Package hvfloat Rotating and scaling of objects and captions ver 2.26

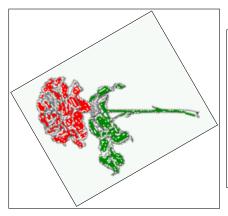
Herbert Voß*

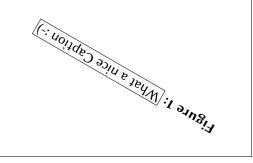
May 31, 2021

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

Contents

Contents

1	The package options	7		
2	The Macros and optional arguments	7		
3	The default use of floating environments	9		
4	Caption width	11		
	4.1 Default – natural width	11		
	4.2 Relative linewidth	11		
	4.3 Identical object and caption width	12		
	4.4 caption width to height of the object	13		
5	Caption left or right of the object	13		
	5.1 Caption right with specific length	14		
	5.2 Caption left and rotated	14		
6	Caption inner or outer	16		
7	Vertical Position of the Caption			
	•			
8	Caption format 19			
9	Horizontal Position of the Float			
10	Wide floats	22		
11	The star version \hvFloat*	24		
12	Full Page Width in Landscape Mode	24		
13	The nonFloat Option	28		
14	Tabulars as Objects 29			
15	5 Text and objects 30			
16	Environment hvFloatEnv	32		
17	Full page objects in onecolumn mode	33		
	17.1 Using the textarea	34		
	17.1.1 Using the default or capPos=before	34		
	17.1.2 Using capPos=after	36		
	17.1.3 Using capPos=evenPage — caption on an even page	37		
	17.1.4 Using canpos=oddPage — caption on an odd page	38		

Contents

		17.1.5 Using capros=timer of capros=outer — caption on the filler of outer side	30
	17.2	Using the paper size	39
	17.3	Multifloats	40
18	Sub	float page	42
19	Full	page objects in twocolumn mode	4 4
	19.1	Default setting	44
		19.1.1 Using capPos=after	45
		19.1.2 Using capPos=evenPage — caption on an even page	49
		19.1.3 Using capPos=oddPage — caption on an odd page	50
		19.1.4 Using capPos=inner — caption in the inner column	51
		19.1.5 Using capPos=outer — caption on the outer column	52
		Using full page in twocolumn mode	53
	19.3	Multifloats	54
20	Sub	float page	55
21	Dou	blepage objects – images and/or tabulars	58
	21.1	doubleFULLPAGE	58
	21.2	doublePAGE	79
	21.3	doublePage	83
	21.4	Tabulars	86
22	Refe	erences to the page	90
23	Defi	ning a style	91
24	Glol	oal float setting	93
25	The	Package Source	102

List of Tables

1	The Caption without sense				
2	The optional keywords for the macro \hvFloat				
3	With the only Option capPos=top to place the caption on top of the table, which				
	is often the default				
4	Demonstration of the use0Box Parameter				
5	Demonstration of the use0Box Parameter				
6	A caption for a nice table				
7	A caption for a nice table				
8	Valid optional arguments for a full page object				
9	A doublepage tabular with a caption on the right side of the right part				
List o	of Figures				
	· ·				
1	What a nice Caption :-)				
2	Without any keywords (only the fbox package option)				
3	Default caption width setting, which is the natural width with respect to the				
Ü	current linewidth				
4					
	object, the separation between object and caption, and the current linewidth 1				
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				
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 13				
7	Caption below with a width of the given object which may be a problem if it is				
	a very small object				
8					
9	Caption beside object and vertically centered				
10	Centered Caption beside Object				
11					
12	Centered Caption on the inner side				
13	Centered Caption on the inner side				
14	Centered Caption beside Object				
15	Centered Caption beside Object				
16	Caption at bottom right beside the float				
17	Caption at top left beside the float				
18	Caption centered right beside the float				

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	20			
20	Caption at top right beside the float and object position left	21			
21	Caption at top right beside the float and object position left	21			
22	Caption at top left beside the float and object position right	22			
23	Caption at top right beside the float and object position left and the option wide.	22			
24	Caption at top left beside the object and object position left and the option wide.	23			
25	Caption at top and inner beside the float and object position right and the option				
	wide	23			
26	Caption at top inner beside the float and object position right and the option wide.	24			
27	Caption at top inner beside the float and object position right and the option wide.	24			
28	Output of default1s2c (pages 2 -5)	25			
29	Object and Caption in landscape mode	26			
30	Rotated Caption in Landscape	27			
31	Nonfloat Captions	29			
32	Output of fullpage1s2c (pages 1-8)	33			
33	Output of default1s1c (pages 2-9)	35			
34	Output of after1s1c (pages 2-9)	36			
35	Output of even1s1c (pages 2-9)	37			
36	Output of oddls1c (pages 2-9)	38			
37	Output of paper-default1s1c (pages 2-9)	39			
38	Output of paper-after1s1c (pages 2-9)	40			
39	Output of multi-default1s1c (pages 4-11)	41			
40	Output of multi-after1s1c (pages 4-11)	42			
41	Output of sub-default1s1c (pages 4-11)	43			
42	Output of sub-after1s1c (pages 4-11)	44			
43	Output of default2s2c (pages 2-9)	45			
44	Output of left2s2c (pages 2-9)	46			
45	Output of after2s2c (pages 2-9)	47			
46	Output of right2s2c (pages 2-9)	48			
47	Output of even2s2c (pages 2-9)	49			
48	Output of odd2s2c (pages 2-9)	50			
49	Output of inner2s2c (pages 2-9)	51			
50	Output of outer2s2c (pages 2-9)	52			
51	Output of paper-default2s2c (pages 2-9)	53			
52	Output of paper-inner2s2c (pages 2-9)	54			
53	Output of multi-default2s2c (pages 2-9)	55			

List of Figures

54	Output of multi-inner2s2c (pages 2-9)	56
55	Output of sub-default2s2c (pages 2-9)	57
56	Output of sub-after2s2c (pages 2-9)	57
57	A doublepage image with a caption on the image	61
58	A doublepage image with a caption on the image	65
59		69
60		74
61		75
62	A doublepage image with a caption below the right part	81
63	A doublepage image with a caption on the right side of the right part	85
64	Caption at bottom right beside the float with a caption width of 0.5\columnwidth.	92
65	A float which needs the complete paper width and height	95

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 hyperap 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} $$ \hvFloatSet{key=value list} $$ \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}
```

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 (l)eft (c)enter (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	false	Use the textarea on a doublepage with additional text.	
doublePAGE	false	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.	

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

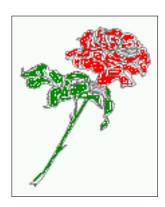


Figure 2: Without any keywords (only the fbox package option)

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

Code for table 3:

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

{With the only Option \texttt{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}

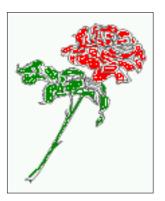


Fig. 3

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

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

For a caption beside an object, the *natural* caption width (without the optional argument wide) is given by the current linewidth minus the width of the object and the space between object and caption, which is set by floatCapSep (see Table 2 on page 8).

 $\label{lem:loss} $$ \operatorname{lostPos=!htb, capPos=after, objectFrame} {\figure} {\figure} include graphics[scale=1.5] {\figure} {\f$

{Caption right beside with a $\ensuremath{\mbox{emph}}$ {natural} width, which is given by the width of the object, the separation between object and caption, and the current linewidth.}{fig:widthl}

Fig. 4

4.2 Relative linewidth

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

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

Fig. 5

4 Caption width

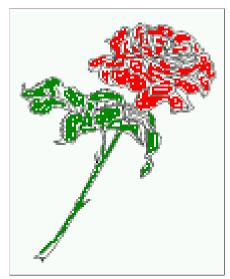


Figure 4: Caption right beside with a *natural* width, which is given by the width of the object, the separation between object and caption, and the current linewidth.



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\\linewidth is used for a caption beside an object, then the macro does a test if the space beside the object is less equal the defined caption width. If not then the width is set to the possible value between object and margin:

Fig. 6

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.

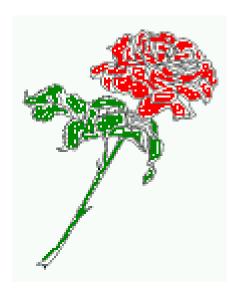


Figure 6: Caption right beside with a width setting of 0.9\linewidth which is too big for this example and therefore corrected by the macro to the maximal width.

\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}

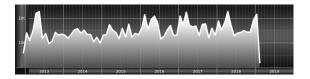


Figure 7: Caption below with a width of the given object which may be a problem if it is a very small object.

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.

 $\label{lem:loss} $$ \operatorname{lostPos=!htb, capPos=after, capWidth=h, capAngle=90, objectFrame} {figure} {\loss of the loss of the l$

{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

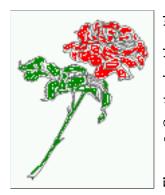


Figure 8: Caption beside with a width of the given object height which may be a problem if it is a very small object.

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}
```



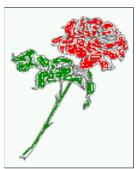


Figure 9: Caption vertically centered right beside the float with a natural caption width (the default). Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information?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

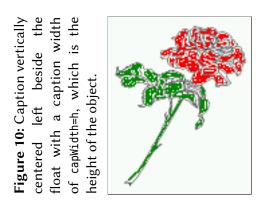
5.2 Caption left and rotated

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

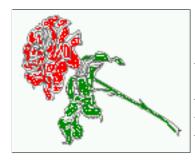


Figure 11: Caption vertically centered right beside the float with a caption width of the height of the image and a rotation of the caption and the object.

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

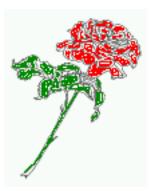


Figure 15: Caption vertically centered right beside the float with a caption width of 0.5\columnwidth and capPos=outer

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

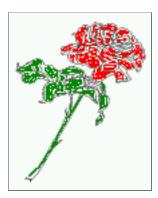


Figure 16: Caption at bottom right beside the float

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

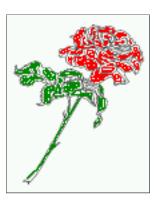


Fig. 17

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}
```



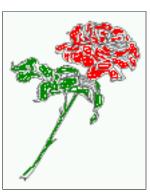


Figure 18: Caption centered right beside the float

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

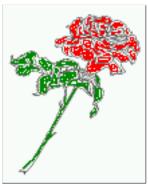


Figure 19

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

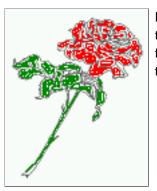
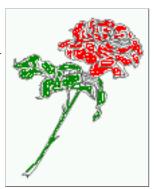


Figure 20: Caption at top right beside the float and object position left

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



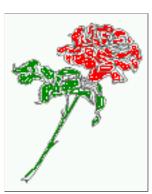
information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and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

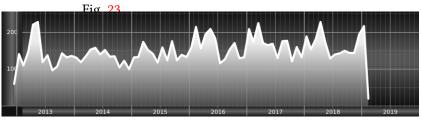


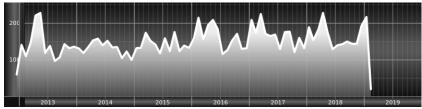
Figure 23: Caption at top right beside the float and object position left and the option wide.

The code for figure 24:

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

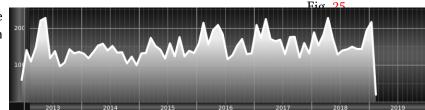
Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all!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

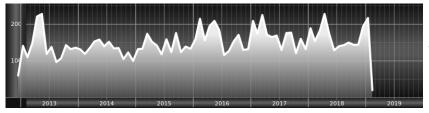
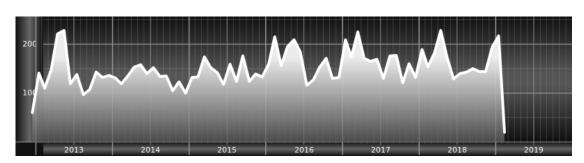


Figure 26: Caption at top inner beside the float and object position right and the option wide.

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:

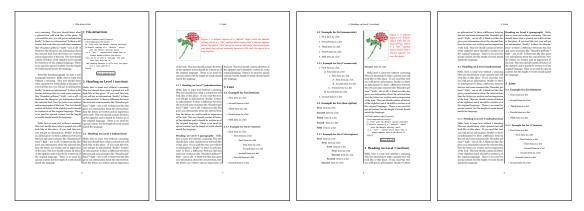


Figure 28: Output of default1s2c (pages 2 -5)

```
\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

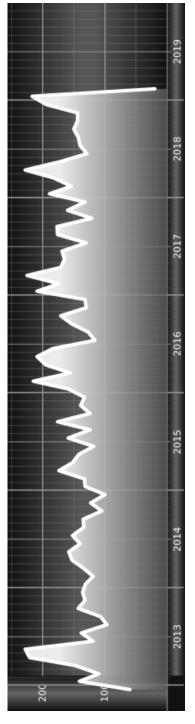


Figure 29: Caption and object in landscape mode. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense 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 \emph{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. 13

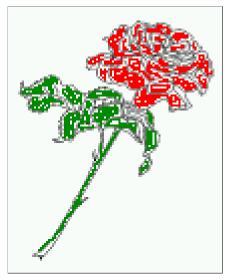


Figure 31: Caption of a "nonfloat" Object, using the nonfloat Package

Some nonsense text after the preceding non floating object.

The image 13 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\\
  \verb|\CMD{hvFloatSetDefaults}| \& command \& sets all options to the defaults \verb|\hline|| \\
 \end{tabular}%
}
  The code for table 4 and 5 is:
\hvFloat[%
  floatPos=!hb,
  capPos=top,
  useOBox=true]{table}{}{Demonstration of the $$ \text{useOBox} 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}}%
```

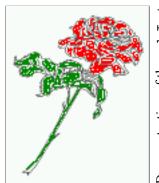
In this case leave the third parameter empty.

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	C	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:

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

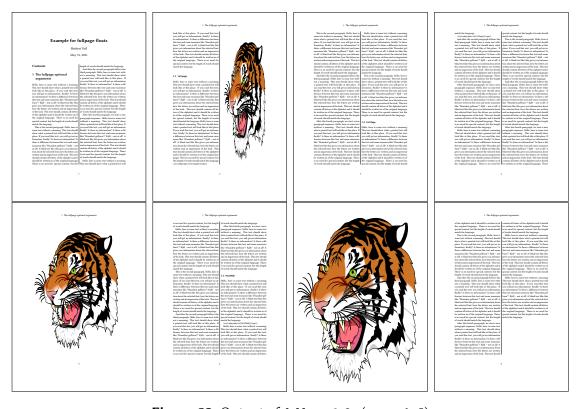


Figure 32: Output of fullpage1s2c (pages 1-8)

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.

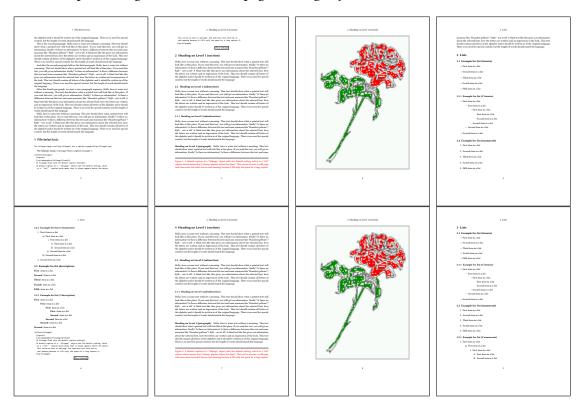


Figure 33: Output of default1s1c (pages 2-9)

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}
```

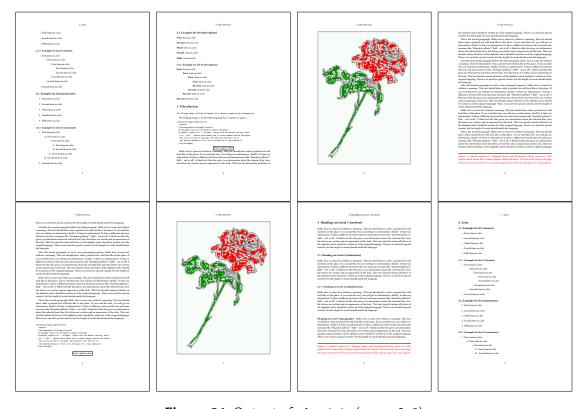


Figure 34: Output of after1s1c (pages 2-9)

