The pdfpages Package*

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Abstract

This package simplifies the insertion of external multi-page PDF or PS documents. It supports pdfTeX, VTeX, XeTeX, LuaTeX, and pTeX.

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1 Introduction

When creating PDF documents, it is sometimes useful to insert pages of external PDF documents. This can be done with the \includegraphics command from the graphics package. But a simple \includegraphics{doc.pdf} normally produces 'Overfull \hbox' and 'Overfull \vbox' warnings, because the size of the inserted pages does not match the print space.

The pdfpages package makes it easy to insert pages of external PDF documents without worrying about the print space. Here are some features of the pdfpages

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The official repository is https://github.com/AndreasMatthias/pdfpages.

package: Several logical pages can be arranged onto each sheet of paper and the layout can be changed individually. A lot of hypertext operations are supported, like links to the inserted pages, links to the original PDF document, threads, etc. When working with VTeX the same is possible with PostScript documents, too. Note that PostScript documents are only supported by VTeX and *not* by pdfLaTeX.

When producing DVI output pdfpages cannot insert pages of a PDF documents. But instead of interrupting execution pdfpages will insert empty pages. This feature is important when using packages like pst-pdf, which need to produce DVI output at the first run.

Links and other interactive features of PDF documents When including pages of a PDF only the so called content stream of these pages is copied but no links. Up to now there are no TeX-engines (pdfTeX, XeTeX, ...) available that can copy links or other interactive features of a PDF document, too. Thus, all kinds of links¹ will get lost during inclusion. (Using \includepdf, \includegraphics, or other low-level commands.)

However, there's a glimmer of hope. Some links may be extracted and later reinserted by a package called *pax* which can be downloaded from CTAN [3]. Have a look at it!

2 Usage

2.1 Package Options

 $\usepackage[\langle options \rangle] \{pdfpages\}$

⟨option⟩ - final: Inserts pages. This is the default.

draft: Does not insert pages, but prints a box and the filename instead.

demo: Inserts empty pages instead of the actual PDFs.

nodemo: Disables 'demo'.

enable-survey: Activates survey functionalities. (experimental, subject to change)

2.2 Commands

\includepdf Inserts pages of an external PDF document.

¹Actually not only links but all kinds of *PDF annotations* will get lost.

```
\includepdf [\langle key=val \rangle] {\langle filename \rangle}
\langle key=val \rangle - \text{A comma separated list of options using the}
\langle key \rangle = \langle value \rangle \text{ syntax.}
\langle filename \rangle - \text{Filename of the PDF document. (The filename must)}
```

not contain any blanks!)

The following list describes all possible options of $\$ includepdf. All options are using the $\langle key=value \rangle$ syntax.

• Main options:

pages Selects pages to insert. The argument is a comma separated list, containing page numbers (pages={3,5,6,8}), ranges of page numbers (pages={4-9}) or any combination. To insert empty pages use {}.

E.g.: pages={3,{},8-11,15} will insert page 3, an empty page, and pages 8, 9, 10, 11, and 15.

Page ranges are specified by the following syntax: $\langle m \rangle - \langle n \rangle$. This selects all pages from $\langle m \rangle$ to $\langle n \rangle$. Omitting $\langle m \rangle$ defaults to the first page; omitting $\langle n \rangle$ defaults to the last page of the document. Another way to select the last page of the document, is to use the keyword last. (This is only permitted in a page range.)

E.g.: pages=- will insert *all* pages of the document, and pages=last-1 will insert all pages in reverse order.

(Default: pages=1)

nup Puts multiple logical pages onto each sheet of paper. The syntax of this option is: $\text{nup}=\langle xnup\rangle x\langle ynup\rangle$. Where $\langle xnup\rangle$ and $\langle ynup\rangle$ specify the number of logical pages in horizontal and vertical direction, which are arranged on each sheet of paper. (Default: nup=1x1)

landscape Specifies the format of the sheet of paper, which is rotated by 90 degrees. This does *not* affect the logical pages, which will *not* be rotated by the 'landscape' option. To rotate the logical pages use the 'angle' option (e.g. 'angle=90'). Either 'true' or 'false' (or no value, which is equivalent to 'true'). (Default: landscape=false)

• Layout options:

delta Puts some horizontal and vertical space between the logical pages. The argument should be two dimensions, separated by space. See Chapter 2.3 and Figure 1. (Default: delta=0 0).

