Nonfloating Tables and Figures in LaTeX 2ε – nonfloat* –

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1 Summary

Placing figures and tables in LaTeX documents always raises questions, especially when the figures and tables shouldn't float, or when captions are needed. Often, users try to achieve this through the use of the [h] parameter. But since the parameter is optional, and since LaTeX isn't required to honor it, using [h] doesn't always put the table or figure quite where "here" is given.

The float package provides one alternative. This package, which provides definitions for other floating objects such as program code or algorithms, offers [H] as an additional parameter. This does indeed place the floats "here" or at the beginning of the next page, but captions are limited to beneath the float. However, it is typographically correct for tables always to have their captions above the float.

The nonfloat package follows the recommendations in [1, 2] and defines various `\XXXcaption` commands for non-floating objects.

Furthermore, adjustments via the placement parameters `\textfraction`, `\topfraction`, `\bottomfraction` and `\floatpagefraction` follow the specifications in [1]. Additionally, length declarations for placing floats on separate "float pages" have been adjusted so that vertical centering no longer occurs.

Tables and figures are not in general centered, although a one-line `\caption` entry is produced centered. The nonfloat package adopts customizations fol-

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†English translation by Steve Peter. Note that German makes a distinction between an *Überschrift*, which appears above a table, and an *Unterschrift* that appears below a figure. Both are called "caption" in English, but where the distinction is important, I also use "supertitle" for the former and "subtitle" for the latter.

lowing [3]. In so doing, the vertical spacing for table captions (supertitle) is determined in the same way as for figure captions (subtitle).

From [1] the `narrow` environment was adopted. Using this environment, you can set not only narrow text, but through the use of negative lengths, it is possible to have very wide figures, tables, etc., stick out in the margins.

2 Using the Package

2.1 Loading Style Options

To use the commands in the nonfloat package, you must load it with the command:

```
\usepackage{nonfloat}
```

after the declaration of your `\documentclass`.

2.2 Commands

After the package is loaded, there are two commands, aside from `\caption`, for creating descriptions of non-floating tables and figures.

Table 1: Commands for Table and Figure Captions

Supertitle for non-floating tables	`\tabcaption`
Subtitle for non-floating figures	`\figcaption`

The implementation also defines a command `\topcaption`, which inserts the same vertical spacing between a supertitle and the object, as is inserted between an object and its subtitle (caption). The command `\topcaption` is not needed within a LaTeX document.

The commands `\tabcaption` and `\figcaption` are based on the commands `\topcaption` and `\caption`. However, they are intended for use outside of the float environment. Examples are given below in section 2.7.

2.3 Adjusting the Placement Parameters

Table 2 contains the newly defined values for the placement parameters as well as the previous LaTeX default values. Furthermore, incompatabilities in recommended values are noted ([1]).

Table 2: Adjusting Parameters for Float Placement

Name	Value	Default	Recommendation
`\textfraction`	0.15	0.2	`\textfraction` ≥ 0.15
`\topfraction`	0.85	0.7	`\topfraction` $\leq 1 -$ `\textfraction`
`\bottomfraction`	0.65	0.3	`\bottomfraction` $<$ `\topfraction`
			`\bottomfraction` $\leq 1 -$ `\textfraction`
`\floatpagefraction`	0.60	0.5	`\floatpagefraction` $\leq$ `\topfraction` $- 0.05$
			`\floatpagefraction` $\leq 1 -$ `\textfraction`

2.4 Adjusting the Table and Figure Environment

Within the `table` and `figure` environment the content is not set centered, although a one-line description is centered. Therefore, the environment has been redefined such that in addition the vertical spacing for table captions (supertitles) is handled analogously with the way figure captions (subtitles) are [3].

2.5 Adjusting Vertical Spacing on Float Pages

When floats are not placed within the text, but on extra float pages, LaTeX centers the floats vertically. The new values given in Table 3 prevent this. If additional floats are placed on the float page, the same vertical spacing as on other pages is applied. The previous default values are also given.

Table 3: Adjusting Vertical Spacing on Float Pages

Name	New Value	Default Value
`\@fptop`	`0pt`	`0pt plus 1.0fil`
`\@fpsep`	`20pt plus 2pt minus 2pt`	`8pt plus 2.0fil`
`\@fpbot`	`0pt`	`0pt plus 1.0fil`

`fil` enables insertion of vertical glue, comparable to `\vfill`. By applying `fil` more than once, a proportional devision of whitespace can be achieved.

Changes to the length parameters in Table 3 made in a LaTeX document must be wrapped with the commands `\makeatletter` and `\makeatother` so that `@` is treated properly.

2.6 The `narrow` Environment

For setting very wide figures or tables, you can use the `narrow` environment with negative lengths within or outside of floating objects. By using

```
\begin{narrow}{-1in}{0in}
   ...
\end{narrow}
```

the content of the `narrow` environment will be set such that it sticks 1 in into the left margin, and is right aligned. In order to encroach into the right margin, the second argument must also be negative.

2.7 Examples

2.7.1 Floating Table

```
\begin{table}[htbp]
  \caption{Table Caption}%
  \label{tab:supertitle}%
  \begin{tabular}{...}
    ...
  \end{tabular}
\end{table}
```

2.7.2 Floating Figure

```
\begin{figure}[htbp]
  \includegraphics[width=0.8\linewidth,clip=]{input.eps}%
  \caption{Figure Caption}%
  \label{fig:input.eps}%
\end{figure}
```

2.7.3 Non-Floating Table

```
\\[\intextsep]
\begin{minipage}{\linewidth}
  \centering%
  \tabcaption{Commands for Table and Figure Captions}%
  \label{tab:Commands}%
  \begin{tabular}{*{2}{l}}
     ...
  \end{tabular}
\end{minipage}
\\[\intextsep]
```

The use of `\\[\intextsep]` inserts the correct amount of vertical spacing, which is also used by accompanying objects.

2.7.4 Non-floating Figure

```
\\[\intextsep]
\begin{minipage}{\linewidth}
  \centering%
  \includegraphics[width=0.8\linewidth,clip=]{input.eps}%
  \figcaption{Figure Caption}%
  \label{fig:input.eps}%
\end{minipage}
\\[\intextsep]
```

References

[1] Reckdahl, Keith: *Using Imported Graphics in LaTeX 2ε*, Version 2.0, 15. December 1997.

[2] Reichert, Axel: `<wdafcrw8a0.fsf@mpie-duesseldorf.mpg.de>` Usenet message ID

[3] Reichert, Axel: `<wdso73fr22.fsf@mtntc1.mpie-duesseldorf.mpg.de>` Usenet message ID