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}
```

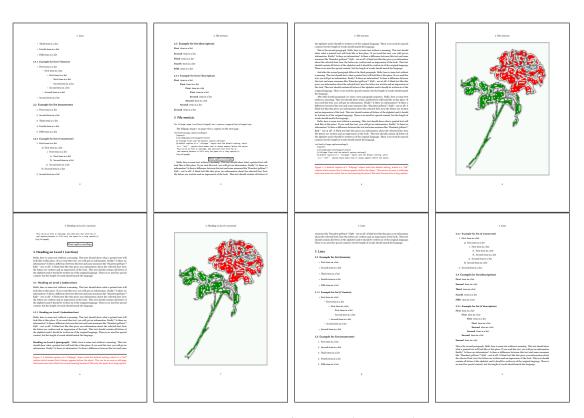


Figure 35: Output of even1s1c (pages 2-9)

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}
```

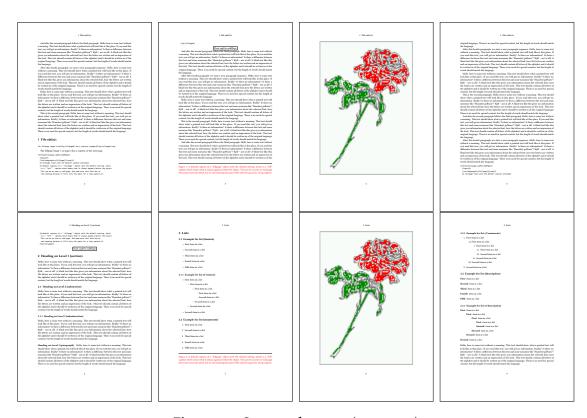


Figure 36: Output of odd1s1c (pages 2-9)

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}
```

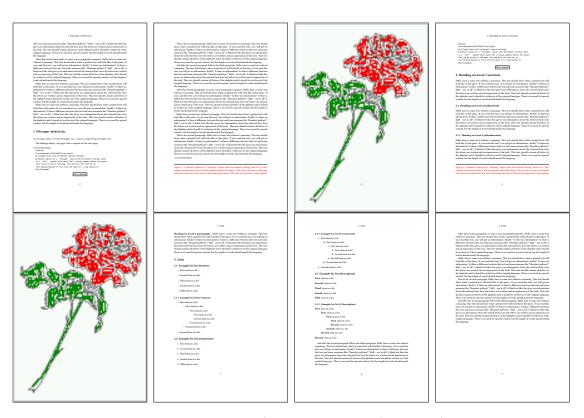


Figure 37: Output of paper-default1s1c (pages 2-9)

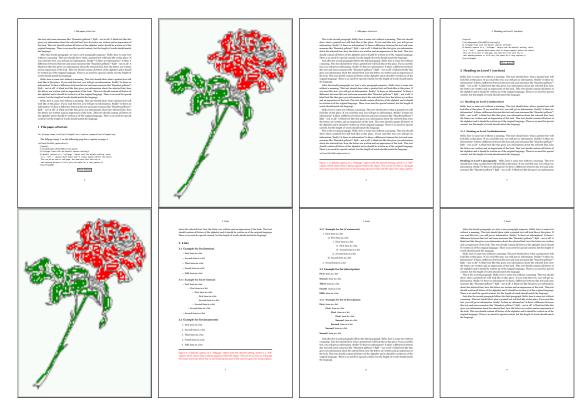


Figure 38: Output of paper-after1s1c (pages 2–9)

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

```
 \begin{tabular}{l} $$ \hvFloat [Options] + {\it float type} {\it floating object} [short caption] {\it long caption} {\it label} \\ + {\it float type} {\it floating object} [short caption] {\it long caption} {\it label} \\ + \dots \\ + {\it float type} {\it floating object} [short caption] {\it long caption} {\it label} \\ \end{tabular}
```

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
           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}
```

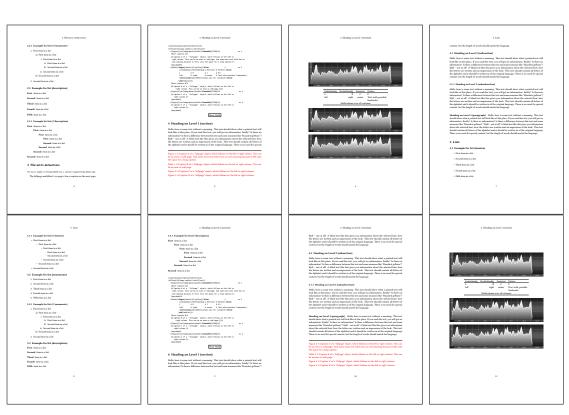


Figure 39: Output of multi-default1s1c (pages 4-11)

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

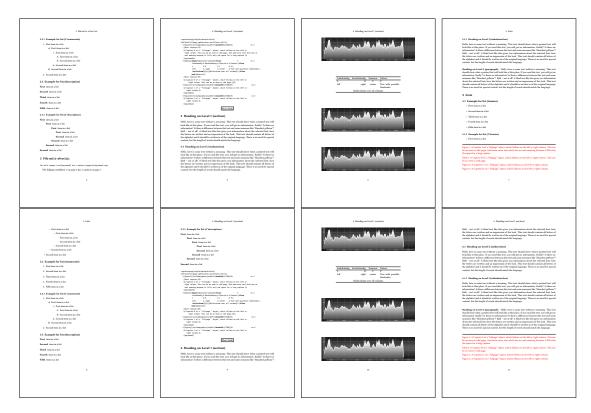


Figure 40: Output of multi-after1s1c (pages 4-11)

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].

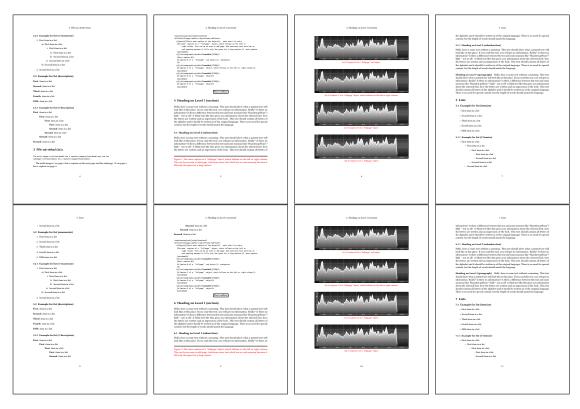


Figure 41: Output of sub-default1s1c (pages 4–11)

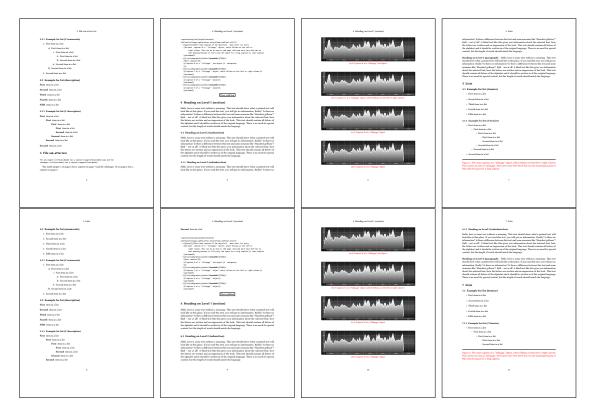


Figure 42: Output of sub-after1s1c (pages 4–11)

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).

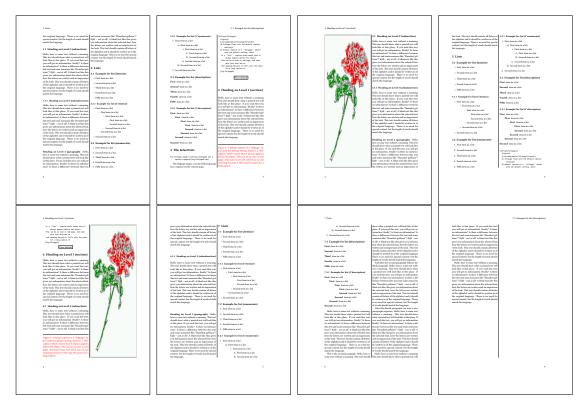


Figure 43: Output of default2s2c (pages 2–9)

```
\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

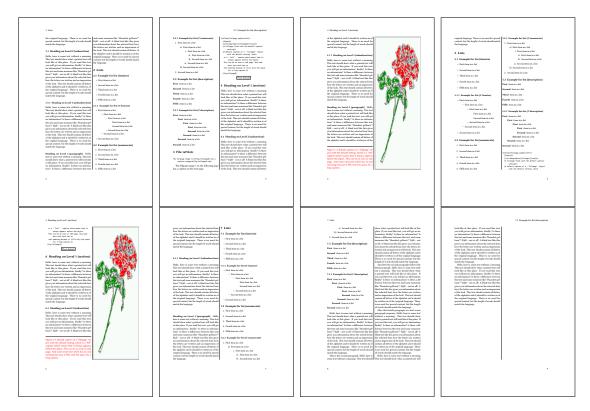


Figure 44: Output of left2s2c (pages 2–9)

```
[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.

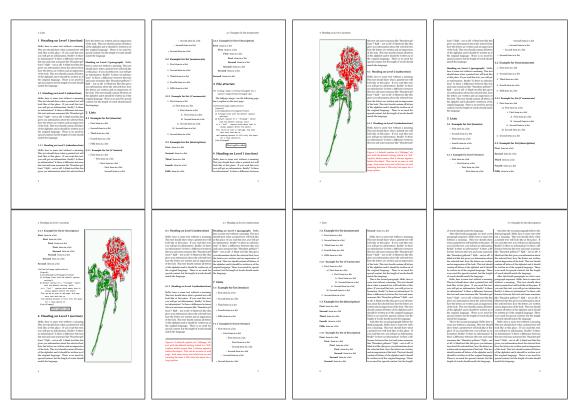


Figure 45: Output of after2s2c (pages 2–9)

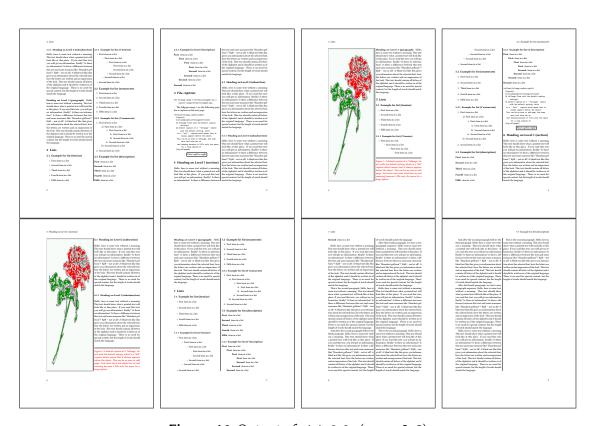


Figure 46: Output of right2s2c (pages 2-9)

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.

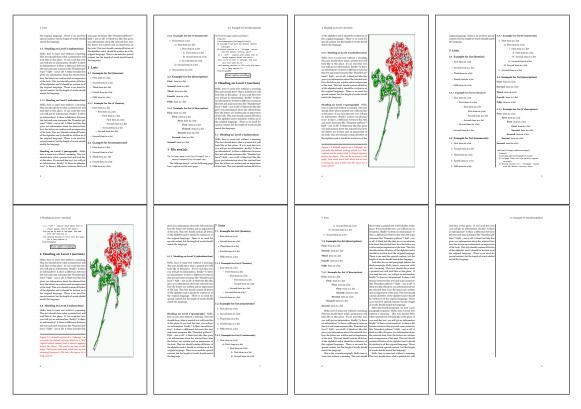


Figure 47: Output of even2s2c (pages 2–9)

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.

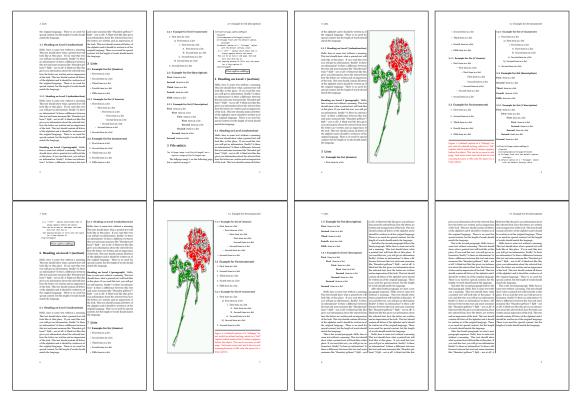


Figure 48: Output of odd2s2c (pages 2-9)

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}

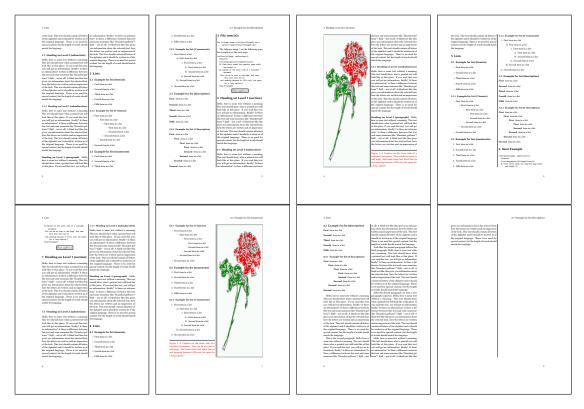


Figure 49: Output of inner2s2c (pages 2-9)

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}
```

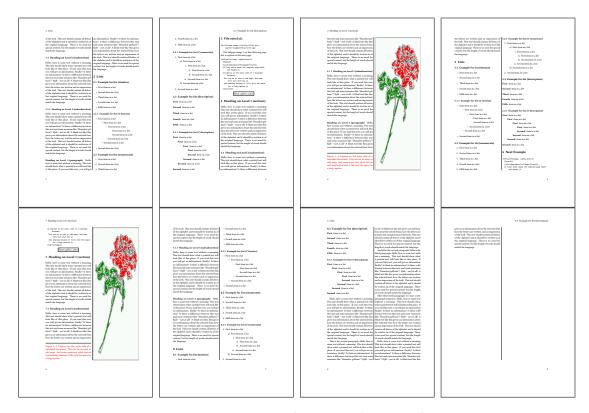


Figure 50: Output of outer2s2c (pages 2-9)

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}
```

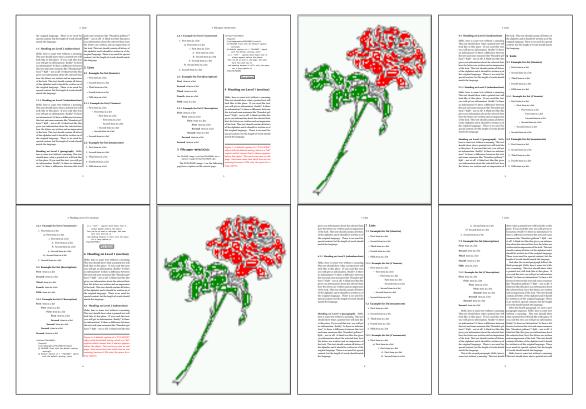


Figure 51: Output of paper-default2s2c (pages 2-9)

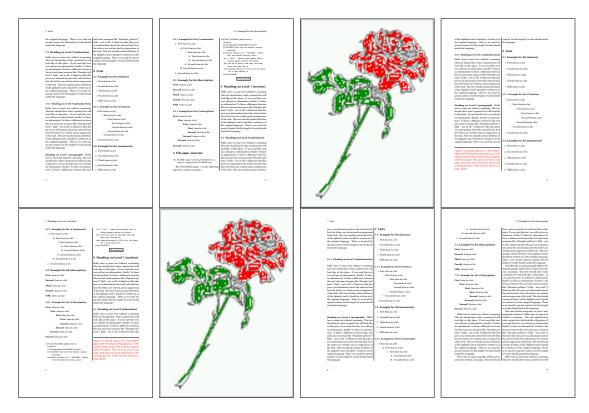


Figure 52: Output of paper-inner2s2c (pages 2-9)

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 \} \{ \inf\{ eght = 0.4 \} \} \{ 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
           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.

