar*{%
1476
                        \begin{\hv@floatType*}[!b]
1477
                              \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1478
                              \ifhv@separatorLine\drawSepLine\fi
1479
                                 \expandafter\captionsetup\expandafter{\hv@caption@format}%
1480
                              \ifx\hv@shortCap\@empty
1481
1482
                                  \captionof{\hv@floatType}{\hv@longCap}%
                              \else
1483
1484
                                   \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1485
1486
                              \  \ifx\hv@label\end{\hv@label-cap}\fi
                        \end{\hv@floatType*}%
1487
1489
               \def\do@hvFloat@doubleFULLPAGE@CaptionBefore{%
1490
                   \afterpage{%
1491
1492
                         \hfuzz=\maxdimen
                        \global\savebox{\hv0bjectBox}{\ifhv@use0Box\usebox{\hv0Box}\else\hv@float0bject\fi}%
1493
                        \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}% no
1494
                                      interlineskip
                         \hspace*{\the\dimexpr-\evensidemargin-\parindent-lin}%
1495
                        \thispagestyle{empty}%
1496
                        \ifx\hv@floatType\hv@figure
1497
1498
                              \global\refstepcounter{hv@tempCNTfigB}%
                        \else
1499
                              \verb|\global| refstep counter \{ hv@tempCNT tabB \} \%
                                                                                                                                           before caption
                        \fi
1501
1502
                        \verb|\expandafter\\| abel\\| expandafter\\| hv@label\\| %
                        \verb|\clipbox*{0 0 $$ \the\hv@leftPageObjectWidth{} \height}{\usebox\hvObjectBox}} % $$ \clipbox*{0 0 $$ \the\hv@leftPageObjectWidth{} \height}{\liber(\clipbox)} $$ \clipbox*{0 0 0 0} $$ \clipbox*{0 0 0 0 0} $$ \clipbox*{0 0 0 0 0} $$ \clipbox*{0 0 0 0} $$ \clipbox*{0 0 0 0 0} $
1503
1504
                              \if@twocolumn\newpage\null\newpage\fi
1505
                              1506
1507
                              \thispagestyle{empty}%
                              \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}%
1508
```

```
-0.5\paperheight+0.5\ht\hv0bjectBox
1509
         \hspace*{\hv@tempWidthA}%
         1510
         1511
             \hv0bjectBox}%
         \ifx\hv@floatType\hv@figure
1512
1513
           \global\refstepcounter{hv@tempCNTfigA}%
         \else
1514
           \global\refstepcounter{hv@tempCNTtabA}% before caption
1515
         \fi
1516
         \expandafter\label\expandafter{\hv@label-2}%
1517
         \newpage\if@twocolumn\null\newpage\fi
1518
1519
1520
1521
1522
    \newif\ifhv@temp
1523
1524
    \def\do@hvFloat@doubleFULLPAGE@CaptionAfter{%
      \afterpage{%
1525
       \hfuzz=\maxdimen
       \global\savebox{\hv0bjectBox}{\ifhv@use0Box\usebox{\hv0Box}\else\hv@float0bject\fi}%
1527
       \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}% no
1528
           interlineskip
       \hspace*{\the\dimexpr-\evensidemargin-\parindent-lin}%
       \thispagestyle{empty}%
1530
       $$ \clipbox*{0 $$ \theta^hv0bjectBox{} \theta^hv@leftPage0bjectWidth{} \theta^hv0bjectBox}{\usebox}$$
1531
            hv0bjectBox}%
1532
       \ifx\hv@floatType\hv@figure
1533
         \refstepcounter{hv@tempCNTfigA}%
       \else
1534
1535
         \refstepcounter{hv@tempCNTtabA}% before caption
       \fi
1536
1537
       \ifx\hv@label\@empty\else\label{\hv@label}\fi
        \afterpage{%
1538
         \newpage\if@twocolumn\null\newpage\fi
1539
         1540
         \thispagestyle{empty}%
         \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}%
1542
             -0.5\paperheight+0.5\ht\hvObjectBox
1543
         \hspace*{\hv@tempWidthA}%
         1544
1545
         \hv0bjectBox}%
1546
         \ifx\hv@floatType\hv@figure
           \refstepcounter{hv@tempCNTfigB}%
1547
         \else
           \refstepcounter{hv@tempCNTtabB}% before caption
1549
1550
         \expandafter\label\expandafter{\hv@label-2}%
1551
1552
         \newpage\if@twocolumn\null\newpage\fi
         \begin{\hv@floatType}[!b]
1553
           \ifhv@separatorLine\drawSepLine\fi
1554
1555
           \expandafter\captionsetup\expandafter{\hv@caption@format}%
           \ifx\hv@shortCap\@empty
1556
1557
            \captionof{\hv@floatType}{\hv@longCap}%
           \else
1558
1559
            \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1560
           1561
         \end{\hv@floatType}%
1562
1563
     }%}%
1564
1565
    \def\do@hvFloat@doubleFULLPAGE@CaptionAfterTwoCol{%
1566
1567
       1568
