Package hvfloat Rotating and scaling of objects and captions ver 2.29

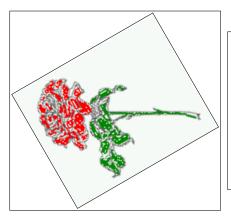
Herbert Voß*

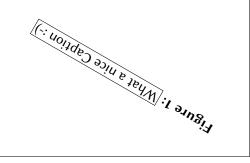
June 15, 2021

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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Thanks to Frank Mittelbach, Rolf Niepraschk

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1 The package options

fbox 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 0pt and changed in hvfloat to the same value than \abovecaptionskip. This length can be changed to another value in the usual way with \setlength or \addtolength.

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

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

2 The Macros and optional arguments

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

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

The star version is explained in section 11 on page 24 and 19.2 on page 53 and the optional **±** is explained in section 17.3 on page 40.

\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.

2 The Macros and optional arguments

[...] 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	<i>D</i> efault	Description	
floatPos	tbp	This is the same default placement setting like the one from standard LATEX, but maybe not always the best setting.	
rotAngle	Θ	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 <code>>n«</code> like a natural width given by the current linewidth, <code>>w«</code> for the width of the object, <code>>h«</code> for the height of the object, or a scale for <code>\columnwidth</code> .	
capAngle	0	The integer value for the angle if the caption should be rotated. Counted counter clockwise.	
capPos	bottom	The position of the caption relative to the object. Possible values are before: always before (left) from the object. top: always on top of the object. left: always before (left) from the object, but on the same page in twocolumn mode. after: always after (right) from the object. bottom: always on the bottom of the object. right: always after (right) from the object, but on the same page in twocolumn mode. inner: in twoside mode always typeset at the inner margin. outer: in twoside mode always typeset at the outer margin. evenPage: in twoside mode with fullpage objects always on an even page.	

Keyword	<i>D</i> efault	Description	
		oddPage: in twoside mode with fullpage objects always on an odd	
		page.	
capVPos	center	This is only important for capPos=left right. Only in this case the	
		caption can vertically placed at the bottom, center and top.	
objectPos	center	The horizontal placement of the object relative to the document.	
		Possible values are (\mathbf{l})eft (\mathbf{c})enter (\mathbf{r})ight.	
objectAngle	0	The integer value for the angle if the object should be rotated.	
		Counted counter clockwise.	
floatCapSep	5pt	The additional space between the object and a left or right placed	
		caption.	
use0Box	false	Instead of passing the object as parameter to the \hvFloat, the con-	
		tents maybe saved in the box \hv0Box With use0Box=true the contents	
		of this box will be used.	
onlyText	false	The caption will be printed as normal text and there is no entry in	
		the list of	
nonFloat	false	The object isn't put in a floating environment. It is printed as stan-	
		dard text with an additional caption. The float counter is increased	
		as usual and can be referenced.	
wide	false	The float can use \textwidth+\marginparwidth as horizontal width.	
objectFrame -	false	put a frame with no separation around the float object.	
style	_	Use a defined style	
capFormat	_	Define formatting options for \caption (see documentation of pack-	
		age caption).	
subcapFormat	-	Define formatting options for \subcaption.	
fullpage	false	Use a complete column in twocolumn mode.	
FULLPAGE	false	Use the complete paper width/height for the object.	
FullPage	false	Use the complete text area for the object.	
doublePage doublePAGE	false false	Use the textarea on a doublepage with additional text. Use the textarea 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.	
VI ILL	ratse	Tut a (VIIII between every two objects in a multi- of subfloat.	

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}
```

Code for figure 2: Fig. 2

3 The default use of floating environments

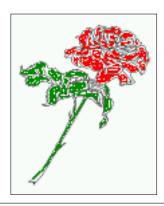


Figure 2: Without any keywords (only the fbox package option)

 $\label{thm:local} $$ \operatorname{figure}{\include graphics[images/rose]}{Without any keywords (only the $$ \text{fbox}) $$ package option)}{fig:0}$

Tab. 3

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

Code for table 3:

```
\hvFloat[capPos=top]{table}{%
\begin{tabularx}{\textwidth}{<>{\tifamily}|||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}}

{With the only Option \textt{capPos=top} to place the caption on top of the table, which is often the default.}%

{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:

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

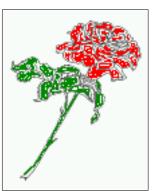


Figure 3: Default caption width setting, which is the natural width with respect to the current linewidth.

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).

 $\label{lem:continuous} \begin{tabular}{ll} \parbox{0.5cm} & \parbox{0.5$

Fig. 4

Fig. 3

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.

Fig. 5

4 Caption width



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.



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

If such a value like 0.9\\inewidth 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

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.

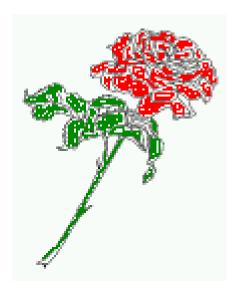


Figure 6: Caption right beside with a width setting of 0.9\linewidth which is too big for this example and therefore corrected by the macro to the maximal width.

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

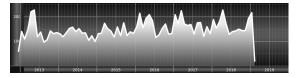


Figure 7: Caption below with a width of the given object which may be a problem if it is a very small object.

4.4 caption width to height of the object

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

\hvFloat[floatPos=!htb,capPos=after,capWidth=h,capAngle=90,objectFrame]{figure}{\includegraphics{
 images/rose}}%

{Caption beside with a width of the given object height which may be a problem if it is a very small object.}{fig:width5}

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 Caption left or right of the object

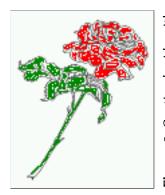


Figure 8: Caption beside with a width of the given object height which may be a problem if it is a very small object.

5.1 Caption right with specific length

Code for figure 9:

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



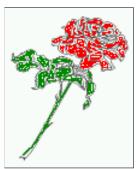


Figure 9: Caption vertically centered right beside the float with a natural caption width (the default). Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information?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

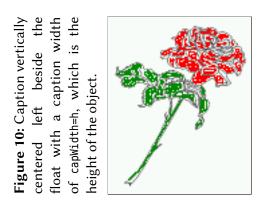
5.2 Caption left and rotated

Code for figure 10:

```
\hvFloat%
  [floatPos=htb,
  capPos=left,
  capWidth=h,% of \columnwidth
  capAngle=90,
```

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

Fig. 10



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.

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

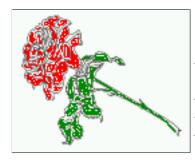


Figure 11: Caption vertically centered right beside the float with a caption width of the height of the image and a rotation of the caption and the object.

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
 an odd page.}{fig:20}

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

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 $\text{texttt}\{0.5\text{textbackslash} \text{ columnwidth}\}\$ and $\text{texttt}\{\text{capPos=outer}\}\{\text{fig:22}\}\$

Fig. 15

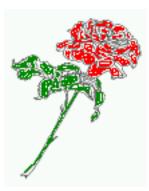


Figure 15: Caption vertically centered right beside the float with a caption width of 0.5\columnwidth and capPos=outer

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,%
```

 $] \{figure\} \{ \ to est defined at bottom right beside the float\} \{fig: 4\} \\$

Fig. 16

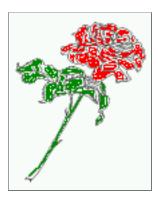


Figure 16: Caption at bottom right beside the float

The code for figure 17:

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

Figure 17: Caption at top left beside the float

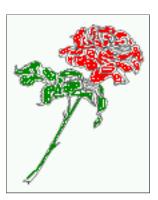


Fig. 17

The code for figure 18:

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



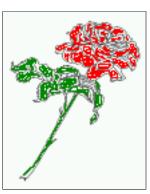


Figure 18: Caption centered right beside the float

8 Caption format

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

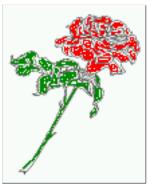


Figure 19

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 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:

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

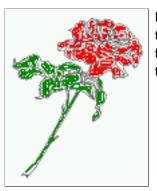
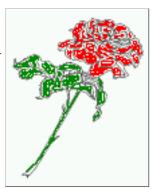


Figure 20: Caption at top right beside the float and object position left

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



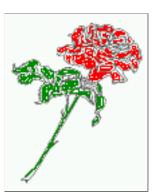
information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and 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}
```

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



10 Wide floats

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

The code for figure 23:

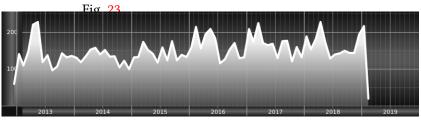


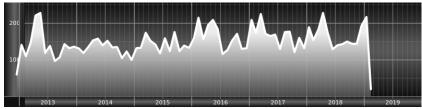
Figure 23: Caption at top right beside the float and object position left and the option wide.

The code for figure 24:

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

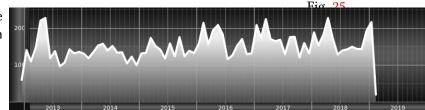
Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all!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

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



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 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.

The caption can be typeset completely into the margin with:

Fig. 26

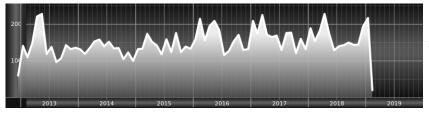
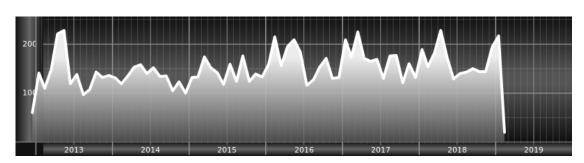


Figure 26: Caption at top inner beside the float and object position right and the option wide.

floatCapSep=\marginparsep,

 $\label{linewidth} $$ \left[\left(\frac{th=\left(\frac{th}{th} \right) {images/CTAN} \right)}{% Caption at top inner beside the float and object position right and the option $$ \left(\frac{texttt}{wide} \right).}{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 on the facing page) 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.

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:

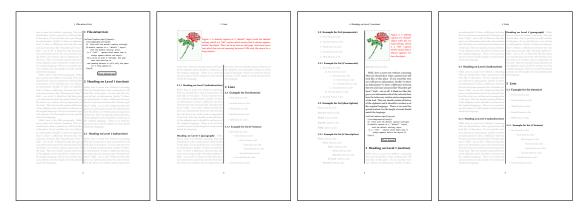


Figure 28: Output of default1s2c (pages 2 -5)

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

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

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

The code for figure 30:

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

Fig. 30

Fig. 29

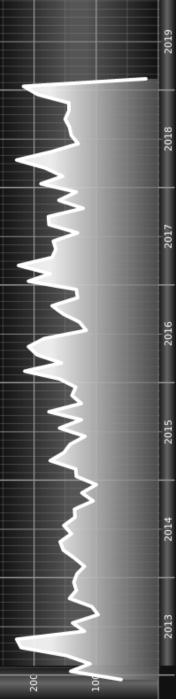


Figure 29: Caption and object in landscape mode. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

the length of words should match the language. 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 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 2019

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! Figure 30: Caption right beside the float and object position left. The caption rotated by -90 degrees. Hello, here is some text without

13 The nonFloat Option

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 \ensuremath{\backslash} emph\{\ensuremath{\backslash} non floating\} object.
```

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

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

Fig. 31

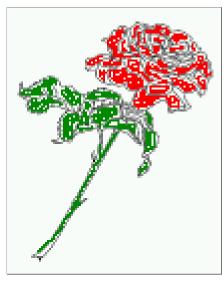


Figure 31: Caption of a "nonfloat" Object, using the nonfloat Package

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\ttfamily}\|\|\|\\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\\
 \end{tabular}%
}
  The code for table 4 and 5 is:
\hvFloat[%
 floatPos=!hb,
 capPos=top,
 use0Box=true]{table}{}{Demonstration of the $$ \text{use0Box} Parameter}{table:1}
\hvblindtext
\marginnote{Tab.~\ref{table:2}}
\hvFloat[%
 floatPos=hb,
 useOBox=true,
 objectAngle=90,
 capPos=right,
 capVPos=top,
 capWidth=0.3] \{table\} \{\} \{Another\ demonstration\ of\ the\ \ \texttt{texttt} \{use0Box\}\ Parameter\} \{table:2\} \}
```

Tab. 4

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

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}}%
```

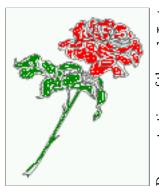
In this case leave the third parameter empty.

Table 5: 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	command	sets all options to the defaults

[''\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:

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:

```
\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{hvFloatEnv}
```

Table 6: A caption for a nice table

left	center	right
L	С	R

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

```
\begin{hvFloatEnv}[0.5\textwidth]
\captionof{table}{A caption for a nice table}
\begin{tabular}{@{} l c r @{}}\hline
left & center & right \\
L & C & R \\hline
\end{tabular}
\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 preceding or following page. It is possible in oneside and twoside mode, but makes only real sense in the twoside mode. hvfloat defines three additional optional arguments for placing images in a complete column, page or paper:

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

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

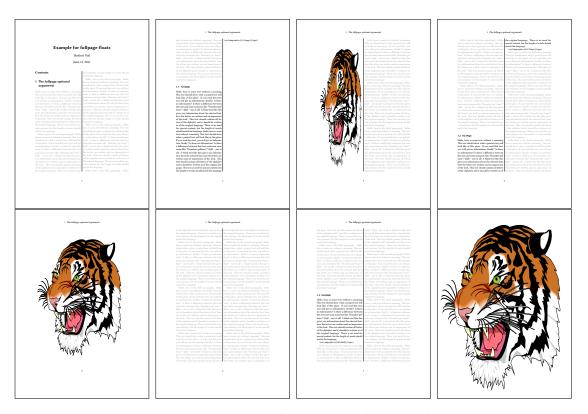


Figure 32: Output of fullpage1s2c (pages 1-8)

17.1 Using the textarea

The setting capPos=evenPage (even) or capPos=oddPage (odd) page for a document in twocolumn mode makes no real sense. For a twosided document a setting like capPos=inner for inner or capPos=outer for outer margin makes more sense. For an image or table which needs the whole space of a page the caption can be printed at the bottom of the 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.

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

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

Name	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 40.
subFloat	true false	For multiple objects with one main and more subcaptions. See
		section 18 on page 42.
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 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.

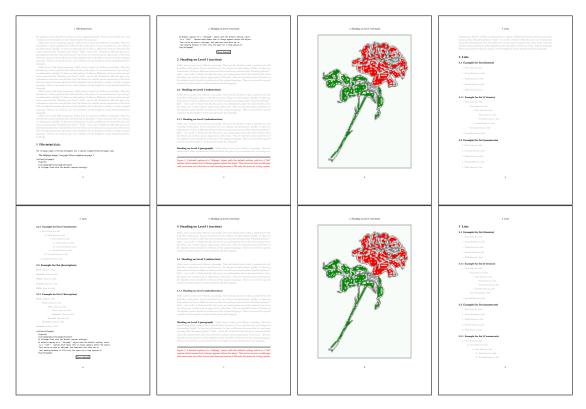


Figure 33: Output of default1s1c (pages 2-9)

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.

