# Package hvfloat Controlling captions, fullpage and doublepage floats ver 2.32

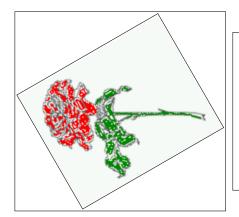
Herbert Voß\*

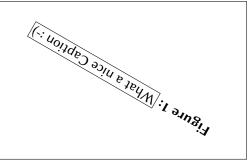
June 29, 2021

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}
```

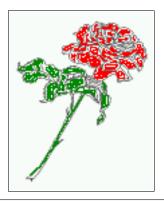


Fig. 2

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.

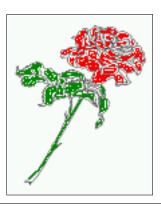
## 4 Caption width

#### 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

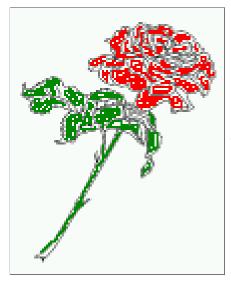


**Figure 3:** Default caption width setting, which is the natural width with respect to the current linewidth.

!! 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}
```

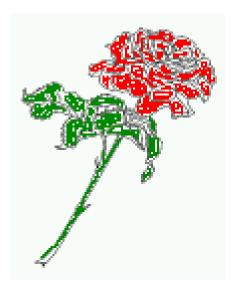
Fig. 5



**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

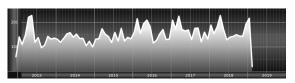


**Figure 6:** Caption right beside with a width setting of 0.9\linewidth which is too big for this example and therefore corrected by the macro to the maximal width.

#### 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:

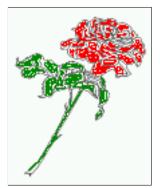


Figure 8: Caption beside with a width of the given object height which may be a problem if it is a very small object.

```
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

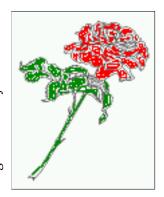
#### Code for figure 10:

```
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

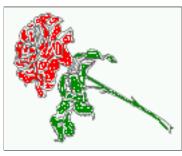


Figure 11: Caption vertically centered right beside the float with a caption width of the height of the image and a rotation of the caption and the object.

# 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:

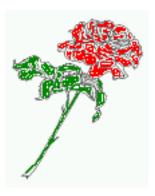
```
hvFloat[capPos=inner]{figure}{\includegraphics{images/rose}}%

[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.



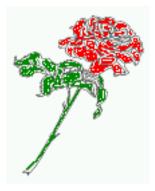
Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! 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

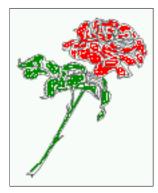
The code for figure 16:

```
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

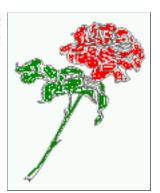
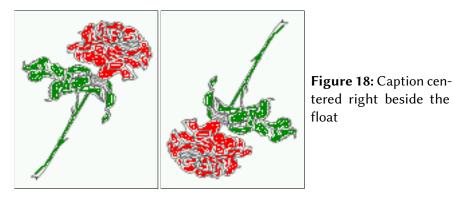


Fig. 17

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

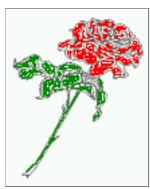


Figure 19

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.

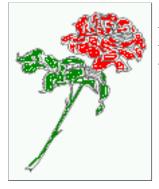
### 9 Horizontal Position of the Float

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

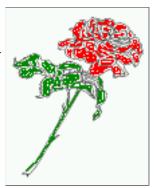


Fig. 21

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

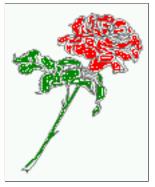


Fig. 22

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

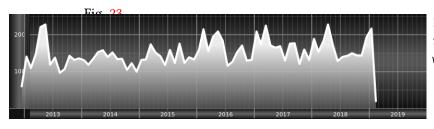
the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

#### 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}
```

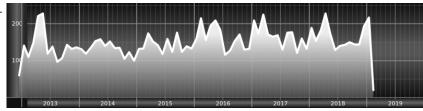


**Figure 23:** Caption at top right beside the float and object position left and the option wide.

#### 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.



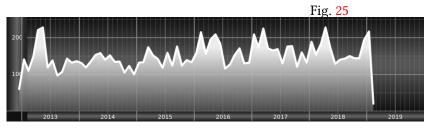
#### For a twosided document it will place the object always in the margin.

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}
```

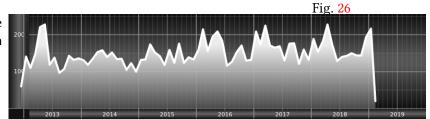
**Figure 25:** Caption at top and inner beside the float and object position right and the option wide.



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}

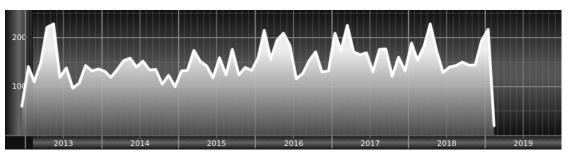


Fig. 27
Figure 27:
Caption at top inner beside the float and object position right and the option wide.

#### 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.

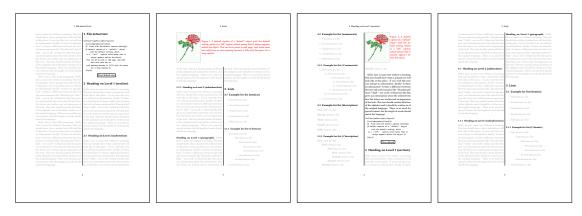


Figure 28: Output of default1s2c (pages 2 -5)

## 12 Full Page Width in Landscape Mode

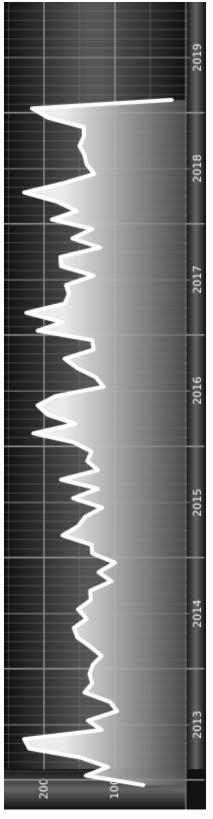
If you do not want to load the package lscape (or pdflscape) you can use the floatPos=p option to put the image on an own page and rotated by 90 degrees (figure 29).

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

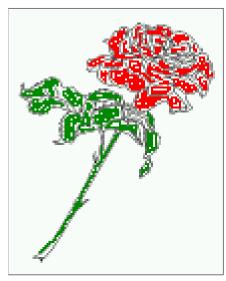
Sometimes it is better to put a "float" in a specific position of the page. This is possible with the nonfloat package and the keyword nonFloat.

```
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
```

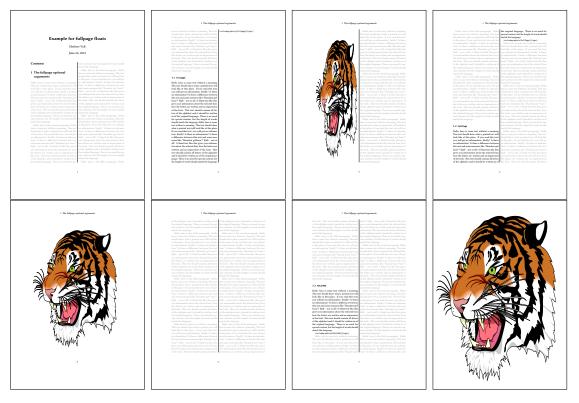


Figure 32: Output of fullpage1s2c (pages 1-8)

- 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.