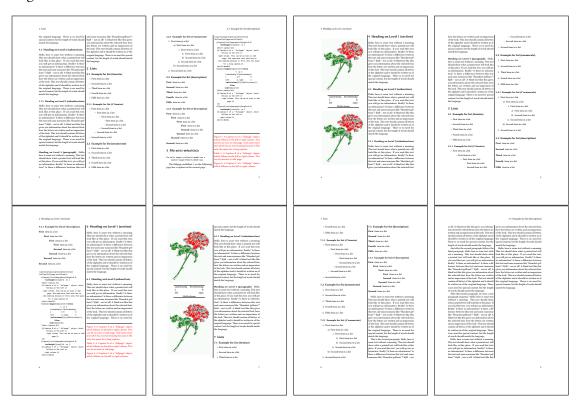


Figure 53: Output of multi-default2s2c (pages 2-9)

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.

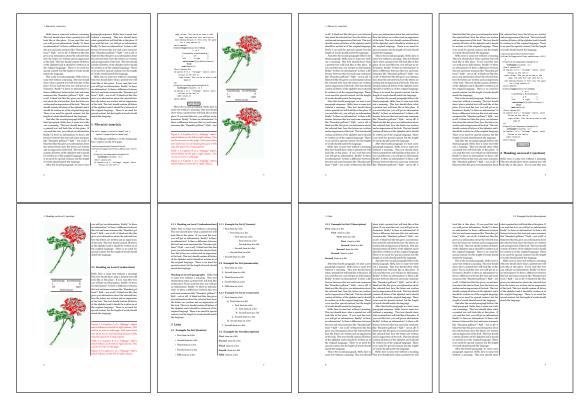


Figure 54: Output of multi-inner2s2c (pages 2-9)

```
\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).

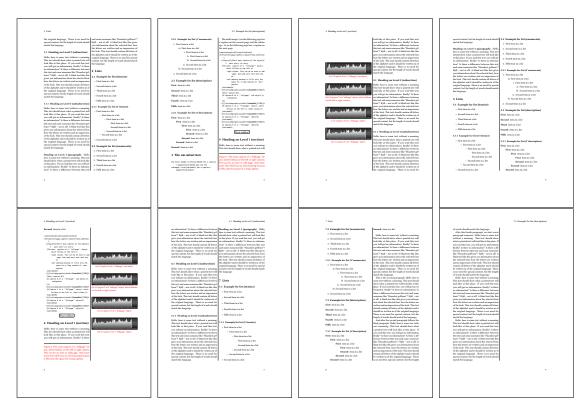


Figure 55: Output of sub-default2s2c (pages 2-9)

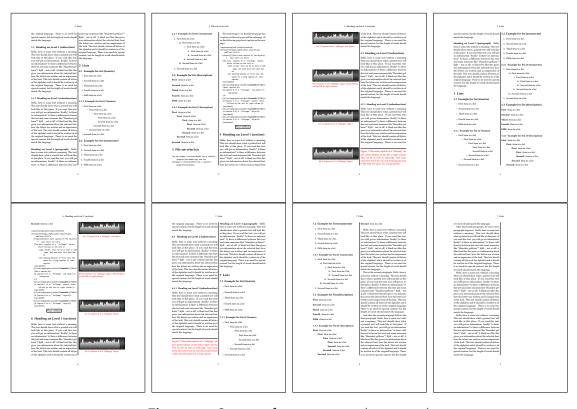


Figure 56: Output of sub-after2s2c (pages 2–9)

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.

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

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

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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

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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

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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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,capWidth=n,capPos=right]%
   {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}
```

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



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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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

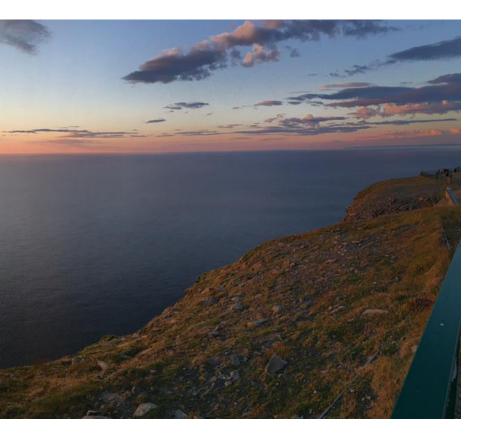


Figure 63: A caption for a double-sided image that will be placed on the right side of the right-hand part of the illustration. The illustration begins on the left edge of the paper. A short form is used for the LOF. The parameter is doublePage

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

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21.4 Tabulars

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

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

```
\qlobal\savebox\hv0Box{%
\begin{tabular}{l*{18}r} \toprule
& \textbf{1972} & \textbf{1973} & \textbf{1974} & \textbf{1975} & \textbf{1976}
& \textbf{1977} & \textbf{1978} & \textbf{1978} & \textbf{1980} & \textbf{1981} & \textbf{1982} & \textbf
   {1983} & \textbf{1984} & \textbf{1985}
& \textbf{1986} & \textbf{1987} & \textbf{1988} & \textbf{1989}
\\\midrule
\addlinespace[3pt]
Zeile 2 & 1 & 1 & 3 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 2 & 1 & 3 & 4 & 4 & 6 & 4 & 2\\addlinespace[3pt]
Zeile 3 & 2 & 1 & 2 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 5 & 3 & 1 & 7 & 7 & 3
Zeile 4 & 1 & 0 & 5 & 1 & 2 & 0 & 0 & 0 & 0 & 0 & 2 & 1 & 0 & 3 & 7 & 2 & 1\\addlinespace[3pt]
Zeile 5 & 0 & 0 & 4 & 2 & 1 & 2 & 2 & 1 & 0 & 0 & 0 & 0 & 1 & 1 & 0 & 2 & 5 & 4 & 3\\addlinespace[3pt]
Zeile 9 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 2 & 1 & 0 & 0 & 0 & 0 & 4 & 2 & 1 & 4 & 5 & 2\\addlinespace[3pt]
Zeilell & 0 & 2 & 2 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 2 & 6 & 1 & 0 & 2 & 1 & 1 \\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,capWidth=n,capPos=right,capVPos=top]%
 {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}
```

Tab. 9

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

	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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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

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

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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

22 References to the page

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22 References to the page

With the command \pageref one can have a reference to the page number of a caption. For the fullpage option this can be the wrong page if someone wants a refence to the page where the object is set. Let's assume that we use something like

```
\hvFloatSetDefaults
\hvFloat[fullpage,capPos=evenPage]{figure}%
  {\IncludeGraphics{images/frose}}%
  [A float which needs the complete paper width and height.]%
  {A Caption of a ''fullpage'' object, which follows on the next page.
  This can be an even or odd page. The object uses the complete paper dimensions}%
  {demo:fullpage}
```

The label demo:fullpage is used for the *image* and not for the caption! Internally another label called demo:fullpage-cap is set on the caption page which can be before or behind the object (depending to the optional argument of capPos). For example:

The caption of figure~\ref{demo:fullpage-cap} is on page~\pageref{demo:fullpage-cap}, but the image itself is on page~\pageref{demo:fullpage}.

The caption of figure 65 is on page 95, but the image itself is on page 96. 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 65 on page 96, which uses a correct page number of the floating object and not the caption pagenumber which is on page 95. The figure 65 is on page 96 and the caption on page 95

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}
```

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

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Figure 64: Caption at bottom right beside the float with a caption width of 0.5\columnwidth.

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

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Figure 65: A Caption 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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24 Global float setting

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Index

A \abovecaptionskip (skip), 7 \addtolength, 7 after (value), 8, 34, 36, 46f, 71 afterpage (package), 7 atbegshi (package), 7	\figcaption, 7, 10, 30f figure (environment), 9, 11, 29 float (package), 29 floatCapSep (keyword), 11 \floatCapSep (length), 20 floatCapSep (keyword), 9, 20 floatPos (keyword), 8, 24
B before (value), 8, 13, 34f, 45, 71 \belowcaptionskip (skip), 7	\frame, 11 FullPage (keyword), 9, 33 fullpage (keyword), 9, 33f, 90
bottom (value), 8f C capAngle (keyword), 8	G graphicx (package), 7
capFormat (keyword), 9, 19 capPos (keyword), 8, 16, 20, 23, 34–38, 45ff,	H h (value), <u>13</u>
49–53, 71, 91 capVPos (keyword), 9	\hvDefFloatStyle, 8, 10, 92 \hvFloat, 7, 9f, 19, 29ff, 40, 42
capWidth (keyword), 8, 11ff caption (package), 7, 9	\hvFloat*, 24 hvFloatEnv (environment), 10, 32
\caption, 9, 19 caption (package), 7, 19	\hvFloatSet, 7 \hvFloatSetDefaults, 7, 10, 30f
\captionof, 32 \captionsetup, 19, 42f, 55 center (value), 9	\hv0Box, 29, 87 hvfloat (package), 50 \hvfloat, 39
\clearpage, 49f \columnwidth (length), 11	hvfloat (package), 7, 49 \hvfloat, 53
D	hvfloat (package), 7, 33 hvfloat-fps (package), 94
doubleFULLPAGE (keyword), 9, 58 doublePAGE (keyword), 9, 58, 80 doublePage (keyword), 9, 58, 84	hypcap (package option), 7 hyperref (package option), 7 hyperref (package), 7
E	I
evenPage (value), <mark>8, 34, 37, 49</mark> expl3 (package), 7	ifoddpage (package), 7 \includegraphics, 39
F FULLPAGE (keyword), 9, 33f, 39	\inclugegraphics, 33 inner (value), 8, 16, 34, 38, 51, 53
false (value), 42, 55 \fbox, 7	K Keyword
fbox (package option), 7	- capPos, 16, 20, 23, 34–38, 45ff, 49–53

Index

- capWidth, 12f - floatPos, 24 - objectPos, 20, 25 - singlelinecheck, 42, 55 L l (value), 25 left (value), 8, 13, 20, 34, 46 \linewidth (length), 12 \listoffigures, 7 lscape (package), 24 M	separatorLine (keyword), 34 \setlength, 7 singlelinecheck (keyword), 42f, 55f stfloats (package), 7 style (keyword), 9 subFloat (keyword), 34, 43, 56 subcapFormat (keyword), 9, 19 \subcaption, 19 subcaption, 19 subcaption (package), 7, 43, 56 \subcaption, 9 \subcaptionsetup, 19
<pre>\marginparwidth (length), 9, 22 multiFloat (keyword), 34 multido (package), 7 N nonFloat (keyword), 7, 9, 28 nonfloat (keyword), 30 nonfloat (package), 28</pre>	T \tabcaption, 7, 10, 30f table (environment), 9, 11, 29 \textwidth (length), 9, 32 top (value), 8f twocolumn (package option), 34, 45 twocolumn, 24, 34, 45 twoside (package option), 37, 45
nostfloats (package option), 7	twoside, 16
O objectAngle (keyword), 9 objectFrame (keyword), 9, 11 objectPos (keyword), 9, 20, 25 oddPage (value), 9, 34, 38, 50 onecolumn, 38 oneside, 34 onlyText (keyword), 9, 30 outer (value), 8, 16, 23, 34, 38, 52	U use0Box (keyword), 9, 29 V vFill (keyword), 9 Value - after, 36, 46f - before, 34f, 45 - evenPage, 34, 37, 49 - false, 42, 55

```
W
w (value), 12
wide (keyword), 9, 11, 22
X
xkeyval (package), 7
```

25 The Package Source

```
%% $Id: hvfloat.sty 102 2021-05-29 20:08:51Z herbert $
2
    % IMPORTANT NOTICE:
   %% This is file 'hvfloat.sty',
   %% Herbert Voss <hvoss@tug.org>
   %% This program can be redistributed and/or modified under the terms
   %% 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{2.26}
    \def\filedate{2021/05/26}
    \message{'hvfloat' v\fileversion, \filedate\space (Herbert Voss)}
    \ProvidesPackage{hvfloat}[\filedate\ rotating of floating objects]
    \let\hvFloatFileVersion\fileversion
    \newif\ifhv@fbox \hv@fboxfalse
24
    \newif\ifhv@hyperref \hv@hyperreffalse
    \verb|\newif| if hv@nostfloats | hv@nostfloatsfalse|
    \newif\ifhv@tugboat \hv@tugboatfalse
    \DeclareOption{fbox}{\hv@fboxtrue\setlength{\fboxsep}{1pt}}
    \DeclareOption{hyperref}{\hv@hyperreftrue}
    \DeclareOption{nostfloats}{\hv@nostfloatstrue}
31
   \ProcessOptions
35
   \providecommand\@tugclass{\@empty}
36
   \ifx\@tugclass\@empty
37
      \hv@tugboattrue % special page handling
38
      \typeout{>>> we are using a TUGboat class}%
39
40
41
    \verb|\PassOptionsToPackage{hypcap}{caption}|
42
    \RequirePackage{caption}
    \PassOptionsToPackage{hypcap}{subcaption}
    \RequirePackage{subcaption}
    \RequirePackage{atbegshi}
    \RequirePackage{picture,trimclip}
47
    \RequirePackage{expl3,multido}
    \RequirePackage{graphicx}
51
```

```
\RequirePackage{xkeyval}
 52
           \RequirePackage{ifoddpage}
 53
 54
           \RequirePackage{afterpage}
 55
           \ifhv@hyperref
 56
                \RequirePackage{hyperref}
 57
           \fi
 58
            \ifhv@nostfloats\else
 59
                 \RequirePackage{stfloats}% for bottom floats in a twocolumn mode
 60
           \fi
 61
 62
            \providecommand*\LenToUnit[1]{\strip@pt\dimexpr#1*\p@/\unitlength}
 63
 64
            \mbox{\ensuremath}\hv\mbox{\ensuremath}\
 65
            \newlength\hvCapWidth
            \mbox{\ensuremath}\hv\begin{subarray}{l} \mbox{\ensuremath}\hv\begin{subarra
 67
           \newlength\hvMultiFloatSkip
 68
            \newlength\hvMaxCapWidth
 69
           %\newlength\hv@BottomSpace
 70
           %\AtBeginDocument{%
 71
           72
 73
           \newsavebox\hv0bjectBox
 74
 75
           \newsavebox\hvCaptionBox
           \newsavebox\hv0Box
 77
           \newsavebox\@tempbox
            \newsavebox\hv@caption@box
 78
            \newsavebox\hv@leftBox
 79
            \newsavebox\hv@rightBox
 80
 81
           \newif\ifhv@capbeside \hv@capbesidefalse
 82
 83
 84
           \def\hv@Top{top}
 85
            \def\hv@Bottom{bottom}
 86
            \def \hv@After{after}
 87
            \def\hv@Before{before}
           \def\hv@Right{right}
 88
           \def\hv@Left{left}
 89
           \def\hv@Center{center}
 90
           \def\hv@Outer{outer}
 91
           \def\hv@Inner{inner}
 92
           \def\hv@Even{evenPage}
 93
           \def\hv@Odd{oddPage}
 94
           \def\hv@Natural\{n\}
 95
           \def\hv@Width{w}
 97
           \def\hv@Height{h}
 98
           \def\hv@Zero{0}
 99
           \def\hv@figure{figure}
100
101
            \define@key{hvSet}{floatPos}[tbp]{%
                                                                                                             LaTeX's position parameters htbp
102
                    \def\hvSet@floatPos{#1}%
103
           }
104
```