offset Displaces the origin of the inserted pages. The argument should be two dimensions, separated by space. In 'oneside' documents positive values shift the pages to the *right* and to the *top* margin, respectively, whereas in 'twoside' documents positive values shift the pages to the *outer* and to the *top* margin, respectively. See Chapter 2.3 and Figure 1. (Default: offset=0 0)

- frame Puts a frame around each logical page. The frame is made of lines of thickness \fboxrule. Either 'true' or 'false' (or no value, which is equivalent to 'true'). (Default: frame=false)
- column Pdfpages normally uses 'row-major' layout, where successive pages are placed in rows along the paper. The column option changes the output into a 'column-major' layout, where successive pages are arranged in columns down the paper. Either 'true' or 'false' (or no value, which is equivalent to 'true'). (Default: column=false)
- columnstrict By default the last page is not set in a strict 'column-major' layout, if the logical pages do not fill up the whole page. The columnstrict option forces a strict 'column-major' layout for the last page. Either 'true' or 'false' (or no value, which is equivalent to 'true'). (Default: columnstrict=false)

1	4	
2	5	
3		

1 3 5 2 4

columnstrict=true

columnstrict=false

- openright This option puts an empty page before the first logical page. In combination with nup=2x1, nup=2x2, etc., this means that the first page is on the right side. The same effect can be achieved with the pages option, if an empty page is inserted in front of the first page. Either 'true' or 'false' (or no value, which is equivalent to 'true'). (Default: openright=false)
- **openrighteach** Similar to **openright** but affects *each* file processed by \includepdfmerge.
- pagecommand Declares IATEX commands, which are executed on each sheet
 of paper. (Default: pagecommand={\thispagestyle{empty}})
- pagecommand* Declares LATEX commands that are executed on the very
 first page only. (Default: pagecommand*={})
- turn By default pages in landscape format are displayed in landscape orientation (if the PDF viewer supports this). With turn=false this can be prohibited. Either 'true' or 'false' (or no value, which is equivalent to 'true'). (Default: turn=true)
- noautoscale By default pages are scaled automatically. This can be suppressed with the noautoscale option. In combination with the scale option (from graphicx) the user has full control over the scaling process. Either 'true' or 'false' (or no value, which is equivalent to 'true'). (Default: noautoscale=false)
- fitpaper Adjusts the paper size to the one of the inserted document. Either 'true' or 'false' (or no value, which is equivalent to 'true'). (Default: fitpaper=false)
- reflect Reflects included pages. Either 'true' or 'false' (or no value, which is equivalent to 'true'). (Default: reflect=false)

signature Creates booklets by rearranging pages into signatures and setting nup=1x2 or nup=2x1, respectively. This option takes one argument specifying the size of the signature, which should be a multiple of 4.

An example for documents in portrait orientation:

An example for documents in landscape orientation:

\includepdf[pages=-, signature=8]{landscape-doc.pdf}

signature* Similar to signature, but for right-edge binding.

booklet This option is just a shortcut of the 'signature' option, if you choose a signature value so large that all pages fit into one signature. Either 'true' or 'false' (or no value, which is equivalent to 'true'). (Default: booklet=false)

booklet* Similar to booklet, but for right-edge binding.

- flip-other-edge Flip paper for duplex printing on the other edge. Only relevant in combination with booklet, booklet*, signature, or signature*. See section 2.4. (Default: flip-other-edge=false)
- picturecommand Declares picture commands which are executed on every page within a picture environment with the base point at the lower left corner of the page. (The base point does not change if the page is rotated, e.g. by the landscape option.) (Default: picturecommand={})
- picturecommand* Like picturecommand, but with the restriction that
 picturecommand* executes its picture commands only on the very first
 page. (Default: picturecommand*={})
- pagetemplate By default the first inserted page will be used as a template. This means that all further pages are scaled such that they match within the contour of this first page. This option allows to declare another page to be used as a template; which is only useful if a PDF document contains different page sizes or page orientations. The argument should be a page number. (Default: pagetemplate=\(first inserted page \)
- templatesize This option is similar to the pagetemplate option, but its arguments specify the size of the template directly. Its syntax is: templatesize= $\{\langle width \rangle\}$ $\{\langle height \rangle\}$ Note: The two lengths should be a bit larger than desired, to keep away from rounding errors.