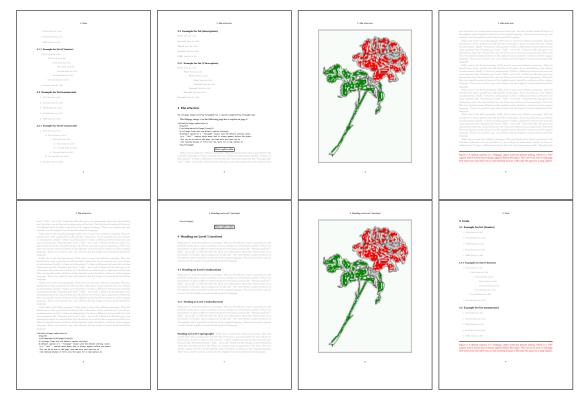


Figure 34: Output of after1s1c (pages 2-9)

#### 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}

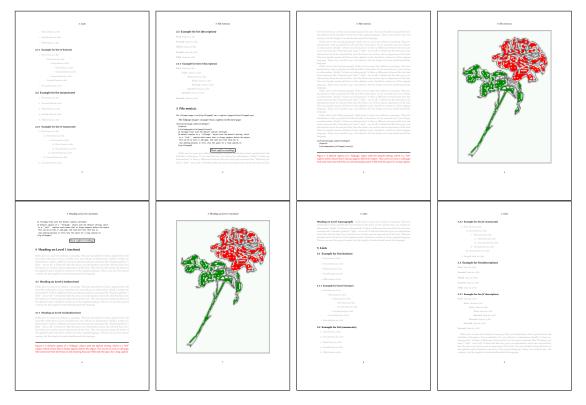


Figure 35: Output of even1s1c (pages 2-9)

#### 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}

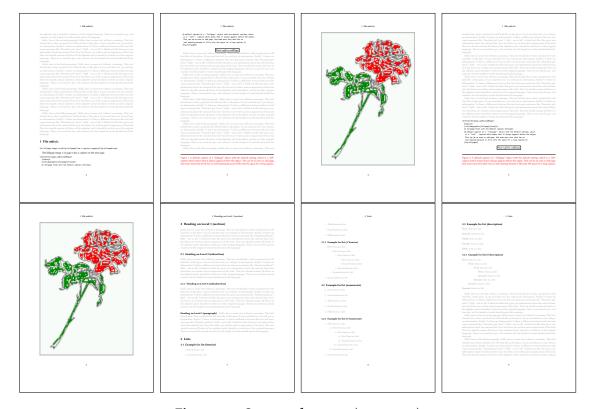


Figure 36: Output of odd1s1c (pages 2-9)

#### 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}

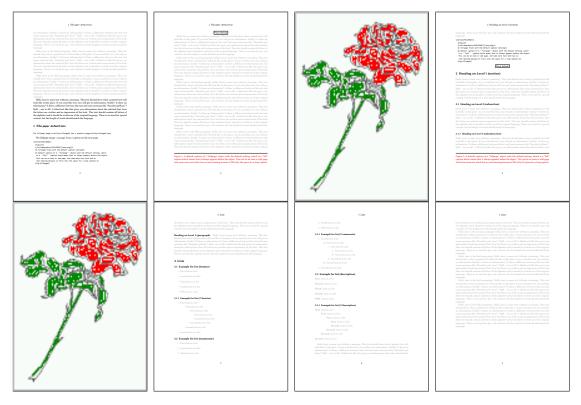


Figure 37: Output of paper-default1s1c (pages 2-9)

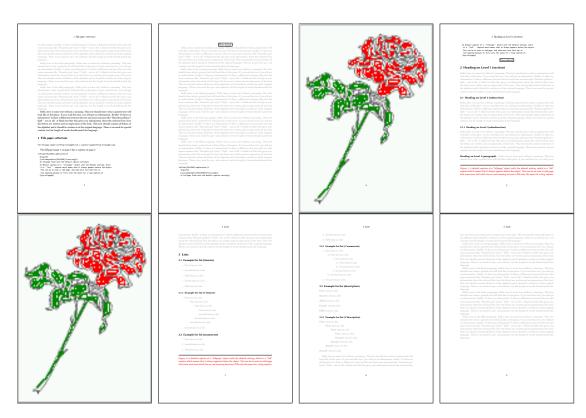


Figure 38: Output of paper-after1s1c (pages 2-9)

#### 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

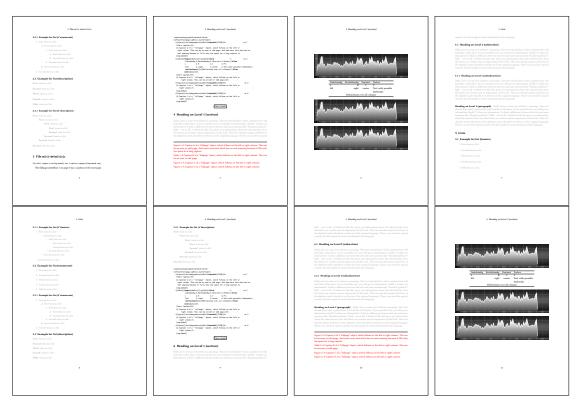
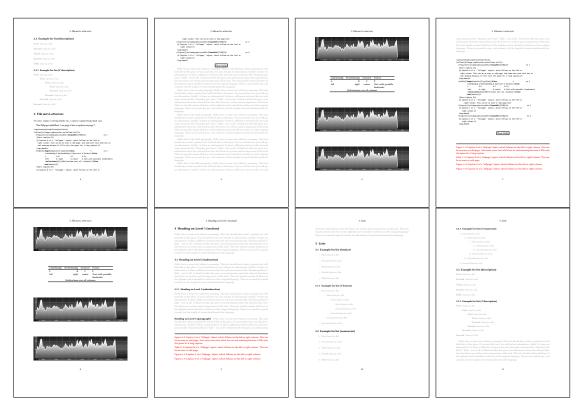


Figure 39: Output of multi-default1s1c (pages 4-11)



**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}
```

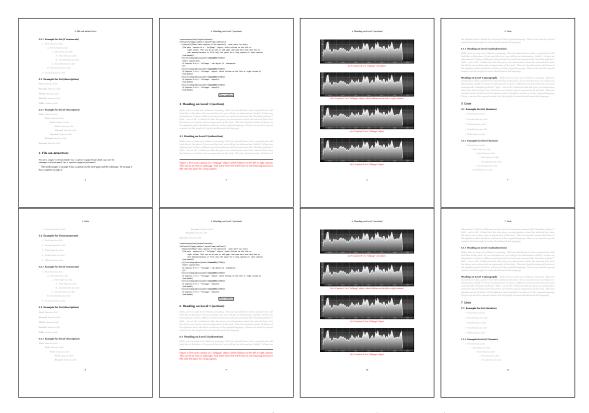


Figure 41: Output of sub-default1s1c (pages 4-11)

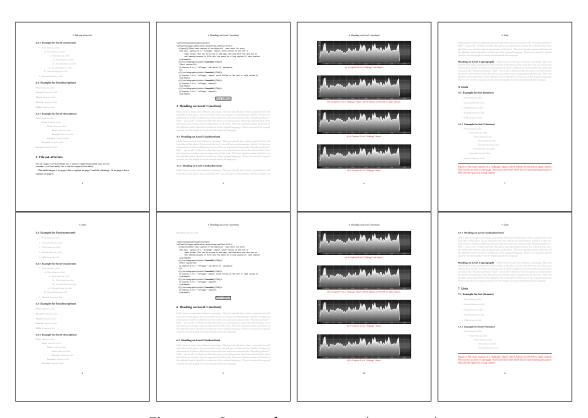


Figure 42: Output of sub-after1s1c (pages 4–11)

# 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).

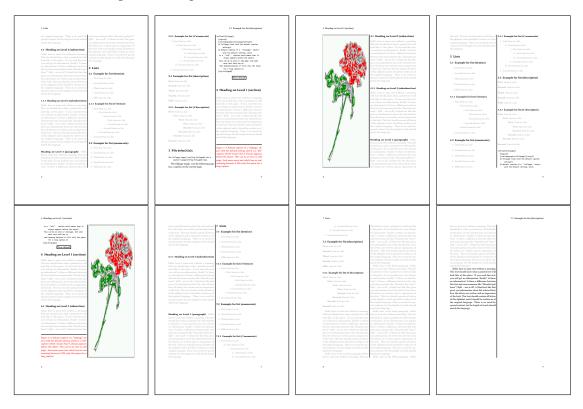


Figure 43: Output of default2s2c (pages 2-9)

```
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).

