



Department of Engineering IT Services

Squeezing Space in LaTeX

Here are some tips on how to squeeze a little more onto LaTeX pages. Note that these methods may adversely affect the appearance of the document, so use them with caution. Rephrasing and editing your text often leads to better results.

The [savetrees](#) package executes many of these methods, packing as much text as possible onto each page.

Fonts

Without changing the point size of a font you might be able to fit more text on a page by choosing a more compact font like Times

Page Layout

The `a4` package will give you narrower margins. To have more control use the [geometry](#) package. If you use the `layout` package then `\layout` will produce a test page showing the values of the variables that control page layout.

Prof. Koenraad De Smedt's suggested that by using `\linespread{0.9}` (which multiplies the normal space between lines by a factor 0.9) you can often get satisfactory results.

Changing lengths

There are many variables in LaTeX determining lengths. Two commands to change them are `\addtolength` and `\setlength`. The dimensions understood by LaTeX include cm, mm, in and pt. Variables can be set to a negative value.

Example: `\addtolength{\parindent}{-5mm}`

Some useful variables are

- Page Layout
 - `\columnsep`: gap between columns
 - `\topmargin`: gap above header
 - `\topskip`: between header and text
 - `\textheight`: height of main text
 - `\textwidth`: width of text
 - `\oddsidemargin`: odd page left margin
 - `\evensidemargin`: even page left margin
- Paragraphs
 - `\parindent`: indentation of paragraphs
 - `\parskip`: gap between paragraphs
- Floats (tables and figures)
 - `\floatsep`: space left between floats.
 - `\textfloatsep`: space between last top float or first bottom float and the text.
 - `\intextsep`: space left on top and bottom of an in-text float.

- `\dbltextfloatsep` is `\textfloatsep` for 2 column output.
- `\dblfloatsep` is `\floatsep` for 2 column output.
- `\abovecaptionskip`: space above caption
- `\belowcaptionskip`: space below caption
- Maths
 - `\abovedisplayskip`: space before maths
 - `\belowdisplayskip`: space after maths
 - `\arraycolsep`: gap between columns of an array
- Lists
 - `\topsep`: space between first item and preceding paragraph.
 - `\partopsep`: extra space added to `\topsep` when environment starts a new paragraph.
 - `\itemsep`: space between successive items.

Environments

The [atbeginend.sty](#) package provides `\BeforeBegin{environment}{code-to-execute}`, `\AfterEnd ...` etc. These commands can be used to remove space around and within environments. This can be useful in situations where the environment resets values that over-ride those you've created. For example, `\AfterBegin{itemize}{\addtolength{\itemsep}{-\baselineskip}}` in a LaTeX file squeezes items together by resetting `\itemsep` inside the environment.

The `mdwlist` package has a `itemize*` environment.

The [paralist](#) package offers a `compactitem` environment (that puts less space between items) and an `inparaenum` environment (that doesn't create new paragraphs for each item).

Figures and Tables

To save space, you can put more than one graphic inside a figure environment by using the `subfigure` package. It's also possible to wrap text around a figure using the [floatflt](#) package.

Using `"\begin{figure} ... \centering ..."` rather than `"\begin{figure} ... \begin{center} ..."` saves space. Sometimes excessive white space around a figure isn't LaTeX's fault. It may be that a postscript figure contains a big white border. `ps2epsi` can be used to produce a minimal bounding box, or you can use the clipping feature of the `\includegraphics` command of the `graphicx` package.

By default, LaTeX doesn't like to fill more than 0.7 of a text page with tables and graphics, nor does it like too many figures per page. This behaviour can be changed by placing lines like the following before `\begin{document}`

```
\renewcommand\floatpagefraction{.9}
\renewcommand\dblfloatpagefraction{.9} % for two column documents
\renewcommand\topfraction{.9}
\renewcommand\dbltopfraction{.9} % for two column documents
\renewcommand\bottomfraction{.9}
\renewcommand\textfraction{.1}
\setcounter{totalnumber}{50}
\setcounter{topnumber}{50}
\setcounter{bottomnumber}{50}
```

To reduce the size of captions use the [caption](#) package.

If you have a big table you might wish to bracket it by `\begin{small} ... \end{small}`.

You can reduce the gap between table columns by using `\setlength{\tabcolsep}{1pt}`. It may also be possible to scale a whole table as you can a piece of graphics, using `\resizebox{!}{5cm}{\begin{tabular} ... \end{tabular}}` though you need to view the output as postscript.

Controlling where space goes

If latex can't fill a page (perhaps because the next object is a figure or table that doesn't fit, or because the next object is a heading that latex doesn't want to put at the foot of a page) then by default it will spread the vertical white space on the page so that the "height" of the page is the default height. If you want all the extra white space to appear at the *bottom* of such pages, add `\raggedbottom` before your `\begin{document}` line.

Headings

Vertical space around a heading depends on `\parskip`, `\baselineskip` and other parameters that LaTeX sends to the `@startsection` routine. Remember also that LaTeX doesn't like putting a heading right at the bottom of a page - it would rather leave space.

Unless you want to redefine the sectioning commands yourself, it's worth looking at the [titlesec](#) package, which offers space-saving alternatives to the standard sectioning commands (especially `\chapter`). Even just `\usepackage[small,compact]{titlesec}` might save you quite a lot.

Contents and bibliography

The [multitoc](#) package lets you have a two column table of contents in a single column document.

To reduce the linespacing in a bibliography (the same idea works for contents pages) use the `setspace` package

```
\begin{spacing}{0.9}
\tableofcontents
\end{spacing}
...

\begin{spacing}{0.9}
\bibliographystyle{plain}
\bibliography{refs}
\end{spacing}
```

If you're using the `natbib` package (recommended) then you can change the value of `\bibsep` to control the gap between items. Otherwise put the following (suggested by Axel Reichert) in the preamble

```
\let\oldthebibliography=\thebibliography
\let\endoldthebibliography=\endthebibliography
\renewenvironment{thebibliography}[1]{%
  \begin{oldthebibliography}{#1}%
    \setlength{\parskip}{0ex}%
    \setlength{\itemsep}{0ex}%
}%
{}%
\end{oldthebibliography}%
}
```

You can use the same idea to modify other environments - theglossary, etc.

© Cambridge University, Engineering Department, Trumpington Street, Cambridge CB2 1PZ, UK ([map](#))

Tel: +44 1223 332600, Fax: +44 1223 332662

[Privacy policy](#)

Contact: [helpdesk](#)