(Default: templatesize= $\langle size\ of\ the\ first\ inserted\ page \rangle$)

rotateoversize This option allows to rotate oversized pages. E.g. pages in landscape orientation are oversized relatively to their portrait counterpart, because they do not match within the contour of a portrait page without rotating them. By default oversized pages are scale and are not rotated. Either 'true' or 'false' (or no value, which is equivalent to 'true'). (Default: rotateoversize=false)

- doublepages Inserts every page twice. This is useful for 2-up printing, if one wants to cut the stack of paper afterwards to get two copies. Either 'true' or 'false' (or no value, which is equivalent to 'true'). (Default: doublepages=false)
- doublepagestwist Whereas with doublepages the cutting edge is once on the inner side and ones on the outer side, doublepagestwist turns the pages such, that the cutting edge is always on the inner side. Either 'true' or 'false' (or no value, which is equivalent to 'true'). (Default: doublepagestwist=false)
- doublepagestwistodd Turns the pages such, that the cutting edge is always on the outer side. Either 'true' or 'false' (or no value, which is equivalent to 'true'). (Default: doublepagestwistodd=false)
- doublepagestwist* Like doublepagestwist but for double side printing. Either 'true' or 'false' (or no value, which is equivalent to 'true'). (Default: doublepagestwist*=false)
- doublepagestwistodd* Like doublepagestwistodd but for double side
 printing Either 'true' or 'false' (or no value, which is equivalent to 'true').
 (Default: doublepagestwistodd*=false)
- **duplicatepages** Duplicates each page n times, with n being the argument to this option. (Default: duplicatepages=2)

• Miscellaneous options:

lastpage In DVI mode pdfpages cannot determine the number of pages of the included document. So this option is suitable to specify the number of pages. This option is only used in DVI mode and has no meaning in any other mode. The argument should be a page number. (Default: lastpage=1)

• Hypertext options:

- link Inserted pages become a target of a hyperlink. The name of the link is
 '\langle filename \rangle . \langle page number \rangle.' The filename extension of \langle filename \rangle must
 not be stripped. Either 'true' or 'false' (or no value, which is equivalent
 to 'true'). (Default: link=false)
- linkname Changes the default linkname created by the option link. Instead of ⟨filename⟩ the value of this option is used. E.g. linkname=mylink produces the linknames 'mylink.⟨page number⟩'.
- thread Combines inserted pages to an article thread. Either 'true' or 'false' (or no value, which is equivalent to 'true'). (Default: thread=false)
- threadname Several threads are distinguished by their threadnames. By default the threadname is equal to the filename (plus filename extension), but it can be changed with this option. This is useful if the same file is inserted twice or more times and should not be combined

to one single thread. Or the other way round if pages from different documents should be combined to one single thread. (Default: threadname= $\langle filename.ext \rangle$)

linktodoc Lets the inserted pages be hyperlinks to the document from which they were extracted. Note that the PDF-Viewer will not find the file, if filename extension (.pdf) is missing in \(\frac{filename}{} \). Either 'true' or 'false' (or no value, which is equivalent to 'true'). (Default: linktodoc=false)

• Additional hypertext options:

linkfit Specifies, how the viewer displays a linked page. This option changes the default behavior of the option link. Possible values are: Fit, FitH $\langle top \rangle$, FitV $\langle left \rangle$, FitB, FitBH $\langle top \rangle$, FitBV $\langle left \rangle$, and Region.

See [2] for a details description of these PDF destinations. The region destination was added by pdfpages and is not a real PDF destinations. It scales a page such that the included page fits exactly into the window of the PDF viewer.

Note that not all of these options are supported by all TEX-engines or drivers, respectively. (Default: linkfit=fit)

linktodocfit By default the option linktodoc opens the page in 'Fit in Window' view. Another view can be specified with this option. Possible values are the legal PDF tokens: /FitH \(\langle top \rangle\), /FitV \(\langle left \rangle\), etc. (See [2] for more details.) (Default: linktodocfit=/Fit)

newwindow By default option linktodoc opens a new window. This can be changed with option newwindow. Either 'true' or 'false' (or no value, which is equivalent to 'true'). (Default: newwindow=true)

linkfilename Sets the name (with path) of the file to be linked to by the
 option linktodoc. You will hardly ever need this option. (Default:
 linkfilename=\(filename.ext\))

• Experimental options: (Syntax may change in future versions!)

addtotoc Adds an entry to the table of contents. This option requires five arguments, separated by commas:

```
addtotoc=\{\langle page\ number \rangle, \langle section \rangle, \langle level \rangle, \langle heading \rangle, \langle label \rangle\}
```

(page number): Page number of the inserted page.