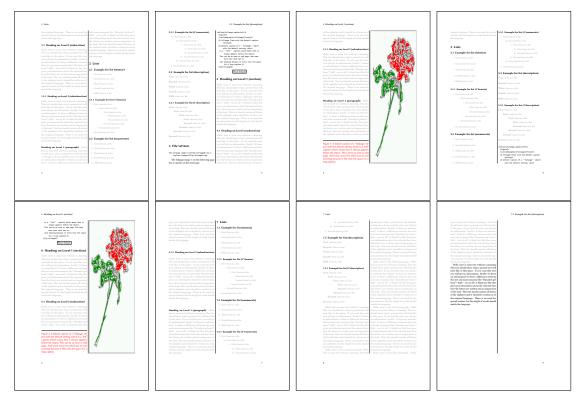


Figure 44: Output of left2s2c (pages 2-9)

#### 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.

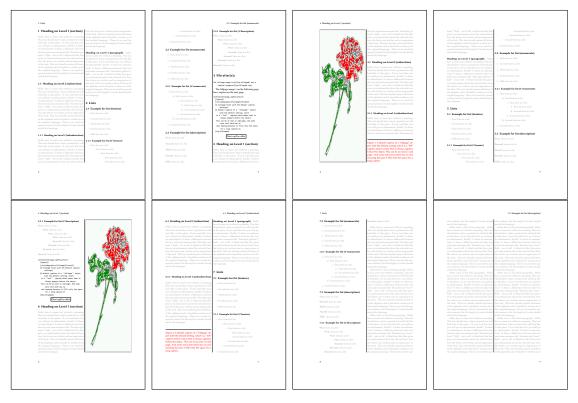
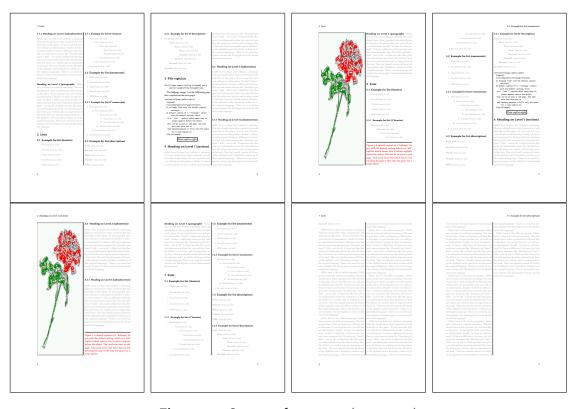


Figure 45: Output of after2s2c (pages 2–9)



**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.

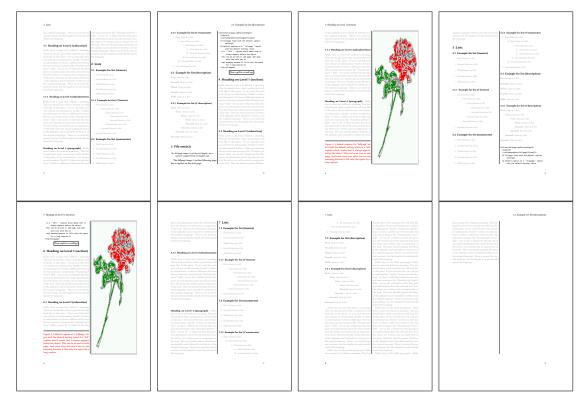


Figure 47: Output of even2s2c (pages 2-9)

## 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}

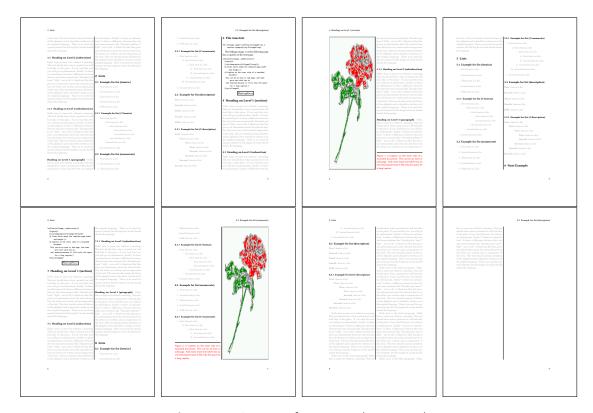


Figure 49: Output of inner2s2c (pages 2-9)

## 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}

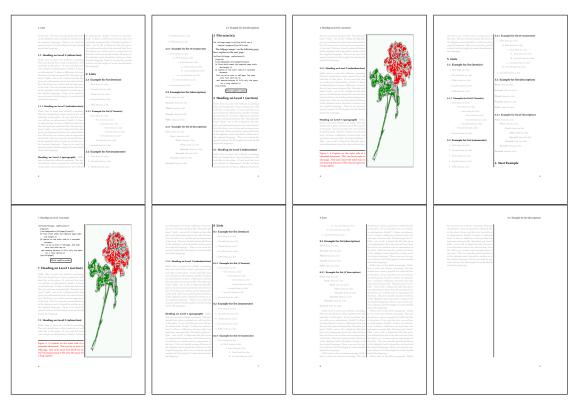


Figure 50: Output of outer2s2c (pages 2-9)

## 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}

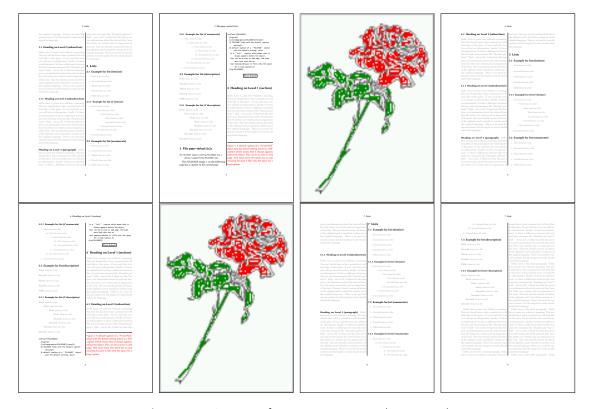


Figure 51: Output of paper-default2s2c (pages 2-9)

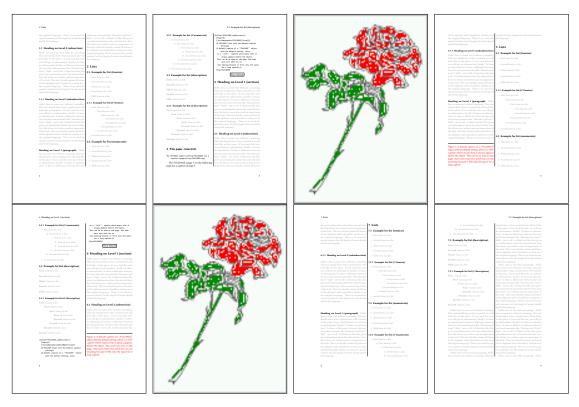


Figure 52: Output of paper-inner2s2c (pages 2-9)

#### 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.

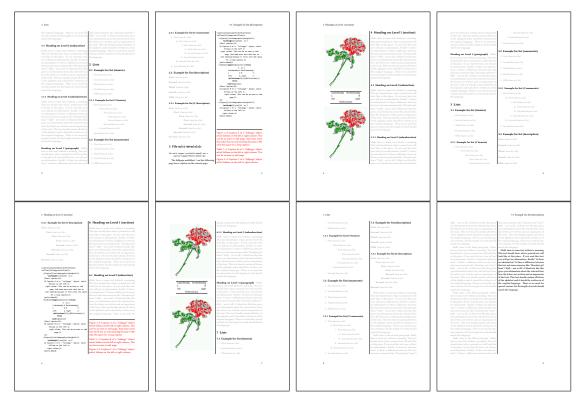


Figure 53: Output of multi-default2s2c (pages 2-9)