```
rotates caption AND image together
    \define@key{hvSet}{rotAngle}[0]{%
105
       \def\hvSet@rotAngle{#1}%
106
107
    (n)atural width|object (w)idth)|object (h)eight|<scale of \columnwidth
       \def \hvSet@capWidth{#1}%
109
110
    }
    \define@key{hvSet}{capAngle}[0]{%
                                       -360..+360, only integers
111
       \def\hvSet@capAngle{#1}%
112
113
114
115
    \define@choicekey*+{hvSet}{capPos}[\val\nr]{bottom,top,left,before,right,after,inner,outer,evenPage,oddPage}[
116
         bottom]{%
                                  it is relativ to the object, (e),(d) only valid for fullpage float
117
      \def\hvSet@capPos{#1}%
118
      \ifcase\nr\relax
119
        \hv@capbesidefalse
120
       \hv@capbesidefalse
121
122
        \hv@capbesidetrue
123
124
    }{\PackageWarning{hvfloat}{erroneous input (#1) for capPos ignored. Using bottom.}%
125
      \def\hvSet@capPos{bottom}%
                                  it is relativ to the object, (e),(d) only valid for fullpage float
126
127
      \hv@capbesidefalse
128
129
    \define@choicekey*+{hvSet}{capVPos}[\val\nr]{bottom,center,top}[center]{%
130
                                it is relativ to the object
      \def\hvSet@capVPos{#1}%
131
      \ifcase\nr\relax
132
       \gdef\hv@@capVPos{b}%
133
134
135
       \gdef\hv@@capVPos{c}%
      \else
136
137
       \gdef\hv@@capVPos{t}%
138
    139
                                  it is relativ to the object
      \def\hvSet@capVPos{center}%
140
141
142
    \define@choicekey*+{hvSet}{objectPos}[\val\nr]{left,center,right,inner,outer}[center]{%
143
      \def\hvSet@objectPos{#1}%
                                    it is relativ to the object
144
    }{\PackageWarning{hvfloat}{erroneous input (#1) for objectPos ignored. Using center.}%
145
      \def\hvSet@capVPos{center}%
                                   it is relativ to the object
146
147
148
149
    %\newif\ifhv@floatRefToObject
150
    to (inactive)
151
    % \ifcase\nr\relax
        \hv@floatRefToObjectfalse
152
   %
    % \else
153
        \hv@floatRefToObjecttrue
154
```

```
155
   %}{\PackageWarning{hvfloat}{erroneous input (#1) for floatRef ignored. Using option object.}%
156
       \hv@floatRefToObjecttrue
157
158
   % }
159
   \define@key{hvSet}{objectAngle}[0]{%
                                    -360..+360
160
      \def\hvSet@objectAngle{#1}%
161
   }
162
   \define@key{hvSet}{floatCapSep}[5pt]{%
                                   a width with the unit pt
163
      \def\hvSet@floatCapSep{#1}%
164
165
   166
      \setlength\hvMultiFloatSkip{#1}%
167
168
   \define@boolkey{hvSet}[hv@]{useOBox}[true]{}%
                                           use of the hvOBox contents
169
                                           Do not use float environment
170
   \define@boolkey{hvSet}[hv@]{nonFloat}[true]{}%
   \define@boolkey{hvSet}[hv@]{onlyText}[true]{}%
171
                                           Write the caption only as text
   \define@boolkey{hvSet}[hv@]{wide}[true]{}%
                                        Write the caption only as text
172
   \define@boolkey{hvSet}[hv@]{twoColumnCaption}[true]{% Write the caption only as text
173
   % \ifhv@stfloats
174
175
       \global\@nameuse{hv@twoColumnCaption#1}%
176
       \PackageWarning{hvfloat}{Please use the package option stfloats!}%
177
   %
       \global\hv@twoColumnCaptionfalse
178
179
   % \fi
   }
180
   give more infos in the terminal
181
182
   \newcommand\hv@typeout[1]{\ifhv@Debug\typeout{>>>> #1}\fi}
183
184
   \newif\ifhv@fullpage
185
   \newif\ifhv@FULLPAGE
186
   \newif\ifhv@doubleFULLPAGE
187
   \newif\ifhv@doublePAGE
188
189
   \newif\ifhv@doublePage
   \newif\ifhv@setObjectLabel
191
   \newlenath\hvSet@bindCorrection
192
   \newlength\hvSet@sepLineskip
193
   \newlength\hv@leftPageObjectWidth% for doublepage images
194
   \newlength\hv@tempWidthA
195
   \newlength\hv@tempWidthB
196
197
   198
   199
   hv@doublePAGEfalse}
   201
       hv@doubleFULLPAGEfalse}
   202
        hv@doubleFULLPAGEfalse}
   \define@key{hvSet}{bindCorr}[\z@]{\setlength\hvSet@bindCorrection{#1}}% for doublepage objects
203
204
```

```
\define@boolkey{hvSet}[hv@]{subFloat}[true]{%
                                               typeset values as subfloats
205
       \ifhv@subFloat\setkeys{hvSet}{multiFloat=false}\fi%
206
207
                                               typeset values as continous floats
    \define@boolkey{hvSet}[hv@]{multiFloat}[true]{%
208
209
      \ifhv@multiFloat\setkeys{hvSet}{subFloat=false}\fi
210
    \define@boolkey{hvSet}[hv@]{vFill}[true]{}%
                                           \vfill between multifloat objects
211
212
    213
    \define@key{hvSet}{sepLineskip}{\def\hv@sepLineskip{#1}}%
214
    \define@boolkey{hvSet}[hv@]{objectFrame}[true]{}% a frame around the object with no separation
215
    \define@key{hvSet}{style}{%
216
      \@ifundefined{hv@#1}%
217
        {\errmessage{Custom style '#1' undefined}}%
218
219
        {\begingroup
        220
221
    222
    223
224
    225
    \let\hvFloatSet\hv@set
226
227
    \label{lem:def} $$\defhvstyle#1#2{\qnamedef{hv@#1}{#2}}$
228
    \let\hvDefFloatStyle\defhvstyle % better name
229
230
    \newcommand\setDefaults{%
231
232
      \hv@set{%
      floatPos=, rotAngle=0, capWidth=n, capAngle=0,
233
      capPos=bottom, capVPos=center, objectPos=center, objectAngle=0,
234
      floatCapSep=5pt, useOBox=false, nonFloat=false,
235
      onlyText=false, wide=false, fullpage=false, FULLPAGE=false,
236
      doubleFULLPAGE=false, doublePage=false, doublePAGE=false,
           multiFloat=false,subFloat=false,
      separatorLine,objectFrame=false,multiFloatSkip=\normalbaselineskip,
      capFormat={}, subcapFormat={}, twoColumnCaption=false,
241
      floatRef=object,
      bindCorr=\z@,sepLineskip=0pt,
242
      vFill=false,
243
    }%
244
    }
245
246
    \let\hvFloatSetDefaults\setDefaults
247
248
    \newcommand\reset@special@float{%
249
250
      \hv@set{subFloat=false,%fullpage=false,
251
            multiFloat=false,%FULLPAGE=false
252
253
    \def\hv@vskip{\vspace{\hvMultiFloatSkip}}
254
255
256
    \newlength\hvAboveCaptionSkip
257
```

```
\newlength\hvBelowCaptionSkip
258
     \newcount\hv@@capPos
259
260
     \mbox{\ensuremath}\ fboxlinewidth
261
262
     \AtBeginDocument{%
       \verb|\dimexpr| \textbf{linewidth-2} fboxrule-2 fboxsep| % \\
263
264
     }
     \setlength\belowcaptionskip{\abovecaptionskip}% it is in latex.ltx = Opt
265
     \newcommand\saveCaptionSkip{%
266
        \setlength{\hvAboveCaptionSkip}{\abovecaptionskip}%
267
        \setlength{\hvBelowCaptionSkip}{\belowcaptionskip}%
268
        \setlength{\abovecaptionskip}{0pt}%
269
        \setlength{\belowcaptionskip}{0pt}%
270
    }
271
272
     \newcommand\restoreCaptionSkip{%
       \setlength\abovecaptionskip{\hvAboveCaptionSkip}%
273
       \setlength\belowcaptionskip{\hvBelowCaptionSkip}%
274
    }
275
     %
276
     \newcommand\figcaption[2][]{%
277
278
       \def\@captype{figure}%
       \begingroup
279
       \ifx\relax\hv@caption@format\relax\else\expandafter\captionsetup\expandafter{\hv@caption@format}\fi
280
       \if$#1$ \caption{#2}\else\caption[#1]{#2}\fi
281
282
       \endgroup}
     \newcommand\tabcaption[2][]{\def\@captype{table}%
283
284
       \begingroup
       \ifx\relax\hv@caption@format\relax\else\expandafter\captionsetup\expandafter{\hv@caption@format}\fi
285
       \ifx\relax#1\relax \caption{#2}\else\caption[#1]{#2}\fi
286
       \endaroup}
287
288
     \newlength\hv@maxImageWidth
289
     \AtBeginDocument{\hv@maxImageWidth=\columnwidth}
290
291
292
     \define@key{Gin}{columnWidth}[true]{%
293
       \def\Gin@ewidth{\columnwidth}%
     % \def\Gin@eheight{lex}%
294
       \Gin@boolkey{true}{iso}%
295
296
     \define@key{Gin}{fullpage}[true]{%
297
       \def\Gin@ewidth{\columnwidth}%
298
       \def\Gin@eheight{\textheight}%
299
       \Gin@boolkey{false}{iso}%
300
    }
301
     \define@key{Gin}{FullPage}[true]{%
302
303
       \def\Gin@ewidth{\textwidth}%
304
       \def\Gin@eheight{\textheight}%
305
       \Gin@boolkey{false}{iso}%
306
    }
     \define@key{Gin}{FULLPAGE}[true]{%
307
       \def\Gin@ewidth{\paperwidth}%
308
       \def\Gin@eheight{\paperheight}%
309
       \Gin@boolkey{false}{iso}%
```

310

```
}
311
                           \define@key{Gin}{doubleFULLPAGE}[true]{%
 312
                                        \def\Gin@ewidth{2\paperwidth}\%
 313
314
                                         \def\Gin@eheight{\paperheight}%
 315
                                         \Gin@boolkey{false}{iso}%
 316
                          }
                            \define@key{Gin}{doubleFULLPAGEbindCorr}[true]{%
 317
                                         318
                                         \def\Gin@eheight{\paperheight}%
 319
                                         \Gin@boolkey{false}{iso}%
 320
 321
 322
                             \newcommand\IncludeGraphics[2][]{%
 323
                                         \vspace*{\the\dimexpr-lin-\voffset+\topskip-\headheight-0.5\baselineskip}%
 325
                                         \leavevmode\checkoddpage
                                        \ifoddpage
                                                   \hspace*{\dimexpr-\oddsidemargin-\parindent-lin}%
 327
 328
                                                    \hspace*{\dimexpr-\evensidemargin-\parindent-lin}%
 329
                                         \fi\noindent
 330
                                         \includegraphics[#1,width=\paperwidth,height=\paperheight,keepaspectratio=false]{#2}%
 331
 332
 333
                            \label{lem:lemmand} $$\operatorname{newcommand}\operatorname{CaptionBox}[1][0]_{\%}$
 334
 335
                                      \ifcase#1
 336
                                                  \ifhv@fbox
                                                             \fbox{\parbox{\wd\hvCaptionBox}{\usebox{\hvCaptionBox}}}%
 337
 338
                                                               339
                                                   \fi
 340
 341
                                                  \ifhv@fbox
 342
 343
                                                             \fbox{\raisebox{-\height}{\usebox{\hvCaptionBox}}}%
 344
                                                               \raisebox{-\height}{\usebox{\hvCaptionBox}}%
                                                  \fi
 347
                                        \or
                                                    \label{lem:linear_linear} $$  \| \nabla_{\mathbf{box}(\mathbf{box}(\mathbf{box})} \le \nabla_{\mathbf{box}(\mathbf{box})} \| \mathbf{i} \|_{\mathbf{box}(\mathbf{box})} \le \mathbf{i} \| \mathbf{i} \|_{\mathbf{box}(\mathbf{box})} \| \mathbf{i} \|_{\mathbf{box}(\mathbf{box}(\mathbf{box}))} \| \mathbf{i} \|_{\mathbf{box}(\mathbf{box}(\mathbf{box}
 348
                                        \fi
 349
                          }
 350
351
                            \newcommand\put@ObjectBox[1][0]{%
 352
                                         \ifcase#1
 353
 354
                                                               \footnote{\wd\hv0bjectBox}{\usebox{\hv0bjectBox}}}
 355
 356
 357
                                                               358
                                                   \fi
 359
                                        \or
                                                   \ifhv@fbox
 360
                                                               \verb|\fbox{\raisebox{-\height}{\usebox{\hv0bjectBox}}}|%
 361
 362
                                                               \label{limits} $$ \operatorname{sho}(-\lambda_{-\infty})\leq \operatorname{limits}(-\lambda_{-\infty})^{2} e^{-\lambda_{-\infty}} e^{-\lambda_
 363
```

```
\fi
364
                  \or
365
                       \ifhv@fbox
 366
                            \footnote{\hv0bjectBox}}%
 367
 368
                            % rotated object with a depth need to raise up the \depth
 369
                             \label{limits} $$  \lim_{n\to\infty} \frac{f^{me}(usebox{\hv0bjectBox})} else \\  \lim_{n\to\infty} \frac{f^{me}(usebox{\hv0bjectBox})} fi^{me} else \\  \lim_{n\to\infty} \frac{f^{me}(
370
371
                  \fi
372
             }
373
374
             \newcounter{hv@tempCNTfigA}%
 375
             \newcounter{hv@tempCNTfigB}%
376
             \newcounter{hv@tempCNTtabA}%
 377
378
             \newcounter{hv@tempCNTtabB}%
 379
             \newcounter{hv@pfigure}
 380
             \newcounter{hv@ptable}
381
             \newcounter{subhv@pfigure}
382
             \newcounter{subhv@ptable}
383
384
             \newif\ifhv@star
385
             \newif\if@hvsubstar
386
             \setDefaults
387
388
             \def\hvFloat{\@ifnextchar*%
389
                                                                                                 Main macro
                  {\c {\tt \c lobal \hv@startrue \hv@maxImageWidth=\tt \c textwidth \hvFloat@i}\%}
390
                   \{ \verb|\global| hv@starfalse| hv@maxImageWidth=| \verb|\columnwidth| hvFloat@i*| \} \% 
 391
 392
 393
            %\newcommand*{\hvFloat}[5][]+{%
394
             % [#1}: keyvalues
395
             % #2: type figure | table | ...
 396
             % #3: float contents
 397
             % [#4]: short caption
             % #5: caption
            % #6: label
 400
401
             402
             \def\do@hvFloat[#1]{%}
 403
                  \begingroup
404
                  \setlength\hvWideWidth{\dimexpr\columnwidth+\marginparwidth+\marginparsep}%
 405
             % \setlength\hvWideWidth{\dimexpr\textwidth+\marginparwidth+\marginparsep}%
 406
                  \setlength\hvWideWidth{\dimexpr\linewidth+\marginparwidth}%
 407
                  408
 409
                  \reset@special@float
                  \verb|\global\setcounter| \{hv@pfigure\} \{ \value \{ figure \} \} \%
 410
411
                  \global\setcounter{hv@ptable}{\value{table}}%
                  \setcounter{hv@tempCNTfigA}{\value{figure}}%
412
                   \setcounter{hv@tempCNTfigB}{\value{figure}}%
413
                   \setcounter{hv@tempCNTtabA}{\value{table}}%
414
                  \setcounter{hv@tempCNTtabB}{\value{table}}%
415
                  \gdef\hv@save@setting{#1}%
416
```