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

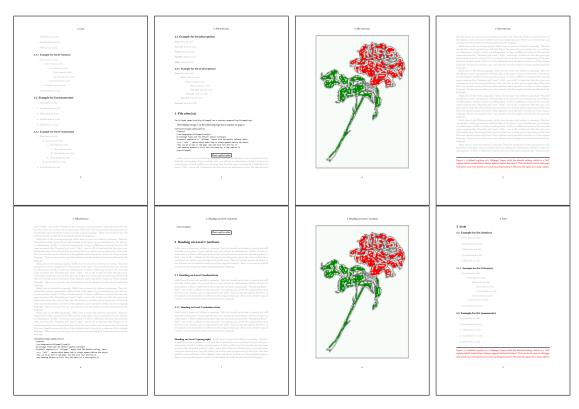


Figure 34: Output of after1s1c (pages 2–9)

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}
```

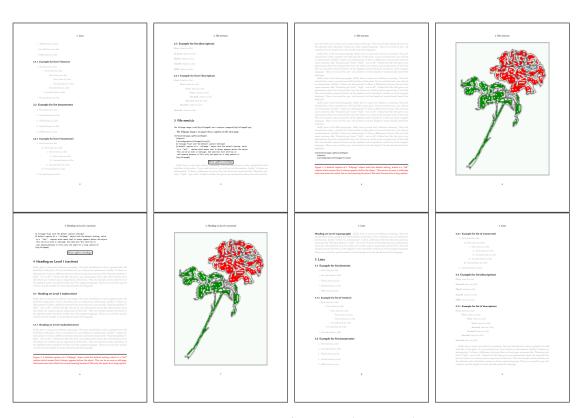


Figure 35: Output of even1s1c (pages 2-9)

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!

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

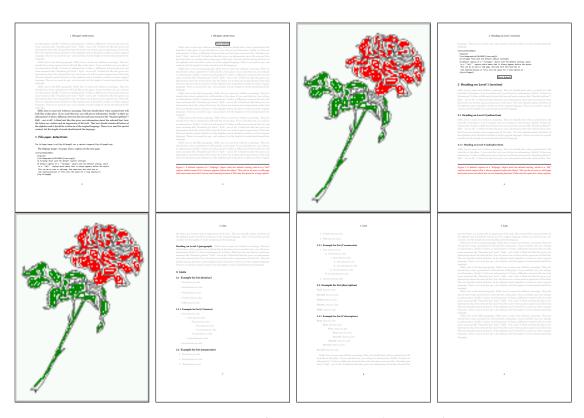


Figure 37: Output of paper-default1s1c (pages 2-9)

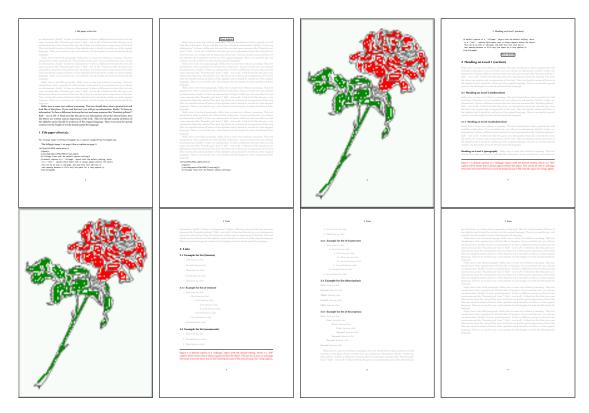


Figure 38: Output of paper-after1s1c (pages 2–9)

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

```
 \label{type} $$ \{float\ type\} \{floating\ object\} \ [short\ caption] \{long\ caption\} \{label\} + \{float\ type\} \{floating\ object\} \ [short\ caption] \{long\ caption\} \{label\} + \dots + \{float\ type\} \{floating\ object\} \ [short\ caption] \{long\ caption\} \{label\} \} $$ (a) $$ (a) $$ (b) $$ (b) $$ (b) $$ (c) $$ (
```

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

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

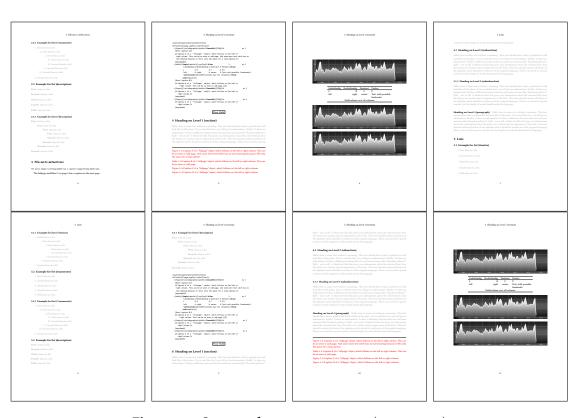


Figure 39: Output of multi-default1s1c (pages 4-11)

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

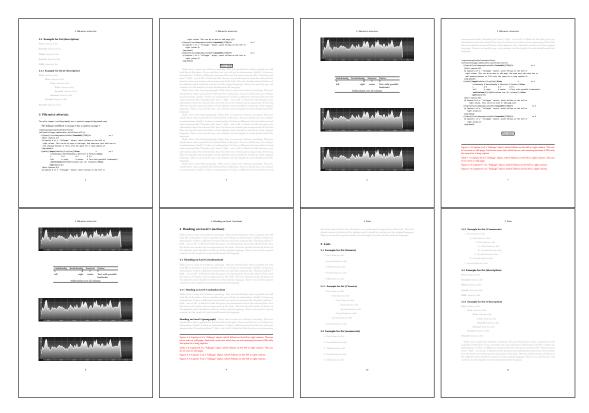


Figure 40: Output of multi-after1s1c (pages 4-11)

tabulars. If you want it like subfigures or subtabulars then go to section 18. The setting \captionsetup{singlelinecheck=false} is needed if you want the captions always left aligned.

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
   {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 whch has no
    real meaning because it fills only the space for a long caption.}% main caption
{sub:demo0}%
+{}{\includegraphics[width=\linewidth]{images/CTAN}}%
[Short caption B]%
{A Caption B of a ''fullpage'' sub object.}% subcaption
{}%
+{}{\includegraphics[width=\linewidth]{images/CTAN}}%
{A Caption C of a ''fullpage'' object, which follows on the left or right column.}%
{sub:demo1}
+{}{\includegraphics[width=\linewidth]{images/CTAN}}%
{A Caption D of a ''fullpage'' object}{sub:demo2}
+{}{\includegraphics[width=\linewidth]{images/CTAN}}%
{A Caption E of a ''fullpage'' object}{sub:demo3}
```

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

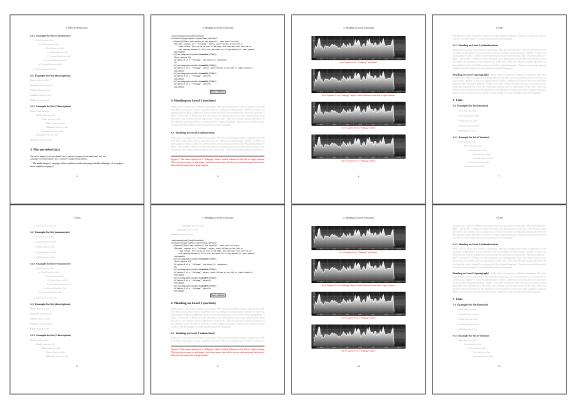


Figure 41: Output of sub-default1s1c (pages 4–11)

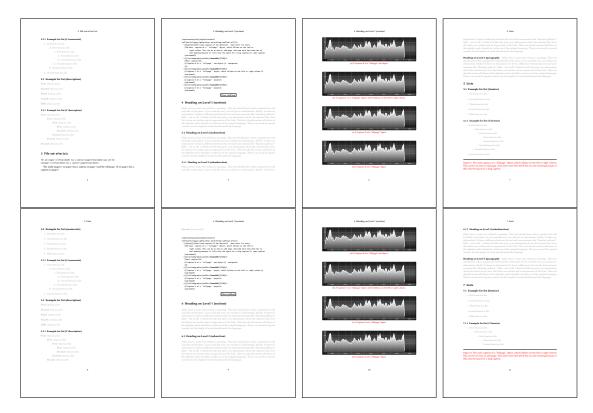


Figure 42: Output of sub-after1s1c (pages 4-11)

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 34 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 on the facing page).

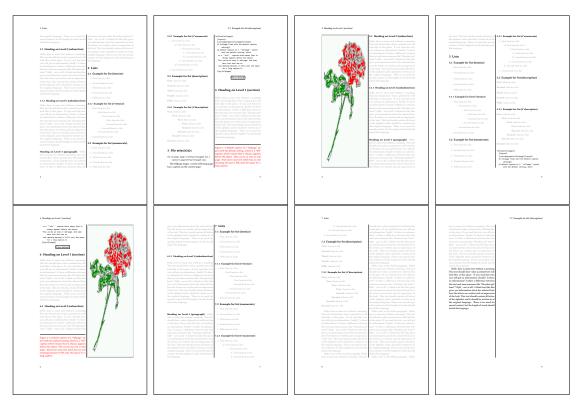


Figure 43: Output of default2s2c (pages 2–9)

```
\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 on the following page).

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 page 48)

```
\hvFloat[fullpage, capPos=after]{figure}%
{\includegraphics[fullpage]{images/rose}}%
```

19 Full page objects in twocolumn mode

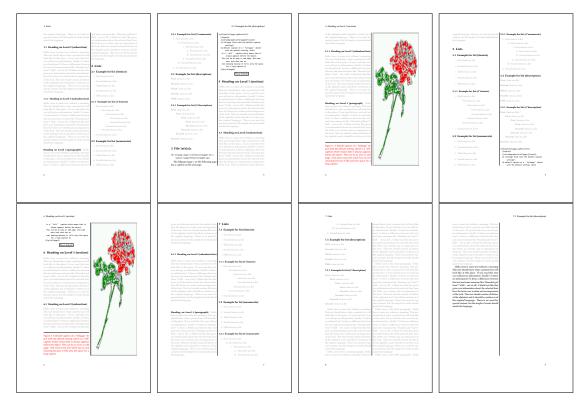


Figure 44: Output of left2s2c (pages 2-9)

```
[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.

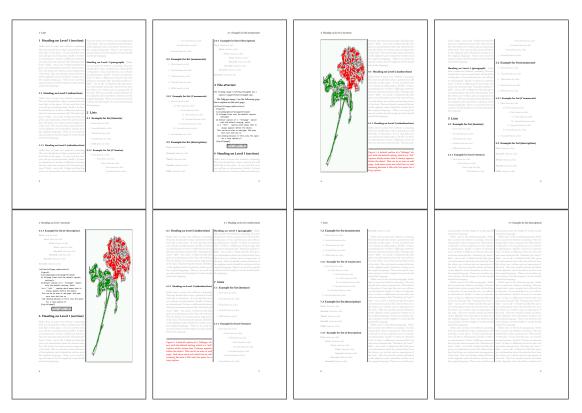


Figure 45: Output of after2s2c (pages 2–9)

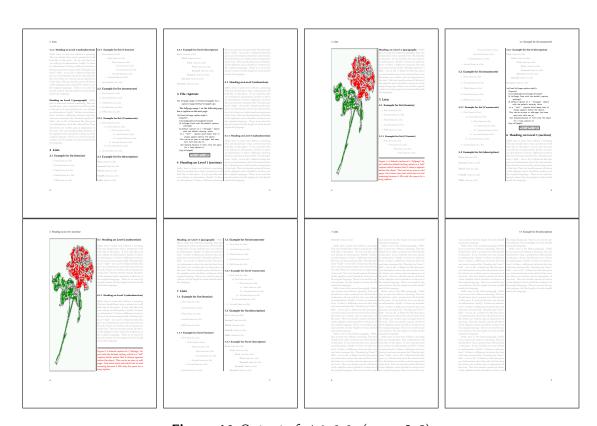


Figure 46: Output of right2s2c (pages 2-9)

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.

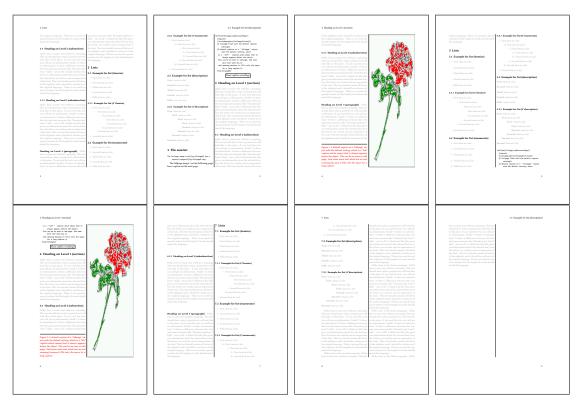


Figure 47: Output of even2s2c (pages 2–9)

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.

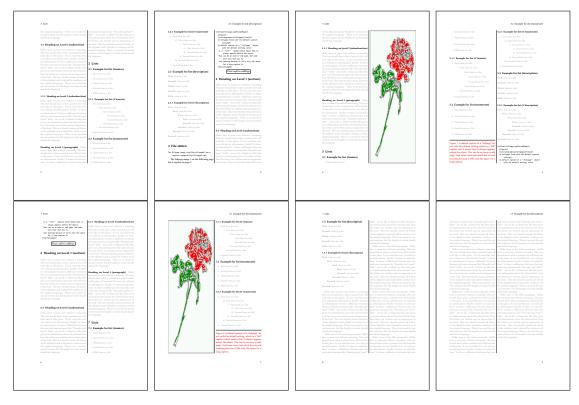


Figure 48: Output of odd2s2c (pages 2-9)

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}}%
[A float which needs the complete column width and height.]%
{A Caption of a ''fullpage'' object, which follows on the left or right column.
This can be an even or odd page. And some more text which has no
real meaning because it fills only the space for a long caption.}{fig:fullpage3-2}

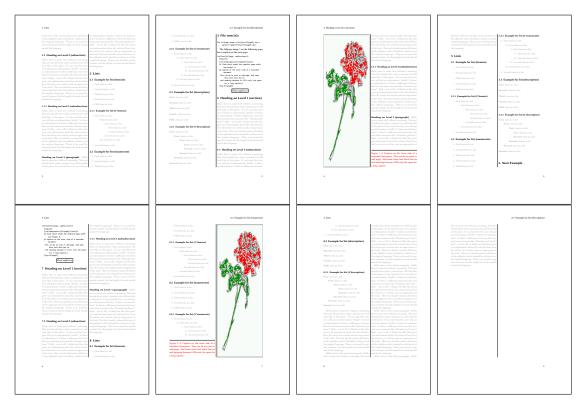


Figure 49: Output of inner2s2c (pages 2-9)

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.

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

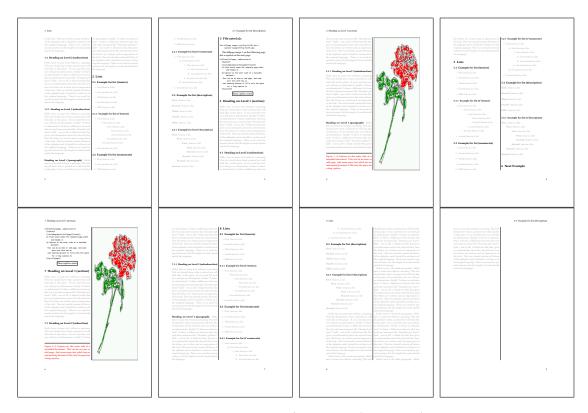


Figure 50: Output of outer2s2c (pages 2-9)

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*.

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

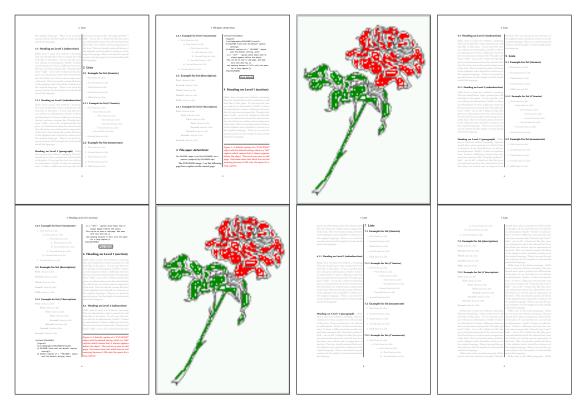


Figure 51: Output of paper-default2s2c (pages 2-9)

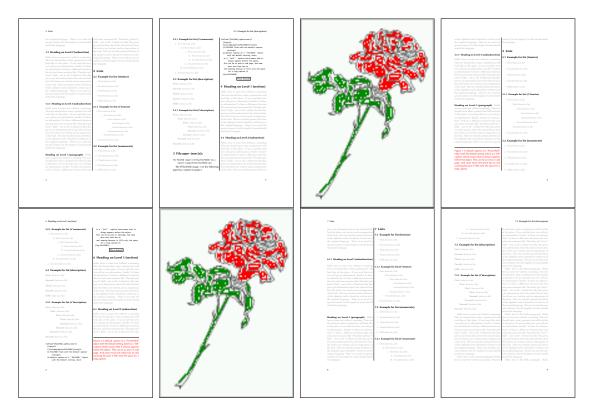


Figure 52: Output of paper-inner2s2c (pages 2-9)

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]%
 + \{ figure \} \{ \\ include graphics [height=0.4 \\ textheight] \{ images/rose \} \} \% \quad no \ 1
   [Short caption A]%
   {A Caption A of a "fullpage" object, which follows on the left or
    right column. This can be an even or odd page. And some more text which has no
    real meaning because it fills only the space for a long caption.}%
   {multi:demo0}%
 +{table}{\begin{tabular}{lr}\hline
                                                        % no 2
            Linksbündig & Rechtsbündig\\
                         & R
                                       11
            left
                         & right
                                       11
            \multicolumn{2}{c}{Multicolumn}\\hline
```

```
\end{tabular}}%
[Short Caption B]%
{A Caption B of a ''fullpage'' object, which follows on the left or right column. This can be an even or odd page.}%
{}%
+{figure}{\includegraphics[height=0.4\textheight]{images/rose}}% no 3
{A Caption C of a ''fullpage'' object, which follows on the left or right column.}%
{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 42. The setting \captionsetup{singlelinecheck=false} is needed if you want the captions always left aligned.

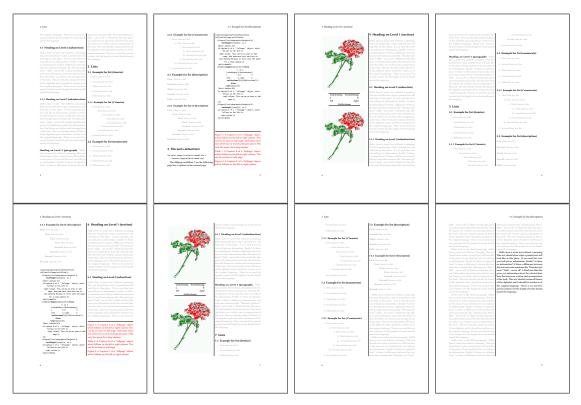


Figure 53: Output of multi-default2s2c (pages 2-9)

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.