(section): LATEX sectioning name – e.g., section, subsection, ...

 $\langle level \rangle :$ Number, denoting depth of section – e.g., 1 for section level, 2 for subsection level, ...

 $\langle heading \rangle$: Title inserted in the table of contents.

⟨label⟩: Name of the label. This label can be referred to with \ref and \pageref.

Note: The order of the five arguments must not be mixed. Otherwise you will get very strange error messages.

The addtotoc option accepts multiple sets of the above mentioned five arguments, all separated by commas. The sets must be sorted such that the $\langle page\ number \rangle$ s are in ascending order. (Strictly speaking they must have the same order as the page numbers specified by the pages option.)

The proper recursive definition of the addtotoc option is:

```
addtotoc=\{\langle toc\text{-}list\rangle\}
```

```
\langle toc\text{-}list \rangle \rightarrow \langle page\ number \rangle, \langle section \rangle, \langle level \rangle, \langle heading \rangle, \langle label \rangle [, \langle toc\text{-}list \rangle]
```

addtolist Adds an entry to the list of figures, the list of tables, or any other list (e.g. from *float.sty*). This option requires four arguments, separated by commas:

```
addtolist={\page number\, \langle type\, \langle heading\, \langle label\} \\
\langle page number\): Page number of the inserted page. \\
\langle type\): Name of a floating environment. (figure, table, etc.) \\
\langle heading\): Title inserted into LoF, LoT, etc. \\
\langle label\): Name of the label. This label can be referred to with \ref and \\
\text{pageref}.
```

Like addtotoc, addtolist accepts multiple sets of the above mentioned four arguments, all separated by commas. The proper recursive definition in:

survey Creates a survey of those pages of the document, which are marked with \AddToSurvey. (\AddToSurvey is a simple command with no arguments. It just writes out labels to the .aux file.) This option may be used when preparing slides to create a survey of only 'finished' pages – if pages are build up incrementally.

To use this option a special sequence of production steps must be obeyed. Here is a small example:

```
--- slides.tex ---
\documentclass{article}
\usepackage[draft,enable-survey]{pdfpages}
\begin{document}
... some text ...
\AddToSurvey
... some text ...
\includepdf[survey,nup=2x2]{slides-tmp.pdf}
\end{document}
```

This is the outline of a document, called slides.tex. Run it through pdfLaTeX several times until all cross-references are solved. (LATeX will produce a warning, if cross-references are not solved, yet.) Now copy the

file slides.pdf to slides-tmp.pdf and rename draft (package option of pdfpages) to final. The next and final run through pdfLaTeX will actually insert the desired pages, whereas the former runs with draft did just insert blank pages. The inserted pages are hyperlink to the original pages.

Experienced users would certainly call

pdflatex '\PassOptionsToPackage{final}{pdfpages} \input{slides}'
instead of exchanging draft for final.

Either 'true' or 'false' (or no value, which is equivalent to 'true'). (Default: survey=false)

survey-nolink Same as option survey except that the inserted pages do not become hyperlinks. This option may be used to create an external survey. To continue the example above (slides.tex), it is now possible to create handouts of the 'finished' slides as an external document.

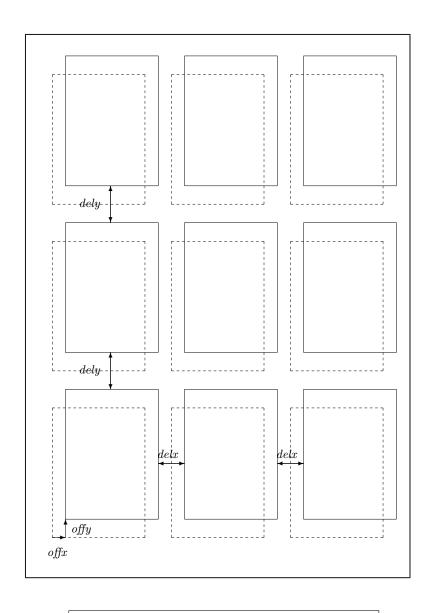
```
\documentclass{article}
\usepackage{xr}
\externaldocument{slides}
\usepackage[enable-survey]{pdfpages}
\begin{document}
\includepdf[survey-nolink, nup=1x2]{slides.pdf}
\end{document}
```