```
\ifx\relax#1\relax\else\setkeys{hvSet}{#1}\fi
417
                              \gdef\hv@floatType{figure}% presetting
418
                              \@ifnextchar+{\do@multiFloat}{\hvFloat@ii[#1]}%
419
420
421
                   \ExplSyntax0n
422
423
                   \def\do@multiFloat+#1#2{%
424
                             \verb|\clist_set:Nn\l_clist_Type{{#1}}|%
425
                              \clist_set:Nn\l_clist_Object{{#2}}%
426
                             \@ifnextchar[\do@multiFloat@i{\do@multiFloat@i[]}%
427
428
                    \def\do@multiFloat@i[#1]#2#3{% lof-caption, caption, label
429
                            \ifx\relax#1\relax
431
                                     \verb|\clist_set:Nn\l_clist_LofCaption{{}} %
                              \else
432
                                     \verb|\clist_set:Nn| \textbf{l}_clist_LofCaption{{#1}}%
433
                            \fi
434
                             \verb|\clist_set:Nn| \mathbf{l}_{clist_Caption} {\{\#2\}} %
435
                            \ifx\relax#3\relax
436
437
                                     \clist_set:Nn\l_clist_Label{{}}%
438
                                     \verb|\clist_set:Nn| \mathbf{l}_c list_Label {\{\#3\}} \\ 
439
440
                             441
442
                    \label{lem:def_domultiFloat@ii+#1#2} $$ \end{figure} $$ \end
443
                            \verb|\clist_put_right:Nn\\ l_clist_Type{{\#1}}%
444
                             \verb|\clist_put_right:Nn\\ \label{loss_put_right}| $$ \clist_Object{{#2}}%
445
                              \@ifnextchar[\do@multiFloat@iii{\do@multiFloat@iii[]}%
446
447
448
449
                    \def\do@multiFloat@iii[#1]#2#3{% lof-caption, caption, label
450
                             \ifx\relax#1\relax
451
                                     \verb|\clist_put_right:Nn\l_clist_LofCaption{{}} %
452
                             \else
                                     \verb|\clist_put_right:Nn\\ \label{local_local} LofCaption\{\{\#1\}\} % $$ \end{tikzpicture} $$ \clist_LofCaption\{\{\#1\}\} % $$ \end{tikzpicture} $$ \clist_LofCaption\{\{\#1\}\} % $$ \end{tikzpicture} $$ \clist_LofCaption\{\{\#1\}\} % $$ \clist_LofCaption\{\{\#1\}\} $$ \cl
453
                             \fi
454
                             \verb|\clist_put_right:Nn\\l_clist_Caption{{\#2}}%
455
                             \ifx\relax#3\relax
456
                                     \verb|\clist_put_right:Nn| \textbf{l}_clist_Label{{}} %
457
                              \else
458
                                     \clist_put_right:Nn\l_clist_Label{{#3}}%
459
460
                              \@ifnextchar+\do@multiFloat@ii%
461
462
                                      {\def\hvSet@CapWidth{n}%
463
                                          \do@@@dhvFloat}%
464
                   }
                   \ExplSyntaxOff
465
466
467
468
                   \def\drawSepLine{%
```

```
\par\noindent
470
       \if@twocolumn
471
472
        \ifhv@twoColumnCaption
          \mathbf{0.4pt} \leq \mathbf{0.4pt} 
473
474
        \else
          \mathbf{0.4pt} \leq \mathbf{0.4pt} 
475
        \fi
476
       \else
477
        \mathbf{0.4pt} \leq \mathbf{0.4pt} 
478
479
       \vspace{\hv@sepLineskip}%
480
481
    }
482
     \newcount\hv@cnta
483
484
     \newcount\hv@cntb
485
     \def\hvFloat@ii[#1]#2#3{%}
                                  #1: key/value, #2: floattype, #3: object
486
       \hv@maxImageWidth=\textwidth
487
       \ifx\relax#1\relax\else\
488
       \gdef\hv@floatType{#2}%
489
       \xdef\hv@floatListOfExt{\@nameuse{ext@\hv@floatType}}%
490
       \ifx\relax#2\relax \setkeys{hvSet}{nonFloat=true}\fi
491
       \gdef\hv@floatObject{#3}%
492
       493
494
    }
495
                                   #1: listof caption, #2. long caption #3: label
    \def\do@hvFloat[#1]#2#3{%}
496
       \gdef\hv@shortCap{#1}%
497
       \gdef\hv@longCap{#2}%
498
       \gdef\hv@label{#3}%
499
       500
       \ifhv@fullpage
501
        \def\hvSet@CapWidth{n}% relative value
502
        \do@@@hvFloat% fullpage with caption on other page
503
504
       \else
505
        \ifhv@FULLPAGE
          \def \hvSet@CapWidth{n}\% relative value
506
          \verb|\do@@ehvFloat|| full page with caption on other page |
507
        \else
508
          \ifhv@doubleFULLPAGE
509
            \setlength\hvCapWidth{\textheight}%
510
            \expandafter\do@hvFloat@doubleFULLPAGE\@@temp% fullpage with caption rotated or under on an odd page
511
          \else
512
513
              \expandafter\do@hvFloat@doublePAGE\@@temp% fullpage with caption rotated or under on an odd page
514
515
            \else
516
              \ifhv@doublePage
517
                \expandafter\do@hvFloat@doublePage\@@temp% fullpage with caption rotated or under on an odd page
518
              \else
                \do@@@hvFloat
519
              \fi
520
            \fi
521
          \fi
522
```

```
\fi
523
                \fi
524
           % \global\hv@capbesidefalse
525
526
          }
527
           \def\do@@@hvFloat{% no special float page, caption and image on top of each other or side by side
528
                \def\@tempa{90}%
529
                \fint \mathbf{x} \cdot \mathbf{fx} \cdot \mathbf{f}
530
                    \verb|\colored| \label{lem:capWidth{\textheight}} % % $$ \colored| \
531
532
                    \setlength\hvMaxCapWidth{\hvWideWidth}%
533
534
535
           % First we save the object in \hvObjectBox
536
537
               \ifnum\hvSet@objectAngle=0 % rotate the object?
538
539
                    \ifhv@useOBox
                         \let\hv0bjectBox\hv0Box
540
541
                         \savebox\hv0bjectBox{\hv@float0bject}%
542
543
                    \fi
                \else
544
                    \savebox\hv0bjectBox{%
545
                         \rotatebox{\hvSet@objectAngle}{%
546
                              \verb|\if| hv@use0Box\\ \textbf{\hv}0Box\\ \textbf{\else}\\ hv@float0bject\\ \textbf{fi}
547
548
                         }%
549
                    }%
550
                \setlength\hv0bjectWidth{\wd\hv0bjectBox}%
551
552
           % Now we save the caption with its defined \hvCapWidth
553
554
               \ifx\hvSet@capWidth\hv@Width%
                                                                                                                          captionwidth=objectwidth
555
                    \setlength\hvCapWidth{\hvObjectWidth}%
556
                    \ifx\hvSet@capWidth\hv@Height%
                                                                                                                          captionwidth=objectheight
                         \verb|\setlength| hvCapWidth{\ht}hvObjectBox{}|%
559
                    \else
560
                         \ifx\hvSet@capWidth\hv@Natural%
                                                                                                                          captionwidth=\linewidth-\objectwidth-separation
561
                              \ifhv@capbeside
562
                                  \ifhv@wide
563
                                       564
                                  \else
565
566
                                            570
                                        \fi
                                  \fi
571
                              \else
572
                                   \verb|\columnwidth| \\ \verb|\columnwidth| \\ \\
573
                              \fi
574
                         \else
575
```

```
\ifhv@capbeside
576
                                                       \ifhv@wide
577
578
                                                              \verb|\colored| \label{lem:capWidth} \label{lem:capWidth} $$ \operatorname{\colored} \label{lem:capWidth} $$ \operatorname{\colored} \label{lem:capWidth} $$ \label{lem:capWidth
                                                              579
 580
                                                       \else
                                                               \setlength\hvCapWidth{\hvSet@capWidth\columnwidth}%
581
                                                               582
                                                       \fi
583
                                                       \ifdim\hvCapWidth>\@tempdima
584
                                                              \setlength\hvCapWidth{\@tempdima}%
585
586
                                                \else
 587
                                                       \ifhv@wide
 588
                                                               \setlength\hvCapWidth{\hvSet@capWidth\hvWideWidth}%
 589
                                                       \else
                                                              \verb|\columnwidth| \hvSet@capWidth \columnwidth| % \\
 591
                                                       \fi
 592
                                               \fi
593
                                        \fi
 594
                                \fi
595
                          \fi
596
                          \saveCaptionSkip% we put this space ourselve
597
                           \ifnum\hvSet@capAngle=0 % need rotation?
598
                                \savebox\hvCaptionBox{% NO rotation
 599
 600
                                        \begin{minipage}[b]{\hvCapWidth}% minipage, to get hyphenation
                             \verb|\ifx| hv@caption@format| @empty | \textbf{else} | \textbf{expandafter}| captions etup | \textbf{expandafter}| find the properties of t
 601
 602
                                                \ifhv@nonFloat
                                    \ifhv@onlyText
 603
                                           \hv@longCap
604
                                     \else
 605
                                            \ifx\hv@floatType\hv@figure
606
                                                   \ifx\relax\hv@shortCap\relax
607
                                                           \figcaption{\hv@longCap}%
 608
 609
                                                           \figcaption[\hv@shortCap]{\hv@longCap}%
 610
                                                   \fi
                                            \else
 612
                                                   \ifx\relax\hv@shortCap\relax
613
                                                          \tabcaption{\hv@longCap}%
614
                                                   \else
615
                                                           \tabcaption[\hv@shortCap]{\hv@longCap}%
616
                                                   \fi
617
                                           \fi
618
                                    \fi
619
                             \else
 620
 621
                                    \ifhv@onlyText
 622
                                           \hv@longCap
 623
                                     \else
                                                               \let\@captype\hv@floatType
 624
                                                               625
                                                       \fi
 626
627
                             \  \ifx \ \end{abel} \ if x \ \end{abel} \ i
628
```

```
\end{minipage}%
629
                               }%
630
                         \else
631
632
                                \savebox\hvCaptionBox{% Rotation
633
                                       \rotatebox{\hvSet@capAngle}{%
                                              \begin{minipage}[b]{\hvCapWidth}% minipage, to get hyphenation
634
                                   635
                                   \ifhv@nonFloat
636
                                          \ifhv@onlyText
637
                                                  \hv@longCap
638
639
                                                  \ifx\hv@floatType\hv@figure
640
                                                         \label{linear_label} $$ \inf_{x\in\mathbb{R}}\else \figcaption_{\ngCap}\else \f
641
642
                                                  \else
                                                         643
                                                  \fi
644
                                          \fi
645
                                   \else
646
                                          \ifhv@onlyText
647
                                                  \hv@longCap
648
649
                                                                    \label{let-problem} $$ \end{tabular} $
650
                                                                   651
                                                                   \fi
                                                             \fi
653
                                                      \fi
654
                                                      655
                                              \end{minipage}%
656
                                       }% rotatebox
657
                                           \sbox
658
659
660
661
                 % now we have the object and the caption with the right
662
                 % rotated angles saved in different boxes
663
                         \restoreCaptionSkip% save old values
664
                 665
                         \ifx\hvSet@floatPos\@empty
                                                                                                                                            % use type default
666
                         \else
667
                                \@namedef{fps@\hv@floatType}{\hvSet@floatPos}%
668
                         \fi
669
                         \ifhv@nonFloat
670
                                \noindent
671
672
                                \begingroup%
                                                                                                       Start the nonfloat part
673
                         \else
674
                                \ifhv@star
                                       \fint \mathbf{fx}\ hvSet@floatPos\hv@floatBottom
675
                                                                                                                                                                         Start the floating environment ******************
                                               \@nameuse{\hv@floatType*}[b]%
676
677
                                        \else
                                              \@nameuse{\hv@floatType*}%
678
679
```

```
\else
680
           \begin{\hv@floatType}%
                                     Start the floating environment
681
682
        \fi
683
       \fi
684
       \checkoddpage
       685
       \ifx\hvSet@objectPos\hv@Center
686
        \verb|\if| hv@nonFloat\\ hspace*{\fill}\else\\ centering\\ fi
687
       \fi
688
       \ifx\hvSet@objectPos\hv@Outer
689
        \ifoddpage\raggedleft\fi
690
691
       \ifx\hvSet@objectPos\hv@Inner
692
        \ifoddpage\else\raggedleft\fi
      \fi
694
695
    % to rotate object and caption together, we save all in another box
696
    % the caption comes first, if its on the left or the top
697
    \% 0 caption left, inner and odd page, oneside inner
698
    % 1 caption top
699
    % 2 caption right, inner and even page, oneside outer
700
    % 3 caption bottom
701
702
703
       \ifx\hvSet@capPos\hv@Left
704
        \hv@@capPos=0
705
       \else
        \ifx\hvSet@capPos\hv@Top
706
          \hv@@capPos=1
707
         \else
708
          709
            \hv@@capPos=2
710
           \else
711
             \ifx\hvSet@capPos\hv@Bottom
712
713
               \hv@@capPos=3
714
             \else
               \ifx\hvSet@capPos\hv@Inner
                \verb|\ifoddpageoroneside| hv@@capPos=0\\ else\\ hv@@capPos=2\\ fi
716
               \else
717
                \ifx\hvSet@capPos\hv@Outer
718
                  \ifoddpageoroneside\hv@@capPos=2\else\hv@@capPos=0\fi
719
                \else
720
                  \ifx\hvSet@capPos\hv@Before
721
                    \hv@@capPos=0% same as cappos=right
722
723
                    \int fx\hvSet@capPos\hv@After
724
725
                      726
                    \fi
727
                  \fi
                \fi
728
               \fi
729
            \fi
730
          \fi
731
         \fi
732
```

```
\fi
733
    %%%
734
                                                  ***** @tempbox start
735
      \savebox{\@tempboxa}{%
736
        START \ifcase
737
          \ifx\hvSet@capVPos\hv@Center
738
            \put@CaptionBox
            \hspace{\hvSet@floatCapSep}% capfloatsep
739
            \put@ObjectBox
740
           \else
741
            \ifx\hvSet@capVPos\hv@Top% caption and object at top aligned
742
               \put@CaptionBox[1]%
743
               \hspace{\hvSet@floatCapSep}% capfloatsep
744
               \put@ObjectBox[1]%
745
             \else% caption on bottom
              \put@CaptionBox[2]%
              \hspace{\hvSet@floatCapSep}% capfloatsep
748
749
              \put@ObjectBox[2]%
            \fi
750
          \fint \mathbf{fi}\% end caption left
751
         \or%1 is top
752
          \ifdim\wd\hvCaptionBox>\wd\hvObjectBox
753
        \begin{minipage}{\wd\hvCaptionBox}%
754
755
        \begin{minipage}{\wd\hv0bjectBox}%
756
757
          \fi
758
          \centering
          \ifhv@fbox
759
       760
       \footnote{Mox{\normalfootnote{Abox}}}
761
          \else
762
        \usebox{\hvCaptionBox}\\[\hvBelowCaptionSkip]%
763
        \usebox{\hv0bjectBox}%
764
765
          \end{minipage}%
766
         \or%2 is right
          \fint \mathbf{x}\ hvSet@capVPos\hv@Center
769
            \put@ObjectBox
       \hspace{\hvSet@floatCapSep}%
770
        \put@CaptionBox
771
          \else
772
       \ifx\hvSet@capVPos\hv@Top
773
               \put@ObjectBox[1]%
774
               \hspace{\hvSet@floatCapSep}% capfloatsep
775
               \put@CaptionBox[1]%
776
777
              \put@ObjectBox[2]%
778
               \hspace{\hvSet@floatCapSep}% capfloatsep
780
               \put@CaptionBox[2]%
781
       \fi
          \fi
782
         \or%3 bottom
783
          \ifdim\wd\hvCaptionBox>\wd\hvObjectBox
784
            \begin{minipage}{\wd\hvCaptionBox}%
785
```

