

The gnuplottex package*

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1 Introduction

This package allows you to include gnuplot graphs in your L^AT_EX documents.

The gnuplot code is extracted from the document and written to `.gnuplot` files. Then, if shell escape is used, the graph files are automatically processed and converted to PostScript or PDF files, which will then be included. If shell escape isn't used, the user will have to manually convert the files.

Shell escape is available in the web2c T_EX compiler, it allows the execution of shell code during the compilation of a T_EX document. It's disabled by default, you'll have to edit your configuration files or give the `-shell-escape` option to `latex`.

2 Requirements

To use gnuplottex, you'll need the `graphicx`, `keyval` and `moreverb` packages, `epstopdf` if you want to use the pdf option, and of course, gnuplot.

3 Usage

To load the package, simply `\usepackage{gnuplottex}` in your document preamble. Options that can be passed to the package are

[`<shell>`] Use shell escape to automatically generate the graphs from the gnuplot source files. This is the default.

[`<noshell>`] Don't use shell escape, graphs must be generated manually.

[`<miktex>`] We're using mikTeX.

[`<pdf>`] PDF output, generate .pdf files of the graphs out of .ps.

The following environments can be used to include graphs:

`gnuplot` Within this environment, you can specify arbitrary gnuplot code, for example `plot sin(x)`.

The code necessary to write the plot to a file will be inserted by this package.

You may specify width or height of the picture using [`width=<width>`] or [`height=<height>`] as in the `includegraphics` command.

*This document corresponds to gnuplottex v0.1, dated 2006/04/02.

4 Implementation

4.1 Initialization

```
1 \newif\ifShellEscape
2 \newif\ifmiktex \miktexfalse
3 \newif\ifpdf \pdffalse
4
5 \DeclareOption{shell}{\ShellEscapetrue}
6 \DeclareOption{noshell}{\ShellEscapefalse}
7 \DeclareOption{miktex}{\global\miktextrue}
8 \DeclareOption{pdf}{\pdftrue}
9
10 \ExecuteOptions{shell}
11 \ProcessOptions\relax
12 %% test if shell escape really works
13 \ifShellEscape
14   \def\tmpfile{/tmp/w18-test-\the\year\the\month\the\day\the\time}
15   \ifmiktex
16     \immediate\write18{rem >"\tmpfile"}
17   \else
18     \immediate\write18{touch \tmpfile}
19   \fi
20   \ifmiktex
21     \IfFileExists{\tmpfile.}{\ShellEscapetrue}{\ShellEscapefalse}
22   \else
23     \IfFileExists{\tmpfile}{\ShellEscapetrue}{\ShellEscapefalse}
24   \fi
25 \fi
26
27 \ifShellEscape
28   \PackageInfo{gnuplottex}
29   {Automatically converting gnuplot files.}
30 \else
31   \PackageWarningNoLine{gnuplottex}
32   {Shell escape not enabled.\MessageBreak
33   You'll need to convert the graphs yourself.}
34 \fi
35 \newcounter{fignum}
```

4.2 .gnuplot write out

```
36 \def\figname{\jobname-gnuplottex-fig\thefignum}
37
38 \def\gnuplotverbatimwrite#1{%
39   \def\BeforeStream
40   {\message{Opening gnuplot stream=\figname.gnuplot}}%
41   \immediate\write\verbatim@out{\string set terminal postscript eps enhanced}
42 \immediate\write\verbatim@out{\string set output '\figname.eps'}
43   }
44   \@bsphack
45   \immediate\openout \verbatim@out #1
46   \BeforeStream%
47   \let\do\@makeother\dospecials
48   \catcode'\^M\active
```

```

49 \def\verbatim@processline{%
50 \immediate\write\verbatim@out
51 {\the\verbatim@line}}%
52 \verbatim@start}
53 \def\endgnuplotverbatimwrite{%
54 \immediate\closeout\verbatim@out
55 \@esphack}

```

4.3 Environment definition

```

56 \define@key{pic}{width}{\def\gnuplotwidth{#1}}
57 \define@key{pic}{height}{\def\gnuplotheight{#1}}
58 \newenvironment{gnuplot}[1][\stepcounter{fignum}%
59 \let\gnuplotwidth\undefined
60 \let\gnuplotheight\undefined
61 \setkeys{pic}{#1}
62 \xdef\gnuplotCutFile{\figname.gnuplot}
63 \gnuplotverbatimwrite{\gnuplotCutFile}}
64 {\endgnuplotverbatimwrite%
65 \gnuplotgraphicsinclude}

```

4.4 .gnuplot file processing

```

66 \long\gdef\gnuplotgraphicsprocess{%
67 \ifShellEscape
68 \IfFileExists{\figname.gnuplot}{%
69 \immediate\write18{gnuplot \figname.gnuplot}
70 \IfFileExists{\figname.eps}{%
71 \ifpdf
72 \immediate\write18{epstopdf \figname.eps}
73 \IfFileExists{\figname.pdf}{%
74 \PackageInfo{gnuplottex}
75 {\figname.gnuplot converted}}
76 {\PackageWarningNoLine{gnuplottex}
77 {Conversion of \figname.gnuplot failed.}}
78 \else
79 \PackageInfo{gnuplottex}
80 {\figname.gnuplot converted}
81 \fi}
82 {\PackageWarningNoLine{gnuplottex}
83 {Conversion of \figname.gnuplot failed.}}{}
84 \fi}

```

4.5 Graph inclusion

```

85 \long\gdef\gnuplotgraphicsinclude{\gnuplotgraphicsprocess%
86 \ifpdf
87 \IfFileExists{\figname.pdf}{%
88 \ifx\gnuplotwidth\undefined
89 \ifx\gnuplotheight\undefined
90 \includegraphics{\figname}
91 \else
92 \includegraphics[height=\gnuplotheight]{\figname}
93 \fi
94 \else
95 \ifx\gnuplotheight\undefined

```

```

96 \includegraphics[width=\gnuplotwidth]{\figname}
97 \else
98 \includegraphics[width=\gnuplotwidth,height=\gnuplotheight]{\figname}
99 \fi
100 \fi
101 }
102 {\PackageWarningNoLine{gnuplottex}
103 {Please convert \figname.gnuplot manually}}
104 \else
105 \IfFileExists{\figname.eps}{%
106 \ifx\gnuplotwidth\undefined
107 \ifx\gnuplotheight\undefined
108 \includegraphics{\figname}
109 \else
110 \includegraphics[height=\gnuplotheight]{\figname}
111 \fi
112 \else
113 \ifx\gnuplotheight\undefined
114 \includegraphics[width=\gnuplotwidth]{\figname}
115 \else
116 \includegraphics[width=\gnuplotwidth,height=\gnuplotheight]{\figname}
117 \fi
118 \fi
119 }
120 {\PackageWarningNoLine{gnuplottex}
121 {Please convert \figname.gnuplot manually}}
122 \fi
123 }

```