The HEP-FLOAT package*

Float placement defaults and side-by-side figures, tables and panels

Jan Hajer†

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Abstract

The HEP-FLOAT package configures float placement for publication-style documents and adds convenience wrappers for figures, tables, sub-floats, and graphics. It centres float contents by default, provides side-by-side figure and table environments, loads BOOKTABS, MULTIROW, and SUBCAPTION, and defines compact graphics helpers.

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

`figure` (*env.*)
`table` (*env.*)

Automatic float placement is adjusted to place a single float at the top of pages and to reduce the number of float pages, using the LaTeX 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)

`local`

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

`\raggedright`

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

`figures` (*env.*)
`\figure`
`\figurehspace`
`\figurevspace`

The `figures` environment places several figure panels next to each other inside one `figure` float. It takes an optional vertical alignment and a mandatory argument that is either the number of equal-width figures or the width of the first figure as a fraction of `\linewidth`. Inside the environment the `\figure[`⟨*vertical alignment*⟩`]` macro starts the next figure panel, which is bottom aligned by default. The first `\caption[`⟨*short*⟩`]{`⟨*long*⟩`}` of each panel numbers the panel as a figure. The horizontal and vertical spacing are controlled by `\figurehspace` and `\figurevspace`.

`tables` (*env.*)
`\table`
`\tablehspace`
`\tablevspace`

The `tables` environment is the analogous wrapper for several tables inside one `table` float. Inside the environment `\table` starts the next table panel, and `\tablehspace` and `\tablevspace` control the spacing.

`panels` (*env.*)
`\panel`

The `panels` environment makes use of the SUBCAPTION package [1]. It provides 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}[`⟨*vertical alignment*⟩`]{`⟨*width*⟩`}` environment the `\panel[`⟨*vertical alignment*⟩`]` macro initiates a new sub-float, which by default

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†jan.hajer@tecnico.ulisboa.pt

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

(a) Code for this panel environment.

one		two	
a	b	c	d
	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).

has the vertical alignment of the environment. In the case that the width of the first sub-float has been given as an optional argument to the `panels` environment the `\panel{`⟨*width*⟩`}` macro takes the width of the next sub-float as mandatory argument. `panels` environments can be nested. The example code is presented in table 1a. The spacing between the panels can be adjusted by adjusting the `\panelvspace` in terms of a `\linewidth` fraction `\renewcommand*{\panelhspace}`fraction and the `\panelvspace` in terms of a length `\renewcommand*{\panelvspace}{`⟨*length*⟩`}`.

`\panelhspace`
`\panelvspace`

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

`\graphic`
`\graphics`

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*⟩`}`.

References

[1] A. Sommerfeldt. 'The `subcaption` package: Support for sub-captions' (2007). CTAN: `subcaption`. GitLab: `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`.