```
\else
786
           \begin{minipage}{\wd\hv0bjectBox}%
787
788
         \fi
         \backslash \textbf{centering}
789
         \ifhv@fbox
790
           \fbox{\usebox{\hv0bjectBox}}\\[\hvAboveCaptionSkip]%
791
             \fbox{\usebox{\hvCaptionBox}}%
792
           \else
793
             794
             \usebox{\hvCaptionBox}%
795
796
         \end{minipage}%
797
        \fi% \ifcase\the\hv@@capPos
798
799
      }% End savebox Object and caption
                                              %%%%%%%%%%%% @tempboxa
800
    % now we rotate the object and caption, if needed
801
802
      \ifhv@wide
803
       \ifoddpageoroneside
804
         \if@twocolumn
805
           \if@firstcolumn
806
807
             \hspace*{\dimexpr-\marginparwidth-\marginparsep}% oddpage first column
808
809
           \fi
         \fi
810
811
       \else
         \ifoddpage
812
           \if@twocolumn
813
             \if@firstcolumn
814
               \noindent
815
               \hspace*{\dimexpr-\marginparwidth-\marginparsep}% oddpage first column
816
             \fi
817
           \fi
818
         \else% evenpage
819
820
           \if@firstcolumn
821
             \noindent
             822
           \fi
823
         \fi
824
       \fi
825
      \fi
826
      \ifx\hvSet@rotAngle\hv@Zero
827
       \usebox{\@tempboxa}%
828
829
830
       831
      \fi
832
      \ifhv@nonFloat
833
        \ifx\hvSet@objectPos\hv@Center
834
          \ifhv@nonFloat
        \hspace{\fill}%
835
          \fi
836
837
        \endgroup% End the nonfloat part
```

838

```
839
       \else
         \ifhv@star
840
841
           \@nameuse{end\hv@floatType*}% End the floating environment
842
           \end{\hv@floatType}% End the floating environment
843
         \fi
844
       \fi
845
       \endgroup% startet at main \hvFloat
846
847
    }
848
     \newenvironment{hvFloatEnv}[1][\textwidth]
849
       {\minipage{#1}\center}
850
       {\endcenter\endminipage}
851
852
     \ExplSyntax0n
854
     \let\clist@item@Nn\clist_item:Nn
855
     856
    \verb|\label{lem:lem:l}| \textbf{let} = \textbf{lection} \\ \textbf{lectist_LofCaption} \\
857
    \verb|\label| \textbf{l}_c list\_Label|
858
     \let\clist@count@N\clist_count:N
859
     \ExplSyntaxOff
860
861
     \def\do@@@hvFloat{% special float page: caption <-> fullpage image
863
       \fint {\bf ifx} \ hvSet@capPos\hv@After \hv@@capPos=1
864
         \ifx\hvSet@capPos\hv@Even \hv@@capPos=2
865
         \else
866
           \ifx\hvSet@capPos\hv@Odd
                                       \hv@@capPos=3
867
           \else
868
             \ifx\hvSet@capPos\hv@Inner
                                            \hv@@capPos=4
869
             \else
870
                \ifx\hvSet@capPos\hv@Outer
                                               \hv@@capPos=5
872
                  \ifx\hvSet@capPos\hv@Right \hv@@capPos=6% only for twocolumn mode
                    \ifx\hvSet@capPos\hv@Left \hv@@capPos=7% only for twocolumn mode
875
                    \else
876
                      \hv@@capPos=0
877
                    \fi
878
                  \fi
879
                \fi
880
             \fi
881
           \fi
882
883
         \fi
884
       \fi
885
       \checkoddpage
886
       \set@caption@object{\hv@floatType}% set caption and object into a box
       \ifcase\hv@capPos% caption before object 0-> _always_ left
887
         \verb|\setBottomCaption\setPageObject| \\
888
                              caption after object 1-> _always_ right
       \or%
889
         \setPageObject\setBottomCaption
890
                               caption on even page 2-> left page
891
```

```
\ifoddpage
892
                                  \afterpage{\setBottomCaption\setPageObject}%
893
 894
                            \else% we are on an even page
895
                                 \setBottomCaption\setPageObject
896
                           \fi
                                                                                    caption on odd page 3->right page
897
                      \or%
                            \if@twoside
898
                                 \if@twocolumn
899
                                        \ifoddpage
 900
                                              \if@firstcolumn% on right side
 901
                                                    \setBottomCaption\setPageObject
 902
                                              \else
 903
                                                     \afterpage{\setPageObject\setBottomCaption}% start next column
 904
                                              \fi
 905
                                        \else% left (even) page
                                              \if@firstcolumn
 907
                                                    \verb|\afterpage{\setPageObject\setBottomCaption}| % \textit{ start next column} | % \textit{ start next column}| % \textit{ start next colum
 908
                                              \else
 909
                                                    \setPageObject\setBottomCaption
910
                                              \fi
911
                                        \fi
912
                                  \else% onecolumn
913
                                        \ifoddpage
 914
915
                                              \setPageObject\setBottomCaption
916
                                        \else% even page
                                              \afterpage{\setPageObject\setBottomCaption}%
917
                                        \fi
918
                                 \fi
919
                            \else% oneside
 920
                                 \if@twocolumn
921
                                        \ifoddpage
 922
                                              \if@firstcolumn% on right side
 923
                                                    \setBottomCaption\setPageObject
 924
 925
 926
                                                    \setPageObject\setBottomCaption
                                              \fi
 927
                                        \else
 928
                                              \if@firstcolumn% on left side
 929
                                                    930
                                              \else
 931
                                                    \setPageObject\setBottomCaption
932
                                              \fi
933
                                        \fi
934
                                  \else % onecolumn
 935
                                        \ifoddpage
 936
937
                                              \setBottomCaption\setPageObject
938
                                        \else
                                              \afterpage{\setBottomCaption\setPageObject}%
939
                                        \fi
940
                                 \fi
941
                            \fi
942
                     \or%
                                                                                    caption on the inner column 4->inner
943
                              \set@caption@object
944
```

```
\if@twocolumn
945
           \ifoddpage
946
947
             \ightharpoonup on right side
          \verb|\setBottomCaption\setPageObject| \\
948
949
                            % right column on right side
               \verb|\setPageObject\setBottomCaption|| \textit{start next firstcolumn next page}|
950
             \fi
951
           \else
952
             \if@firstcolumn% on left side
953
               \afterpage{\afterpage{\setBottomCaption\setPageObject}}% start next page/first column
954
             \else% left page/column
955
               \setBottomCaption\setPageObject% start on same page/column
956
           \fi
         \else% onecolumn
           \setBottomCaption\setPageObject
960
        \fi
961
      \or%
                           caption on the outer column 5->outer
962
          \set@caption@object
963
         \if@twocolumn
964
           \ifoddpage
965
             \if@firstcolumn
966
               \afterpage{\afterpage{\setBottomCaption\setPageObject}}%
967
               970
             \fi
           \else% even page (left)
971
             \if@firstcolumn
972
               \setBottomCaption\setPageObject
973
             \else
974
    %%%
                       !!!! to-do: !!!!
975
             \fi
976
977
           \fi
         \else% onecolumn
978
           \setBottomCaption\setPageObject
        \fi
                           caption after object on same page 6->right for twocolumn
981
       \or%
         \if@twocolumn
982
          \if@firstcolumn
983
             \afterpage{\setPageObject\setBottomCaption}%
984
           \else
985
             \setPageObject\setBottomCaption
986
           \fi
987
         \else% always caption _after_ object for onecolumn
988
           \setPageObject\setBottomCaption
990
         \fi
991
      \or%
                           caption before object on same page 7->left for twocolumn
992
         \if@twocolumn
993
           \if@firstcolumn
             \setBottomCaption\setPageObject
994
           \else
995
             \afterpage{\setBottomCaption\setPageObject}%
996
997
```

```
onecolumn -> same as before
                    \else%
 998
                        \setBottomCaption\setPageObject
                   \fi
1000
1001
               \fi
                \endgroup% startet at main \hvFloat
1002
1003
1004
           % ------ the doublepage obejcts -----
1005
           % || lin+evenside --- |lin+oddside --- ||
1006
1007
            \def\do@hvFloat@doublePage#1{% image on left and right page with caption on the right page
1008
               % #1-> 0/1 caption under/right
1009
                \global\setlength\hv@leftPageObjectWidth{\dimexpr\paperwidth-lin-\evensidemargin-\hvSet@bindCorrection}%
1010
                1011
1012
                \xdef\hv@capAngle{\hvSet@capAngle}%
1013
               \checkoddpage
                \ifoddpage
1014
                   \if@twocolumn
1015
                        \if@firstcolumn
1016
                            \afterpage{\afterpage{\do@hvFloat@doublePageCaptionRight{#1}}}%
1017
1018
                            \ifhv@tugboat
1019
                                \do@hvFloat@doublePageCaptionRight{#1}%
1020
1021
                                \afterpage{\do@hvFloat@doublePageCaptionRight{#1}}%
1022
1023
                            \fi
                        \fi
1024
                    \else
1025
                        \afterpage{\do@hvFloat@doublePageCaptionRight{#1}}%
1026
                    \fi
1027
                \else
1028
                    \if@twocolumn
1029
                        \if@firstcolumn
1030
1031
                            1032
                           \afterpage{\afterpage{\do@hvFloat@doublePageCaptionRight{#1}}}%
1033
                        \fi
1034
                   \else
1035
                        1036
                   \fi
1037
               \fi
1038
                \endgroup% started at main macro \hvFloat
1039
          }
1040
1041
           \def\do@hvFloat@doublePageCaptionRight#1{% image on left and right page with caption on the right page
1042
1043
               \label{let-hv@fptop} \column{t} \column{t}
1044
                \global\setlength{\@fptop}{0pt}%
1045
                \let\hv@c@dbltopnumber\c@dbltopnumber
                \setcounter{totalnumber}{0}%
1046
                \setcounter{dbltopnumber}{0}%
1047
                \def\dblfloatpagefraction{0.5}%
1048
                \begin{\hv@floatType*}[!thb]
1049
```

```
1050
                                  \verb|\clipbox*{0 -\depth{} \hv@leftPageObjectWidth{} \height}{\usebox}\hvObjectBox{}% |
1051
                                  \ifx\hv@label\@empty
1052
1053
                                        \else
                                        \ifx\hv@floatType\hv@figure
1054
                                                \refstepcounter{hv@tempCNTfigA}%
1055
                                         \else
1056
                                                \refstepcounter{hv@tempCNTtabA}%
                                                                                                                                                                         before caption
1057
                                         \fi
1058
                                         \label{\hv@label}%
1059
                                  \fi
1060
                           \end{\hv@floatType*}%
1061
                           \afterpage{%
1062
                                  \begin{\hv@floatType*}[!thb]
1063
                                            \hspace*{\hv@tempWidthA}%
                                            \noindent
                                            \label{linear_savebox_hv@rightBox_clipbox*{hv@leftPageObjectWidth{} -\depth{} \width{} \height{}}{\usebox} $$ \clipbox^{\clipbox^{\clipbox}} $$ \clipbox^{\clipbox^{\clipbox^{\clipbox}}} $$ \clipbox^{\clipbox^{\clipbox^{\clipbox}}} $$ \clipbox^{\clipbox^{\clipbox^{\clipbox}}} $$ \clipbox^{\clipbox^{\clipbox^{\clipbox}}} $$ \clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox}}}} $$ \clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\clipbox^{\cli
1067
                                                               hv0biectBox}}%
                                            \global\setlength\hv@tempWidthB{\the\dimexpr\textwidth-\wd\hv@rightBox-\hv@tempWidthA-\marginparsep}%
1068
                                            \parbox[\hv@capVPos]{\the\wd\hv@rightBox}{%
1069
                                                   \vspace{0pt}%
1070
                                                   \raisebox{\depth}{\usebox\hv@rightBox}%
1071
1072
                                            \ifx\hv@label\@empty\else
1073
1074
                                                   \ifx\hv@floatType\hv@figure
                                                          \global\refstepcounter{hv@tempCNTfigB}%
1075
                                                   \else
1076
                                                          \global\refstepcounter{hv@tempCNTtabB}%
                                                                                                                                                                                                              before caption
1077
                                                   \fi
1078
                                                   \label{\hv@label-2}%
1079
1080
                                            \ifnum#1>0
                                                                                             % caption on the right
1081
                                                      \medskip
1082
1083
                                                   \int \int \mathbf{ifnum} \ln \mathbf{e} \cos \mathbf{p} \cdot \mathbf{ngle} > 0
                                                              \int \int \int dp \cdot hvObjectBox > \int Column = \int \int \int \int dp \cdot hvObjectBox > \int Column = \int \int \int \partial p \cdot hvObjectBox > \int Column = \int \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvObjectBox > \int Column = \int \partial p \cdot hvO
                                                                     1085
                                                                            \ifx\relax\hv@shortCap\relax
1086
                                                                                   \captionof{\hv@floatType}{\hv@longCap}%
1087
                                                                            \else
1088
                                                                                   \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1089
                                                                           \fi
1090
                                                                           \ifx\hv@label\@empty\else\label{\hv@label-cap}\fi
1091
                                                                    }}%
1092
                                                               \else
1093
                                                                 \ifx\relax\hv@shortCap\relax
1096
                                                                                \captionof{\hv@floatType}{\hv@longCap}%
1097
                                                                        \else
                                                                                \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1098
                                                                        \fi
1099
1100
                                                                 \ifx\relax\hv@label\relax\else\label{\hv@label-cap}\fi
1101
```

```
\fi
1102
                             \else
1103
                                 \hspace{\marginparsep}%
1104
1105
                                 \parbox[\hv@capVPos]{\hv@tempWidthB}{%
1106
                                     \vspace{0pt}%
1107
                                     \ifx\hv@shortCap\@empty
                                         \label{$\hv@floatType}{\hv@longCap} if x \hv@label\@empty\else\\label{$\hv@label-cap}\fi\end{$i} % if x \hv@label\else\\label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@label\hv@
1108
                                     \else
1109
                                         \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}
1110
                                     \fi
1111
                                 }%
1112
                                 \ifx\hv@label\ensuremath{\hv@label-cap}\fi
1113
1114
                         \else % #1 = 0 caption below
1115
                             \ifx\relax\hv@shortCap\relax
1116
                                 \captionof{\hv@floatType}{\hv@longCap}%
1117
1118
                                 \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1119
                            \fi
1120
                             \ifx\hv@label\@empty\else\label{\hv@label-cap}\fi
1121
                         \fi
1122
                     \end{\hv@floatType*}%
1123
1124
               \let\c@topnumber\hv@c@topnumber
1125
               \let\c@fptop\hv@fptop
1126
1127
          }
1128
           \newsavebox\hv@boxLeftPage
1129
           \newsavebox\hv@boxRightPage
1130
1131
           % ||1in+evenside --- |1in+oddside ---||
1132
1133
           \newif\ifhv@save@twocolumn
1134
1135
           \def\do@hvFloat@doublePAGE#1{% image on left and right page with caption on the right
1136
               % #1-> 0/1 caption under/right
1137
               1138
               \global\setlength\hv@leftPageObjectWidth{\the\dimexpr\paperwidth-lin-\evensidemargin-\hvSet@bindCorrection}
1139
               \expandafter\global\expandafter\savebox\expandafter\hv0bjectBox\expandafter\\ifnv@use0Box\usebox\hv0Box\\
1140
                         else\hv@floatObject\fi}%
               \ensuremath{\texttt{expandafter}}\ \expandafter\global\expandafter\savebox\expandafter\hv@boxLeftPage\expandafter\\clipbox*{0 -\depth{} \
1141
                         hv@leftPageObjectWidth{} \height}{\usebox\hvObjectBox}}%
               1142
                         1143
               \checkoddpage
1144
               \ifoddpage
1145
                  \if@twocolumn
                      \if@firstcolumn
1146
                           \afterpage{\do@hvFloat@doublePAGECaptionRight{#1}}%
1147
                       \else
1148
                           \do@hvFloat@doublePAGECaptionRight{#1}%
1149
```