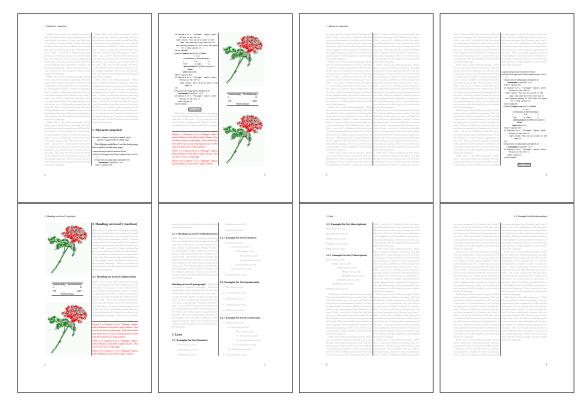


Figure 54: Output of multi-inner2s2c (pages 2-9)

```
\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}%
 + \{\} \{ \texttt{lincludegraphics[height=0.28} \texttt{textheight}] \{ \texttt{limages/rose} \} \%
  [Short caption B]%
  {A Caption B of a ''fullpage'' sub object.}% subcaption
  {}%
 +{}{\includegraphics[height=0.28\textheight]{images/rose}}%
  {A Caption C of a ''fullpage'' object, which follows on the left or right column.}%
  {sub:demo10}
 +{}{\includegraphics[height=0.28\textheight]{images/rose}}%
  {A Caption D of a ''fullpage'' object}%
  {sub:demo20}
```

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

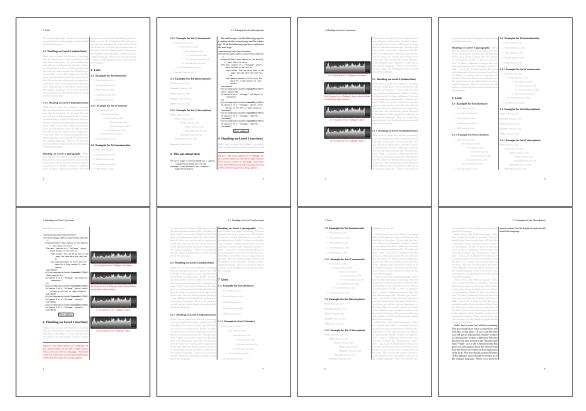


Figure 55: Output of sub-default2s2c (pages 2-9)

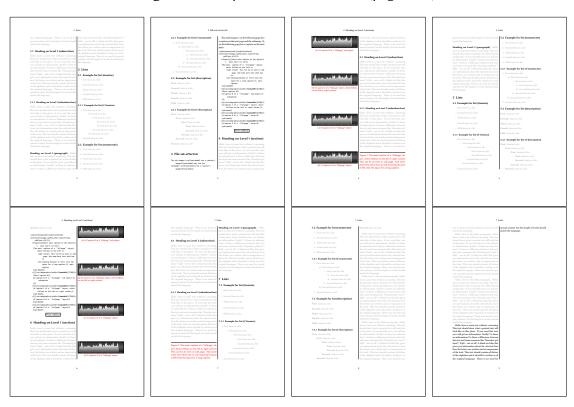


Figure 56: Output of sub-after2s2c (pages 2–9)

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 \texttt{doubleFULLPAGE}}%
   {fig:doubleFULLPAGE0}
```

Fig. 57 Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

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

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

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

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

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

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





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

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

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Fig. 58





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\hvFloat[doubleFULLPAGE,capPos=right]%
{figure}%
{\includegraphics[height=\paperheight]{images/rheinsberg}}%
{A caption for a double-sided image that will be placed on the right-hand
part of the illustration. The illustration begins on the left edge of the paper.
No further text is placed on the pages. A short form is used for the LOF.
The parameter is \textt{doubleFULLPAGE}}%
{fig:doubleFULLPAGE1}
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Fig. 59





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

21 Doublepage objects - images and/or tabulars

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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 74, the left image part on page 72 and the right part on page 73. In the following example 61 the caption is on page 75, the left image part on page 76 and the right part on page 77. All three labels points to the same figure or table number:

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Fig. 60





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

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Figure 60: 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

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\hvFloat[doubleFULLPAGE,capPos=before]%
{figure}%
{\includegraphics[height=\paperheight,width=2\paperwidth,
    keepaspectratio=false]{images/rheinsberg}}%
{A caption for a double-sided image that will be placed 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 \texttt{doubleFULLPAGE}}%
{bar}
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Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

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

Fig. 61





21 Doublepage objects - images and/or tabulars

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.

```
\hvFloat[doublePAGE]%
   {figure}%
   {\includegraphics[width=\dimexpr2\textwidth+2in]{images/seiser}}%
   [A doublepage image with a caption below the right part.]%
   {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{doublePAGE}}%
   {fig:doublePAGE0}
```

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.

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[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:doublePage0sH}
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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

Fig. 63



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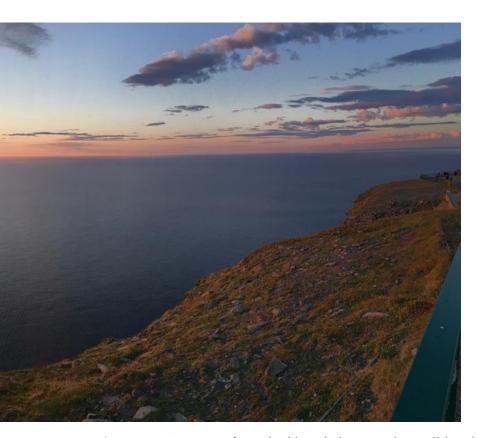


Figure 63: A caption for a double-sided image that will be placed on the right side of the right-hand part of the illustration. The illustration begins on the left edge of the paper. A short form is used for the LOF. The parameter is doublePage

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21 Doublepage objects - images and/or tabulars

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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



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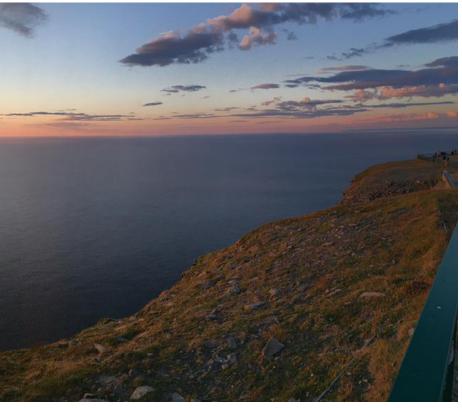


Figure 64: A caption for a double-sided image that will be placed on the right side of the right-hand part of the illustration. The illustration begins on the left edge of the paper. A short form is used for the LOF. The parameter is doublePage

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\hvFloat[doublePage,bindCorr=inner]%
   {figure}%
   {\includegraphics[width=2\textwidth]{images/sonne-meer}}%
   [A doublepage image with a caption on the right side of the right part.]%
   {A caption for a double-sided image that will be placed on the right side of the right-hand part of the illustration. The illustration begins on the left edge of the paper. A short form is used for the LOF.
   The parameter is \texttt{doublePage}}%
   {fig:doublePage0sH2}
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Fig. 65

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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

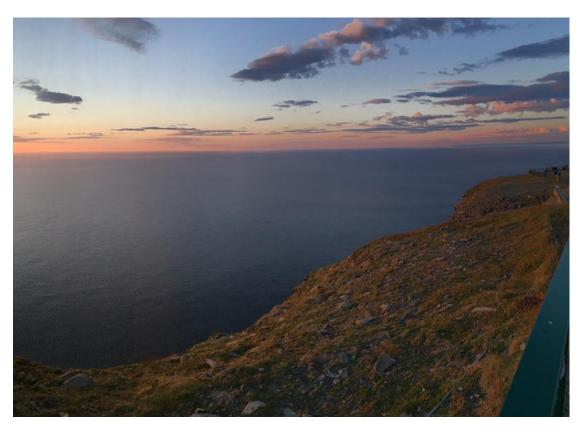


Figure 65: A caption for a double-sided image that will be placed on the right side of the right-hand part of the illustration. The illustration begins on the left edge of the paper. A short form is used for the LOF. The parameter is doublePage

split in the middle of a column. In such a case one can insert some additional horizontal space for this coloumn.

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

```
\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{1983} & \textbf{1984} & \textbf{1988} & \textbf{1989} & \textbf{19
```

```
Zeile 8 & 0 & 1 & 1 & 0 & 0 & 0 & 1 & 1 & 1 & 0 & 2 & 1 & 1 & 3 & 5 & 3 & 4\\addlinespace[3pt]
Zeile 9 & 0 & 0 & 0 & 0 & 0 & 1 & 2 & 1 & 0 & 0 & 0 & 4 & 2 & 1 & 4 & 5 & 2\\addlinespace[3pt]
Zeilel1 & 0 & 2 & 2 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 2 & 6 & 1 & 0 & 2 & 1 & 1 \\addlinespace[3pt]
Zeile13 & 0 & 1 & 0 & 0 & 1 & 0 & 3 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 2 & 0 & 1 & 3 & 0 & 2\\addlinespace[3pt]
Artikel gesamt & 2 & 6 & 13 & 8 & 4 & 3 & 5 & 4 & 0 & 6 & 3 & 5 & 23 & 10 & 8 & 15 & 13 & 1 \\
\bottomrule
\end{tabular}}
\Blindtext
\hvFloat[doublePage,capPos=right,capVPos=top,floatCapSep=12pt]%
 {table}%
 [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
 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}}%
 {tab:doublePage3}
```

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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Tab. 9

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	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Zeile 1	1	3	1	1	1	0	1	1	0	0	0	0
Zeile 2	1	1	3	1	0	0	0	0	0	0	2	1
Zeile 3	2	1	2	1	0	0	0	0	0	0	0	1
Zeile 4	1	0	5	1	2	0	0	0	0	2	1	0
Zeile 6	2	1	1	0	0	0	0	0	0	1	2	0
Zeile 5	0	0	4	2	1	2	2	1	0	0	0	1
Zeile 8	0	1	1	0	0	0	1	1	0	3	2	1
Zeile 9	0	0	0	0	0	1	2	1	0	0	0	0
Zeile10	0	1	3	0	1	0	1	0	0	1	1	0
Zeile11	0	2	2	1	1	0	1	0	0	0	0	2
Zeile12	2	0	2	4	1	0	4	0	0	0	0	0
Lärm	2	3	0	0	0	0	0	0	0	0	1	0
Zeile13	0	1	0	0	1	0	3	0	0	0	0	0
Zeile14	0	1	0	0	0	0	0	0	0	0	0	0
Zeile15	0	0	0	0	0	0	0	0	0	1	0	0
Zeile16	0	0	0	0	0	1	0	0	0	0	0	0
Artikel gesamt	2	6	13	8	4	3	5	4	0	6	3	5

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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

1984	1985	1986	1987	1988	1989
20	0	2	2	2	1
3	4	4	6	4	2
5	3	1	7	7	3
1	0	3	7	2	1
5	2	2	5	4	2
1	0	2	5	4	3
2	1	3	5	3	4
4	2	1	4	5	2
1	1	1	4	4	1
6	1	0	2	1	1
0	0	0	1	0	3
2	0	0	2	2	2
2	0	1	3	0	2
3	3	2	1	1	0
4	0	0	3	1	1
0	0	3	5	0	1
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

\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} ${\mbox{\tt demo:fullpage}}$

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 102, but the image itself is on page 103. 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 103, which uses a correct page number of the floating object and not the caption pagenumber which is on page 102. The figure 67 is on page 103 and the caption on page 102

23 Defining a style

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

```
\hvDefFloatStyle{name}{setting}
```

For example:

\hvDefFloatStyle{RightCaption}{floatPos=htb, capWidth=0.5, capPos=after, capVPos=bottom, objectPos=center

```
\hvFloat[style=RightCaption]{figure}{\includegraphics{images/rose}}%
{Caption vertically centered right beside the float with a caption width of
\texttt{0.5\textbackslash columnwidth}.}{fig:style}
```



Figure 66: Caption at bottom right beside the float with a caption width of 0.5\columnwidth.

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

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}

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

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Figure 67: A Caption of a "fullpage" object, which follows on the next page. This can be an even or odd page. The object uses the complete paper dimensions



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R	- p, 24
	- right, 47
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rotAngle (keyword), 8	varioref (package), 91f
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```
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w (value), 12
wide (keyword), 9, 11, 22
X
xkeyval (package), 7
```

25 The Package Source

```
% $Id: hvfloat.sty 113 2021-06-15 05:42:23Z herbert $
   % IMPORTANT NOTICE:
   %% This is file 'hvfloat.sty',
   % 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
   % in directory macros/latex/base/lppl.txt.
   % DESCRIPTION:
14
        'hvfloat' offers rotating of captions and objects for floats
15
16
   \NeedsTeXFormat{LaTeX2e}
17
   \def\fileversion{2.29}
   \def\filedate{2021/06/15}
19
   \message{'hvfloat' v\fileversion, \filedate\space (Herbert Voss)}
   \ProvidesPackage{hvfloat}[\filedate\ rotating of floating objects]
21
   \let\hvFloatFileVersion\fileversion
   \newif\ifhv@fbox \hv@fboxfalse
24
   \newif\ifhv@hyperref \hv@hyperreffalse
   \newif\ifhv@nostfloats \hv@nostfloatsfalse
   \newif\ifhv@tugboat \hv@tugboatfalse
27
28
   \DeclareOption{fbox}{\hv@fboxtrue\setlength{\fboxsep}{1pt}}
   \DeclareOption{hyperref}{\hv@hyperreftrue}
   \DeclareOption{nostfloats}{\hv@nostfloatstrue}
   \DeclareOption{no-stfloats}{\hv@nostfloatstrue}
   \ProcessOptions
35
   \providecommand\@tugclass{\@empty}
   \ifx\@tugclass\@empty
37
38
   \else
     \hv@tugboattrue % special page handling
39
     \typeout{>>> we are using a TUGboat class}%
40
41
42
   \PassOptionsToPackage{hypcap}{caption}
   \RequirePackage{caption}
   \RequirePackage{varwidth}
   \PassOptionsToPackage{hypcap}{subcaption}
48
   \RequirePackage{subcaption}
   \RequirePackage{atbegshi}
```