# 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}
```

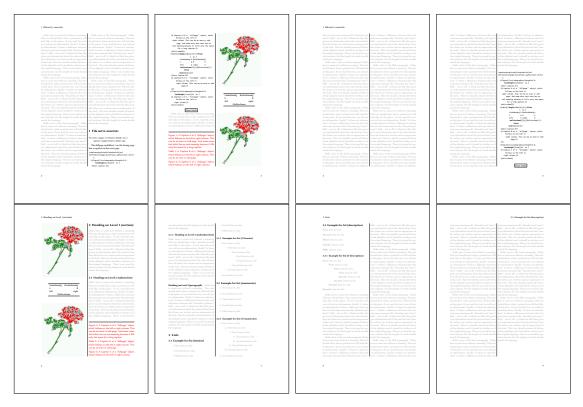


Figure 54: Output of multi-inner2s2c (pages 2-9)

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).

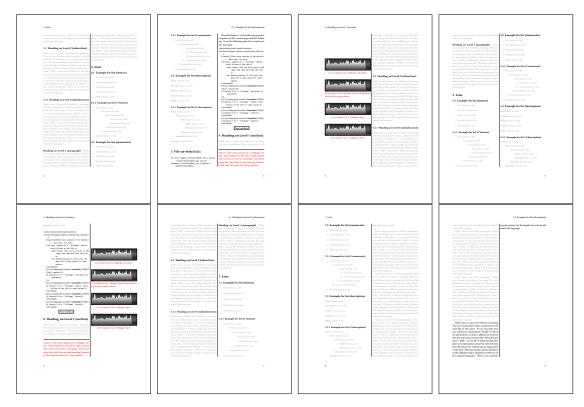


Figure 55: Output of sub-default2s2c (pages 2-9)

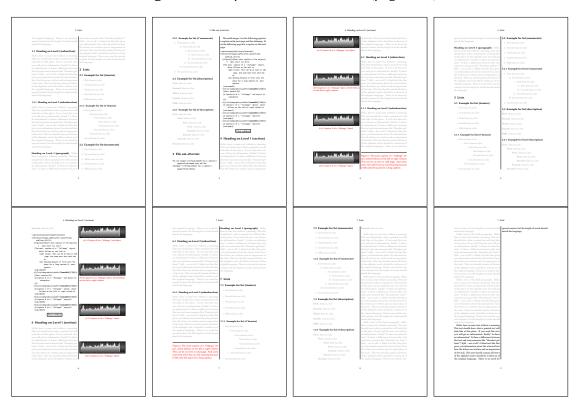


Figure 56: Output of sub-after2s2c (pages 2–9)

# 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

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

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#### 21.2 doublePAGE

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

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

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

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Fig. 62





**Figure 62:** A caption for a double-sided image that will be placed below the right-hand part of the illustration. The illustration begins on the left edge of the paper. No further text is placed on the pages. A short form is used for the LOF. The parameter is doublePAGE

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

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### 21.3 doublePage

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

- \hvFloat[doublePage,sameHeight]% {figure}% {\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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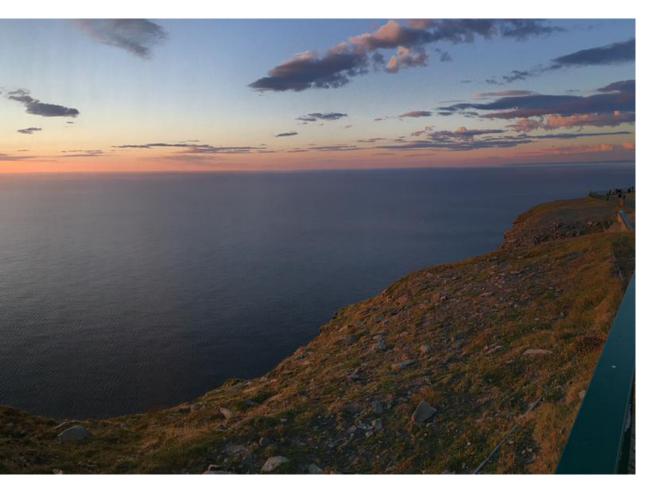


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**Figure 63:** A caption for a double-sided image that will be placed on the right side of the right-hand part of the illustration. The illustration begins on the left edge of the paper. A short form is used for the LOF. The parameter is doublePage

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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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And after the second paragraph follows the third paragraph. Hello, here is some text

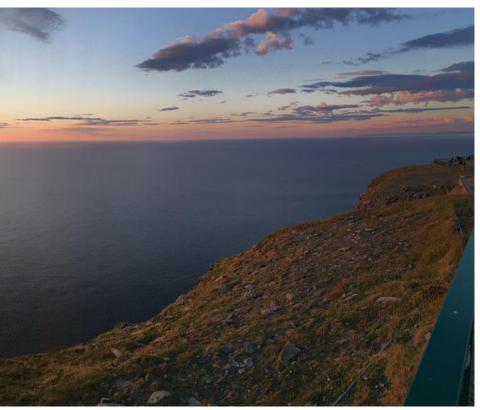


Figure 64: A caption for a double-sided image that will be placed on the right side of the right-hand part of the illustration. The illustration begins on the left edge of the paper. A short form is used for the LOF. The parameter is doublePage

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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```
1 \hvFloat[doublePage,bindCorr=inner]%
```

- {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

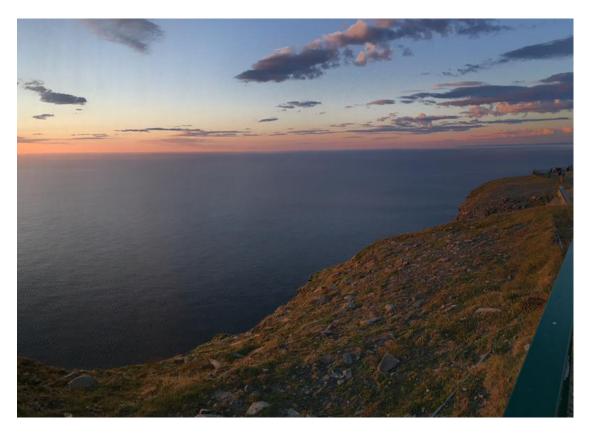


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**Figure 65:** A caption for a double-sided image that will be placed on the right side of the right-hand part of the illustration. The illustration begins on the left edge of the paper. A short form is used for the LOF. The parameter is doublePage

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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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nostricuts (package option), 7	vFill (keyword), 9
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	- oddPage, 29, 34, 45
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subFloat (keyword), 30, 39, 51	
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\tabcaptionhelow, 7	
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top (value), 8	
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u U 1 // /	

