

The HEP-FLOAT package*

Convenience package for float placement

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Abstract

The HEP-FLOAT package redefines some L^AT_EX float placement defaults and defines convenience wrappers for floats.

The HEP-FLOAT package can be loaded with `\usepackage{hep-float}`.

figure Automatic float placement is adjusted to place a single float at the top of pages and
table to reduce the number of float pages, using the L^AT_EX macros.

`\setcounter{bottomnumber}{0}` no floats at the bottom of a page (default 1)
`\setcounter{topnumber}{1}` a single float at the top of a page (default 2)
`\setcounter{dbltopnumber}{1}` same for full widths floats in two-column mode
`\renewcommand{\textfraction}{.1}` large floats are allowed (default 0.2)
`\renewcommand{\topfraction}{.9}` (default 0.7)
`\renewcommand{\dbltopfraction}{.9}` (default 0.7)
`\renewcommand{\floatpagefraction}{.8}` float pages must be full (default 0.5)

The most useful float placement is usually archived by placing the float *in front* of the paragraph it is referenced in first. Additionally, manual float placement can be deactivated using the `manualplacement` package option.

`\raggedright` The float environments have been adjusted to center their content. The usual behaviour can be reactivated using `\raggedright`.

panels The `panels` environment makes use of the `SUBCAPTION` package [1]. It provides
`\panel` sub-floats and takes as mandatory argument either the number of sub-floats (default 2) or the width of the first sub-float as fraction of the `\linewidth`. Within the `\begin{panels}[\langle vertical alignment \rangle]{\langle width \rangle}` environment the `\panel` macro initiates a new sub-float. In the case that the width of the first sub-float has been given as an optional argument to the `panels` environment the `\panel{\langle width \rangle}` macro takes the width of the next sub-float as mandatory argument. The example code is presented in table 1a.

tabular The `BOOKTABS` [2] and `MULTIROW` [3] packages are loaded enabling publication quality tabulars such as in table 1b.

*This document corresponds to HEP-FLOAT v1.0.

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```

\begin{panels}{2}
  code
\panel
  \begin{tabular}...\end{tabular}
\end{panels}

```

(a) Code for this panel environment.

	one	two		
		b	c	d
a	b	c	d	

(b) The `booktabs` and `multirow` features.

Table 1: Example use of the `panels` environment in Panel (a) and the features from the `BOOKTABS` and `MULTIROW` packages in Panel (b).

`\graphic` The `GRAPHICX` package [4] is loaded and the `\graphic[width]{figure}` macro is defined, which is a wrapper for the `\includegraphics{figure}` macro and takes the figure width as fraction of the `\linewidth` as optional argument (default 1). If the graphics are located in a sub-folder its path can be indicated by `\graphics{subfolder}`.

`\graphics`

A Implementation

<*package>

Load the `KVOPTIONS` package [5] and define a `hepfloat` namespace.

```

1 \RequirePackage{kvoptions}
2 \SetupKeyvalOptions{
3   family=hepfloat,
4   prefix=hepfloat@
5 }

```

`manualplacement` Provide the `manualplacement` option for reactivating the manual placement of floats.

```

6 \DeclareBoolOption[true]{manualplacement}
7 \ProcessKeyvalOptions*

```

Adjust the \LaTeX float placement defaults

```

8 \setcounter{bottomnumber}{0} % 1
9 \setcounter{topnumber}{1} % 2
10 \setcounter{dbltopnumber}{1} % 2
11 \renewcommand{\topfraction}{.9} % .7
12 \renewcommand{\dbltopfraction}{.9} % .7
13 \renewcommand{\textfraction}{.1} % .2
14 \renewcommand{\floatpagefraction}{.8} % .5

```

`figure` Center the content of `figure` and `table` environments. Ignore the manual placement if `table` the `manualplacement` option is set to false.

```

15 \let\hep@figure\figure%
16 \let\end@hep@figure\endfigure%
17 \let\hep@table\table%

```

```

18 \let\end@hep@table\endtable%
19 \ifhepfloat@manualplacement%
20 \renewenvironment{figure}[1][tbp]{%
21   \hep@figure[#1]\centering%
22   }\end@hep@figure}%
23 \renewenvironment{table}[1][tbp]{%
24   \hep@table[#1]\centering%
25   }\end@hep@table}%
26 \else%
27 \renewenvironment{figure}[1][tbp]{%
28   \hep@figure\centering%
29   }\end@hep@figure}%
30 \renewenvironment{table}[1][tbp]{%
31   \hep@table\centering%
32   }\end@hep@table}%
33 \fi%

```

A.1 Sub-floats

`\subfigure` Load the SUBCAPTION package [1]. Provide the old `\subcaption@minipage` macro.