Either 'true' or 'false' (or no value, which is equivalent to 'true'). (Default: survey-nolink=false)

xr-prefix Adjusts a prefix to the labels \includepdf is looking for. The name
 of the prefix must be the same as the name of the optional argument of
 \extra{}

Internally the command \includepdf makes use of the \includegraphics command from the graphicx (actually graphics) package. Hence it is possible to use all the options of \includegraphics, too. Options which are not interpreted by \includepdf are passed directly to \includegraphics.

Especially the 'trim' and 'clip' options of \includegraphics are quite useful, if only parts of a page should be inserted. (Maybe to cut off the header and footer of the inserted pages.) Just use the 'trim' and 'clip' options as if they were options of \includepdf. They will be passed to \includegraphics internally.



— physical sheet of paper delta= $\langle delx \rangle \langle dely \rangle$ — logical pages offset= $\langle offx \rangle \langle offy \rangle$ — centered position

Figure 1: Layout

\includepdfmerge Inserts pages of several external PDF documents.

```
\includepdfmerge[\langle key=val \rangle] \{\langle file-page-list \rangle\}
```

```
\langle key = val \rangle - \text{A comma separated list of options using the} \\ \langle key \rangle = \langle value \rangle \text{ syntax.} \\ \langle file\text{-}page\text{-}list \rangle - \langle file\text{-}name \rangle [,\langle page \ spec \rangle] [,\langle file\text{-}page\text{-}list \rangle] \\ \text{A comma separated list of filenames and optional} \\ \langle page \ spec \rangle \text{ specifiers. A } \langle page \ spec \rangle \text{ can be everything} \\ \text{the option pages accepts.}
```

The \includepdfmerge command uses the same options as \includepdf with one exception. The option pages has no meaning for \includepdfmerge. Instead the $\langle page\ spec \rangle$ specifier is used to specify which pages should be inserted. The $\langle page\ spec \rangle$ specifier accepts the same values as the pages option. If no $\langle page\ spec \rangle$ specifier is given, only the first page will be inserted.

Examples: To create a kind of summary of three PDF documents, it might be nice to insert just the first page of each document and to provide links to the original documents:

But sometimes the title page of a document is not the first page. So it would be more pleasant to insert the title page of each document than the first page. This can be done with the $\langle page\ spec \rangle$ specifier. The following example inserts the second page of doc1.pdf and the third page of doc2.pdf and doc3.pdf:

Here is an example of more complex $\langle page\ spec \rangle$ specifiers:

\includepdfset If you need the same options for \includepdf all the time, it is possible to define global options with \includepdfset. The argument of \includepdfset is a comma separated list of options, using the $\langle key \rangle = \langle value \rangle$ syntax. These options are processed each time \includepdf is called. Local options (passed as an optional argument directly to \includepdf) are overwriting global options:

```
\label{eq:constraints} $$\left(\frac{\langle global\ options\rangle}{\langle local\ options\rangle}\right) = \frac{\langle global\ options\rangle}{\langle local\ options\rangle} = \frac{\langle global\ options\rangle}{\langle local\ option
```

Only options specific to this package can be made global by \includepdfset. Options of the graphicx package are not concerned.

\threadinfodict When using the option thread to create an article thread, it may be useful to create a thread information dictionary, too, which contains informations about the thread, such as its title, author, and creation date. The macro \threadinfodict is used to set these informations. It can be redefined and may contain entries of a thread information dictionary in low-level PDF commands. (See [2] for more information.)

```
\renewcommand*{\threadinfodict}
  {/Title (My first thread) /Author (That's me!)}
```

2.3Layout

The default layout can be changed by the options delta and offset. Figure 1 shows the meaning of these options.

The inserted logical pages are being centered on the sheet of paper by default. To displace them use the offset option, which argument should be two dimensions. E.g. offset=10mm 14mm means that the logical pages are displaced by 10 mm in horizontal direction and by 14 mm in vertical direction. In 'oneside' documents positive values shift the pages to the right and to the top margin, respectively, whereas in 'twoside' documents positive values shift the pages to the outer and to the top margin, respectively.