\RequirePackage{picture,trimclip}

25 The Package Source

```
52
            \RequirePackage{expl3,multido}
            \RequirePackage{graphicx}
            \RequirePackage{varwidth}
 55
            \RequirePackage{xkeyval}
 57
            \RequirePackage{ifoddpage}
 58
            \RequirePackage{afterpage}
 59
 60
            \ifhv@hyperref
 61
                 \RequirePackage{hyperref}
 62
 63
            \ifhv@nostfloats\else
 64
                 \RequirePackage{stfloats}% for bottom floats in a twocolumn mode
            \fi
 67
            68
 69
            \newlength\hv0bjectWidth
 70
            \newlength\hvCapWidth
 71
            \newlength\hvWideWidth
 72
            \newlength\hvMultiFloatSkip
 73
            \newlength\hvMaxCapWidth
            \Lambda tBeginDocument{\%}
           76
 77
            \newsavebox\hv0bjectBox
 78
            \newsavebox\hvCaptionBox
            \newsavebox\hv0Box
            \newsavebox\@tempbox
            \newsavebox\hv@caption@box
            \newsavebox\hv@leftBox
 83
            \newsavebox\hv@rightBox
 86
            \mbox{\ensuremath{\mbox{\sf newif}}} \mbox{\ensuremath{\mbox{\sf ifhv@capbeside}}} \mbox{\ensuremath{\mbox{\sf hv@capbeside}}} \mbox{\ensuremath{\mbox{\sf also}}} \mbox{\ensuremath{\mbox{\sf also}}} \mbox{\ensuremath{\mbox{\sf hv@capbeside}}} \mbox{\ensuremath{\mbox{\sf also}}} \mbox{\ensu
 87
            \newif\ifhv@switchType
            \def\hv@Top{top}
 89
            \def\hv@Bottom{bottom}
            \def\hv@After{after}
            \def\hv@Before{before}
            \def\hv@Right{right}
            \def\hv@Left{left}
            \def\hv@Center{center}
            \def \hv@Outer{outer}
            \def\hv@Inner{inner}
            \label{lem:configure} $$\def\hv@Even{evenPage}$
            \def\hv@Odd{oddPage}
100
            \def\hv@Natural{n}
            \def\hv@Width\{w\}
101
            \def \hv@Height\{h\}
102
            \def \hv@Zero{0}
103
104
```

```
\def\hv@figure{figure}
105
106
           \define@key{hvSet}{floatPos}[tbp]{%
                                                                                                 LaTeX's position parameters htbp
107
                 \def\hvSet@floatPos{#1}%
108
109
          }
           rotates caption AND image together
110
                  \def \hvSet@rotAngle{#1}%
111
          }
112
           (n)atural width|object (w)idth)|object (h)eight|<scale of \columnwidth
113
                  \def\hvSet@capWidth{#1}%
114
          }
115
           \define@key{hvSet}{capAngle}[0]{%
                                                                                                  -360..+360, only integers
116
                  \def \hvSet@capAngle{#1}%
117
118
          }
119
           120
                      hottom1{%
               \def\hvSet@capPos{#1}%
                                                                                    it is relativ to the object, (e),(d) only valid for fullpage float
121
               \ifcase\nr\relax
122
                   \hv@capbesidefalse
123
124
                   \hv@capbesidefalse
125
126
127
                   \hv@capbesidetrue
128
               \fi
           {\colored} {\tt PackageWarning\{hvfloat\}\{erroneous\ input\ (\#1)\ for\ capPos\ ignored.\ Using\ bottom.} \\ {\tt WeakageWarning\{hvfloat\}\{erroneous\ input\ (\#1)\ for\ capPos\ ignored.\ Using\ bottom.} \\ {\tt WeakageWarning\{hvfloat\}\{erroneous\ input\ (\#1)\ for\ capPos\ ignored.\ Using\ bottom.} \\ {\tt WeakageWarning\{hvfloat\}\{erroneous\ input\ (\#1)\ for\ capPos\ ignored.\ Using\ bottom.} \\ {\tt WeakageWarning\{hvfloat\}\{erroneous\ input\ (\#1)\ for\ capPos\ ignored.\ Using\ bottom.} \\ {\tt WeakageWarning\{hvfloat\}\{erroneous\ input\ (\#1)\ for\ capPos\ ignored.\ Using\ bottom.} \\ {\tt WeakageWarning\{hvfloat\}\{erroneous\ input\ (\#1)\ for\ capPos\ ignored.\ Using\ bottom.} \\ {\tt WeakageWarning\{hvfloat\}\{erroneous\ input\ (\#1)\ for\ capPos\ ignored.\ Using\ bottom.} \\ {\tt WeakageWarning\{hvfloat\}\{erroneous\ input\ (\#1)\ for\ capPos\ ignored.\ Using\ bottom.} \\ {\tt WeakageWarning\{hvfloat\}\{erroneous\ input\ (\#1)\ for\ capPos\ ignored.\ Using\ bottom.} \\ {\tt WeakageWarning\{hvfloat\}\{erroneous\ input\ (\#1)\ for\ capPos\ ignored.\ Using\ bottom.} \\ {\tt WeakageWarning\{hvfloat\}\{erroneous\ input\ (\#1)\ for\ capPos\ ignored.\ Using\ bottom.} \\ {\tt WeakageWarning\{hvfloat\}\{erroneous\ input\ (\#1)\ for\ capPos\ ignored.\ Using\ bottom.} \\ {\tt WeakageWarning\{hvfloat\}\{erroneous\ input\ (\#1)\ for\ capPos\ ignored.\ Using\ bottom.} \\ {\tt WeakageWarning\{hvfloat\}\{erroneous\ input\ (\#1)\ for\ capPos\ ignored.\ Using\ bottom.} \\ {\tt WeakageWarning\{hvfloat\}\{erroneous\ input\ (\#1)\ for\ capPos\ ignored.\ Using\ bottom.} \\ {\tt WeakageWarning\{hvfloat\}\{erroneous\ input\ (\#1)\ for\ capPos\ ignored.\ Using\ bottom.} \\ {\tt WeakageWarning\{hvfloat\}\{erroneous\ input\ (\#1)\ for\ capPos\ ignored.\ Using\ bottom.} \\ {\tt WeakageWarning\{hvfloat\}\{erroneous\ input\ (\#1)\ for\ capPos\ ignored.\ Using\ bottom.} \\ {\tt WeakageWarning\{hvfloat\}\{erroneous\ input\ (\#1)\ for\ capPos\ ignored.\ Using\ bottom.} \\ {\tt WeakageWarning\{hvfloat\}\{erroneous\ input\ i
129
                                                                                          it is relativ to the object, (e),(d) only valid for fullpage float
               \def\hvSet@capPos{bottom}%
130
               \hv@capbesidefalse
131
            }
132
133
           \define@choicekey*+{hvSet}{capVPos}[\val\nr]{bottom,center,top}[center]{%
134
135
               \def\hvSet@capVPos{#1}%
                                                                                   it is relativ to the object
               \ifcase\nr\relax
136
137
                   \def\hv@@capVPos\{b\}%
138
               \or
                   \def\hv@@capVPos\{c\}\%
139
               \else
140
                   \def \hv@capVPos{t}%
141
142
           }{\PackageWarning{hvfloat}{erroneous input (#1) for capVPos ignored. Using center.}%
143
               \def\hvSet@capVPos{center}%
                                                                                         it is relativ to the object
144
145
146
           147
148
               \def\hvSet@allHPos{#1}%
149
               \ifcase\nr\relax
                    \label{localimpos} $$ \gdef\hv@@allHPos{l}% $$
150
151
               \or
                   \gdef\hv@@allHPos{c}%
152
               \else
153
                   \gdef\hv@@allHPos{r}%
154
155
```

```
}{\PackageWarning{hvfloat}{erroneous input (#1) for allHPos ignored. Using center.}%
156
     \def\hvSet@capVPos{center}%
                              it is relativ to the object
157
158
159
   \define@choicekey*+{hvSet}{objectPos}[\val\nr]{left,center,right,inner,outer}[center]{%
160
     \def\hvSet@objectPos{#1}%
                              it is relativ to the object
161
   }{\PackageWarning{hvfloat}{erroneous input (#1) for objectPos ignored. Using center.}%
162
    \def\hvSet@capVPos{center}%
                            it is relativ to the object
163
   }
164
   \define@key{hvSet}{objectAngle}[0]{%
                                  -360..+360
165
     \def\hvSet@objectAngle{#1}%
166
167
   \define@key{hvSet}{floatCapSep}[5pt]{%
                                  a width with the unit pt
168
     \def\hvSet@floatCapSep{#1}%
169
170
   171
     \setlength\hvMultiFloatSkip{#1}%
172
   }
173
   \define@boolkey{hvSet}[hv@]{useOBox}[true]{}%
                                         use of the hvOBox contents
174
   \define@boolkey{hvSet}[hv@]{nonFloat}[true]{}%
                                         Do not use float environment
175
   \define@boolkey{hvSet}[hv@]{onlyText}[true]{}%
                                         Write the caption only as text
176
177
   \define@boolkey{hvSet}[hv@]{wide}[true]{}%
                                       Write the caption only as text
   178
       caption only as text
   \define@boolkey{hvSet}[hv@]{sameHeight}[true]{\@nameuse{hv@sameHeight#1}}% Write the caption only as text
179
   \define@boolkey{hvSet}[hv@]{Debug}[true]{}%
                                       give more infos in the terminal
180
181
   182
183
   \newif\ifhv@fullpage
184
   \newif\ifhv@FULLPAGE
185
   \newif\ifhv@doubleFULLPAGE
186
   \newif\ifhv@doublePAGE
   \newif\ifhv@doublePage
188
189
   \newif\ifhv@setObjectLabel
190
   \newif\ifhv@global@sameHeight
191
   \newlength\hvSet@bindCorrection
192
   \newlength\hvSet@sepLineskip
193
   \newlength\hv@leftPageObjectWidth% for doublepage images
194
   \newlength\hv@tempWidthA
195
   \newlength\hv@tempWidthB
196
   \newlength\hv@minTextlines
197
   \newlength\hv@floatCapSep
198
   \newlength\hvSet@bindCorr
199
200
   201
202
   203
       hv@doublePAGEfalse}
   204
       hv@doubleFULLPAGEfalse}
```

```
hv@doubleFULLPAGEfalse}
         \define@key{hvSet}{bindCorr}[0]{%
206
             \def \hv@temp{#1}%
207
208
             \ifx\hv@temp\hv@Inner
                \setlength\hvSet@bindCorr{\dimexprlin+\oddsidemargin}%
209
210
             \else
                \setlength\hvSet@bindCorr{#1}%
211
             \fi
212
        }
213
         %\setlength\hvSet@bindCorrection{#1}}% for doublepage objects
214
215
         \define@boolkey{hvSet}[hv@]{subFloat}[true]{%
                                                                                                        typeset values as subfloats
216
               \ifhv@subFloat\setkeys{hvSet}{multiFloat=false}\fi%
217
         }%
218
         \define@boolkey{hvSet}[hv@]{multiFloat}[true]{%
                                                                                                        typeset values as continous floats
219
               \ifhv@multiFloat\setkeys{hvSet}{subFloat=false}\fi
220
221
         1%
         \define@boolkey{hvSet}[hv@]{vFill}[true]{}%
                                                                                                 \vfill between multifloat objects
222
223
         \define@boolkey{hvSet}[hv@]{separatorLine}[true]{}% separator line for caption of a full page float
224
         \define@key{hvSet}{sepLineskip}{\def\hv@sepLineskip{#1}}%
225
         226
         227
         \define@key{hvSet}{style}{%
228
             \ensuremath{\mbox{\sc oifundefined{hv@#1}}\%}
229
                 {\errmessage{Custom style '#1' undefined}}%
230
231
                 {\begingroup
                  \end{weight} \x{\end{weight}} \x {\end{weight}} \xspace a defined style a defined style in the style of the style in the
232
        }
233
         \define@key{hvSet}{capFormat}{\def\hv@caption@format{#1}}%
234
         \define@key{hvSet}{subcapFormat}{\def\hv@subcaption@format{#1}}%
235
236
         237
         \let\hvFloatSet\hv@set
238
         \def \def hv@#1 \ \{ \def hv@#1 \ \{ \#2 \} \}
         \let\hvDefFloatStyle\defhvstyle % better name
241
242
         \newcommand\setDefaults{%
243
             \hv@set{%
244
               floatPos=, rotAngle=0, capWidth=n, capAngle=0, objectAngle=0,
245
               capPos=bottom, capVPos=center, objectPos=center, allHPos=center,
246
               floatCapSep=5pt, useOBox=false, nonFloat=false,
247
               onlyText=false, wide=false, fullpage=false, FULLPAGE=false,
248
               doubleFULLPAGE=false, doublePage=false, doublePAGE=false,
249
                       multiFloat=false, subFloat=false,
250
251
               separatorLine,objectFrame=false,multiFloatSkip=\normalbaselineskip,
252
               capFormat={}, subcapFormat={}, twoColumnCaption=false,
253
               sameHeight=false.
              bindCorr=\z@,sepLineskip=0pt,
254
              vFill=false, minTextlines=2,
255
256
        }%
```

257 }

```
258
          \let\hvFloatSetDefaults\setDefaults
259
260
261
          \newcommand\reset@special@float{%
262
              \hv@set{subFloat=false,%fullpage=false,
                               \verb| multiFloat=false|, \$| FULLPAGE = false|
263
264
         }}
265
          \def\hv@vskip{\vspace{\hvMultiFloatSkip}}
266
267
268
          \newlength\hvAboveCaptionSkip
269
          \newlength\hvBelowCaptionSkip
270
          \newcount\hv@@capPos
271
          \mbox{\ensuremath}\ fboxlinewidth
273
274
          \AtBeginDocument{%
              275
276
          \setlength\belowcaptionskip{\abovecaptionskip}% it is in latex.ltx = 0pt
277
          \newcommand\saveCaptionSkip{%
278
                \setlength{\hvAboveCaptionSkip}{\abovecaptionskip}%
279
                \setlength{\hvBelowCaptionSkip}{\belowcaptionskip}%
280
                \setlength{\abovecaptionskip}{0pt}%
281
282
                \setlength{\belowcaptionskip}{0pt}%
283
         }
          \newcommand\restoreCaptionSkip{%
284
              \setlength\abovecaptionskip{\hvAboveCaptionSkip}%
285
               \setlength\belowcaptionskip{\hvBelowCaptionSkip}%
286
287
288
          \providecommand\figcaption[2][]{}%
289
          \providecommand\tabcaption[2][]{}%
291
          \providecommand\tabcaptionbelow[2][]{}%
292
293
          \renewcommand\figcaption[2][]{%
294
               \begingroup
               \def\@captype{figure}%
295
               \ifx\relax#1\relax \caption{#2}\else\caption[#1]{#2}\fi
297
               \endaroup}
298
          \renewcommand\tabcaption[2][]{%
299
               \begingroup
300
301
               \def\@captype{table}%
               \edef\hv@caption@format{position=top,\hv@caption@format}%
302
303
               \expandafter\captionsetup\expandafter{\hv@caption@format}%
               \ifx\relax#1\relax \caption{#2}\else\caption[#1]{#2}\fi
304
305
               \endgroup}
          \restair= \res
306
307
               \begingroup
308
               \def\@captype{table}%
               \edef\hv@caption@format{position=below,\hv@caption@format}%
309
               \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
       \endgroup}
312
313
    %
     \newlength\hv@maxImageWidth
314
     \AtBeginDocument{\hv@maxImageWidth=\columnwidth}
315
316
     \define@key{Gin}{columnWidth}[true]{%
317
       \def\Gin@ewidth{\columnwidth}%
318
     % \def\Gin@eheight{lex}%
319
       \Gin@boolkey{true}{iso}%
320
    }
321
     \define@key{Gin}{fullpage}[true]{%
322
       \def\Gin@ewidth{\columnwidth}%
323
       \def\Gin@eheight{\textheight}%
324
325
       Gin@boolkey{false}{iso}%
    }
326
     \define@key{Gin}{FullPage}[true]{%
327
       \def\Gin@ewidth{\textwidth}%
328
       \def\Gin@eheight{\textheight}%
329
       \Gin@boolkey{false}{iso}%
330
331
     \define@key{Gin}{FULLPAGE}[true]{%
332
       \def\Gin@ewidth{\paperwidth}%
333
       \def\Gin@eheight{\paperheight}%
334
335
       \Gin@boolkey{false}{iso}%
336
    }
     \label{lem:condition} $$\define@key{Gin}{doubleFULLPAGE}[true]{$}$
337
       \def\Gin@ewidth{2\paperwidth}%
338
       \def\Gin@eheight{\paperheight}%
339
       \Gin@boolkey{false}{iso}%
340
341
     \define@key{Gin}{doubleFULLPAGEbindCorr}[true]{%
342
       343
       \def\Gin@eheight{\paperheight}%
344
345
       \Gin@boolkey{false}{iso}%
346
     }
347
     \newcommand\IncludeGraphics[2][]{%
348
       \vspace*{\the\dimexpr-lin-\voffset+\topskip-\headheight-0.5\baselineskip}%
349
       \leavevmode\checkoddpage
350
       \ifoddpage
351
         \hspace*{\dimexpr-\oddsidemargin-\parindent-lin}%
352
       \else
353
         \hspace*{\dimexpr-\evensidemargin-\parindent-lin}%
354
       \fi\noindent
355
356
       \includegraphics[#1,width=\paperwidth,height=\paperheight,keepaspectratio=false]{#2}%
357
     }
358
     \newcommand\put@CaptionBox[1][0]{%
359
       \ifcase#1
360
         \ifhv@fbox
361
           \fbox{\parbox{\wd\hvCaptionBox}{\usebox{\hvCaptionBox}}}%
362
363
```

```
\parbox{\wd\hvCaptionBox}{\usebox{\hvCaptionBox}}%
364
                                     \fi
365
                             \or
366
                                     \ifhv@fbox
367
                                             368
369
                                              \label{lem:continuous} $$ \arrowvert and $$ \operatorname{hvCaptionBox}} % $$
370
                                      \fi
371
                              \or
372
                                     373
                             \fi
374
375
376
                     \mbox{\ensuremath{\mbox{\sf Newcommand}\mbox{\tt put@0bjectBox[1][0]}{\tt {\$}}}
377
378
                             \ifcase#1
379
                                     \ifhv@fbox
                                              \begin{tabular}{\bf \begin{tab
380
381
                                              \label{thm:constraint} $$\operatorname{wh}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox)_{\infty}(hv0bjectBox
382
                                     \fi
383
                              \or
384
                                     \ifhv@fbox
385
                                             \fbox{\raisebox{-\height}{\usebox{\hv0bjectBox}}}%
386
                                             388
389
                                     \fi
390
                              \or
                                     \ifhv@fbox
391
                                            \fbox{\usebox{\hv0bjectBox}}%
392
393
                                             % rotated object with a depth need to raise up the \depth
394
                                              395
397
                              \fi
398
399
400
                     \def\drawSepLine{%
401
                              \par\noindent
402
                              \if@twocolumn
403
                                     \ifhv@twoColumnCaption
404
                                             \mathbf{0.4pt} \le {\linewidth} \{0.4pt\} \le {\linewidth} 
405
                                     \else
406
                                              \mathbf{0.4pt} \leq \mathbf{0.4pt} \setminus [-2.5ex]
407
                                     \fi
408
409
                              \else
410
                                     \mathbf{0.4pt} \le [-2.5ex]
411
412
                              \vspace{\hv@sepLineskip}%
413
414
                    \newcounter{hv@tempCNTfigA}%
415
                    \newcounter{hv@tempCNTfigB}%
```

```
\newcounter{hv@tempCNTtabA}%
417
                    \newcounter{hv@tempCNTtabB}%
418
                    \newcounter{hv@pfigure}%
419
                    \newcounter{hv@ptable}%
 420
421
                    \newcounter{subhv@pfigure}%
422
                    \newcounter{subhv@ptable}%
423
                    \newif\ifhv@star
 424
                     \newif\if@hvsubstar
425
                     \setDefaults
426
 427
                    \def\hvFloat{\@ifnextchar*%
                                                                                                                                                         Main macro
 428
                              {\global\hv@startrue\hv@maxImageWidth=\textwidth\hvFloat@i}%
 429
                               \label{lem:columnwidth} $$ \sup_{x \in \mathbb{R}^{n}} \operatorname{log}(x) = \operatorname{columnwidth} \operatorname{log}(x) + \operatorname{columnwidth} \operatorname{log}(x) + \operatorname
 430
 431
                   }
 432
                    433
                   % [#1}: keyvalues
434
                    % #2: type figure | table | ...
435
                   % #3: float contents
436
                  % [#4]: short caption
437
                   % #5: caption
438
                  % #6: label
439
 440
                   \def\hvFloat@i*{\@ifnextchar[{\do@hvFloat}{\do@hvFloat[]}}
441
442
                    \def\do@hvFloat[#1]{%}
 443
                             \begingroup
                             \setlength\hvWideWidth{\dimexpr\columnwidth+\marginparwidth+\marginparsep}%
 444
                    % \setlength\hvWideWidth{\dimexpr\textwidth+\marginparwidth+\marginparsep}%
 445
                    % \setlength\hvWideWidth{\dimexpr\linewidth+\marginparwidth}%
 446
                             \hv@maxImageWidth=\textwidth
 447
                             \reset@special@float
 448
                              \setcounter{hv@pfigure}{\value{figure}}%
 449
 450
                              \setcounter{hv@ptable}{\value{table}}%
 451
                              \setcounter{hv@tempCNTfigA}{\value{figure}}%
 452
                             \setcounter{hv@tempCNTfigB}{\value{figure}}%
                             \setcounter{hv@tempCNTtabA}{\value{table}}%
 453
                             \setcounter{hv@tempCNTtabB}{\value{table}}%
454
                             \renewcommand\thehv@pfigure{\thefigure}%
455
                             \renewcommand\thehv@ptable{\thetable}%
 456
                             \renewcommand\thehv@tempCNTfigA{\thefigure}%
457
                             \renewcommand\thehv@tempCNTfigB{\thefigure}%
458
                             \renewcommand\thehv@tempCNTtabA{\thetable}%
 459
                              \renewcommand\thehv@tempCNTtabB{\thetable}%
 460
                             \gdef\hv@save@setting{#1}%
 461
 462
                             \ifx\relax#1\relax\else\setkeys{hvSet}{#1}\fi
 463
                             \label{linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_linear_
 464
                              \ifx\hv@subcaption@format\@empty\else
 465
                                              \expandafter
                                              \captionsetup\expandafter[\expandafter s\expandafter u\expandafter b\expandafter]\expandafter
 466
                                                                                                                                             {\hv@subcaption@format}%
 467
 468
                             \gdef\hv@floatType{figure}% presetting
```