```

\subtable
34 \RequirePackage[subrefformat=pars]{subcaption}
35 \captionsetup{font=small}
36 \captionsetup[sub]{font=small}
37 \providecommand*\subcaption@minipage[2]{%
38   \minipage#1[#2]\setcaptionsubtype\relax%
39 }

```

`panels` Define the panels environment and the `\panel` macro.

```

\panel
40 \newcommand{\hep@panels@space}{20}
41 \newenvironment{panels}[2][b]{%

```

Define an internal macro for global behaviour.

```

42 \newcommand{\begin@subcaption@minipage}[2][b]{%
43   \caption@withoptargs\subcaption@minipage[##1]{##2}%
44   \centering\vskip 0pt%
45 }

```

Define the `\panel` macro for the case that the number of panels is given.

```

46 \ifdim#2pt>1pt%
47   \newcommand{\hep@panel@space}{%
48     (1-#2+\hep@panels@space)/\hep@panels@space%
49   }%
50 \newcommand{\panel}[1][b]{%
51   \endminipage\hfill\begin@subcaption@minipage[#1]{%
52     \linewidth/#2*\hep@panel@space%
53   }%
54 }%

```

```
55 \begin@subcaption@minipage[#1]{\linewidth/#2*\hep@panel@space}%
```

Define the `\panel` macro for the case that the width of the panel is given.

```
56 \else%
57 \newcommand{\panel}[2][b]{%
58 \endminipage\hfill\begin@subcaption@minipage[#1]{##2\linewidth}%
59 }%
60 \begin@subcaption@minipage[#1]{#2\linewidth}%
61 \fi%
62 }\endminipage}
```

A.2 Tables

`tabular` Enhance tabulars with the `BOOKTABS` and `MULTIROW` packages [2, 3].

```
63 \RequirePackage{booktabs}
64 \RequirePackage{multirow}
```

A.3 Figures

`\graphic` Provide the `\graphic` macro for the inclusion of figures using the `GRAPHICX` package [4].

```
65 \RequirePackage{graphicx}
66 \providecommand{\tikzsetnextfilename}[1]{}
67 \newcommand{\graphic}[2][1]{\tikzsetnextfilename{#2}{%
68 \centering\includegraphics[width=#1\linewidth]{#2}\par%
69 }}
```

`\graphics` Provide the `\graphics` macro for the inclusion of figures located in a subfolder.

```
70 \newcommand{\graphics}[1]{\graphicspath{.{/#1/}}}
```

</package>

B Readme

<*readme>

```
71 # The 'hep-float' package
72
73 Convenience package for float placement
74
75 ## Introduction
76
77 The 'hep-float' package redefines some 'LaTeX' float placement defaults and defines conv
78
79 The 'hep-float' package can be loaded with '\usepackage{hep-float}'.
80
81 ## Author
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83 Jan Hajer

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85 ## License

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88 The latest version of this license is in ‘<http://www.latex-project.org/lppl.txt>’ and ver

</readme>

References

- [1] A. Sommerfeldt. ‘The `subcaption` package: Support for sub-captions’ (2007). CTAN: `subcaption`. GitLab: [axelsommerfeldt/caption](https://gitlab.com/axelsommerfeldt/caption).
- [2] D. Els and S. Fear. ‘The `booktabs` package: Publication quality tables in \LaTeX ’ (1995). CTAN: `booktabs`.
- [3] P. van Oostrum and J. Leichter. ‘The `multirow`, `bigstrut` and `bigdelim` packages: Create tabular cells spanning multiple rows’ (1994). CTAN: `multirow`.
- [4] D. Carlisle and S. Rahtz. ‘Packages in the “graphics” bundle: Enhanced support for graphics’ (1994). CTAN: `graphicx`.
- [5] H. Oberdiek. ‘The `kvoptions` package: Key value format for package options’ (2004). CTAN: `kvoptions`. GitHub: [ho-tex/kvoptions](https://github.com/ho-tex/kvoptions).