# 25 The Package Source

```
%% $Id: hvfloat.sty 125 2021-06-26 19:18:09Z 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{2.32}
18
   \def\filedate{2021/06/26}
   %\message{'hvfloat' v\fileversion, \filedate\space (Herbert Voss)}
20
    \ProvidesPackage{hvfloat}[\filedate\space v\fileversion\space special floating objects (hv)]
21
   \let\hvFloatFileVersion\fileversion
22
   \newif\ifhv@fbox \hv@fboxfalse
24
    \newif\ifhv@hyperref \hv@hyperreffalse
25
    \newif\ifhv@nostfloats \hv@nostfloatsfalse
26
   \newif\ifhv@tugboat \hv@tugboatfalse
27
28
   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{tabular}
                                                                        \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 \hat{\hat{h}} \in \mathcal{L}_{hv@label} fi} % $$ $$ \tilde{\hat{h}}$ $$ $$ if $x \mapsto \hat{\hat{h}} . $$
668
669
                                                                        \label{$$ \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{\normalis} 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
        \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{\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}\ it gets lost otherwise for next afterpage
 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
                  1261
                  \global\setlength\hv@leftPageObjectWidth{\the\dimexpr\paperwidth-lin-\evensidemargin-\
1262
                  1263
                              }\else\hv@floatObject\fi}%
                  1264
                              hv@leftPageObjectWidth{} \height}{\usebox\hvObjectBox}}%
                  \verb|\expandafter\global| expandafter \\ savebox \\ expandafter \\ hv@boxRightPage \\ expandafter \\ \|\clip{box*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox*{\clipbox
1265
                              hv@leftPageObjectWidth{} -\depth{} \width{} \height}{\usebox\hvObjectBox}}%
1266
              % \endgroup% started at main macro \hvFloat
               \checkoddpage
1267
                  \ifoddpage
1268
                       \if@twocolumn
1269
                           \if@firstcolumn
                               1271
1272
                               \do@hvFloat@doublePAGECaptionRight{#1}%
1273
                           \fi
1274
1275
                       \else
1276
                           \do@hvFloat@doublePAGECaptionRight{#1}%
                       \fi
1277
                  \else
1278
1279
                       \if@twocolumn
                           \if@firstcolumn
1280
1281
                               \else
1282
                                1283
                           \fi
1284
1285
                           1286
1287
                       \fi
1288
                  \fi
1289
                  \endgroup% startet at main macro
1290
1291
             \def\do@hvFloat@doublePAGECaptionRight#1{% image on left and right page with caption on the right
1292
                  % #1-> 0/1 caption under/right
1293
                       \afterpage{%
1294
                           \hfuzz=\maxdimen
                           \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1296
1297
                           1298
                           \noindent
                           \verb|\clipbox*{0 -\depth{} \hv@leftPageObjectWidth{} \height}{\usebox}\hvObjectBox{}% |
1299
1300
                           \null\newpage\if@twocolumn\null\newpage\fi
                           \expandafter\global\expandafter\savebox\expandafter\hv0bjectBox\expandafter\\ifhv@use0Box\usebox{\
1301
                                       hv0Box}\else\hv@float0bject\fi}%
1302
1303
                           \hspace*{\dimexpr-\hv@tempWidthA}%
                                \verb|\clipbox*{\the}| \end{thmatching} -\depth{} \width{} \height{}\}{\usebox} \end{thmatching} $$ \clipbox*{\the}| \end{thm
1304
                           \begingroup
1305
                                     \int 1>0
1306
1307
                                         \medskip
                                         \ifdim\dp\hv0bjectBox > \z@
1308
                                              \ifx\relax\hv@shortCap\relax
1310
1311
                                                       \captionof{\hv@floatType}{\hv@longCap}%
                                                   \else
1312
1313
                                                        \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
```

```
\fi
1314
               }}%
1315
               \ifx\hv@label\end{hv@label}\fi
1316
              \else
1317
               1318
                 \ifx\relax\hv@shortCap\relax
1319
1320
                  \captionof{\hv@floatType}{\hv@longCap}%
                 \else
1321
                  \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1322
                 \fi
1323
               }}%
1324
               1325
             \fi
1326
          \else% caption not rotated
1327
            \par\noindent
1328
1329
            \parbox{\textwidth}{%
               \ifx\relax\hv@shortCap\relax
1330
1331
                 \captionof{\hv@floatType}{\hv@longCap}%
               \else
1332
                 \caption of {\hv@floatType}[\hv@shortCap]{\hv@longCap}\%
1333
               \fi
1334
               \ifx\hv@label\end{hv@label}\fi
1335
             }%
1336
1337
          \fi
          \endgroup
1338
          \newpage\if@twocolumn\null\newpage\fi
1339
1340
     }%
1341
1342
    % ||1in+evenside --- |1in+oddside ---||
1343
1344
    \def\do@hvFloat@doubleFULLPAGE#1{% image on left and right page with caption before/below/right/after
1345
1346
      #1-> 0/1 caption under/right
     \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1347
     \fint {\bf ylobal} \
1348
1349
     \else
       \ifx\hvSet@capPos\hv@Before \global\hv@@capPos=0
1351
       \else
1352
         \global\hv@@capPos=2 % other caption type
     \fi\fi
1353
     \checkoddpage
1354
1355
     \global\setlength\hv@tempWidthA{\dimexpr-\oddsidemargin-lin-\parindent+\hvSet@bindCorrection}% the
1356
          width of the right side offset
     \global\setlength\hv@tempWidthB{\dimexpr\ht\hvCaptionBox+\wd\hvObjectBox+2\hvSet@bindCorrection}%
1357
     1359
      1360
        hv0biectBox}}%
1361
      \expandafter\captionsetup\expandafter{\hv@caption@format}%
1362
     \ifoddpage
       \ifcase\hv@@capPos % =0 Caption before
1363
1364
         \if@twocolumn
          \if@firstcolumn
1365
1366
            \ifhv@twoColumnCaption
             \set@Normal@Bottom@Caption*
1367
             \afterpage{\do@hvFloat@doubleFULLPAGE@CaptionBefore}%
1368
            \else
1369
             1370
            \fi
1371
1372
          \else% \if@firstcolumn
            \set@Normal@Bottom@Caption
1373
            \do@hvFloat@doubleFULLPAGE@CaptionBefore
1374
          \fi
1375
         \else% \if@twocolumn
1376
          \set@Normal@Bottom@Caption
1377
          \do@hvFloat@doubleFULLPAGE@CaptionBefore
1378
```

```
\fi
1379
                 \or % =1 Caption after
1380
                    \ifhv@twoColumnCaption
1381
                        \if@firstcolumn
1382
                           1383
                        \else
1384
1385
                           \verb|\do@hvFloat@doubleFULLPAGE@CaptionAfterTwoCol| \\
                        \fi
1386
1387
                    \else
                        \if@twocolumn
1388
                           \if@firstcolumn
                               \verb|\afterpage{\documents|} afterpage{\documents|} % The properties of the constraint of the constrain
1390
1391
                               \verb|\do@hvFloat@doubleFULLPAGE@CaptionAfter||
1392
1393
                           \fi
                        \else
1394
1395
                           \do@hvFloat@doubleFULLPAGE@CaptionAfter
1396
                        \fi
                    \fi
1397
1398
                 \else% \ifcase >1 all other Captions
                    \if@twocolumn
1399
                        \if@firstcolumn
1400
                           1401
1402
                           \do@hvFloat@doubleFULLPAGE@CaptionOther{#1}%
1403
                        \fi
1404
1405
                    \else % \if@twocolumn
                        \do@hvFloat@doubleFULLPAGE@CaptionOther{#1}%
1406
                    \fi
1407
                 \fi% \ifcase
1408
1409
             \else% we have an even page
                 \ifcase\hv@@capPos% Before
1410
1411
                    \if@twocolumn
                        \if@firstcolumn
1412
                           \ifhv@twoColumnCaption
1413
                               \afterpage{\afterpage\set@Normal@Bottom@Caption*\afterpage{\
1414
                                        do@hvFloat@doubleFULLPAGE@CaptionBefore \{\#1\}\}\}\%
                           \else
1415
                               \afterpage{\afterpage{\set@Normal@Bottom@Caption\
1416