       \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}% no
1569
```

```
interlineskip
1570
                       \hspace*{\the\dimexpr-\evensidemargin-\parindent-lin}%
                       \thispagestyle{empty}%
1571
                       \ifx\hv@floatType\hv@figure
1572
                           \refstepcounter{hv@tempCNTfigA}%
1573
                       \else
1574
1575
                           \refstepcounter{hv@tempCNTtabA}% before caption
                       \fi
1576
                       \ifx\hv@label\end{hv@label}\fi
1577
                       \verb|\clipbox*{0 0 $$ \the\hv@leftPageObjectWidth{} \height}{\usebox\hvObjectBox}$ 
1578
                            \newpage\if@twocolumn\null\newpage\fi
                            \global\savebox{\hv0bjectBox}{\ifhv@use0Box\usebox{\hv0Box}\else\hv@float0bject\fi}%
1580
1581
                            \thispagestyle{empty}%
                            \verb|\vspace*{\the \dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\\lineskip}% | \dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lineskip+2\\lines
1582
                                         -0.5\paperheight+0.5\ht\hv0bjectBox
1583
                            \hspace*{\hv@tempWidthA}%
                            \global\savebox{\hv0bjectBox}{\ifhv@use0Box\usebox{\hv0Box}\else\hv@float0bject\fi}%
1584
1585
                            \label{limits} $$ \clipbox*{\theta\theta\thetaftPageObjectWidth{} \dp\hvObjectBox{} \wd\hvObjectBox{} \ht\hvObjectBox}{\usebox} $$
                                         \hv0bjectBox}%
                            \ifx\hv@floatType\hv@figure
1586
                                \refstepcounter{hv@tempCNTfigB}%
1587
1588
                                \refstepcounter{hv@tempCNTtabB}% before caption
1589
                            \fi
                            \ifx\hv@label\@empty\else\label{hv@label-2}\fi
1591
                            \newpage
1592
1593
                            \begin{\hv@floatType*}[!b]
                                 \hv@twoColumnCaptiontrue
1594
1595
                                 \ifhv@separatorLine\drawSepLine\fi
                                   \expandafter\captionsetup\expandafter{\hv@caption@format}%
1596
1597
                                 \ifx\hv@shortCap\@empty
                                     \captionof{\hv@floatType}{\hv@longCap}%
1598
1599
                                 \else
                                     \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1600
                                 \fi
1601
                                1602
                            \end{\hv@floatType*}%
1603
                 }%
1604
1605
1606
             \def\do@hvFloat@doubleFULLPAGE@CaptionOther#1{%
1607
                  \afterpage{%
1608
                       \hfuzz=\maxdimen
1609
                       \global\savebox{\hv0bjectBox}{\ifhv@use0Box\usebox{\hv0Box}\else\hv@float0bject\fi}%
1610
                       \thispagestyle{empty}%
1611
                       \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}%
                                                                                                                                                                                                                                                                    -0.51
                                    paperheight+0.5\ht\hv0bjectBox
                       \verb|\hspace*{\the\dimexpr-\evensidemargin-\parindent-lin}%|
1613
                       1614
1615
                       \ifx\hv@floatType\hv@figure
1616
                            \refstepcounter{hv@tempCNTfigA}%
1617
1618
                       \else
                            \refstepcounter{hv@tempCNTtabA}% before caption
1619
                       \fi
1620
                       \label{\hv@label}%
1621
1622
                       \afterpage{%
                           1623
                            \thispagestyle{empty}%
1625
1626
                            \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}%
                                         -0.5\paperheight+0.5\ht\hv0bjectBox
                            \hspace*{\hv@tempWidthA}%
1627
                            \label{linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_
1628
                                        hv0biectBox}%
                            1629
                                 \refstepcounter{hv@tempCNTfigB}%
1630
```

```
\else
1631
                                                                   \refstepcounter{hv@tempCNTtabB}%
                                                                                                                                                                                                                                          before caption