469

```
\@ifnextchar+{\do@multiFloat}{\hvFloat@ii[#1]}%
470
471
472
            \ExplSyntax0n
473
474
            \def\do@multiFloat+#1#2{%}
475
                  \verb|\clist_set:Nn\l_clist_Type{{#1}}|%
476
                   \clist_set:Nn\l_clist_Object{{#2}}%
477
                  \@ifnextchar[\do@multiFloat@i{\do@multiFloat@i[]}%
478
479
            }
             \label{lem:loss_def} $$ \def\do@multiFloat@i[\#1]\#2\#3{\%} $$ lof-caption, caption, label $$ \def\doms{\def}$$ $$ \def\doms{\def}$$$ $\def\doms{\def}$$$ \def\doms{\def}$$$ \def\doms{\def}$$$ \def\doms{\def}$$$ \def\doms{\def}$$$ \def\doms{\def}$$$ \def\doms{\def}$$$ \def\doms{\def}$$$ \def\doms{\def}$$$ \def\doms{\def}$$$ \def\doms{\def}$$$$ \def\doms{\def}$$$ \def\doms{\def}$$ \def\doms{\def}$$$ \def\doms{\def}$$$ \def\doms{\def}$$$\def\do
480
                  \ifx\relax#1\relax
481
                        \clist_set:Nn\l_clist_LofCaption{{}}%
482
                       \verb|\clist_set:Nn| \mathbf{l}_c list_LofCaption {\{\#1\}\}} %
484
                  \fi
485
                  \verb|\clist_set:Nn\l_clist_Caption{{#2}}%
486
                  \ifx\relax#3\relax
487
                       \verb|\clist_set:Nn| \mathbf{l}_{clist\_Label} {\{\}\}} %
488
489
                       \verb|\clist_set:Nn\l_clist_Label{{#3}}|%
490
491
                  \@ifnextchar+{\do@multiFloat@ii}{}%
492
493
            \def\do@multiFloat@ii+#1#2{%
494
                  \verb|\clist_put_right:Nn\\ l_clist_Type{{\#1}}%
495
                  \verb|\clist_put_right:Nn\\| \textbf{l}_clist_Object{\{\#2\}}\\| %
496
                   \@ifnextchar[\do@multiFloat@iii{\do@multiFloat@iii[]}%
497
498
499
             \def\do@multiFloat@iii[#1]#2#3{% lof-caption, caption, label
500
                  \ifx\relax#1\relax
501
502
                       \clist_put_right:Nn\l_clist_LofCaption{{}}%
503
                       \clist_put_right:Nn\l_clist_LofCaption{{#1}}%
505
                  \fi
                  \verb|\clist_put_right:Nn\\ l_clist_Caption{{#2}}%
506
                  \ifx\relax#3\relax
507
                       \verb|\clist_put_right:Nn| \textbf{l}_clist_Label{{}} %
508
                  \else
509
                       \verb|\clist_put_right:Nn\\| \textbf{l}_clist_Label{{#3}} %
510
511
                   \@ifnextchar+\do@multiFloat@ii%
512
                        {\def}\hvSet@CapWidth{n}%
513
514
                          \do@@@dhvFloat}%
515
516
            \ExplSyntaxOff
517
518
519
            \newcount\hv@cnta
520
            \newcount\hv@cntb
521
522
```

```
\def\hvFloat@ii[#1]#2#3{%
                                 #1: key/value, #2: floattype, #3: object
523
      \hv@maxImageWidth=\textwidth
524
      \ifx\relax#1\relax\else\setkeys{hvSet}{#1}\fi
525
526
      \gdef\hv@floatType{#2}%
527
      \ifx\relax#2\relax
        \setkeys{hvSet}{nonFloat,onlyText}%
528
      \fi
529
      \xdef\hv@floatListOfExt{\@nameuse{ext@\hv@floatType}}%
530
      \gdef\hv@floatObject{#3}%
531
       \@ifnextchar[{\do@@hvFloat}{\do@@hvFloat[]}%
532
533
534
535
    \def\do@hvFloat[#1]#2#3{%}
                                  #1: listof caption, #2. long caption #3: label
536
537
      \gdef\hv@shortCap{#1}%
      \gdef\hv@longCap{#2}%
538
      \gdef\hv@label{#3}%
539
      540
      541
      \xdef\hv@global@@capVPos{\hv@@capVPos}%
542
      \xdef\hvSet@global@capVPos{\hvSet@capVPos}%
543
      \xdef\hvSet@global@capAngle{\hvSet@capAngle}%
544
       \global\setlength\hvSet@bindCorrection{\hvSet@bindCorr}% for doublepage objects
545
       \global\setlength\hv@floatCapSep{\hvSet@floatCapSep}%
546
547
548
      \ifhv@fullpage
        \def\hvSet@CapWidth{n}% relative value
549
        \verb|\do@@@hvFloat|| full page with caption on other page|
550
551
        \ifhv@FULLPAGE
552
          \def\hvSet@CapWidth{n}% relative value
553
          \do@@@hvFloat% fullpage with caption on other page
554
555
          \ifhv@doubleFULLPAGE
556
557
            \setlength\hvCapWidth{\textheight}%
            \expandafter\do@hvFloat@doubleFULLPAGE\@@temp% fullpage with caption rotated or under on an odd page
558
          \else
559
            \ifhv@doublePAGE
560
              \expandafter\do@hvFloat@doublePAGE\@@temp% fullpage with caption rotated or under on an odd page
561
            \else
562
              \ifhv@doublePage
563
                \expandafter\do@hvFloat@doublePage\@@temp% fullpage with caption rotated or under on an odd page
564
              \else
565
                \do@@dhvFloat
566
              \fi
567
            \fi
568
569
          \fi
570
        \fi
      \fi
571
572
    }
573
    \def\do@@hvFloat{% no special float page, caption and image on top of each other or side by side
574
      \def\@tempa{90}%
575
```

```
\ifx\hvSet@rotAngle\@tempa
576
                              \setlength\hvMaxCapWidth{\textheight}%
577
578
                              \verb|\colored| \colored| \c
579
580
                        \fi
581
                %
                 % First we save the object in \hvObjectBox
582
583
                       \ifnum\hvSet@objectAngle=0 % rotate the object?
584
                              \ifhv@useOBox
585
                                     \let\hv0bjectBox\hv0Box
586
                                      \savebox\hv0bjectBox{\hv@float0bject}%
                               \fi
                        \else
                              \savebox\hv0bjectBox{%
591
                                     \rotatebox{\hvSet@objectAngle}{%
592
                                            \verb|\if| hv@use0Box\\ \textbf{\hv}0Box\\ \textbf{\else}\\ hv@float0bject\\ \textbf{fi}
593
                                    }%
594
                              }%
595
                        \fi
596
                        \setlength\hv0bjectWidth{\wd\hv0bjectBox}%
597
598
                \% Now we save the caption with its defined \hvCapWidth
599
600
601
                       \ifx\hvSet@capWidth\hv@Width%
                                                                                                                                                                                   captionwidth=objectwidth
                              \setlength\hvCapWidth{\hvObjectWidth}%
602
603
                              \ifx\hvSet@capWidth\hv@Height%
                                                                                                                                                                                   captionwidth=objectheight
604
                                    605
606
                                     \ifx\hvSet@capWidth\hv@Natural%
                                                                                                                                                                                   captionwidth=\linewidth-\objectwidth-separation
607
                                            \ifhv@capbeside
                                                   \ifhv@wide
                                                          610
                                                   \else
                                                          \ifhv@star
                                                                613
614
                                                                 \verb|\setlength| hvCapWidth{\the} dimexpr\\ \linewidth-\hvObjectWidth-\hv@floatCapSep\\ \linewidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-\hvObjectWidth-
615
                                                          \fi
616
                                                   \fi
617
                                            \else
618
                                                   \setlength\hvCapWidth{\columnwidth}%
619
                                            \fi
620
                                     \else
                                            \ifhv@capbeside
623
                                                   \ifhv@wide
                                                           \setlength\hvCapWidth{\hvSet@capWidth\hvWideWidth}%
624
                                                          625
                                                   \else
626
                                                          \setlength\hvCapWidth{\hvSet@capWidth\columnwidth}%
627
                                                          \setlength\@tempdima{\the\dimexpr\columnwidth-\hv0bjectWidth-\hv@floatCapSep\relax}%
628
```

```
629
                                                                                                        \ifdim\hvCapWidth>\@tempdima
 630
                                                                                                                      \verb|\colored| \colored| \c
 631
                                                                                                        \fi
  632
  633
                                                                                           \else
                                                                                                        \ifhv@wide
  634
                                                                                                                      \setlength\hvCapWidth{\hvSet@capWidth\hvWideWidth}%
 635
                                                                                                        \else
 636
                                                                                                                      \setlength\hvCapWidth{\hvSet@capWidth\columnwidth}%
 637
                                                                                                        \fi
 638
                                                                                           \fi
 639
                                                                           \fi
                                                              \fi
  641
                                                 \fi
  642
  643
                                                 \saveCaptionSkip% we put this space ourselve
  644
                                                 \ifnum\hvSet@global@capAngle=0 % need rotation?
                                                               \savebox\hvCaptionBox{% NO rotation
 645
                                                                             \minipage[b]{\hvCapWidth}% minipage, to get hyphenation
 646
                                                                                           \ifhv@nonFloat
 647
                                                                      \ifhv@onlyText
648
                                                                                    \hv@longCap
649
                                                                      \else
 650
                                                                                    \ifx\hv@floatType\hv@figure
 651
                                                                                                 \ifx\relax\hv@shortCap\relax
  652
                                                                                                               \label{$\ \$ ifig caption $$ \left( \ hv@long Cap \ ifx \ hv@label \ empty \ else \ label \ hv@label \ ifi \ empty \ else \ label \ hv@label \ hv@label \ hv@label \ empty \ else \ label \ hv@label \ empty \ else \ else \ empty \ else \
  653
  654
                                                                                                               \label{$$ \figcaption[\hv@shortCap]{\hv@longCap\ifx\hv@label\end{\hv@label}\fi}% $$ \end{\hv@label} $$ \en
  655
                                                                                                 \fi
  656
                                                                                    \else
 657
                                                                                                 \ifx\relax\hv@shortCap\relax
  658
                                                                                                              \label{$$ \tilde{\hv@longCap}ifx\hv@label\end{hv@label} if i} % $$ $$ $$ $$ if x \mapsto \tilde{\hv@label} if i \end{hv@label} $$ $$ $$ $$ if x \mapsto \tilde{\hv@label} if i \end{hv@label} $$
 659
 660
                                                                                                               \label{$$ \tilde{\hv@longCap}ifx\hv@label\empty} else \label{\hv@label} \tilde{\hv@label} \tilde
  661
  662
                                                                                  \fi
  663
                                                                    \fi
                                                        \else
  665
                                                                    \ifhv@onlyText
  666
                                                                                  \hv@longCap
  667
                                                                    \else
 668
                                                                                                                      \let\@captype\hv@floatType
 669
                                                                                                                      670
                                                                                                                      \ifx\hv@label\end{hv@label}\fi
671
                                                                                                        \fi
 672
                                                       \fi
 673
  674
                                                                              \endminipage
  675
                                                               }%
 676
                                                 \else
                                                               \savebox\hvCaptionBox{% Rotation
 677
                                                                           \verb|\rotatebox{\hvSet@global@capAngle}{%}|
 678
                                                                                           \minipage[b]{\hvCapWidth}% minipage, to get hyphenation
 679
                                                                       680
                                                                      \ifhv@nonFloat
681
```

```
\ifhv@onlyText
682
                                                 \hv@longCap
 683
                                                            \else
                                                 \ifx\hv@floatType\hv@figure
 685
                                                        \label{linear_continuity} $$ \inf_{\boldsymbol{\omega}\in \mathbb{R}^{d}} \exp[-(hv@shortCap)_{\boldsymbol{\omega}}] $$ igcaption_{\boldsymbol{\omega}\in \mathbb{R}^{d}} $$ igcaption_{\boldsymbol{\omega}\in \mathbb
 687
                                                 \else
                                                        688
                                                 \fi
 689
                                          \fi
 690
                                   \else
 691
                                          \ifhv@onlyText
 692
                                                 \hv@longCap
 693
 694
                                                                   \let\@captype\hv@floatType
                                                                  697
                                                                  \fi
                                                           \fi
 698
                                                    \fi
 699
                                                    \label{$\vec{\mathbf{h}}$ if $\mathbf{x} \rightarrow \mathbb{C}_{\mathbf{b}} \
 700
                                             \endminipage
 701
                                      }% rotatebox
 702
                               }% \sbox
 703
 704
 705
                 % now we have the object and the caption with the right
 706
                 % rotated angles saved in different boxes
 707
 708
                        \restoreCaptionSkip% save old values
 709
                 % \def\fps@figure{\hvSet@floatPos}%
710
                        \ifx\hvSet@floatPos\@empty
                                                                                                                                       % use type default
711
712
                               \@namedef{fps@\hv@floatType}{\hvSet@floatPos}%
713
714
 715
                         \ifhv@nonFloat
 716
                                \noindent
 717
                               \begingroup%
                                                                                                     Start the nonfloat part
                         \else
718
                               \ifhv@star
719
                                      \fint {\bf ifx}\hvSet@floatPos\hv@floatBottom}
 720
                                                                                                                                                                    Start the floating environment ******************
                                             \@nameuse{\hv@floatType*}[b]%
721
                                      \else
722
                                             \@nameuse{\hv@floatType*}%
723
                                      \fi
724
725
                                       \begin{\hv@floatType}%
                                                                                                                                    Start the floating environment
 726
 727
                               \fi
 728
                         \fi
 729
                         \checkoddpage
                         730
                        \ifx\hvSet@objectPos\hv@Center
731
                               \verb|\if| hv@nonFloat\\ hspace*{\fill} else\\ centering\\ fi
732
733
                        \ifx\hvSet@objectPos\hv@Outer
 734
```

```
\ifoddpage\raggedleft\fi
735
       \fi
736
       \ifx\hvSet@objectPos\hv@Inner
737
         \verb|\ifoddpage| else| raggedleft| fi
738
739
       \fi
740
    %
    % to rotate object and caption together, we save all in another box
741
    % the caption comes first, if its on the left or the top
742
     % O caption left, inner and odd page, oneside inner
743
     % 1 caption top
744
       2 caption right, inner and even page, oneside outer
745
    % 3 caption bottom
746
747
748
       749
         \hv@@capPos=0
       \else
750
         \ifx\hvSet@capPos\hv@Top
751
           \hv@@capPos=1
752
         \else
753
           \ifx\hvSet@capPos\hv@Right
754
             \hv@@capPos=2
755
756
           \else
             \ifx\hvSet@capPos\hv@Bottom
757
758
               \hv@@capPos=3
759
             \else
               \ifx\hvSet@capPos\hv@Inner
                 \verb|\ifoddpageoroneside| hv@@capPos=0\\ else\\ hv@@capPos=2\\ fi
761
               \else
762
                 \ifx\hvSet@capPos\hv@Outer
763
                   \ifoddpageoroneside\hv@@capPos=2\else\hv@@capPos=0\fi
764
765
                   \ifx\hvSet@capPos\hv@Before
766
                      \hv@@capPos=0% same as cappos=right
767
768
769
                      \fint \mathbf{x}\ hvSet@capPos\hv@After
                        \fi
771
                   \fi
772
                 \fi
773
               \fi
774
             \fi
775
           \fi
776
         \fi
777
       \fi
778
779
     %%%
                                                    ***** @tempbox start
780
       \savebox{\@tempboxa}{%
781
         \expandafter\ifcase\the\hv@ecapPos\% \ \theta \ is \ LEFT
                                                             START \ifcase
782
           \fint {\bf ifx}\hvSet@global@capVPos\hv@Center}
783
             \put@CaptionBox
             \hspace{\hv@floatCapSep}% capfloatsep
784
             \put@ObjectBox
785
786
             \ifx\hvSet@global@capVPos\hv@Top% caption and object at top aligned
787
```

```
\put@CaptionBox[1]%
788
             \hspace{\hv@floatCapSep}% capfloatsep
789
             \put@ObjectBox[1]%
791
           \else% caption on bottom
792
             \put@CaptionBox[2]%
             \hspace{\hv@floatCapSep}% capfloatsep
793
             \put@ObjectBox[2]%
794
           \fi
795
         \fint \mathbf{fi}\% end caption left
796
        \or%1 is top
797
         \ifdim\wd\hvCaptionBox>\wd\hvObjectBox
798
       \begin{minipage}{\wd\hvCaptionBox}%
       \begin{minipage}{\wd\hv0bjectBox}%
         \fi
         \centering
         \ifhv@fbox
       805
       \footnote{Mox{\normalfootnote{Abox}}}
806
         \else
807
       \usebox{\hvCaptionBox}\\[0.5\hvBelowCaptionSkip]%
808
       \usebox{\hv0bjectBox}%
809
810
811
         \end{minipage}%
812
        \or%2 is right
         \verb|\ifx\hvSet@global@capVPos\hv@Center| \\
813
           \put@ObjectBox
814
       \hspace{\hv@floatCapSep}%
815
       \put@CaptionBox
816
         \else
817
       \ifx\hvSet@global@capVPos\hv@Top
818
             \put@ObjectBox[1]%
819
             \hspace{\hv@floatCapSep}% capfloatsep
820
821
             \put@CaptionBox[1]%
       \else
823
             \put@ObjectBox[2]%
             \put@CaptionBox[2]%
825
       \fi
826
         \fi
827
        \or%3 bottom
828
         \ifdim\wd\hvCaptionBox>\wd\hvObjectBox
829
           \begin{minipage}{\wd\hvCaptionBox}\%
830
         \else
831
           \begin{minipage}{\wd\hv0bjectBox}%
832
833
         \fi
834
         \centering
835
         \ifhv@fbox
           836
             \fbox{\usebox{\hvCaptionBox}}%
837
           \else
838
             839
                  hvAboveCaptionSkip]%
```

```
\usebox{\hvCaptionBox}%
840
            \fi
841
842
          \end{minipage}%
        \fi% \ifcase\the\hv@@capPos
843
      }% End savebox Object and caption
                                                  844
845
    %
    \ensuremath{\text{\%}} now we rotate the object and caption, if needed
846
847
      \ifhv@wide
848
        \ifoddpageoroneside
849
          \if@twocolumn
850
            \if@firstcolumn
851
              \noindent
852
              \hspace*{\dimexpr-\marginparwidth-\marginparsep}% oddpage first column
853
854
            \fi
          \fi
855
        \else
856
          \ifoddpage
857
            \if@twocolumn
858
              \if@firstcolumn
859
                \noindent
860
                \hspace*{\dimexpr-\marginparwidth-\marginparsep}% oddpage first column
861
862
            \fi
863
864
          \else% evenpage
865
            \if@firstcolumn
              \noindent
866
              \verb|\hspace*{\dimexpr-\marginparwidth-\marginparsep}\% <- \textit{for wide and left page}| \\
867
            \fi
868
          \fi
869
        \fi
870
871
872
      \ifx\hvSet@rotAngle\hv@Zero
873
        \usebox{\@tempboxa}%
874
      \else
        \fi
876
      \ifhv@nonFloat
877
        \ifx\hvSet@objectPos\hv@Center
878
           \ifhv@nonFloat
879
         \hspace{\fill}%
880
           \fi
881
        \fi
882
        \endgroup% End the nonfloat part
883
884
      \else
885
        \ifhv@star
886
          887
        \else
          \end{\hv@floatType}% End the floating environment
888
        \fi
889
      \fi
890
      \endgroup% startet at main \hvFloat
891
```