                                        do@hvFloat@doubleFULLPAGE@CaptionBefore{#1}}}}%
                           \fi
1417
1418
                        \else
                           1419
1420
                        \fi
                    \else% \if@twocolumn
1421
                        1422
                    \fi
1423
                 \or % capPos after
                    \if@twocolumn
1425
1426
                        \if@firstcolumn
                           \ifhv@twoColumnCaption
1427
                               1428
1429
                           \else
                               1430
                           \fi
1431
                        \else
1432
1433
                           \ifhv@twoColumnCaption
                              1434
1435
                           \else
                               1436
1437
                           \fi
                        \fi
1438
                    \else% \if@twocolumn
1439
                        1440
                    \fi
1441
                 \else % \ifcase Any other caption
1442
1443
                    \if@twocolumn
```

```
\if@firstcolumn
1444
              \afterpage{\afterpage{\do@hvFloat@doubleFULLPAGE@CaptionOther{#1}}}}%
1445
1446
            \else
              \afterpage{\do@hvFloat@doubleFULLPAGE@CaptionOther{#1}}}%
1447
            \fi
1448
          \else
1449
            1450
          \fi
1451
        \fi% \ifcase
1452
       \fi% main ifoddpage
1453
       \endgroup% started at main macro \hvFloat
1454
1455
1456
     1457
     \def\set@Normal@Bottom@Caption@{%
1458
1459
        \begin{\hv@floatType}[!b]
          \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1460
1461
          \ifhv@separatorLine\drawSepLine\fi
           \expandafter\captionsetup\expandafter{\hv@caption@format}%
1462
          \ifx\hv@shortCap\@empty
1463
            \captionof{\hv@floatType}{\hv@longCap}%
1464
          \else
1465
            \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1466
1467
          \fi
          1468
         \end{\hv@floatType}%
1469
1470
     \def\set@Normal@Bottom@CaptionStar*{%
1471
1472
        \begin{\hv@floatType*}[!b]
          \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1473
1474
          \ifhv@separatorLine\drawSepLine\fi
           \expandafter\captionsetup\expandafter{\hv@caption@format}%
1475
1476
          \ifx\hv@shortCap\@empty
            \captionof{\hv@floatType}{\hv@longCap}%
1477
          \else
1478
            \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1479
          \fi
          \ifx\hv@label\ensuremath{\hv@label-cap}\fi
1481
        \end{\hv@floatType*}%
1482
1483
1484
1485
     \def\do@hvFloat@doubleFULLPAGE@CaptionBefore{%
       \afterpage{%
1486
1487
        \hfuzz=\maxdimen
        \global\savebox{\hv0bjectBox}{\ifhv@use0Box\usebox{\hv0Box}\else\hv@float0bject\fi}%
1488
         \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}% no
             interlineskip
        \verb|\hspace*{\the \dimexpr-\evensidemargin-\parindent-lin}% |
        \thispagestyle{empty}%
1491
        \ifx\hv@floatType\hv@figure
1492
          \qlobal\refstepcounter{hv@tempCNTfiqB}%
1493
        \else
1494
1495
          \global\refstepcounter{hv@tempCNTtabB}% before caption
1496
1497
        \expandafter\label\expandafter{\hv@label}%
        \clipbox*{0 0 \the\hv@leftPageObjectWidth{} \height}{\usebox\hvObjectBox}%
1498
        \afterpage{%
1499
          \if@twocolumn\newpage\null\newpage\fi
1500
          1501
          \thispagestyle{empty}%
1502
1503
          \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}%
               -0.5\paperheight+0.5\ht\hv0biectBox
1504
          \hspace*{\hv@tempWidthA}9
          \global\savebox{\hv0bjectBox}{\ifhv@use0Box\usebox{\hv0Box}\else\hv@float0bject\fi}%
1505
          \clipbox*{\theta\theta\theta\clipbox}{\ \dp\hv0bjectBox{} \wd\hv0bjectBox{} \ht\hv0bjectBox}{\ \dp\hv0bjectBox}
1506
               \hv0biectBox}%
1507
          \ifx\hv@floatType\hv@figure
```

```
\global\refstepcounter{hv@tempCNTfigA}%
1508
                                           \else
1509
                                                   \global\refstepcounter{hv@tempCNTtabA}% before caption
1510
                                           \fi
1511
1512
                                           \expandafter\label\expandafter{\hv@label-2}%
                                           \newpage\if@twocolumn\null\newpage\fi
1513
1514
                           }}%
1515
1516
                      \newif\ifhv@temp
1517
                      \def\do@hvFloat@doubleFULLPAGE@CaptionAfter{%
1519
1520
                             \afterpage{%
                                    \hfuzz=\maxdimen
1521
1522
                                    1523
                                    \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}% no
                                                       interlineskip
1524
                                    \hspace*{\the\dimexpr-\evensidemargin-\parindent-lin}%
                                    \thispagestyle{empty}%
1525
                                    \clipbox*{0 \the\dp\hv0bjectBox{} \the\hv@leftPageObjectWidth{} \the\ht\hv0bjectBox}{\usebox\
                                                       hv0biectBox}%
                                    \ifx\hv@floatType\hv@figure
1527
                                           \refstepcounter{hv@tempCNTfigA}%
1528
                                    \else
                                           \refstepcounter{hv@tempCNTtabA}% before caption
1530
                                    \fi
1531
1532
                                    \afterpage{%
1533
                                           \newpage\if@twocolumn\null\newpage\fi
1534
                                           \global\savebox{\hv0bjectBox}{\ifhv@use0Box\usebox{\hv0Box}\else\hv@float0bject\fi}%
1535
1536
                                           \thispagestyle{empty}%
                                           \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}%
1537
                                                               -0.5\paperheight+0.5\ht\hv0bjectBox
                                           \hspace*{\hv@tempWidthA}%
1538
                                           \global\savebox{\hv0bjectBox}{\ifhv@use0Box\usebox{\hv0Box}\else\hv@float0bject\fi}%
1539
                                           \clipbox*{\theta velocity} \ \clipbox*{\theta velocity} \ \clipbox*{\the\nv0bjectBox{} \tht\nv0bjectBox}{\the\nv0bjectBox}} \ \clipbox*{\the\nv0bjectBox} \ \clipbox*{\the\nv0bjectBox} \ \clipbox*{\the\nv0bjectBox}} \ \clipbox*{\the\nv0bjectBox} \ \clipbox*{\the\nv0bjectBox}} \ \clipbox*{\the\nv0bjectBox} \ \clipbox*{\the\nv0bjectBox}} \ \clipbox*{\the\nv0bjectBox}} \ \clipbox*{\the\nv0bjectBox} \ \clipbox*{\the\nv0bjectBox}} \ \clipbox*{\
1540
                                                               \hv0bjectBox}%
                                           \ifx\hv@floatType\hv@figure
1541
                                                   \refstepcounter{hv@tempCNTfigB}%
1542
                                           \else
1543
                                                   \refstepcounter{hv@tempCNTtabB}% before caption
1544
                                           \fi
1545
                                           \expandafter\label\expandafter{\hv@label-2}%
1546
1547
                                           \newpage\if@twocolumn\null\newpage\fi
                                           \begin{\hv@floatType}[!b]
1548
                                                   \ifhv@separatorLine\drawSepLine\fi
                                                      \expandafter\captionsetup\expandafter{\hv@caption@format}%
1550
                                                   \ifx\hv@shortCap\@empty
                                                          \captionof{\hv@floatType}{\hv@longCap}%
1552
1553
                                                    \else
                                                          \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1554
1555
                                                   \label{$$ \ifing $$ \inf_{\boldsymbol{\theta}\in\mathbb{R}}\left(\boldsymbol{\theta}-\boldsymbol{\theta}\right)$ if $\boldsymbol{\theta}$ is $\boldsymbol{\theta}.$ In $\boldsymbol{
1556
                                           \end{\hv@floatType}%
1557
                           }%}%
1558
1559
1560
                     \def\do@hvFloat@doubleFULLPAGE@CaptionAfterTwoCol{%
1561
                             \afterpage{%
1562
                                    \global\savebox{\hvObjectBox}{\ifhv@useOBox\usebox{\hvOBox}\else\hv@floatObject\fi}%
1563
1564
                                    \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}% no