1632
                                                        \fi
1633
                                                        \expandafter\label\expandafter{\hv@label-2}%
1634
                                                        1635
                                                        \ifnum#1 > 0\relax
                                                                                                                                                          % rotation with 90°
1636
1637
                                                                        \setlength\hv@tempWidthB{\dimexpr\ht\hvCaptionBox+\wd\hvObjectBox+2\hvSet@bindCorrection}%
                                                                  \ifdim\hv@tempWidthB < 2\paperwidth
1638
1639
                                                                            \label{lem:local_condition} $$ \operatorname{local_condition} {90}_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(c)_{\mathbf{0.8}}(
                                                                                           \expandafter\captionsetup\expandafter{\hv@caption@format}%
1640
                                                                                     \fint {\bf ifx} \end{center} \
                                                                                               \captionof{\hv@floatType}{\hv@longCap}%
1642
1643
1644
                                                                                              \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
                                                                                    \fi
1645
1646
                                                                           }}}% rotatebox
                                                                            \ifx\hv@label\end{hv@label-cap}\fi
1647
1648
                                                                   \else% ifdim: no space left on page
                                                                             \displaystyle \begin{array}{l} \mathbf{0.5} \\ \mathbf{0.5} \\ \mathbf{0.5} \\ \mathbf{0.5} \\ \mathbf{0.5} \\ \mathbf{0.5} \\ \mathbf{0.05} \\ \mathbf{0
1649
                                                                                     \parbox{0.8\textwidth}{%
1650
                                                                                               \ifx\hv@shortCap\@empty
1651
                                                                                                        \captionof{\hv@floatType}{\hv@longCap}%
1652
1653
                                                                                                         \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1654
                                                                                               \fi
1655
1656
                                                                                    }%
                                                                                     \ifx\hv@label\@empty\else\label{\hv@label-cap}\fi
1657
1658
                                                                           \endminipage}}}%
                                                                  \fi
1659
1660
                                                        \else% ifnum, caption not rotated, under or over the right page
                                                                  \setlength\hv@tempWidthA{\dimexpr\paperheight-\ht\hv0bjectBox}%
1661
1662
                                                                  \ifdim\hv@tempWidthA > \ht\hvCaptionBox
                                                                  \else
1663
                                                                             \put(\the\dimexpr1.5\paperwidth-\wd\hvObjectBox-\hvSet@bindCorrection,\the\dimexpr\ht\
1664
                                                                                                    hvCaptionBox + \label{lowcaptionskip} $$ hvCaptionBox + \label{lowcaptionskip} {\mathbf pt}[c] {\mathbf pt}[c] $$ hox{\textwidth}{$} $$ hvCaptionBox + \label{lowcaptionskip} $$ hox = \label{lowcaptionBox} $$ hox = \label{lowcap
                                                                                            \expandafter\captionsetup\expandafter{\hv@caption@format}%
                                                                                     \ifx\hv@shortCap\@empty
1666
                                                                                               \captionof{\hv@floatType}{\hv@longCap}%
1667
                                                                                    \else
1668