892

```
893
    \newenvironment{hvFloatEnv}[1][\textwidth]
894
      {\minipage{\#1}}
896
      {\endminipage}
897
898
    \ExplSyntax0n
899
    \let\clist@item@Nn\clist_item:Nn
900
    901
    902
    \let\l@clist@Label\l clist Label
903
    \let\clist@count@N\clist_count:N
904
    \ExplSyntaxOff
905
    \label{lem:def} $$ \do@@hvFloat{% special float page: caption <-> fullpage image } $$
907
      908
909
        910
        \else
911
          \ifx\hvSet@capPos\hv@Odd
                                    \hv@@capPos=3
912
913
            \ifx\hvSet@capPos\hv@Inner
914
                                        \hv@@capPos=4
915
              \fint \mathbf{x}\ hvSet@capPos\hv@Outer
                                           \hv@@capPos=5
916
917
                                            \label{local_pose_fit} $$ \rhoonly for two column mode $$ \end{area}.
                \ifx\hvSet@capPos\hv@Right
919
                  \ifx\hvSet@capPos\hv@Left \hv@@capPos=7% only for twocolumn mode
920
921
                    \hv@@capPos=0
922
                  \fi
923
                \fi
924
925
              \fi
            \fi
926
          \fi
        \fi
928
      \fi
929
      \checkoddpage
930
      \set@caption@object{\hv@floatType}% set caption and object into a box
931
      \ifcase\hv@@capPos% caption before object 0-> _always_ left
932
        \setBottomCaption\setPageObject
933
      \or%
                            caption after object 1-> _always_ right
934
        \setPageObject\setBottomCaption
935
      \or%
                            caption on even page 2-> left page
936
937
        \ifoddpage
938
          \afterpage{\setBottomCaption\setPageObject}%
939
        \else% we are on an even page
940
          \setBottomCaption\setPageObject
941
        \fi
                          caption on odd page 3->right page
942
      \or%
        \if@twoside
943
          \if@twocolumn
944
            \ifoddpage
945
```

```
\if@firstcolumn% on right side
946
                  \setBottomCaption\setPageObject
947
948
                \else
                  \verb|\afterpage{\setPageObject\setBottomCaption}| % \textit{ start next column} |
949
                \fi
950
              \else% left (even) page
951
                \if@firstcolumn
952
                  \afterpage{\setPageObject\setBottomCaption}% start next column
953
                \else
954
                  \setPageObject\setBottomCaption
955
                \fi
956
              \fi
957
            \else% onecolumn
958
              \ifoddpage
959
                \setPageObject\setBottomCaption
              \else% even page
961
                \verb|\afterpage{\setPageObject\setBottomCaption}| % \\
962
              \fi
963
            \fi
964
          \else% oneside
965
            \if@twocolumn
966
              \ifoddpage
967
                \if@firstcolumn% on right side
968
                  \setBottomCaption\setPageObject
969
970
                \else
                  \verb|\setPageObject\setBottomCaption| \\
971
                \fi
972
              \else
973
                \if@firstcolumn% on left side
974
                  \afterpage{\setPageObject\setBottomCaption}%
975
976
                  \setPageObject\setBottomCaption
977
978
              \fi
979
980
            \else % onecolumn
              \ifoddpage
                \verb|\setBottomCaption\setPageObject| \\
982
              \else
983
                \afterpage{\setBottomCaption\setPageObject}%
984
              \fi
985
            \fi
986
         \fi
987
                             caption on the inner column 4->inner
       \or%
988
           \set@caption@object
989
         \if@twocolumn
990
991
            \ifoddpage
992
              \ightharpoonup on right side
993
           \setBottomCaption\setPageObject
                               % right column on right side
994
              \else
                \setPageObject\setBottomCaption% start next firstcolumn next page
995
              \fi
996
            \else
997
              \if@firstcolumn% on left side
998
```

```
\afterpage{\afterpage{\setBottomCaption\setPageObject}}% start next page/first column
              \else% left page/column
1000
                 \setBottomCaption\setPageObject% start on same page/column
1001
              \fi
1002
            \fi
1003
          \else% onecolumn
1004
            \setBottomCaption\setPageObject
1005
          \fi
1006
                              caption on the outer column 5->outer
1007
           \set@caption@object
1008
          \if@twocolumn
1009
            \ifoddpage
1010
              \if@firstcolumn
1011
                 \afterpage{\afterpage{\setBottomCaption\setPageObject}}%
1012
1013
              \else
                 \afterpage{\setBottomCaption\setPageObject}%
1014
              \fi
1015
            \else% even page (left)
1016
              \if@firstcolumn
1017
                 \setBottomCaption\setPageObject
1018
              \else
1019
                         !!!! to-do: !!!!
1020
              \fi
1021
            \fi
1022
1023
          \else% onecolumn
            \verb|\setBottomCaption\setPageObject| \\
1024
          \fi
1025
                              caption after object on same page 6->right for twocolumn
        \or%
1026
          \if@twocolumn
1027
            \if@firstcolumn
1028
              \afterpage{\setPageObject\setBottomCaption}%
1029
1030
1031
              \setPageObject\setBottomCaption
1032
1033
          \else% always caption _after_ object for onecolumn
1034
            \verb|\setPageObject\setBottomCaption| \\
          \fi
1035
                              caption before object on same page 7->left for twocolumn
        \or%
1036
          \if@twocolumn
1037
            \if@firstcolumn
1038
              \setBottomCaption\setPageObject
1039
            \else
1040
              \afterpage{\setBottomCaption\setPageObject}%
1041
            \fi
1042
                         onecolumn -> same as before
1043
1044
            \verb|\setBottomCaption\setPageObject| \\
1045
          \fi
1046
        \endgroup% startet at main \hvFloat
1047
1048
      }
1049
      %
1050
1051
```

```
% ------ the doublepage obejcts -----
1052
    % || 1in+evenside --- | 1in+oddside --- ||
1053
1054
    \def\do@hvFloat@doublePage#1{% image on left and right page with caption on the right page
1055
1056
      % #1-> 0/1 caption under/right
      1057
      1058
      \xdef\hv@caption@format@temp{\hv@caption@format}% it gets lost otherwise for next afterpage
1059
      \qlobal\hv@switchTypefalse
1060
      \savebox\hvCaptionBox{% NO rotation
1061
        \minipage{\textwidth}% minipage, to get hyphenation
1062
         \let\@captype\hv@floatType
1063
         \caption*{\hv@longCap}%
1064
        \endminipage}%
1065
      \savebox\hv0bjectBox{\ifhv@use0Box\usebox{\hv0Box}\else\hv@float0bject\fi}%
1067
      \ifnum#1=0\relax
                     % no rotation, caption below
        \hv@typeout{Texthöhe: \the\textheight}%
1068
       \hv@typeout{Objekthöhe: \the\ht\hvObjectBox}%
1069
       \hv@typeout{Captionhöhe: \the\ht\hvCaptionBox}%
1070
        \@tempdima=\dimexpr\ht\hv0bjectBox+\ht\hvCaptionBox+\abovecaptionskip+\belowcaptionskip +\textfloatsep\
1071
            relax%+\floatsep\relax
1072
        \hv@typeout{Summe: \the\@tempdima}%
        \ifdim\@tempdima > \dimexpr\textheight-\hv@minTextlines\relax
1073
         \hv@typeout{hvfloat: switched to floattype p}%
1074
1075
         \hv@switchTypetrue
1076
       \fi
      \fi
1077
      1078
      \checkoddpage
1079
      \ifoddpage
1080
       \if@twocolumn
1081
         \if@firstcolumn
1082
           \ifhv@switchType
1083
             \afterpage{\do@hvFloat@doublePAGECaptionRight{#1}}%
1084
1085
            \fi
1087
         \else
1088
           \ifhv@tugboat
1089
             \do@hvFloat@doublePageCaptionRight{#1}%
1090
           \else
1091
             \ifhv@switchType
1092
              \do@hvFloat@doublePAGECaptionRight{#1}%
1093
1094
              1095
             \fi
1096
1097
           \fi
1098
         \fi
1099
        \else
         \ifhv@switchType
1100
           \do@hvFloat@doublePAGECaptionRight{#1}%
1101
         \else
1102
           \afterpage{\do@hvFloat@doublePageCaptionRight{#1}}%
1103
```

```
\fi
1104
                   \fi
1105
               \else% we have an even page
1106
1107
                  \if@twocolumn
1108
                       \if@firstcolumn
1109
                           \ifhv@switchType
                               \afterpage{\do@hvFloat@doublePAGECaptionRight{#1}}}%
1110
                           \else
1111
                               1112
                           \fi
1113
                       \else% second column
1114
                           \ifhv@switchType
1115
                               \afterpage{\do@hvFloat@doublePAGECaptionRight{#1}}%
1116
1117
1118
                               \fi
1119
                       \fi
1120
                   \else% onecolumn
1121
                       \ifhv@switchTvpe
1122
                           \afterpage{\do@hvFloat@doublePAGECaptionRight{#1}}%
1123
1124
                           \afterpage{\do@hvFloat@doublePageCaptionRight{#1}}}%
1125
                       \fi
1126
                   \fi
1127
1128
               \fi
1129
               \let\c@fptop\hv@fptop
1130
             \endgroup% started at main macro \hvFloat
1131
          }
1132
           \verb|\def| do@hvFloat@doublePageCaptionRight#1{\%} image on left and right page with caption on the right page for the caption of the right page of of the rig
1133
               \do@hvFloat@doublePageCaptionRightObjectLeft{Opt}%
1134
1135
               \afterpage{\do@hvFloat@doublePageCaptionRightObjectRight{#1}}%
1136
          }
1137
           \def\do@hvFloat@doublePageCaptionRightObjectLeft#1{% left part of the object
1139
               \begin{\hv@floatType*}[!t]
                   \hv@typeout{Floatpositionsparameter: !t}%
1140
                   1141
                   1142
                   \ifx\hv@label\@empty
1143
                   \else
1144
                       \ifx\hv@floatType\hv@figure
1145
                           \global\refstepcounter{hv@tempCNTfigA}%
1146
                       \else
1147
1148
                           \global\refstepcounter{hv@tempCNTtabA}%
                                                                                                                before caption
1149
                       \fi
1150
                       \label{\hv@label}%
1151
                   \ifhv@global@sameHeight
1152
                       \hv@typeout{text should be of same height of both pages}%
1153
                       \par\phantom{\parbox{\textwidth}{\caption*{\hv@longCap}}}%
1154
                         \vspace{\textfloatsep}%
1155
```

```
\fi
1156
                                 \end{\hv@floatType*}%
1157
                      }
1158
                       \def\doehvFloat@doublePageCaptionRightObjectRight#1{\% right part of the object}
1159
                                        \begin{\hv@floatType*}[!t]
1160
                                                     1161
                                                     \hspace*{-\hv@tempWidthA}%
1162
                                                     \label{linear_continuity} $$\ \end{show} \end{show} \end{show} $$\ \end{show} \end{show} $$\ \
1163
                                                                           hv0biectBox}}%
                                                     \global\setlength\hv@tempWidthB{\dimexpr\textwidth-\wd\hv@rightBox-\hvSet@bindCorrection+lin+\
1164
                                                                           oddsidemargin-\hv@floatCapSep\relax}%
                                                     \hv@typeout{Height of right box: \the\ht\hv@rightBox}%
1165
                                                     1166
                                                     \int \int d\mathbf{p} \cdot d\mathbf{p}
1167
                                                                      \raisebox{\depth}{\usebox\hv@rightBox}%
                                                     \else
1169
1170
                                                             \usebox\hv@rightBox
                                                     \fi
1171
                                                     \ifx\hv@label\@empty\else
1172
                                                             \ifx\hv@floatType\hv@figure
1173
                                                                      \global\refstepcounter{hv@tempCNTfigB}%
1174
1175
                                                                      \global\refstepcounter{hv@tempCNTtabB}%
1176
                                                             \fi
1177
                                                             \label{\hv@label-2}%
1178
1179
                                                     \fi
                                                     1180
                                                             \expandafter\captionsetup\expandafter{\hv@caption@format@temp}%
1181
                                                     \fi
1182
                                                                                                                            % caption on the right
                                                     \ifnum#1>\z@
1183
                                                             \hv@typeout{doublePage: capAngle=\hvSet@global@capAngle}%
1184
                                                             \ifnum\hvSet@global@capAngle > \z@
1185
                                                                      \hspace{\hv@floatCapSep}%
1186
                                                                      \rdet{rotatebox}{\hvSet@global@capAngle}{\parbox[b]}{\the}dimexpr\\ht\\hv0bjectBox+\\dp\\hv0bjectBox}{%}
1187
                                                                               \abovecaptionskip=0pt% local inside parbox
1188
                                                                               \belowcaptionskip=0pt% local inside parbox
1190
                                                                               \ifx\relax\hv@shortCap\relax
                                                                                      \caption{\hv@longCap}%
1191
                                                                              \else
1192
                                                                                       \caption[\hv@shortCap]{\hv@longCap}%
1193
                                                                             \fi
1194
                                                                     }}}%
1195
                                                                      1196
1197
                                                                      \global\setlength\hv@tempWidthB{\dimexpr\textwidth-\wd\hv@rightBox-\hvSet@bindCorrection+lin+\
1198
                                                                                            oddsidemargin-\hv@floatCapSep\relax}%
1199
                                                                      \hspace{\hv@floatCapSep}%
1200
                                                                      \label{local_parbox_balance} $$ \Gamma_{\sigma}[\dot{\sigma}] (\del{hv@rightBox}) [\hv@global@capVPos]_{\hv@tempWidthB}_{%} $$
1201
                                                                               \abovecaptionskip=0pt% local inside parbox
                                                                               \belowcaptionskip=0pt% local inside parbox
1202
                                                                               \ifx\hv@shortCap\@empty
1203
                                                                                       \caption{\hv@longCap}%
1204
                                                                               \else
1205
```

```
\caption[\hv@shortCap]{\hv@longCap}%
1206
             \fi
1207
           }}%
1208
           \fi
        \else % #1 = 0 caption below
1211
          \ifx\relax\hv@shortCap\relax
1212
           \caption{\hv@longCap}%
1213
          \else
1214
           \caption[\hv@shortCap]{\hv@longCap}%
1215
1216
          \ifx\hv@label\ensuremath{\hv@label-cap}\fi
1217
1218
      \vspace{0pt}%
1219
1220
     \end{\hv@floatType*}
1221
   }
1222
   \newsavebox\hv@boxLeftPage
1223
   \newsavebox\hv@boxRightPage
1224
1225
   % || 1in+evenside --- | 1in+oddside --- ||
1226
1227
1228
   \def\do@hvFloat@doublePAGE#1{% image on left and right page with caption on the right
1229
1230
     % #1-> 0/1 caption under/right
     1231
     1232
     1233
         else\hv@floatObject\fi}%
     1234
         hv@leftPageObjectWidth{} \height}{\usebox\hvObjectBox}}%
     \expandafter\global\expandafter\savebox\expandafter\hv@boxRightPage\expandafter{\clipbox*{\
1235
         \label{lem:lem:lem:hv@leftPageObjectWidth{} -\depth{} \width{} \height}{\usebox}hvObjectBox{}\}% $$
1236
     \checkoddpage
1237
     \ifoddpage
      \if@twocolumn
1238
        \if@firstcolumn
1239
         \afterpage{\do@hvFloat@doublePAGECaptionRight{#1}}%
1240
        \else
1241
         \do@hvFloat@doublePAGECaptionRight{#1}%
1242
        \fi
1243
1244
        \verb|\do@hvFloat@doublePAGECaptionRight{#1}%|
1245
1246
      \fi
1247
     \else
1248
      \if@twocolumn
1249
        \if@firstcolumn
         1250
        \else
1251
         1252
1253
```

```
\else
1254
                                                     \afterpage{\do@hvFloat@doublePAGECaptionRight{#1}}%
1255
                                            \fi
1256
1257
                                   \fi
1258
                                   \endgroup% startet at main macro
1259
                        }
1260
                         \def\do@hvFloat@doublePAGECaptionRight#1{% image on left and right page with caption on the right
1261
                                  % #1-> 0/1 caption under/right
1262
                                            \afterpage{%
1263
                                                     1264
1265
                                                     \verb|\clipbox*{0 -\depth{} \hv@leftPageObjectWidth{} \height}{\usebox}\hvObjectBox}|% | \clipbox*{0 -\depth{} \hvObjectBox}|% |
1266
                                                     \null\newpage\if@twocolumn\null\newpage\fi
                                                     hv0Box}\else\hv@float0bject\fi}%
1269
                                                     \noindent
                                                     \hspace*{\dimexpr-\hv@tempWidthA}%
1270
                                                               1271
                                                                        \int 1>0
