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new macros and bugfixes for the basic package `pstricks`

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Contents

Part I.
pstricks – package

1. pstricks.sty – pstricks-pdf.sty

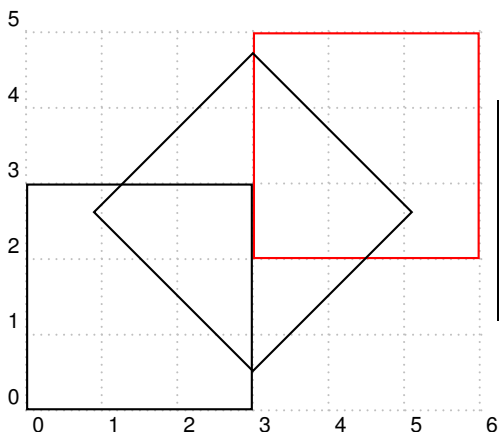There is now a new optional argument for the package: ckeckengine, which will be used in later versions.

2. pstricks-tex.tex

This package collects all additional latex macros which must be definied when running PSTricks with tex. They all moved from the base pstricks.tex into this new file.

3. pstricks.tex (v. 2.89 – 2018/12/16)

Use the \long definition for \@fornoop to be compatible to the latest changes in LaTeX.

   In old versions the macro \rput can't be used with the key-value setting. The latest version of pstricks.tex defines a modified \rput which ckecks first if a following optional argument has the old behaviour, eg \rput[lb]{...} or a key/value setting like \rput[ref=lb,rot=...](...). However, there should be no change in the output and, of course, it makes no sense to mix the old and new setting in *one* \rput macro. The setting refers only to the optional arguments which are valid for \rput:


```
\begin{pspicture}[showgrid](6,5)
\rput[ref=rt](3,2){%
  \psframe[linecolor=red](3,3)}
\rput[lb](0,0){\psframe(3,3)}
\rput{45}(3,0.5){\psframe(3,3)}
\end{pspicture}
```

3.1. PostScript Fonts

This version of PSTricks uses the Ghostscript fonts from URW instead of the original base 14 fonts of PostScript. For example: instead of Helvetica we use NimbusSanL-Regu. The URW fonts are always embedded in the created ps or pdf output. This is not the default for the PostScript fonts. You change this setting with the optional argument to pstricks.sty.

3.2. Error message

Using PSTricks with pdflatex will work only when using package auto-pst-pdf and running the TeX-file with

```
pdflatex -shell-escape <file>
```

   otherwise you'll get an error message which was misleading in the past:

```
[...]
! Undefined control sequence.
<recently read> \c@lor@to@ps
```
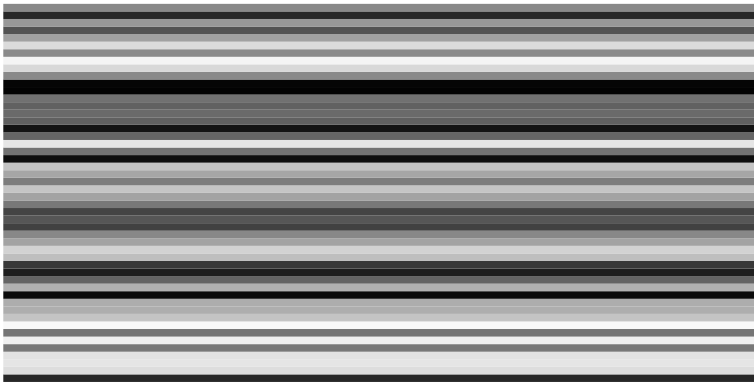
This changes now to

```
[...]
! Undefined control sequence.
\c@lor@to@ps ->\PSTricks
                        _Not_Configured_For_This_Format
```
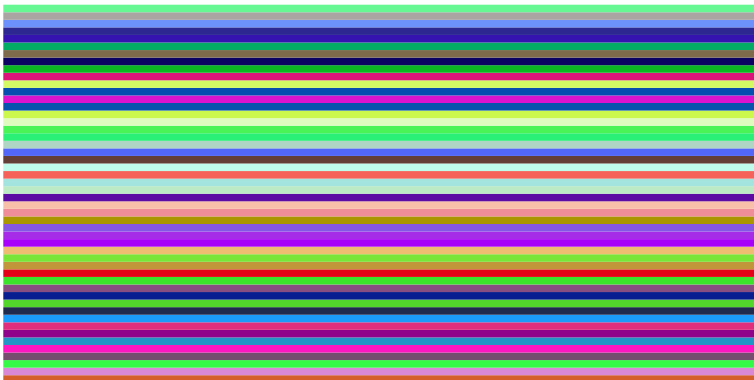
3.3. Random colors