                                                                                               \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1669
                                                                                    \fi
1670
                                                                           }}}%
1671
1672
                                                                            \ifx\hv@label\end{hv@label-cap}\fi
1673
                                                         \fi% end \ifnum#1>0
1674
                                                        \newpage \if @two column \null \newpage \fi
1675
                                   }%
1677
1678
1679
1680
1681
                             \def\setBottomCaption{%
                                     \begin{\hv@floatType}[!b]%
1682
1683
                                     \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
                                    \ifhv@separatorLine\drawSepLine\fi
1684
                                    \par
1685
                                     \usebox\hvCaptionBox
1686
                                    \end{\hv@floatType}%
1687
1688
1689
                            \def\setPageObject{%
1690
                                     \ifhv@star
1691
                                               \begin{\hv@floatType*}[p]%
1692
1693
                                               \begin{\hv@floatType}[p]%
1694
1695
```

```
\hfuzz=\maxdimen
1696
        \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1697
        \ifhv@FULLPAGE
1698
          \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep}%-0.5\baselineskip%
1699
1700
          \checkoddpage
          \if@twoside
1701
1702
            \ifoddpage
              \hspace*{\the\dimexpr-\oddsidemargin-\parindent-lin}%
1703
1704
            \else
              \hspace*{\the\dimexpr-\evensidemargin-\parindent-lin}%
1705
            \fi
1706
          \else
1707
            \hspace*{\the\dimexpr-\oddsidemargin-\parindent-lin}%
1708
          \fi
1709
1710
          \AtBeginShipoutNext{\thispagestyle{empty}}%
1711
          \usebox\hv0bjectBox
1712
        \else
1713
          \usebox\hv0bjectBox
        \fi
1714
1715
        \ifhv@star
          \end{\hv@floatType*}%
1716
1717
          \end{\hv@floatType}%
1718
1719
        \fi
1720
1721
1722
      \ExplSyntax0n
1723
      \def\getMultiCaptionAndLabel{%
1724
        \global\sbox\hvCaptionBox{\minipage[b]{\linewidth}%
1725
1726
          \captionsetup{aboveskip=\z@,belowskip=\z@,position=below,parbox=none}%,skip=-lex}%
          \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1727
1728
          \parskip=-0.5\baselineskip
          \hv@cntb=\clist_count:N\l_clist_Type
1729
1730
          \advance\hv@cntb by \@ne
1731
          \hv@cnta=1
          \loop
1732
            \edef\@captype{\clist_item:Nn\l_clist_Type{\hv@cnta}}%
1733
1734
            \edef\@tempa{\clist_item:Nn\l_clist_LofCaption{\hv@cnta}}%
1735
            \ifx\@tempa\@empty
1736
              \caption{\clist_item:Nn\l_clist_Caption{\hv@cnta}}%
1737
            \else
              \expandafter\caption\expandafter[\@tempa]{\clist item:Nn\l clist Caption{\hv@cnta}}%
1738
1739
            \fi
            \edef\@tempa{\clist item:Nn\l clist Label{\hv@cnta}}%
1740
            \ifx\@tempa\@empty
1742
              \label \expandafter \clist\_item: Nn\l\_clist\_Label \hv@cnta\}-cap \fi
            \advance\hv@cnta by \@ne
1744
1745
          \ifnum\hv@cnta<\hv@cntb
1746
          \repeat
          \vspace{-\baselineskip}% no vspace at the end
1747
        \verb|\endminipage|| \%
1748
1749
1750
      \def\getMultiObjectAndLabel{%
1751
1752
        \global\sbox\hv0bjectBox{%
1753
          \ifhv@vFill
1754
            \minipage[b][\textheight][s]{\columnwidth}%
          \else
1755
1756
            \minipage{\columnwidth}%
          \fi
1757
          \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1758
          \ifx\hvSet@objectPos\hv@Right\raggedleft\else
1759
            \ifx\hvSet@objectPos\hv@Left\raggedleft\else
1760
              \ifx\hvSet@objectPos\hv@Center\centering
1761
          \fi\fi\fi
1762
```

```
\hv@cntb=\clist_count:N\l_clist_Type
1763
                           \advance\hv@cntb by \@ne
1764
                           \hv@cnta=1
1765
1766
                           \loop
                                 \label{lem:nnl_clist_object{hv@cnta}} $$ \def^{\theta}:Nn\l_clist_object{hv@cnta}} $$
1767
                                 \ifhv@objectFrame\frame{\@temp}\else\@temp\fi
1768
1769
                                 \ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ens
                                 \label{lem:nnl_clist_Type{hv@cnta}} $$ \end{figure} $$ \operatorname{Int}_{\operatorname{n}l_clist_Type{hv@cnta}} $$