```
\fi
1150
                                 \else
1151
                                        \verb|\do@hvFloat@doublePAGECaptionRight{#1}%|
1152
1153
                                 \fi
1154
                          \else
                                 \if@twocolumn
1155
                                        \if@firstcolumn
1156
                                              1157
                                        \else
1158
                                              1159
1160
1161
                                        \afterpage{\do@hvFloat@doublePAGECaptionRight{#1}}%
1162
1163
                          \fi
1164
1165
                          \endgroup
1166
                  }
1167
                   \def\do@hvFloat@doublePAGECaptionRight#1{% image on left and right page with caption on the right
1168
                          % #1-> 0/1 caption under/right
1169
                                 \afterpage{%
1170
1171
                                        \noindent
                                        1172
1173
                                        \clipbox*{0 -\depth{} \hv@leftPageObjectWidth{} \height}{\usebox\hvObjectBox}%
1174
                                        \newpage\if@twocolumn\null\newpage\fi
                                        1175
                                                         hv0Box}\else\hv@float0bject\fi}%
                                        \hspace*{-\dimexpr\hv@tempWidthA}%
1176
                                        \noindent
1177
                                              1178
                                                     \ifnum#1>0
1179
                                                              \medskip
1180
                                                             \int \int \mathbf{dp} \cdot \mathbf{dp}
1181
1182
                                                                    \ifx\relax\hv@shortCap\relax
                                                                                  \captionof{\hv@floatType}{\hv@longCap}%
                                                                           \else
1185
                                                                                  1186
                                                                          \fi
1187
                                                                   }}%
1188
                                                                    \ifx\hv@label\ensuremath{\fi}
1189
1190
                                                                    \rotatebox{90}{\parbox{\the}\dimexpr\ht\hv0bjectBox+\dp\hv0bjectBox}{\%}
1191
                                                                          \ifx\relax\hv@shortCap\relax
1192
                                                                                  \captionof{\hv@floatType}{\hv@longCap}\%
                                                                          \else
1195
                                                                                  \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1196
                                                                           \fi
1197
                                                                    \ifx\hv@label\end{\hv@label}\fi
1198
                                                              \fi
1199
                                              \else
1200
```

```
\ifx\relax\hv@shortCap\relax
1201
                                                   \captionof{\hv@floatType}{\hv@longCap}%
1202
                                             \else
1203
                                                   \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1204
1205
                                             \fi
                                             \ifx\hv@label\ensuremath{\hv@label}\fi
1206
1207
                                        \newpage\if@twocolumn\null\newpage\fi
1208
                      }%
1209
               }
1210
1211
                % ||1in+evenside --- |1in+oddside ---||
1212
1213
                \def\do@hvFloat@doubleFULLPAGE#1{% image on left and right page with caption before/below/right/after
1214
1215
                      % #1-> 0/1 caption under/right
                      1216
1217
                            \ifx\hvSet@capPos\hv@Before \hv@@capPos=0
1218
1219
                                  \hv@@capPos=2 % other caption type
1220
                      \fi\fi
1221
                      \checkoddpage
1222
                       1223
                       1224
                                     of the right side offset
1225
                      \global\setlength\hv@tempWidthB{\dimexpr\ht\hvCaptionBox+\wd\hvObjectBox+2\hvSet@bindCorrection}%
                      \verb|\global| setlength| hv@leftPageObjectWidth{\dimexpr\\paperwidth-\hvSet@bindCorrection}| % in the context of 
1226
               % \space{0.05} % \s
1227
               % \savebox\hv@rightBox{\clipbox*{\the\hv@leftPageObjectWidth{} \depth{} \width{} \height}{\usebox\
1228
                               hv0biectBox}}%
                      \expandafter\captionsetup\expandafter{\hv@caption@format}%
1229
                       \ifoddpage
1230
                            \ifcase\hv@@capPos % =0 Caption before
1231
                                  \if@twocolumn
1232
1233
                                        \if@firstcolumn
                                             \ifhv@twoColumnCaption
1235
                                                   \set@Normal@Bottom@Caption*
                                                   \afterpage{\do@hvFloat@doubleFULLPAGE@CaptionBefore}%
1236
                                             \else
1237
                                                   \afterpage{\set@Normal@Bottom@Caption\do@hvFloat@doubleFULLPAGE@CaptionBefore}%
1238
                                             \fi
1239
                                        \else% \if@firstcolumn
1240
                                             \set@Normal@Bottom@Caption
1241
                                             \do@hvFloat@doubleFULLPAGE@CaptionBefore
1242
                                        \fi
1243
                                  \else% \if@twocolumn
1244
                                        \set@Normal@Bottom@Caption
1245
1246
                                        \verb|\do@hvFloat@doubleFULLPAGE@CaptionBefore||
1247
                                  \fi
                             \or % =1 Caption after
1248
                                 \ifhv@twoColumnCaption
1249
                                        \if@firstcolumn
1250
                                             \afterpage{\do@hvFloat@doubleFULLPAGE@CaptionAfterTwoCol}%
1251
```

```
\else
1252
            \do@hvFloat@doubleFULLPAGE@CaptionAfterTwoCol
1253
           \fi
1254
         \else
           \if@twocolumn
1257
            \if@firstcolumn
              \afterpage{\do@hvFloat@doubleFULLPAGE@CaptionAfter}%
1258
            \else
1259
              \do@hvFloat@doubleFULLPAGE@CaptionAfter
1260
            \fi
1261
           \else
1262
            \do@hvFloat@doubleFULLPAGE@CaptionAfter
1263
1264
         \fi
1265
       \else% \ifcase >1 all other Captions
         \if@twocolumn
           \if@firstcolumn
            1269
1270
            \do@hvFloat@doubleFULLPAGE@CaptionOther{#1}%
1271
1272
         \else % \if@twocolumn
1273
           \label{lem:condition} $$\do@hvFloat@doubleFULLPAGE@CaptionOther{\#1}% $$
1274
         \fi
1275
1276
       \fi% \ifcase
1277
      \else% we have an even page
1278
       \ifcase\hv@@capPos% Before
         \if@twocolumn
1279
          \if@firstcolumn
1280
            \ifhv@twoColumnCaption
1281
              \afterpage{\afterpage\set@Normal@Bottom@Caption*\afterpage{\
1282
                  do@hvFloat@doubleFULLPAGE@CaptionBefore{#1}}}%
1283
            \else
              \afterpage{\afterpage{\set@Normal@Bottom@Caption\
1284
                  do@hvFloat@doubleFULLPAGE@CaptionBefore \{\#1\}\}\} \} \%
            \fi
           \else
            1287
           \fi
1288
         \else% \if@twocolumn
1289
           1290
         \fi
1291
       \or % capPos after
1292
         \if@twocolumn
1293
           \if@firstcolumn
1294
            \ifhv@twoColumnCaption
              1297
            \else
1298
              \fi
1299
1300
           \else
            \ifhv@twoColumnCaption
1301
              \afterpage{\afterpage{\do@hvFloat@doubleFULLPAGE@CaptionAfterTwoCol{#1}}}%
1302
```

```
\else
1303
              1304
            \fi
1305
1306
          \fi
         \else% \if@twocolumn
1307
          \afterpage{\do@hvFloat@doubleFULLPAGE@CaptionAfter}%
1308
         \fi
1309
       \else % \ifcase Any other caption
1310
         \if@twocolumn
1311
          \if@firstcolumn
1312
            1313
1314
            1315
          \fi
1316
1317
         \else
          1318
1319
         \fi
       \fi% \ifcase
1320
      \fi% main ifoddpage
1321
      \endgroup% started at main macro \hvFloat
1322
1323
1324
    1325
    \def\set@Normal@Bottom@Caption@{%
1326
1327
       \begin{\hv@floatType}[!b]
1328
         \ifhv@separatorLine\drawSepLine\fi
         \expandafter\captionsetup\expandafter{\hv@caption@format}%
1329
         \ifx\relax\hv@shortCap\relax
1330
          \captionof{\hv@floatType}{\hv@longCap}%
1331
         \else
1332
          \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1333
1334
         1335
       \end{\hv@floatType}%
1336
1337
1338
    \def\set@Normal@Bottom@CaptionStar*{%
1339
       \begin{\hv@floatType*}[!b]
         \ifhv@separatorLine\drawSepLine\fi
1340
         \verb|\expandafter| captions etup| expandafter {\hv@caption@format} % \\
1341
         \ifx\relax\hv@shortCap\relax
1342
          \captionof{\hv@floatType}{\hv@longCap}%
1343
         \else
1344
          \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1345
1346
         \  \ifx\hv@label\end{\hv@label-cap}\fi
1347
       \end{\hv@floatType*}%
1348
1349
    }
1350
1351
    \def\do@hvFloat@doubleFULLPAGE@CaptionBefore{%
1352
    % \setcounter{hv@tempCNTfigA}{\value{figure}}%
1353
      \setcounter{hv@tempCNTfigB}{\value{figure}}%
1354
      \setcounter{hv@tempCNTtabA}{\value{table}}%
```

1355

```
% \setcounter{hv@tempCNTtabB}{\value{table}}%
1356
1357
                     \afterpage{%
                           \global\savebox{\hv0bjectBox}{\ifhv@use0Box\usebox{\hv0Box}\else\hv@float0bject\fi}%
1358
                           \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}% no
1359
                                         interlineskip
                           \hspace*{\the\dimexpr-\evensidemargin-\parindent-lin}%
1360
                           \thispagestyle{empty}%
1361
                           \ifx\hv@floatType\hv@figure
1362
                                \global\refstepcounter{hv@tempCNTfigB}%
1363
                           \else
1364
                                \global\refstepcounter{hv@tempCNTtabB}%
                                                                                                                                                     before caption
1365
1366
                           \expandafter\label\expandafter{\hv@label}%
1367
                           \verb|\clipbox*{0 0 $$ \the\hv@leftPageObjectWidth{} \height}{\usebox\hvObjectBox}$ 
1368
                                \if(two column) = \null + \n
                                1371
1372
                                \thispagestyle{empty}%
                                \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}%
                                                                                                                                                                                                                                                                                                                -0.51
1373
                                              paperheight+0.5\ht\hv0bjectBox
1374
                                \hspace*{\hv@tempWidthA}%
                                1375
                                \clipbox*{\the\hv@leftPageObjectWidth{} \dp\hvObjectBox{} \wd\hvObjectBox{} \ht\hvObjectBox}{\usebox\
1376
                                               hv0bjectBox}%
1377
                                \ifx\hv@floatType\hv@figure
                                     \global\refstepcounter{hv@tempCNTfigA}%
1378
1379
                                \else
                                     \global\refstepcounter{hv@tempCNTtabA}% before caption
1380
                                \fi
1381
                                \expandafter\label\expandafter{\hv@label-2}%
1382
                                \newpage\if@twocolumn\null\newpage\fi
1383
                    }}%
1384
1385
1386
1387
                \newif\ifhv@temp
                \def\do@hvFloat@doubleFULLPAGE@CaptionAfter{%
1390
                     \afterpage{%
                           1391
                           \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}% no
1392
                                        interlineskip
                           \hspace*{\the\dimexpr-\evensidemargin-\parindent-lin}%
1393
                           \thispagestyle{empty}%
1394
                           $$ \clipbox*{0 <caption> \clipbox*{0 } \clipbox*{0
1395
                          \ifx\hv@floatType\hv@figure
1396
                                \refstepcounter{hv@tempCNTfigA}%
1397
1398
                           \else
1399
                                \refstepcounter{hv@tempCNTtabA}% before caption
1400
                           \ifx\hv@label\end{whv@label}\fi
1401
                             \afterpage{%
1402
                                \newpage\if@twocolumn\null\newpage\fi
1403
```

```
1404
                                                                          \thispagestyle{empty}%
1405
                                                                          \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -0.51
1406
                                                                                                            paperheight+0.5\ht\hv0bjectBox
1407
                                                                          \hspace*{\hv@tempWidthA}%
                                                                          1408
                                                                          \label{linear_continuous} $$ \left( \frac{\theta}{\theta} \right) \left( \frac{\theta}{\theta} \right)
1409
                                                                                                            hv0biectBox}%
                                                                          \ifx\hv@floatType\hv@figure
1410
                                                                                       \refstepcounter{hv@tempCNTfigB}%
1411
                                                                            \else
1412
                                                                                       \refstepcounter{hv@tempCNTtabB}% before caption
1413
1414
                                                                            \expandafter\label\expandafter{\hv@label-2}%
 1415
                                                                          \newpage\if@twocolumn\null\newpage\fi
                                                                          \begin{\hv@floatType}[!b]
 1417
                                                                                       \ifhv@separatorLine\drawSepLine\fi
 1418
                                                                                       \verb|\expandafter| captions etup| expandafter {\hv@caption@format} % \\
1419
                                                                                       \ifx\relax\hv@shortCap\relax
1420
                                                                                                    \captionof{\hv@floatType}{\hv@longCap}%
1421
                                                                                       \else
1422
                                                                                                    \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1423
1424
                                                                                       \  \ifx \ \end{\ended} \ \fi
1425
                                                                          \end{\hv@floatType}%
 1426
                                                }%}%
 1427
 1428
                                 }
1429
                                   \verb|\def| do@hvFloat@doubleFULLPAGE@CaptionAfterTwoCol{% | line for the context of the context o
1430
                                                 \afterpage{%
1431
                                                              \global\savebox{\hv0bjectBox}{\ifhv@use0Box\usebox{\hv0Box}\else\hv@float0bject\fi}%
1432
                                                              \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}% no
1433
                                                              \hspace*{\the\dimexpr-\evensidemargin-\parindent-lin}%
1434
                                                               \thispagestyle{empty}%
1435
                                                             \ifx\hv@floatType\hv@figure
                                                                         \verb|\refstepcounter| \{ hv@tempCNTfigA \} \%
 1437
1438
                                                              \else
                                                                         \refstepcounter{hv@tempCNTtabA}% before caption
1439
                                                              \fi
1440
                                                             \ifx\hv@label\@empty\else\label{\hv@label}\fi
1441
                                                             \clipbox*{0 0 \the\hv@leftPageObjectWidth{} \height}{\usebox\hvObjectBox}%
1442
                                                                          \newpage\if@twocolumn\null\newpage\fi
1443
                                                                          1444
                                                                          \thispagestyle{empty}%
1445
                                                                          \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -0.51
1446
                                                                                                            paperheight+0.5\ht\hv0bjectBox
 1447
                                                                          \hspace*{\hv@tempWidthA}%
                                                                            1448
                                                                          \label{linear_continuous} $$ \left( \frac{\theta}{\theta} \right) \left( \frac{\theta}{\theta} \right)
1449
                                                                                                            hv0biectBox}%
                                                                          \ifx\hv@floatType\hv@figure
1450
                                                                                       \refstepcounter{hv@tempCNTfigB}%
1451
```