1272
                                                                                 \medskip
1273
                                                                                 \int \int d\mathbf{p} \cdot d\mathbf{p}
1274
                                                                                           1275
                                                                                                   \ifx\relax\hv@shortCap\relax
                                                                                                            \captionof{\hv@floatType}{\hv@longCap}\%
1277
1278
                                                                                                   \else
                                                                                                            \caption of {\hv@floatType}[\hv@shortCap]{\hv@longCap}\%
1279
                                                                                                   \fi
1280
                                                                                         }}%
1281
                                                                                          \ifx\hv@label\ensuremath{\del{hv@label}\fi}
1282
                                                                                 \else
1283
                                                                                           \rotatebox{90}{\parbox{\the}\dimexpr\ht\hv0bjectBox+\dp\hv0bjectBox}{%}
1284
                                                                                                   \ifx\relax\hv@shortCap\relax
1285
                                                                                                             \captionof{\hv@floatType}{\hv@longCap}%
1286
                                                                                                   \else
1288
                                                                                                            \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
                                                                                                   \fi
1289
                                                                                         }}%
1290
                                                                                           1291
                                                                                 \fi
1292
                                                               \else% caption not rotated
1293
                                                                        \par\noindent
1294
                                                                        \parbox{\textwidth}{%
1295
                                                                                           \ifx\relax\hv@shortCap\relax
1296
                                                                                                    \captionof{\hv@floatType}{\hv@longCap}%
1297
                                                                                           \else
1298
1299
                                                                                                   \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1300
                                                                                          \fi
                                                                                           \ifx\hv@label\ensuremath{\hv@label}\fi
1301
1302
                                                                                 }%
1303
                                                               \newpage\if@twocolumn\null\newpage\fi
1304
```

```
}%
1305
1306
     }
1307
     % ||1in+evenside --- |1in+oddside ---||
1309
     \def\do@hvFloat@doubleFULLPAGE#1{% image on left and right page with caption before/below/right/after
1310
       % #1-> 0/1 caption under/right
1311
       \ifx\hvSet@capPos\hv@After \hv@@capPos=1
1312
1313
         \ifx\hvSet@capPos\hv@Before \hv@@capPos=0
1314
1315
           \hv@@capPos=2 % other caption type
1316
1317
       \checkoddpage
1318
       1319
       \global\setlength\hv@tempWidthA{\dimexpr-\oddsidemargin-lin-\parindent+\hvSet@bindCorrection}% the width
1320
            of the right side offset
       \global\setlength\hv@tempWidthB{\dimexpr\ht\hvCaptionBox+\wd\hvObjectBox+2\hvSet@bindCorrection}%
1321
       \global\setlength\hv@leftPageObjectWidth{\dimexpr\paperwidth-\hvSet@bindCorrection}%
1322
     % \savebox\hv@leftBox{\clipbox*{0 0 \the\hv@leftPage0bjectWidth{} \height}{\usebox\hv0bjectBox}}%
1323
     % \savebox\hv@rightBox{\clipbox*{\the\hv@leftPageObjectWidth{} \depth{} \width{} \height}{\usebox\
1324
          hv0bjectBox}}%
     % \expandafter\captionsetup\expandafter{\hv@caption@format}%
1325
1326
         \ifcase\hv@@capPos % =0 Caption before
1327
          \if@twocolumn
1328
1329
             \if@firstcolumn
               \verb|\ifhv@twoColumnCaption| \\
1330
                \set@Normal@Bottom@Caption*
1331
                 \afterpage{\do@hvFloat@doubleFULLPAGE@CaptionBefore}%
1332
               \else
1333
                 \afterpage{\set@Normal@Bottom@Caption\do@hvFloat@doubleFULLPAGE@CaptionBefore}%
1334
               \fi
1335
             \else% \if@firstcolumn
1336
1337
               \set@Normal@Bottom@Caption
               \do@hvFloat@doubleFULLPAGE@CaptionBefore
             \fi
1339
           \else% \if@twocolumn
1340
             \set@Normal@Bottom@Caption
1341
             \do@hvFloat@doubleFULLPAGE@CaptionBefore
1342
           \fi
1343
         \or % =1 Caption after
1344
           \ifhv@twoColumnCaption
1345
1346
               1347
             \else
               \do@hvFloat@doubleFULLPAGE@CaptionAfterTwoCol
1350
             \fi
1351
           \else
             \if@twocolumn
1352
               \if@firstcolumn
1353
                 \afterpage{\do@hvFloat@doubleFULLPAGE@CaptionAfter}%
1354
               \else
1355
```

```
\do@hvFloat@doubleFULLPAGE@CaptionAfter
1356
             \fi
1357
           \else
1358
             \do@hvFloat@doubleFULLPAGE@CaptionAfter
1359
1360
           \fi
         \fi
1361
        \else% \ifcase >1 all other Captions
1362
         \if@twocolumn
1363
           \if@firstcolumn
1364
             \afterpage{\do@hvFloat@doubleFULLPAGE@CaptionOther{#1}}%
1365
           \else
1366
             \do@hvFloat@doubleFULLPAGE@CaptionOther{#1}%
1367
1368
         \else % \if@twocolumn
1369
           \do@hvFloat@doubleFULLPAGE@CaptionOther{#1}%
1370
         \fi
1371
       \mathbf{fi}% \ifcase
1372
      \else% we have an even page
1373
        \ifcase\hv@@capPos% Before
1374
         \if@twocolumn
1375
           \if@firstcolumn
1376
             \ifhv@twoColumnCaption
1377
              \afterpage{\afterpage\set@Normal@Bottom@Caption*\afterpage{\
1378
                   do@hvFloat@doubleFULLPAGE@CaptionBefore \{\#1\}\}\}\%
1379
             \else
              \afterpage{\afterpage{\set@Normal@Bottom@Caption\
1380
                   \label{local_double_full_page} do@hvFloat@doubleFULLPAGE@CaptionBefore \{\#1\}\}\} \%
             \fi
1381
           \else
1382
             1383
           \fi
1384
         \else% \if@twocolumn
1385
           \afterpage{\set@Normal@Bottom@Caption\do@hvFloat@doubleFULLPAGE@CaptionBefore}%
1386
         \fi
1387
1388
        \or % capPos after
         \if@twocolumn
           \if@firstcolumn
1390
             \ifhv@twoColumnCaption
1391
              1392
             \else
1393
              1394
             \fi
1395
           \else
1396
             \ifhv@twoColumnCaption
1397
              1398
1399
             \else
              1400
1401
             \fi
1402
           \fi
         \else% \if@twocolumn
1403
           \afterpage{\do@hvFloat@doubleFULLPAGE@CaptionAfter}%
1404
1405
        \else % \ifcase Any other caption
1406
```

```
\if@twocolumn
1407
           \if@firstcolumn
1408
             1409
           \else
1410
1411
             \afterpage{\do@hvFloat@doubleFULLPAGE@CaptionOther{#1}}}%
           \fi
1412
          \else
1413
           \afterpage{\do@hvFloat@doubleFULLPAGE@CaptionOther{#1}}%
1414
          \fi
1415
        \fi% \ifcase
1416
      \fi% main ifoddpage
1417
      \endgroup% started at main macro \hvFloat
1418
1419
1420
    1421
     \def\set@Normal@Bottom@Caption@{%
1422
        \begin{\hv@floatType}[!b]
1423
          \verb|\fine| drawSepLine| \textbf{fi}|
1424
          \expandafter\captionsetup\expandafter{\hv@caption@format}%
1425
          \ifx\hv@shortCap\@empty
1426
           \captionof{\hv@floatType}{\hv@longCap}%
1427
1428
           \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1429
          \fi
1430
1431
          \ifx\hv@label\ensuremath{\dempty\else\label{hv@label-cap}\fi}
1432
        \end{\hv@floatType}%
1433
    }
    \def\set@Normal@Bottom@CaptionStar*{%
1434
        \begin{\hv@floatType*}[!b]
1435
          \ifhv@separatorLine\drawSepLine\fi
1436
          \expandafter\captionsetup\expandafter{\hv@caption@format}%
1437
          \ifx\hv@shortCap\@empty
1438
           \captionof{\hv@floatType}{\hv@longCap}%
1439
          \else
1440
           \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1441
1442
          \fi
          1443
        \end{\hv@floatType*}%
1444
1445
    }
1446
1447
    \def\do@hvFloat@doubleFULLPAGE@CaptionBefore{%
1448
    % \setcounter{hv@tempCNTfigA}{\value{figure}}%
1449
    % \setcounter{hv@tempCNTfigB}{\value{figure}}%
1450
    % \setcounter{hv@tempCNTtabA}{\value{table}}%
1451
    % \setcounter{hv@tempCNTtabB}{\value{table}}%
1452
1453
      \afterpage{%
1454
        1455
        \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}% no
             interlineskip
        \hspace*{\the\dimexpr-\evensidemargin-\parindent-lin}%
1456
        \thispagestyle{empty}%
1457
        \ifx\hv@floatType\hv@figure
1458
```

```
\global\refstepcounter{hv@tempCNTfigB}%
1459
                                                 \else
1460
                                                           \global\refstepcounter{hv@tempCNTtabB}%
                                                                                                                                                                                                                                                                                before caption
1461
                                                 \fi
1462
                                                 \expandafter\label\expandafter{\hv@label}%
1463
                                                 \verb|\clipbox*{0 0 $$ \the\hv@leftPageObjectWidth{} \height}{\usebox\hvObjectBox}% $$
1464
1465
                                                 \afterpage{%
                                                           \if @two column \ge new page \cap ull \ge fi
1466
                                                           1467
                                                           \thispagestyle{empty}%
1468
                                                            \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -0.51
1469
                                                                                     paperheight+0.5\ht\hv0bjectBox
                                                            \hspace*{\hv@tempWidthA}%
 1470
                                                           \global\savebox{\hv0bjectBox}{\ifhv@use0Box\usebox{\hv0Box}\else\hv@float0bject\fi}%
 1471
                                                           \clipbox*{\the\hv@leftPage0bjectWidth{} \dp\hv0bjectBox{} \wd\hv0bjectBox{} \ht\hv0bjectBox}{\usebox\hd}
                                                                                     hv0bjectBox}%
 1473
                                                           \ifx\hv@floatType\hv@figure
                                                                     \global\refstepcounter{hv@tempCNTfigA}%
1474
                                                           \else
1475
                                                                     \global\refstepcounter{hv@tempCNTtabA}% before caption
1476
1477
                                                            \expandafter\label\expandafter{\hv@label-2}%
1478
                                                            \newpage\if@twocolumn\null\newpage\fi
1479
                                     }}%
 1480
                           }
 1481
 1482
 1483
                            \newif\ifhv@temp
1484
                            \verb|\def| do@hvFloat@doubleFULLPAGE@CaptionAfter{% | linear continuous contin
1485
                                        \afterpage{%
1486
                                                  \global\savebox{\hv0bjectBox}{\ifhv@use0Box\usebox{\hv0Box}\else\hv@float0bject\fi}%
1487
                                                  \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}% no
1488
                                                 \hspace*{\the\dimexpr-\evensidemargin-\parindent-lin}%
1489
                                                 \thispagestyle{empty}%
 1490
                                                 $$ \clipbox*{0 <caption> \clipbox*{0 } \clipbox*{0 } \clipbox}{\clipbox} \clipbox*{0 } \clip
 1491
                                                \ifx\hv@floatType\hv@figure
1492
                                                          \refstepcounter{hv@tempCNTfigA}%
1493
                                                 \else
1494
                                                          \refstepcounter{hv@tempCNTtabA}% before caption
1495
                                                  \fi
1496
                                                  \ifx\hv@label\@empty\else\label{\hv@label}\fi
1497
                                                      \afterpage{%
1498
                                                           1499
                                                           \global\savebox{\hv0bjectBox}{\ifhv@use0Box\usebox{\hv0Box}\else\hv@float0bject\fi}%
1500
                                                           \thispagestyle{empty}%
1501
1502
                                                           \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -0.51
                                                                                     paperheight+0.5\ht\hv0bjectBox
1503
                                                           \hspace*{\hv@tempWidthA}%
                                                            1504
                                                           \label{linear_continuous} $$ \left( \frac{\theta}{\theta} \right) \left( \frac{\theta}{\theta} \right)
1505
                                                                                     hv0bjectBox}%
```

```
\ifx\hv@floatType\hv@figure
1506
                                         \refstepcounter{hv@tempCNTfigB}%
1507
                                   \else
1508
                                         \refstepcounter{hv@tempCNTtabB}% before caption
1509
                                   \fi
1510
                                   \expandafter\label\expandafter{\hv@label-2}%
1511
                                   \newpage if@twocolumn null newpage fi
1512
                                   \begin{\hv@floatType}[!b]
1513
                                         \ifhv@separatorLine\drawSepLine\fi
1514
                                            \expandafter\captionsetup\expandafter{\hv@caption@format}%
1515
                                         \ifx\hv@shortCap\@empty
1516
                                               \captionof{\hv@floatType}{\hv@longCap}%
1517
1518
                                               \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1519
                                         \fi
                                         1521
1522
                                   \end{\hv@floatType}%
1523
                      }%}%
                }
1524
1525
                 \def\do@hvFloat@doubleFULLPAGE@CaptionAfterTwoCol{%
1526
                       \afterpage{%
1527
                             1528
                             \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}% no
1529
                                            interlineskip
1530
                             \hspace*{\the\dimexpr-\evensidemargin-\parindent-lin}%
1531
                             \thispagestyle{empty}%
                             \fint \mathbf{x} \cdot \mathbf{f} \mathbf{x} \cdot \mathbf{f} \mathbf{y} = \mathbf{y} \cdot \mathbf{f} \mathbf{y} \mathbf{g} \mathbf{f} \mathbf{y} \mathbf{g} \mathbf{f} \mathbf{g} \mathbf{u} \mathbf{r} \mathbf{g}
1532
                                   \refstepcounter{hv@tempCNTfigA}%
1533
                             \else
1534
                                   \refstepcounter{hv@tempCNTtabA}%
                                                                                                                                           before caption
1535
1536
                             \ifx\hv@label\ensuremath{\dempty\else\label}\fi
1537
                             \verb|\clipbox*{0 0 $$ \end{the} hv@leftPageObjectWidth{} \height}{\usebox}hvObjectBox} % $$ \end{the} $$ \end{
1538
                                   \newpage\if@twocolumn\null\newpage\fi
1539
                                   \global\savebox{\hv0bjectBox}{\ifhv@use0Box\usebox{\hv0Box}\else\hv@float0bject\fi}%
                                   \thispagestyle{empty}%
                                   \verb|\vspace| {\the \dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2 \\ |\the \dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\dimexpr-lin-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\dimexpr-\
                                                                                                                                                                                                                                                                                                                                        -0.51
1542
                                                  paperheight+0.5\ht\hv0bjectBox
                                   \hspace*{\hv@tempWidthA}%
1543
                                   \global\savebox{\hv0bjectBox}{\ifhv@use0Box\usebox{\hv0Box}\else\hv@float0bject\fi}%
1544
                                   \clipbox*{\the}\nv@leftPageObjectWidth{} \dp\nvObjectBox{} \wd\nvObjectBox{} \ht\nvObjectBox}{\nv}
1545
                                                  hv0bjectBox}%
                                   \ifx\hv@floatType\hv@figure
1546
                                         \refstepcounter{hv@tempCNTfigB}%
1547
                                   \else
1548
                                         \refstepcounter{hv@tempCNTtabB}% before caption
1550