1770
1771
                                 \edef\@captype{hv@p\@tempb}%
                                 \ifx\@tempa\@empty
1772
                                 \else
1773
                                      \refstepcounter{\@captvpe}%
1774
                                      \expandafter\label\expandafter{\clist_item:Nn\l_clist_Label{\hv@cnta}}%
                                 \fi
1776
1777
                                 1778
                                 \advance\hv@cnta by \@ne
                           \ifnum\hv@cnta<\hv@cntb
1779
1780
                                 \ifhv@vFill\vfill\fi
                           \repeat
1781
1782
                     \endminipage}%
1783
                \def\getMultiSubCaptionAndLabel{%
1784
                     \qlobal\sbox\hvCaptionBox{%
1785
1786
                           \minipage{\linewidth}%
                           \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1787
                           \setlength\belowcaptionskip{5pt}%
1788
1789
                           \setlength\abovecaptionskip{0pt}%
                           \xdef\@captype{\clist_item:Nn\l_clist_Type{1}}\%$$ the same for all subfloats
1790
1791
                           \edef\@tempa{\clist_item:Nn\l_clist_LofCaption{1}}%
                           \ifx\@tempa\@empty
1792
1793
                                 \caption{\clist_item:Nn\l_clist_Caption{1}}%
                           \else
1794
1795
                                 \expandafter\caption\expandafter[\@tempa]{\clist_item:Nn\l_clist_Caption{1}}%
                           \fi
1796
1797
                           \ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ens
                           \ifx\@tempa\@empty\else\expandafter\label\expandafter{\clist_item:Nn\l_clist_Label{1}-cap}\fi
1798
                     \endminipage}%
1799
1800
1801
                \def\getMultiSubObjectAndLabel{%
1802
                     \global\sbox\hv0bjectBox{%
1803
1804
                           \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
                           \ifhv@vFill
1805
1806
                                 \minipage[b][\textheight][s]{\columnwidth}%
                                 \captionsetup{belowskip=0pt}%
1807
                           \else
1808
                                 \minipage{\columnwidth}%
1809
                           \fi
                              \ifx\hv@subcaption@format\@empty\else
1811
1812
                                    1813
                                                                                                     {\hv@subcaption@format}%
1814
1815
                           \ifx\hvSet@objectPos\hv@Right\raggedleft\else
1816
1817
                                 \ifx\hvSet@objectPos\hv@Left\raggedleft\else
                                      \ifx\hvSet@objectPos\hv@Center\centering
1818
1819
                           \fi\fi\fi
                           \hv@cntb=\clist_count:N\l_clist_Caption
1820
1821
                           \advance\hv@cntb by \@ne
                           \hv@cnta=2
1822
1823
                           \label{lem:Nnlclist_Type} $$ \end{array} $$ \end{array} $$ the same for all subfloats $$ \end{array} $$
                           \ifx\@tempa\@empty
1824
1825
                                    \refstepcounter{\@captype}%
1826
1827
                                    \expandafter\label\expandafter{\@tempa}%
                           \fi
1828
1829
                           \loop
```

```
\def\@temp{\clist item:Nn\l clist Object{\hv@cnta}}%
1830
                                                       \ifhv@objectFrame\frame{\@temp}\else\@temp\fi
1831
1832
                                                       \begingroup
                                                       \edef\@tempa{\clist_item:Nn\l_clist_LofCaption{\hv@cnta}}%
1833
1834
                                                       \ifx\ensuremath{\texttt{ifx}\ensuremath{\texttt{atempa}\ensuremath{\texttt{dempty}}}
                                                              \subcaption{\clist_item:Nn\l_clist_Caption{\hv@cnta}}%
1835
1836
                                                       \else
                                                               \label{lem:nnl_clist_caption} $$ \operatorname{cont} \operatorname{c
1837
1838
                                                       \fi
                                                       \label{$\endath} $$ \endath $$ \endamn $$ \endath $$ \endath $$ \endath $$ \endath $$ \endath $$ \endamn $$ \endath $$ 
1839
                                                       \ifx\ensuremath{\mbox{dempty}}
                                                       \else
1841