```
\else
1452
                                     \refstepcounter{hv@tempCNTtabB}% before caption
1453
                               \fi
1454
                               \ifx\hv@label\@empty\else\label{\hv@label-2}\fi
1455
                                \newpage
1456
                                \begin{\hv@floatType*}[!b]
1457
                                     \hv@twoColumnCaptiontrue
1458
                                     \ifhv@separatorLine\drawSepLine\fi
1459
                                     \expandafter\captionsetup\expandafter{\hv@caption@format}%
1460
                                     \ifx\relax\hv@shortCap\relax
1461
                                           \captionof{\hv@floatType}{\hv@longCap}%
1462
1463
                                           \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1464
1465
                                     \ifx\hv@label\@empty\else\label{\hv@label-cap}\fi
1467
                                \end{\hv@floatType*}%
                    }%
1468
              }
1469
1470
              \def\do@hvFloat@doubleFULLPAGE@CaptionOther#1{%
1471
1472
                          1473
1474
                          \thispagestyle{empty}%
                          \vspace*{\the\dimexpr-lin-\voffset-\topmargin-\headheight-\headsep-\baselineskip+2\lineskip}%
                                                                                                                                                                                                                                                                                                      -0.5\
1475
                                        paperheight+0.5\ht\hv0bjectBox
1476
                          \hspace*{\the\dimexpr-\evensidemargin-\parindent-lin}%
                          1477
                          \verb|\clipbox*{0 } $$ \clipbox*{0 } $$ \clipbox*{0 } $$ \clipbox*{0 } $$
1478
                          \ifx\hv@floatType\hv@figure
1479
                               \refstepcounter{hv@tempCNTfigA}%
1480
                          \else
1481
                               \refstepcounter{hv@tempCNTtabA}%
                                                                                                                               before caption
1482
1483
                          \label{\hv@label}%
1484
1485
                          \afterpage{%
                               \if@twocolumn\newpage\if@firstcolumn\else\null\newpage\fi\fi
                                1487
1488
                               \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
1489
                                             paperheight+0.5\ht\hv0bjectBox
                               \hspace*{\hv@tempWidthA}%
1490
                                \clipbox*{\hv@leftPageObjectWidth{} \dp\hvObjectBox{} \wd\hvObjectBox{} \ht\hvObjectBox}{\usebox\
1491
                                             hv0bjectBox}%
1492
                               \ifx\hv@floatType\hv@figure
                                     \refstepcounter{hv@tempCNTfigB}%
1493
                               \else
1494
                                     \refstepcounter{hv@tempCNTtabB}% before caption
1495
1496
                                \fi
1497
                                \expandafter\label\expandafter{\hv@label-2}%
                                \label{local-continuous} $$\ \end{0.9} $$ \operatorname{hv}(0.9) $$ \operatorname{hv}(0.9) $$ \caption of ${\left( \operatorname{hv@floatType}_{\left( \operatorname{hv@longCap}_{\left( \operatorname{hv}(0.9) \right) }\right)^{2}} $$ $$ \caption of $$ 
1498
                                                                                        % rotation with 90°
1499
                                \ifnum#1 > 0\relax
                                        1500
                                     \ifdim\hv@tempWidthB < 2\paperwidth
1501
```

```
\rotatebox[origin=lb]{90}{\makebox[\paperheight][c]{\parbox{0.8\ht\hv0bjectBox}{%
1502
                                     \expandafter\captionsetup\expandafter{\hv@caption@format}%
1503
                                     \ifx\relax\hv@shortCap\relax
1504
                                          \captionof{\hv@floatType}{\hv@longCap}%
1505
1506
                                     \else
                                          \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1507
                                     \fi
1508
                                 }}}% rotatebox
1509
                                 1510
                            \else% ifdim: no space left on page
1511
                                 \protect\ (-2\ht\nvCaptionBox, 0.5\ht\nvObjectBox) {\bf Makebox}(0,0) {\bf 0.5\ht\nvObjectBox} {\bf 0.5\ht\nvCaptionBox}(0,0) {\bf 0.5\ht\
1512
                                            centering
                                     \parbox{0.8\textwidth}{%
1513
                                          \ifx\relax\hv@shortCap\relax
1514
1515
                                              \captionof{\hv@floatType}{\hv@longCap}%
                                          \else
1516
                                              \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1517
                                         \fi
1518
                                     }%
1519
                                     1520
                                 \endminipage}}}%
1521
                            \fi
1522
                        \else% ifnum, caption not rotated, under or over the right page
1523
                            1524
1525
                            \ifdim\hv@tempWidthA > \ht\hvCaptionBox
1526
                            \else
                                 1527
                                            +\abovecaptionskip+\belowcaptionskip){\makebox[0pt][c]{\parbox{\textwidth}{%%
                                     \expandafter\captionsetup\expandafter{\hv@caption@format}%
1528
                                     \ifx\relax\hv@shortCap\relax
1529
                                         \captionof{\hv@floatType}{\hv@longCap}%
1530
1531
                                         \captionof{\hv@floatType}[\hv@shortCap]{\hv@longCap}%
1532
                                     \fi
1533
1534
                                 }}}%
                                 1535
                            \fi
1536
                        \fi% end \ifnum#1>0
1537
                        \verb|\newpage| if @twocolumn| null| newpage| fi
1538
                    1%
1539
               }%
1540
          }
1541
1542
1543
            \def\setBottomCaption{%
1544
1545
               \begin{\hv@floatType}[!b]%
1546
                \ifhv@separatorLine\drawSepLine\fi
1547
                \usebox\hvCaptionBox
1548
                \end{\hv@floatType}%
1549
1550
1551
           \def\setPageObject{%
1552
```

```
\ifhv@star
1553
          \begin{\hv@floatType*}[p]%
1554
1555
        \else
          \begin{\hv@floatType}[p]%
1556
1557
        \fi
       \ifhv@FULLPAGE
1558
         \label{limit} $$ \space {\the dimexpr-lin-\voffset-\topmargin-\headheight-\headsep} -0.5\baselineskip $$
1559
          \checkoddpage
1560
          \if@twoside
1561
            \ifoddpage
1562
              \hspace*{\the\dimexpr-\oddsidemargin-\parindent-lin}%
1563
1564
              \hspace*{\the\dimexpr-\evensidemargin-\parindent-lin}%
1565
            \fi
1566
          \else
            \hspace*{\the\dimexpr-\oddsidemargin-\parindent-lin}%
          \fi
1569
         1570
         \usebox\hv0bjectBox%
1571
1572
         \usebox\hv0bjectBox
1573
1574
        \fi
       \ifhv@star
1575
         \end{\hv@floatType*}%
1576
1577
1578
         \end{\hv@floatType}%
       \fi
1579
1580
     }
1581
     \ExplSyntax0n
1582
1583
     \def\getMultiCaptionAndLabel{%
1584
        \global\sbox\hvCaptionBox{\minipage[b]{\linewidth}%
1585
          \ifx\relax\hv@caption@format\relax\else\expandafter\captionsetup\expandafter{\hv@caption@format}\fi
1586
1587
         \setlength\belowcaptionskip{5pt}%
         \setlength\abovecaptionskip{0pt}%
         \hv@cntb=\clist_count:N\l_clist_Type
         \advance\hv@cntb\ by \@ne
1590
          \hv@cnta=1
1591
          \loop
1592
            \edef\@captype{\clist_item:Nn\l_clist_Type{\hv@cnta}}%
1593
            1594
            \ifx\@tempa\@empty
1595
              \caption{\clist_item:Nn\l_clist_Caption{\hv@cnta}}%
1596
            \else
1597
              \label{lem:nnl_clist_caption} $$\operatorname{\colorer{log}(\clist_item:Nnl_clist_Caption{\hv@cnta})}$$
1598
1599
            \fi
1600
            \label{$\ \endown} $$\endown= Nn\l_clist_Label{\nv@cnta}} $$
            \fint \mathbf{x}\ @tempa\@empty
1601
1602
              \label{$\operatorname{\operatorname{label}} \expandafter(\clist_item: Nn\l_clist_Label{\hv@cnta}-cap}\fi
1603
            \advance\hv@cnta by \@ne
1604
          \ifnum\hv@cnta<\hv@cntb
1605
```

```
\repeat
1606
                                                                    \endminipage}%
1607
1608
 1609
                                               \def\getMultiObjectAndLabel{%
1610
                                                                  \global\sbox\hv0bjectBox{%
1611
                                                                                   \ifhv@vFill
1612
                                                                                                    \minipage[b][\textheight][s]{\columnwidth}%
1613
                                                                                     \else
1614
                                                                                                    \minipage{\columnwidth}%
1615
1616
                                                                                   \ifx\relax\hv@caption@format\relax\else\expandafter\captionsetup\expandafter{\hv@caption@format}\fi
1617
                                                                                   \ifx\hvSet@objectPos\hv@Right\raggedleft\else
1618
                                                                                                    1619
                                                                                                                     \ifx\hvSet@objectPos\hv@Center\centering
                                                                                 \fi\fi\fi
                                                                                   \hv@cntb=\clist_count:N\l_clist_Type
                                                                                 \advance\hv@cntb by \@ne
1623
                                                                                 \hv@cnta=1
1624
                                                                                   \loop
1625
                                                                                                      \def\@temp{\clist item:Nn\l clist Object{\hv@cnta}}%
1626
                                                                                                    \fint {\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\colored{\co
1627
                                                                                                    \ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\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
1628
                                                                                                    \label{lem:nnl_clist_Type} $$ \end{ \clist_item:Nn\l_clist_Type_{\hv@cnta}} $$
 1629
                                                                                                    \ensuremath{\mbox{\sf def}\ensuremath{\mbox{\sf deaptype}}\ensuremath{\mbox{\sf hv@p}\ensuremath{\mbox{\sf dempb}}\ensuremath{\mbox{\sf %}}}
 1630
 1631
                                                                                                  \ifx\@tempa\@empty
 1632
                                                                                                    \else
                                                                                                                     \refstepcounter{\@captype}%
1633
                                                                                                                     \label{$\expandafter(\clist_item:Nn\l_clist_Label{\hv@cnta})} % \label{$\expandafter(\clist_item:Nn\l_clist_Label{\hv@cnta})} % \label{$\expandafter(\clist_item:Nn\l_clist_Label(\hv@cnta))} % \label{$\expandafter(\clist_item:Nn\l_clist_Label(\hv@cnta)))} % \label{{\expandafter(\clist_item:Nn\l_clist_Label(\hv@cnta)))} % \label{{\expandafter(\clist_item:Nn\l_clist_Label(\clist_item)))} % \label{{\expandafter(\clist_item))} % \label{{\expandafter(\clist_item
1634
1635
                                                                                                    \ifnum\hv@cnta<\clist_count:N\l_clist_Type\par\hv@vskip\fi
1636
                                                                                                      \advance\hv@cnta by \@ne
1637
                                                                                     \ifnum\hv@cnta<\hv@cntb
 1638
                                                                                                    \ifhv@vFill\vfill\fi
1639
                                                                                   \repeat
 1640
                                                                  \endminipage}%
 1642
1643
                                               \def\getMultiSubCaptionAndLabel{%
1644
                                                                  \global\sbox\hvCaptionBox{\minipage{\linewidth}%
1645
                                                                                   \label{limit} $$ \inf_{\boldsymbol{\omega}\in \mathbb{R}} \exp(\boldsymbol{\omega}) = \sup_{\boldsymbol{\omega}\in \mathbb{R}} \exp(\boldsymbol{\omega}) = \sup_
1646
                                                                                 \setlength\belowcaptionskip{5pt}%
1647
                                                                                 \setlength\abovecaptionskip{0pt}%
1648
                                                                                 \xdef\@captype{\clist_item:Nn\l_clist_Type{1}}\%$$ the same for all subfloats
1649
                                                                                   \label{lem:nnl_clist_lofCaption} $$\ef{$\mathbb{I}}% $$
1650
                                                                                 \ifx\@tempa\@empty
1651
                                                                                                    \color{caption{Clist_item:Nn\l_clist_Caption{1}}}
1652
1653
                                                                                   \else
                                                                                                      \label{lem:locality} $$ \operatorname{caption}\exp{\operatorname{andafter}[\operatorname{dempa}]_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_item:Nn\l_clist_Caption\{1\}}_{\clist_Caption\{1\}}_{\clist_Caption\{1\}}_{\clist_Caption\{1\}}_{\clist_Caption\{1\}
1654
1655
                                                                                   \label{localist_item:Nn\l_clist_Label{1}} $$ \end{area} $$ \operatorname{Nn}_{-clist_Label{1}} $$
1656
                                                                                   \ifx\@tempa\@empty\else\expandafter\label\expandafter{\clist_item:Nn\l_clist_Label{1}-cap}\fi
1657
                                                                    \endminipage}%
1658
```

```
}
1659
1660
                   \verb| def \ | getMultiSubObjectAndLabel{% }
1661
1662
                           \global\sbox\hv0bjectBox{%
1663
                                  \ifhv@vFill
                                         \minipage[b][\textheight][s]{\columnwidth}%
1664
                                  \else
1665
                                        \minipage{\columnwidth}%
1666
                                  \fi
1667
                                  \ifx\hv@subcaption@format\@empty\else
1668
1669
                                         \captionsetup\expandafter[\expandafter s\expandafter u\expandafter b\expandafter]\expandafter
1670
                                                                                                                         {\hv@subcaption@format}%
1671
                                  \fi
1672
                                 \ifx\hvSet@objectPos\hv@Right\raggedleft\else
1673
                                         \ifx\hvSet@objectPos\hv@Left\raggedleft\else
1674
                                               \ifx\hvSet@objectPos\hv@Center\centering
                                 \fi\fi\fi
1676
                                  1677
                                  \advance\hv@cntb by \@ne
1678
1679
                                 \hv@cnta=2
                                  1680
1681
                                        \label{lem:nnl_clist_object{hv@cnta}} $$ \end{area} $$ \clist_object{hv@cnta}$$
1682
                                        1683
                                        \begingroup
1684
                                         \edef\@tempa{\clist_item:Nn\l_clist_LofCaption{\hv@cnta}}%
1685
                                        \ifx\@tempa\@empty
1686
                                               1687
                                        \else
1688
                                               \label{lem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:nonlem:non
1689
1690
                                         \edef\@tempa{\clist_item:Nn\l_clist_Label{\hv@cnta}}%
1691
                                         \ifx\@tempa\@empty
1692
1693
                                               \expandafter\label\expandafter{\clist_item:Nn\l_clist_Label{\hv@cnta}}%
                                        \fi
                                        \verb|\ifnum| hv@cnta<\clist_count:N\l_clist_Type\\| par\\| hv@vskip\\| fi
1697
                                        \advance\hv@cnta by \@ne
1698
                                        \ifnum\hv@cnta<\hv@cntb
1699
                                        \ifhv@vFill\vfill\fi
1700
                                  \repeat
1701
                                  \ensuremath{\ensuremath{\text{def}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.slist}}\ensuremath{\ensuremath{\text{l.sl
                                                                                                                                                                                                                 the main label at the end
1702
                                  \fint \mathbf{x}\ @tempa\@empty
1703
1704
                                  \else
1705
                                         \addtocounter{\ensuremath{\colored{0captype}}{-1}\%}
                                                                                                                                                                       to get the same <object>-ref as "label"-cap
1706
                                         \refstepcounter{\@captype}%
                                         \expandafter\label\expandafter{\@tempa}%
1707
                                  \fi
1708
                           \endminipage}%
1709
1710
                  }
                  \ExplSyntax0ff
1711
```

```
1712
      \def\getSingleCaptionAndLabel{%
1713
1714
        \label{linewidth} $$ \global\sbox\hvCaptionBox{\minipage{\linewidth}}$$
          1715
1716
          \setlength\belowcaptionskip{5pt}%
          \setlength\abovecaptionskip{0pt}%
1717
          \edef\@captype{\hv@floatType}%
1718
          \expandafter\ifx\expandafter\relax\hv@shortCap\relax
1719
               \caption{\hv@longCap}%
1720
          \else
1721
               \caption[\hv@shortCap]{\hv@longCap}%
1722
1723
        \ifx\hv@label\@empty\else\label{\hv@label-cap}\fi
1724
1725
        \endminipage}%
1726
1727
                                        first caption, then object #1=\hv@floatType
      \def\ set@caption@object#1{%
1728
        \ifhv@multiFloat
1729
          \verb|\getMultiCaptionAndLabel| \\
1730
        \else
1731
          \ifhv@subFloat
1732
            \getMultiSubCaptionAndLabel
1733
1734
1735
            \getSingleCaptionAndLabel
          \fi
1736
        \fi
1737
        \ensuremath{\mbox{\sf def}}\ensuremath{\mbox{\sf deptype}}\ensuremath{\mbox{\sf hv@p#1}}\%
1738
        \ifhv@multiFloat
1739
          \getMultiObjectAndLabel
1740
        \else
1741
          \ifhv@subFloat
1742
            \getMultiSubObjectAndLabel
1743
1744
1745
             \global\sbox\hv0bjectBox{%
1746
               \refstepcounter{\@captype}%
               \verb|\if| hv@objectFrame \\ | frame{\hv@float0bject} \\ | else \\ | hv@float0bject \\ | fi
               \expandafter\ifx\expandafter\relax\hv@label\relax
1748
1749
                 \verb|\expandafter\\| abel\\| expandafter\\| hv@label\\| %
1750
               \fi
1751
            }%
1752
          \fi
1753
        \fi
1754
     }
1755
1756
1757
     \endinput
```