                                                       interlineskip
                                    \hspace*{\the\dimexpr-\evensidemargin-\parindent-lin}%
1565
                                    \thispagestyle{empty}%
1566
                                    \ifx\hv@floatType\hv@figure
1567
                                           \refstepcounter{hv@tempCNTfigA}%
1568
1569
```

```
\refstepcounter{hv@tempCNTtabA}% before caption
1570
1571
               1572
               \verb|\clipbox*{0 0 $$ \the\hv@leftPageObjectWidth{} \height}{\usebox\hvObjectBox}% $$
1573
1574
                   \newpage if @twocolumn \null \newpage fi
                   \global\savebox{\hv0bjectBox}{\ifhv@use0Box\usebox{\hv0Box}\else\hv@float0bject\fi}%
1575
                   \thispagestyle{empty}%
1576
                   \label{lineskip} $$ \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\\lineskip}% $$ \color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\color=\c
1577
                            -0.5\paperheight+0.5\ht\hv0bjectBox
                   \hspace*{\hv@tempWidthA}%
1578
                   \global\savebox{\hv0bjectBox}{\ifhv@use0Box\usebox{\hv0Box}\else\hv@float0bject\fi}%
1579
                   \clipbox*{\theta\theta\theta\clipbox}{\ \dp\hv0bjectBox{} \wd\hv0bjectBox{} \ht\hv0bjectBox}{\ \dp\hv0bjectBox}
1580
                            \hv0bjectBox}%
                   1581
                      \refstepcounter{hv@tempCNTfigB}%
1582
1583
                   \else
                      \refstepcounter{hv@tempCNTtabB}% before caption
1584
1585
                   \fi
                   \ifx\hv@label\@empty\else\label{\hv@label-2}\fi
1586
1587
                   \begin{\hv@floatType*}[!b]
1588
                      \hv@twoColumnCaptiontrue
1589
                      \ifhv@separatorLine\drawSepLine\fi
1590
1591
                        \expandafter\captionsetup\expandafter{\hv@caption@format}%
                      \ifx\hv@shortCap\@empty
1592
                         \captionof{\hv@floatType}{\hv@longCap}%
1593
1594
                      \else
                          \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1595
                      \fi
1596
                      \  \ifx \ \end{\ended} \ \fi
1597
1598
                   \end{\hv@floatType*}%
            }%
1599
1601
         \def\do@hvFloat@doubleFULLPAGE@CaptionOther#1{%
1602
            \afterpage{%
1603
                \hfuzz=\maxdimen
1604
               1605
               \thispagestyle{empty}%
1606
1607
               \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}%
                                                                                                                                                                                  -0.51
                        paperheight+0.5\ht\hv0bjectBox
1608
               \hspace*{\the\dimexpr-\evensidemargin-\parindent-lin}%
               \global\savebox{\hv0bjectBox}{\ifhv@use0Box\usebox{\hv0Box}\else\hv@float0bject\fi}%
1609
               \clipbox*{0 \depth{} \hv@leftPageObjectWidth{} \height}{\usebox\hvObjectBox}%
1610
               \ifx\hv@floatType\hv@figure
1611
                   \refstepcounter{hv@tempCNTfigA}%
               \else
1613
                   \refstepcounter{hv@tempCNTtabA}% before caption
1614
               \fi
1615
                \label{\hv@label}%
1616
1617
               \afterpage{%
                   \if@twocolumn\newpage\if@firstcolumn\else\null\newpage\fi\fi
1618
                   1619
                   \thispagestyle{empty}%
1620
                   \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}%
1621
                            -0.5\paperheight+0.5\ht\hv0bjectBox
1622
                   \hspace*{\hv@tempWidthA}%
                   \clipbox*{\hv@leftPageObjectWidth{} \dp\hvObjectBox{} \wd\hvObjectBox{} \ht\hvObjectBox}{\usebox\
1623
                            hv0bjectBox}%
                   \ifx\hv@floatType\hv@figure
1624
1625
                      \refstepcounter{hv@tempCNTfigB}%
                   \else
1626
                      \refstepcounter{hv@tempCNTtabB}% before caption
1627
                   \fi
1628
1629
                   \expandafter\label\expandafter{\hv@label-2}%
                   \savebox\hvCaptionBox{\parbox{0.9\ht\hvObjectBox}{\captionof*{\hv@floatType}{\hv@longCap}}}%
1630
                   \ifnum#1 > 0\relax
                                                      % rotation with 90°
1631
```

```
\setlength\hv@tempWidthB{\dimexpr\ht\hvCaptionBox+\wd\hvObjectBox+2\hvSet@bindCorrection}%
1632
                          \ifdim\hv@tempWidthB < 2\paperwidth
1633
                              \label{lem:local_condition} $$ \operatorname{local_condition} {\theta}_{0.8}(\mathbf{0.8})_{0.8}^{\mathbf{0.8}} $$
1634
                                    \expandafter\captionsetup\expandafter{\hv@caption@format}%
1635
1636
                                  \captionof{\hv@floatType}{\hv@longCap}%
1637
1638
                                  \else
                                      \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1639
                                  \fi
1640
                              }}}% rotatebox
1641
                               \ifx\hv@label\end{\hv@label-cap}\fi
                          \else% ifdim: no space left on page
1643
                              \displaystyle \operatorname{vol}_{-2\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox},0.5\,ht\n{GaptionBox
1644
                                        centering
                                  \parbox{0.8\textwidth}{%
1645
1646
                                      \ifx\hv@shortCap\@empty
                                          \captionof{\hv@floatType}{\hv@longCap}%
1647
1648
                                      \else
                                          \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1649
                                      \fi
1650
                                  }%
1651
                                  \ifx\hv@label\ensuremath{\hv@label-cap}\fi
1652
                              \endminipage}}}%
1653
1654
                          \fi
                      \else% ifnum, caption not rotated, under or over the right page
1655
                          \verb|\setlength| hv@tempWidthA{\dimexpr\\paperheight-\ht\\hv0bjectBox}|%
1656
1657
                          \ifdim\hv@tempWidthA > \ht\hvCaptionBox
                          \else
1658
                              1659
                                        hvCaptionBox+\abovecaptionskip+\belowcaptionskip){\makebox[0pt][c]{\parbox{\textwidth}}{%%
1660
                                    \expandafter\captionsetup\expandafter{\hv@caption@format}%
                                  \ifx\hv@shortCap\@empty
1661
1662
                                      \captionof{\hv@floatType}{\hv@longCap}%
                                  \else
1663
                                      \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1664
                                  \fi
1665
                              }}}%
                              1667
                          \fi
1668
                      \fi% end \ifnum#1>0
1669
                      \newpage\if@twocolumn\null\newpage\fi
1670
1671
                  }%
              }%
1672
1673
1674
           \def\setBottomCaption{%
1676
               \begin{\hv@floatType}[!b]%
              \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1678
1679
               \ifhv@separatorLine\drawSepLine\fi
1680
              \par
               \usebox\hvCaptionBox
1681
1682
              \end{\hv@floatType}%
1683
1684
           \def\setPageObject{%
1685
              \ifhv@star
1686
                   \begin{\hv@floatType*}[p]%
1687
              \else
1688
                   \begin{\hv@floatType}[p]%
1689
1690
              \fi
              \hfuzz=\maxdimen
1691
               \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
               \ifhv@FULLPAGE
1693
                   \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep}%-0.5\baselineskip%
1694
                   \checkoddpage
1695
                   \if@twoside
1696
```

```
\ifoddpage
1697
                                  \hspace*{\the\dimexpr-\oddsidemargin-\parindent-lin}%
1698
                             \else
1699
                                  \hspace*{\the\dimexpr-\evensidemargin-\parindent-lin}%
1700
                            \fi
1701
                        \else
1702
1703
                            \hspace*{\the\dimexpr-\oddsidemargin-\parindent-lin}%
                        \fi
1704
1705
                        \AtBeginShipoutNext{\thispagestyle{empty}}%
                        \usebox\hv0bjectBox
1706
1707
                        \usebox\hv0bjectBox
1708
                   \fi
1709
                   \ifhv@star
1710
1711