                                                                \expandafter\label\expandafter{\clist_item:Nn\l_clist_Label{\hv@cnta}}%
1842
                                                       \fi
1843
                                                       \endgroup
1844
                                                       \verb|\ifnum| hv@cnta<| clist\_count: N\l\_clist\_Type\\| par\hv@vskip\\| fi
1845
                                                       \advance\hv@cnta by \@ne
1846
1847
                                                      \ifnum\hv@cnta<\hv@cntb
                                                      \ifhv@vFill\vfill\fi
1848
1849
                                             \repeat
                                             \edef\@tempa{\clist_item:Nn\l_clist_Label{1}}%
                                                                                                                                                                                                                                                                                 the main label at the end
1850
                                             \fint \mathbf{x}\ @tempa\@empty
1851
                                             \else
1852
1853
                                                       \edef\@temp{hv@p\@captype}%
                                                      \refstepcounter{\@temp}%
1854
                                                       \expandafter\label\expandafter{\@tempa}%
1855
                                             \fi
1856
1857
                                   \endminipage}%
1858
                          \ExplSyntax0ff
1859
1860
                          \def\getSingleCaptionAndLabel{%
1861
1862
                                   \global\sbox\hvCaptionBox{\minipage{\linewidth}%
                                             \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1863
                                             \setlength\belowcaptionskip{5pt}%
1864
1865
                                             \setlength\abovecaptionskip{0pt}%
                                             \edef\@captype{\hv@floatType}%
1866
                                             \verb|\expandafter| if x \exp and after| relax \land w@shortCap| relax|
1867
                                                                \caption{\hv@longCap}%
1868
1869
                                             \else
                                                                \caption[\hv@shortCap]{\hv@longCap}%
1870
                                             \fi
1871
                                   \ifx\hv@label\@empty\else\label{\hv@label-cap}\fi
1872
1873
                                   \endminipage}%
1874
1875
                                                                                                                                                                             first caption, then object #1=\hv@floatType
                            \def\set@caption@object#1{%
1876
                                   \ifhv@multiFloat
1877
                                             \setcounter{hv@pfigure}{\value{figure}}%
1878
1879
                                             \setcounter{hv@ptable}{\value{table}}%
                                             \getMultiCaptionAndLabel
1880
1881
                                   \else
1882
                                             \ifhv@subFloat
                                                       \setcounter{hv@pfigure}{\value{figure}}%
1883
1884
                                                       \setcounter{hv@ptable}{\value{table}}%
                                                      \getMultiSubCaptionAndLabel
1885
1886
                                             \else
1887
                                                      \getSingleCaptionAndLabel
1888
                                             \fi
                                   \fi
1889
1890
                                   \ensuremath{\mbox{\sf edef}}\ensuremath{\mbox{\sf @captype}{hv@p#1}}\%
                                   \ifhv@multiFloat
1891
                                             \getMultiObjectAndLabel
1892
                                   \else
1893
                                             \ifhv@subFloat
1894
                                                      \getMultiSubObjectAndLabel
1895
1896
```

```
\global\sbox\hv0bjectBox{%
1897
1898
            \refstepcounter{\@captype}%
           1899
           \expandafter\ifx\expandafter\relax\hv@label\relax
1900
1901
             \verb|\expandafter\\| abel\\| expandafter\\| hv@label\\| %
1902
           \fi
1903
          }%
1904
        \fi
1905
      \fi
1906
1907
1908
     \endinput
```