There are now four predefined random "colors":

```
\definecolor[ps]{randomgray}{gray}{Rand}%
\definecolor[ps]{randomrgb}{rgb}{Rand Rand Rand}%
\definecolor[ps]{randomcmyk}{cmyk}{Rand Rand Rand Rand}%
\definecolor[ps]{randomhsb}{hsb}{Rand Rand Rand}%
```
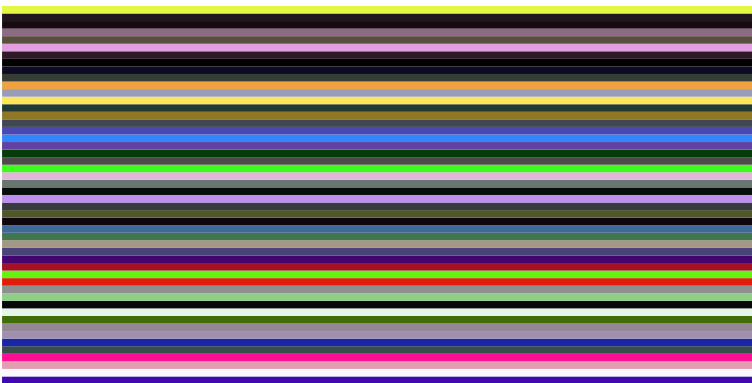


```
\begin{pspicture}(10,5)
\multido{\rA=0.0+0.1}{50}{\psline[linecolor=randomgray,linewidth=1mm](0,\rA)(10,\rA)}
\end{pspicture}
```



```
\begin{pspicture}(10,5)
\multido{\rA=0.0+0.1}{50}{\psline[linecolor=randomrgb,linewidth=1mm](0,\rA)(10,\rA)}
\end{pspicture}
```

```
\begin{pspicture}(10,5)
\multido{\rA=0.0+0.1}{50}{\psline[linecolor=randomcmyk,linewidth=1mm](0,\rA)(10,\rA)}
\end{pspicture}
```



```
\begin{pspicture}(10,5)
\multido{\rA=0.0+0.1}{50}{\psline[linecolor=randomhsb,linewidth=1mm](0,\rA)(10,\rA)}
\end{pspicture}
```

The random counter can be initialized with \pstVerb{rrand srand}.
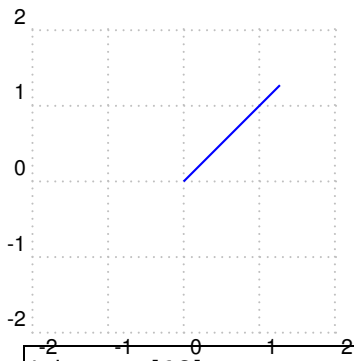
3.4. Optional argument xetex

The output driver xdvipdfmx for using X∃TEX or X∃LATEX is not fully compatible to dvips. Especially some node operations will not work. If the LATEX package detects a programm run with X∃LATEX it automatically loads the file pstricks-xetex.def which defines some macros with a new name to keep the existing ones. By now there is only \NCput, which is the same as \ncput, but works with X∃LATEX.

If someone wants to use these macros though he/she runs not X∃LATEX then these macros are available too by using the optional argument xetex:

\usepackage[xetex]{pstricks}

4. pstricks.pro

A full circle has by default an angle of 360 degrees. Setting the circle with \degrees[*17*] to another value doesn't work for the PostScript function PtoC (Polat to Cartesian – $(r, \phi) \rightarrow (x, y)$). Now there is a PtoCrel for the new definition which now takes the setting of \pst@angleunit into account.

```
\degrees[16]
\begin{pspicture}[showgrid](-2,-2)(2,2)
\psline[linecolor=blue](!1.8 2 PtoCrel)% 45 degrees
\end{pspicture}
```

The command \framed was build by clockwise line sequence. Now it is the other way round to get the same behaviour as for all other commands with closed lines.

There are some new PS functions

```
/AnytoDeg { pst@angleunit } def
/DegtoAny { 1 pst@angleunit div} def
/AnytoRad { AnytoDeg DegtoRad } def
/RadtoAny { RadtoDeg DegtoAny } def
```

See pst-node documentation for an example.

References

[1] Michel Goosens et al. *The L^ATEX Graphics Companion*. 2nd ed. Reading, Mass.: Addison-Wesley Publishing Company, 2007.

[2] Laura E. Jackson and Herbert Voß. "Die Plot-Funktionen von `pst-plot`". In: *Die T_EXnische Komödie* 2/02 (June 2002), pp. 27–34.

[3] Nikolai G. Kollock. *PostScript richtig eingesetzt: vom Konzept zum praktischen Einsatz*. Vaterstetten: IWT, 1989.

[4] Herbert Voß. "Die mathematischen Funktionen von Postscript". In: *Die T_EXnische Komödie* 1/02 (Mar. 2002), pp. 40–47.

[5] Herbert Voß. *PSTricks – Grafik für T_EX und L^ATEX*. 7th ed. Heidelberg and Berlin: DANTE – Lehmanns Media, 2016.

[6] Herbert Voß. *PSTricks – Graphics for L^ATEX*. 1st ed. Cambridge/UK: UIT, 2011.

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[8] Herbert Voß. *L^ATEX Quick Reference*. 1st ed. Cambridge/UK: UIT, 2011.

[9] Herbert Voß. *L^ATEX Referenz*. 3rd ed. Heidelberg and Berlin: DANTE – lehmanns media, 2014.

[10] Michael Wiedmann and Peter Karp. *References for T_EX and Friends*. 2003. URL: http://www.miwie.org/tex-refs/.

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