By default logical pages are being arranged side by side. To put some space between them, use the delta option, whose argument should be two dimensions. Figure 1 shows the meaning of delta.

The layout options delta and offset always refer to a sheet of paper in portrait orientation. No matter whether you have set the landscape option to true, or not.

If you are confused about horizontal (x) and vertical (y) directions, just set the option turn=false. Now your PDF viewer shows the pages in the same orientation as in Figure 1. And the options delta and offset have the same meaning as in Figure 1. Regardless of any other options.

2.4 Booklets

There are some important points that have a significant impact on the layout of a booklet:

- Option landscape of the document class.
- Option landscape of the \includepdf command.
- Paper format of the included PDF.
- Option nup² of the \includepdf command.

²Up to version 0.6c the booklet option was overriding any nup setting of the user. But this is no longer the case. Now the user has to choose a correct nup setting.

• Option flip-other-edge of the \includepdf command.

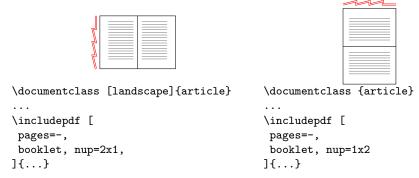
Changing the paper orientation to landscape can be done either by using landscape as an option of the document class, i.e. \documentclass[landscape,...]{...}, or as an option of the \includepdf command, i.e \includepdf [landscape,...]{...}. But it should not be used for both at the same time.

For duplex printing there are two ways of flipping a sheet of paper. Either on the long edge or on the short edge. But note that the layouts are different depending on the flip edge.

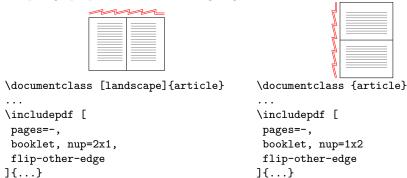
Thus, you have to tell you printer in the printer settings which flip edge you prefer. And you have to generate the corresponding layout with \includepdf, which provides the option flip-other-edge to swap the flip edge.

Here are some examples in which the flip edge is marked by a red zigzag line.

• Flip edge paralell to binding edge:



• Flip edge perpendicular to binding edge:



Very slim paper formats require a slightly different layout like in the following example. Note the difference in using landscape compared to the examples above.

```
\documentclass {article}
...
\includepdf [
   pages=-,
   booklet, nup=2x1,
]{...}
```



2.5 Hints for Users of platex

• The recommended way to tell pdfpages that you are using platex is to add dvipdfmx as a class option, e.g.:

```
\documentclass[dvipdfmx]{article}
\usepackage{pdfpages}
```

• Pdfpages calls program extractbb to get the total number of pages of a PDF. But if an xbb file (output of extractbb) exists, pdfpages will not call extractbb but use this file. However, be very cautious with xbb files: Do not use xbb files for PDFs with varying page sizes. Because an xbb file contains only the page size of a single page.

2.6 Pitfalls

pagecolor When setting the background color with \pagecolor (a command from color.sty), the first \pagecolor must precede \usepackage{pdfpages}.

```
\usepackage{color}
\pagecolor{white}
\usepackage{pdfpages}
```

The color is nonrelevant, it can be changed afterwards by using \pagecolor again. Just the order (first \pagecolor before \usepackage{pdfpages}) is important. – This is not needed when using VTeX.

3 Required Packages

The pdfpages package requires the following packages:

```
eso-pic CTAN:macros/latex/contrib/eso-pic/
atbegshi CTAN:macros/latex/contrib/oberdiek/
pdflscape CTAN:macros/latex/contrib/oberdiek/
```

graphicx, ifthen, calc These packages belong to the standard LATEX distribution.

Furthermore it requires a recent version of:

pdftex.def http://www.tug.org/applications/pdftex/

Since pdfTEX, Version 3.14159-1.00a-pretest-20010806, PDF import has improved a lot. This results in much smaller file sizes, faster processing and the intuitively correct treatment of landscape pages. The latest version of pdfTEX can be found at: ftp://ftp.muni.cz/pub/tex/local/cstug/thanh/pdftex.

4 Acknowledgment

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