                        \end{\hv@floatType*}%
1712
                   \else
                        \end{\hv@floatType}%
1713
1714
                  \fi
1715
1716
              \ExplSyntax0n
1717
1718
              \def\getMultiCaptionAndLabel{%
1719
                   \global\sbox\hvCaptionBox{\minipage[b]{\linewidth}%
                        1721
                        \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1722
1723
                        \parskip=-0.5\baselineskip
1724
                        \hv@cntb=\clist_count:N\l_clist_Type
1725
                        \advance\hv@cntb by \@ne
                        \hv@cnta=1
1726
1727
                        \loop
                            \ensuremath{\mbox{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\mbox{$\setminus$}}\ensuremath{\m
1728
1729
                             \label{lem:nnl_clist_LofCaption} $$ \edf^{\theta}_{\Omega}: Nn\l_clist_LofCaption_{\n}_{\n} $$
                            \ifx\@tempa\@empty
1730
1731
                                  \caption{\clist_item:Nn\l_clist_Caption{\hv@cnta}}%
1732
                             \else
                                  \label{lem:nnl_clist_item:Nnl_clist_caption} $$ \operatorname{caption}\exp{\operatorname{log}(\operatorname{clist_item:Nn}_c\operatorname{log}(\operatorname{clist_Caption}_{\operatorname{clist}})^2} $$
1733
                             \fi
1734
1735
                             1736
                             \ifx\end{array}
1737
                                  \expandafter\label\expandafter{\clist_item:Nn\l_clist_Label{\hv@cnta}-cap}\fi
1738
                             \advance\hv@cnta by \@ne
1739
1740
                        \ifnum\hv@cnta<\hv@cntb
1741
                        \vspace{-\baselineskip}% no vspace at the end
1742
                   \endminipage}%
1743
1744
1745
1746
              \def\getMultiObjectAndLabel{%
                   \global\sbox\hv0bjectBox{%
1747
                        \ifhv@vFill
1748
                             \minipage[b][\textheight][s]{\columnwidth}%
1749
                        \else
1750
                             \minipage{\columnwidth}%
1751
1752
                        \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1753
1754
                        \ifx\hvSet@objectPos\hv@Right\raggedleft\else
1755
                            \ifx\hvSet@objectPos\hv@Left\raggedleft\else
                                 \ifx\hvSet@objectPos\hv@Center\centering
1756
1757
                        \fi\fi\fi
                        \hv@cntb=\clist_count:N\l_clist_Type
1758
                        \advance\hv@cntb by \@ne
1759
                        \hv@cnta=1
1760
1761
                             \def\@temp{\clist_item:Nn\l_clist_Object{\hv@cnta}}%
1762
                             \ifhv@objectFrame\frame{\@temp}\else\@temp\fi
1763
```

```
\edef\@tempa{\clist item:Nn\l clist Label{\hv@cnta}}%
1764
            \edef\@tempb{\clist item:Nn\l clist Type{\hv@cnta}}%
1765
1766
            \edef\@captype{hv@p\@tempb}%
1767
            \ifx\@tempa\@empty
1768
            \else
              \refstepcounter{\@captype}%
1769
1770
              \expandafter\label\expandafter{\clist_item:Nn\l_clist_Label{\hv@cnta}}%
            \fi
1771
            \int Type\par\hv@vskip\fi
1772
            \advance\hv@cnta by \@ne
1773
          \ifnum\hv@cnta<\hv@cntb
1774
            \ifhv@vFill\vfill\fi
1775
1776
          \repeat
       \endminipage}%
1777
1778
      \def\getMultiSubCaptionAndLabel{%
1779
       \global\sbox\hvCaptionBox{%
1780
1781
          \minipage{\linewidth}%
          \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1782
          \setlength\belowcaptionskip{5pt}%
1783
          \setlength\abovecaptionskip{0pt}%
1784
          \xdef\@captype{\clist_item:Nn\l_clist_Type{1}}\%$$ the same for all subfloats
1785
          \label{lem:nnl_clist_LofCaption} $$ \edset(0) = {\clist_LofCaption{1}} $$
1786
1787
          \ifx\@tempa\@empty
            \caption{\clist_item:Nn\l_clist_Caption{1}}%
1788
1789
          \else
            \expandafter\caption\expandafter[\@tempa]{\clist_item:Nn\l_clist_Caption{1}}%
1790
1791
          \label{lem:nnl_clist_label} $$ \edge {\clist_item:Nn\l_clist_Label{1}} $$
1792
          \ifx\@tempa\@empty\else\expandafter\label\expandafter{\clist item:Nn\l clist Label{1}-cap}\fi
1793
1794
       \endminipage}%
1795
1796
      \def\getMultiSubObjectAndLabel{%
1797
       \global\sbox\hv0bjectBox{%
1798
          \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1799
            \minipage[b][\textheight][s]{\columnwidth}%
1801
1802
            \captionsetup{belowskip=0pt}%
1803
          \else
            \minipage{\columnwidth}%
1804
1805
          \fi
           \ifx\hv@subcaption@format\@empty\else
1806
1807
             \expandafter
             \captionsetup\expandafter[\expandafter s\expandafter u\expandafter b\expandafter]\expandafter
1808
                                     {\hv@subcaption@format}%
1809
1810
          \ifx\hvSet@objectPos\hv@Left\raggedleft\else
1812
1813
              \ifx\hvSet@objectPos\hv@Center\centering
          \fi\fi\fi
1814
          \hv@cntb=\clist_count:N\l_clist_Caption
1815
1816
          \advance\hv@cntb by \@ne
          \hv@cnta=2
1817
1818
          \ensuremath{\mbox{edef}\ensuremath{\mbox{@captype}\clist_item:Nn}\ensuremath{\mbox{l\_clist\_Type}\clist\_Type}\clist\_s the same for all subfloats}
          \ifx\@tempa\@empty
1819
1820
          \else
             \refstepcounter{\@captype}%
1821
1822
             \expandafter\label\expandafter{\@tempa}%
          \fi
1823
1824
            \def\@temp{\clist_item:Nn\l_clist_Object{\hv@cnta}}%
1825
            1826
            \begingroup
1827
            \edef\@tempa{\clist_item:Nn\l_clist_LofCaption{\hv@cnta}}%
1828
1829
            \ifx\@tempa\@empty
              \subcaption{\clist item:Nn\l clist Caption{\hv@cnta}}%
1830
```

```
\else
1831
               \ensuremath{\texttt{expandafter}}\ \texpandafter\subcaption\\\texpandafter[\@tempa]{\clist item:Nn\\\\texpandafter\Caption{\hv@cnta}}\%
1832
             \fi
1833
             \edef\@tempa{\clist_item:Nn\l_clist_Label{\hv@cnta}}%
1834
1835
             \ifx\ensuremath{\texttt{ifx}\ensuremath{\texttt{atempa}\ensuremath{\texttt{dempty}}}
             \else
1836
1837
               \expandafter\label\expandafter{\clist_item:Nn\l_clist_Label{\hv@cnta}}%
             \fi
1838
1839
             \endgroup
             \ifnum\hv@cnta<\clist_count:N\l_clist_Type\par\hv@vskip\fi
1840
             \advance\hv@cnta by \@ne
            \ifnum\hv@cnta<\hv@cnth
1842
            \ifhv@vFill\vfill\fi
1843
1844
          \repeat
          \edef\@tempa{\clist_item:Nn\l_clist_Label{1}}%
                                                                  the main label at the end
1845
1846
          \fint \mathbf{x}\ @tempa\@empty
1847
          \else
1848
             \edef\@temp{hv@p\@captype}%
             \refstepcounter{\@temp}%
1849
1850
            \expandafter\label\expandafter{\@tempa}%
          \fi
1851
        \endminipage}%
1852
1853
1854
      \ExplSyntax0ff
1855
      \def\getSingleCaptionAndLabel{%
1856
        \global\sbox\hvCaptionBox{\minipage{\linewidth}%
1857
           \expandafter\hvFloatSet\expandafter{\hv@save@setting}%
1858
          \setlength\belowcaptionskip{5pt}%
1859
          \setlength\abovecaptionskip{0pt}%
1860
1861
          \edef\@captype{\hv@floatType}%
          \expandafter\ifx\expandafter\relax\hv@shortCap\relax
1862
1863
               \caption{\hv@longCap}%
          \else
1864
1865
               \caption[\hv@shortCap]{\hv@longCap}%
          \fi
1866
        1867
        \endminipage}%
1868
1869
1870
      \def\set@caption@object#1{%
                                        first caption, then object #1=\hv@floatType
1871
1872
        \ifhv@multiFloat
          \setcounter{hv@pfigure}{\value{figure}}%
1873
1874
          \setcounter{hv@ptable}{\value{table}}%
          \getMultiCaptionAndLabel
1875
1876
        \else
          \ifhv@subFloat
1877
             \setcounter{hv@pfigure}{\value{figure}}%
1878
            1879
1880
             \getMultiSubCaptionAndLabel
          \else
1881
             \getSingleCaptionAndLabel
1882
          \fi
1883
1884
        \ensuremath{\mbox{\sf def}}\ensuremath{\mbox{\sf deptype}{hv@p#1}}\%
1885
        \ifhv@multiFloat
1886
1887
          \getMultiObjectAndLabel
1888
        \else
1889
          \ifhv@subFloat
            \getMultiSubObjectAndLabel
1890
1891
          \else
             \global\sbox\hv0bjectBox{%
1892
               \refstepcounter{\@captype}%
1893
               \ifhv@objectFrame\frame{\hv@floatObject}\else\hv@floatObject\fi
1894
               \expandafter\ifx\expandafter\relax\hv@label\relax
1895
               \else
1896
                 \expandafter\label\expandafter{\hv@label}%
1897
```