                                   \fi
1551
                                   1552
                                   \newpage
                                   \begin{\hv@floatType*}[!b]
1553
                                         \hv@twoColumnCaptiontrue
1554
                                         \ifhv@separatorLine\drawSepLine\fi
1555
```

```
\expandafter\captionsetup\expandafter{\hv@caption@format}%
1556
                             \ifx\hv@shortCap\@empty
1557
                                 \captionof{\hv@floatType}{\hv@longCap}%
1558
1559
                             \else
                                 \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1560
1561
                             \fi
                             1562
                         \end{\hv@floatType*}%
1563
                }%
1564
           }
1565
1566
            \def\do@hvFloat@doubleFULLPAGE@CaptionOther#1{%
1567
1568
                     1569
                    \thispagestyle{empty}%
                     \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}%
                                                                                                                                                                                                                                     -0.51
1571
                               paperheight+0.5\ht\hv0bjectBox
                    \hspace*{\the\dimexpr-\evensidemargin-\parindent-lin}%
1572
                    \qlobal\savebox{\hvObjectBox}{\ifhv@useOBox\usebox{\hvOBox}\else\hv@floatObject\fi}%
1573
                    \clipbox*{0 \depth{} \hv@leftPageObjectWidth{} \height}{\usebox\hvObjectBox}%
1574
                    \ifx\hv@floatType\hv@figure
1575
                        \refstepcounter{hv@tempCNTfigA}%
1576
1577
                        \refstepcounter{hv@tempCNTtabA}% before caption
1578
                    \fi
1579
                    \label{\hv@label}%
1580
1581
                    \afterpage{%
                         \verb|\if| @twocolumn \\ | newpage \\ | if @firstcolumn \\ | else \\ | null \\ | newpage \\ | fi \\ | fi
1582
                         1583
                         \thispagestyle{empty}%
1584
                         \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}%
                                                                                                                                                                                                                                          -0.5\
1585
                                    paperheight+0.5\ht\hv0bjectBox
                         \hspace*{\hv@tempWidthA}%
1586
                         $$ \clipbox*{\hv@leftPage0bjectWidth{} \dp\hv0bjectBox{} \wd\hv0bjectBox{} \ht\hv0bjectBox}{\hd\hv0bjectBox}.
1587
                                    hv0bjectBox}%
1588
                         \ifx\hv@floatType\hv@figure
                             \refstepcounter{hv@tempCNTfigB}%
                         \else
1590
                            \refstepcounter{hv@tempCNTtabB}%
                                                                                                       before caption
1591
                         \fi
1592
                         \expandafter\label\expandafter{\hv@label-2}%
1593
                         1594
                         \infnum#1 > 0 \ relax
                                                                       % rotation with 90°
1595
                               1596
                             \ifdim\hv@tempWidthB < 2\paperwidth
1597
                                 \label{lem:local_condition} $$ \operatorname{congin=lb}_{90}_{\mathbf{0.8}}(paperheight)[c]_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.8}}^{0.8}_{\mathbf{0.
1598
                                        \expandafter\captionsetup\expandafter{\hv@caption@format}%
1599
1600
                                      \ifx\hv@shortCap\@empty
1601
                                          \captionof{\hv@floatType}{\hv@longCap}%
1602
                                      \else
                                          \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1603
                                     \fi
1604
                                 }}}% rotatebox
1605
```

```
\ifx\hv@label\engty\else\label\hv@label-cap\fi
1606
                              \else% ifdim: no space left on page
1607
                                  1608
                                              centering
                                       \parbox{0.8\textwidth}{%
1610
                                            \ifx\hv@shortCap\@empty
                                                \captionof{\hv@floatType}{\hv@longCap}%
1611
                                            \else
1612
                                                \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1613
                                           \fi
1614
                                       }%
1615
                                       \ifx\hv@label\ensuremath{\hv@label-cap}\fi
1616
                                  \endminipage}}}%
1617
                              \fi
1618
                          \else% ifnum, caption not rotated, under or over the right page
                              \ifdim\hv@tempWidthA > \ht\hvCaptionBox
                              \else
1622
                                  \parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\parbox{$\
1623
                                              +\abovecaptionskip+\belowcaptionskip){\makebox[0pt][c]{\parbox{\textwidth}}{%%
                                         \expandafter\captionsetup\expandafter{\hv@caption@format}%
1624
                                       \ifx\hv@shortCap\@empty
1625
                                           \captionof{\hv@floatType}{\hv@longCap}%
1626
1627
                                           \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1629
                                       \fi
1630
                                  }}}%
                                  \ifx\hv@label\ensuremath{\hv@label-cap}\fi
1631
1632
                          \fi% end \ifnum#1>0
1633
                          \newpage\if@twocolumn\null\newpage\fi
1634
1635
                }%
1636
1637
            }
1638
            \def\setBottomCaption{%
                 \begin{\hv@floatType}[!b]%
1641
                 \ifhv@separatorLine\drawSepLine\fi
1642
1643
                 \usebox\hvCaptionBox
1644
                 \end{\hv@floatType}%
1645
           }
1646
1647
            \def\setPageObject{%
1648
1649
                \ifhv@star
1650
                     \begin{hv@floatType*}[p]% \end{picture}
1651
                 \else
1652
                     \begin{hv@floatType}[p]% \end{picture}
1653
                 \ifhv@FULLPAGE
1654
                     \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep}%-0.5\baselineskip%
1655
                     \checkoddpage
1656
```

```
\if@twoside
1657
            \ifoddpage
1658
              \hspace*{\the\dimexpr-\oddsidemargin-\parindent-lin}%
1659
1660
            \else
              \hspace*{\the\dimexpr-\evensidemargin-\parindent-lin}%
1661
            \fi
1662
          \else
1663
            \hspace*{\the\dimexpr-\oddsidemargin-\parindent-lin}%
1664
1665
          \AtBeginShipoutNext{\thispagestyle{empty}}%
1666
          \usebox\hv0bjectBox%
1667
        \else
1668
          \usebox\hv0bjectBox
1669
        \fi
1670
1671
        \ifhv@star
          \end{\hv@floatType*}%
1672
        \else
1673
          \end{\hv@floatType}%
1674
       \fi
1675
     }
1676
1677
     \ExplSyntax0n
1678
1679
     \def\getMultiCaptionAndLabel{%
1680
       \global\sbox\hvCaptionBox{\minipage[b]{\linewidth}%
1681
           1682
          \setlength\belowcaptionskip{5pt}%
1683
          \setlength\abovecaptionskip{0pt}%
1684
          1685
          \advance\hv@cntb by \@ne
1686
          \hv@cnta=1
1687
1688
            \edef\@captype{\clist_item:Nn\l_clist_Type{\hv@cnta}}%
1689
            \edef\@tempa{\clist_item:Nn\l_clist_LofCaption{\hv@cnta}}%
1690
1691
            \ifx\@tempa\@empty
              \colored{$\clist_item:Nn\l_clist_Caption{\hv@cnta}}\
1692
            \else
1693
              \label{lem:nnl_clist_Caption} $$ \operatorname{caption}\exp{\operatorname{log}_{\operatorname{clist_item:Nn\l_clist_Caption}}} $$
1694
            \fi
1695
            \label{$\ \endown} $$\endown= Nn\l_clist_Label{\nv@cnta}} $$
1696
            \ifx\@tempa\@empty
1697
            \else
1698
              \label{$\operatorname{\operatorname{label}} \expandafter(\clist_item: Nn\l_clist_Label{\hv@cnta}-cap)$ is $\operatorname{\operatorname{\operatorname{label}} \expandafter}$.
1699
            \advance\hv@cnta by \@ne
1700
          1701
1702
          \repeat
1703
        \endminipage}%
1704
     }
1705
     \def\getMultiObjectAndLabel{%
1706
        \global\sbox\hv0bjectBox{%
1707
          \ifhv@vFill
1708
            \minipage[b][\textheight][s]{\columnwidth}%
1709
```

```
1710
                                \else
                                      \minipage{\columnwidth}%
1711
                                \fi
1712
1713
                                  1714
                                \ifx\hvSet@objectPos\hv@Right\raggedleft\else
1715
                                      \ifx\hvSet@objectPos\hv@Left\raggedleft\else
                                            \ifx\hvSet@objectPos\hv@Center\centering
1716
                                \fi\fi\fi
1717
                                \hv@cntb=\clist_count:N\l_clist_Type
1718
                                \advance\hv@cntb by \@ne
1719
                                \hv@cnta=1
1720
                                \loop
1721
                                      \def\@temp{\clist_item:Nn\l_clist_Object{\hv@cnta}}%
1722
                                      1723
                                      \ensuremath{\l_clist\_Label{\hv@cnta}} % \ens
                                      \label{lem:nnl_clist_Type} $$\end{Arguments} $$ \end{Arguments} $$ \operatorname{L_clist_Type}_{hv@cnta}} $$
1725
                                      \edef\@captype{hv@p\@tempb}%
1726
                                      \ifx\@tempa\@empty
1727
                                      \else
1728
                                            \refstepcounter{\@captype}%
1729
                                            \expandafter\label\expandafter{\clist item:Nn\l clist Label{\hv@cnta}}%
1730
1731
                                      \ifnum\hv@cnta<\clist_count:N\l_clist_Type\par\hv@vskip\fi
1732
                                      \advance\hv@cnta\ by \@ne
1733
1734
                                \ifnum\hv@cnta<\hv@cntb
1735
                                      \ifhv@vFill\vfill\fi
1736
                                \repeat
                         \endminipage}%
1737
1738
1739
                 \def\getMultiSubCaptionAndLabel{%
1740
                        \global\sbox\hvCaptionBox{\minipage{\linewidth}%
1741
                                  1742
                                \setlength\belowcaptionskip{5pt}%
1743
1744
                                \setlength\abovecaptionskip{0pt}%
                                \xdef\@captype{\clist_item:Nn\l_clist_Type{1}}\%$$ the same for all subfloats
1746
                                \edef\@tempa{\clist_item:Nn\l_clist_LofCaption{1}}%
1747
                               \ifx\@tempa\@empty
                                      \color{\color=0.05cm} \color=0.05cm. Nn\l_clist_Caption{1}}%
1748
                                \else
1749
                                      \verb|\expandafter| caption| expandafter[\@tempa]{\clist\_item:Nn\\l\_clist\_Caption{1}} % $$ $$ \expandafter[\@tempa] {\clist\_item:Nn\\l\_clist\_Caption{1}} $$ $$ \expandafter[\@tempa] {\clist\_item:Nn\\l\_clist\_Caption{1}} $$ $$ \expandafter[\@tempa] {\clist\_item:Nn\\l\_clist\_Caption{1}} $$ $$ \expandafter[\@tempa] {\clist\_item:Nn\\l\_clist\_Caption{1}} $$ \expandafter[\@tempa] {\clist\_item:Nn\\l\_clist\_Caption{1}} $$ \expandafter[\@tempa] {\clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_Caption{1}} $$ \expandafter[\@tempa] {\clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clist\_item:Nn\\l\_clis
1750
1751
                                \edef\@tempa{\clist item:Nn\l clist Label{1}}%
1752
                                \ifx\@tempa\@empty\else\expandafter\label\expandafter{\clist_item:Nn\l_clist_Label{1}-cap}\fi
1753
                         \endminipage}%
1754
1755
                 }
1756
1757
                  \def\getMultiSubObjectAndLabel{%
1758
                         \global\sbox\hv0bjectBox{%
                               \ifhv@vFill
1759
                                      \minipage[b][\textheight][s]{\columnwidth}%
1760
                                \else
1761
                                      \minipage{\columnwidth}%
1762
```

```
1763
                                   \ifx\hv@subcaption@format\@empty\else
1764
                 %
                                        \expandafter
1765
                                        \colone{tem} \co
1766
                %
                                                                                                                  {\hv@subcaption@format}%
1767
                 %
                                 ١fi
1768
                 %
                               \ifx\hvSet@objectPos\hv@Right\raggedleft\else
1769
                                     \ifx\hvSet@objectPos\hv@Left\raggedleft\else
1770
                                            \ifx\hvSet@objectPos\hv@Center\centering
1771
                               \fi\fi\fi
1772
                               \hv@cntb=\clist count:N\l clist Caption
1773
                               \advance\hv@cntb by \@ne
1774
                               \hv@cnta=2
1775
                               \label{lem:Nnlclist_Type{1}} % \ \ the \ same \ for \ all \ subfloats
1776
                               \loop
1777
                                     \label{lem:nnl_clist_object_hv@cnta} $$ \def_{\mathrm{nv}_{\mathrm{n}}} \approx Nn \cdot l_{\mathrm{nv}_{\mathrm{n}}} $$
1778
                                     1779
                                     \begingroup
1780
                                     1781
                                     \ifx\@tempa\@empty
1782
                                            \subcaption{\clist item:Nn\l clist Caption{\hv@cnta}}%
1783
1784
                                     \else
                                            \expandafter\subcaption\expandafter[\@tempa]{\clist_item:Nn\l_clist_Caption{\hv@cnta}}%
1785
                                     \fi
1786
                                     \ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ens
1787
1788
                                     \ifx\@tempa\@empty
1789
                                     \else
                                            \expandafter\label\expandafter{\clist_item:Nn\l_clist_Label{\hv@cnta}}%
1790
                                      \fi
1791
                                      \endgroup
1792
                                     \verb|\ifnum| hv@cnta<| clist\_count: N\l\_clist\_Type\\| par\\| hv@vskip\\| fi
1793
                                      \advance\hv@cnta by \@ne
1794
1795
                                     \ifnum\hv@cnta<\hv@cntb
                                     \ifhv@vFill\vfill\fi
1796
1797
                               \repeat
                               \edef\@tempa{\clist_item:Nn\l_clist_Label{1}}%
1798
                                                                                                                                                                                                the main label at the end
1799
                               \ifx\ensuremath{\mbox{dempty}}
                               \else
1800
                                     \addtocounter{\@captype}{-1}%
                                                                                                                                                         to get the same <object>-ref as "label"-cap
1801
                                     \refstepcounter{\@captype}%
1802
                                     \expandafter\label\expandafter{\@tempa}%
1803
1804
                        \endminipage}%
1805
                 }
1806
                 \ExplSyntaxOff
1807
1808
1809
                 \def\getSingleCaptionAndLabel{%
1810
                        \global\sbox\hvCaptionBox{\minipage{\linewidth}%
1811
                               \setlength\belowcaptionskip{5pt}%
                              \setlength\abovecaptionskip{0pt}%
1812
                               \edef\@captype{\hv@floatType}%
1813
                               \expandafter\ifx\expandafter\relax\hv@shortCap\relax
1814
                                            \caption{\hv@longCap}%
1815
```

```
\else
1816
                                                    \caption[\hv@shortCap]{\hv@longCap}%
1817
1818
                              \label{$$ \if x\hv@label\cap}\fi
1819
                              \endminipage}%
1820
1821
1822
                     \label{lem:def} $$ \end{area} $$ \end{area
                                                                                                                                           first caption, then object #1=\hv@floatType
1823
                            \ifhv@multiFloat
1824
                                    \getMultiCaptionAndLabel
1825
1826
                                    \ifhv@subFloat
1827
                                            \getMultiSubCaptionAndLabel
1828
1829
                                            \verb|\getSingleCaptionAndLabel| \\
                                    \fi
1831
                             \fi
1832
                              \edef\@captype{hv@p#1}%
1833
                             \ifhv@multiFloat
1834
                                    \getMultiObjectAndLabel
1835
1836
                                    \ifhv@subFloat
1837
                                           \getMultiSubObjectAndLabel
1838
1839
                                           \global\sbox\hv0bjectBox{%}
                                                   \verb|\refstepcounter{\@captype}|%
1841
                                                   \verb|\frame| frame {\hv@float0bject} \else \hv@float0bject \\ fi
1842
                                                   \verb|\expandafter| ifx \expandafter| relax \end{|} hv@label \end{|} relax
1843
1844
                                                           \verb|\expandafter\\| abel\\| expandafter\\| hv@label\\| %
1845
1846
                                           }%
1847
1848
1849
1850
                     }
1851
                     \verb|\endinput|
1852
```