

Changes listing for PSTricks

Version 0.93a

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The PSTricks package is still preliminary. The features list and user interface are unlikely to change much in the short term, but the internal code is not stable.

1 VERSION 0.93 and 0.93a

There have been substantial changes (hopefully for the last time).

This section describes the changes from 0.92 to 0.93a. The only difference between 0.93 and 0.93a are that a bug in `\nccircle` was fixed, and the features in `\pst-old.tex` where either incorporated into the main files (`\Rput`, `\Lput`, `\Mput`, `\Polar` and `\Cartesian`) or eliminated entirely (`\NewPspout`, `\OldPspout` and the old `\pscustom` commands). What is described

1.1 Incompatible changes

These changes may require modification to files prepared with version 0.92. Sorry about the inconvenience. To avoid letting new changes catch you by surprise, get on the PSTricks mailing list.

1. `\SpecialCoor` has changed completely. See User's Guide for details. Most of these changes were announced shortly after the release of v0.92, but `pst-beta.tex` users should note that raw PostScript coordinates are now delimited by `!` rather than by `:`.

How to fix files: Search for `\SpecialCoor` in your file. Change the old syntax to the new syntax according to this table:

<i>Old</i>	<i>New</i>	<i>Type</i>
<code>(c<x>,<y>)</code>	<code>(<x>,<y>)</code>	Cartesian.
<code>(p<r>,<a>)</code>	<code>(<r>;<a>)</code>	Polar.
<code>(n{<node>})</code>	<code>(<node>)</code>	Center of <i>node</i> .
<code>(N[<par>]{<node>})</code>	<code>([<par>]<node>)</code>	Relative to <i>node</i> .
<code>(m{<coor1>}{<coor2>})</code>	<code>(<coor1> <coor2>)</code>	Mixed.

In addition, if you used the syntax `(:<ps>)` from `pst-beta.tex` for raw postscript code, search for `(:` and replace by `(!`.

2. Angles can no longer be specified by `{<x>,<y>}`. `\SpecialCoor` lets you use coordinates as angles, but they must be enclosed in `()`. E.g., `{(<x>,<y>)}`. See User's Guide for details.

How to fix files: Add the parentheses `()` to angles given by `{<x>,<y>}` and precede this usage by `\SpecialCoor`. However, there is no easy way to search for `{<x>,<y>}` (unless you are good at using Unix's regular expressions). On the other hand, you probably didn't use this features much, and it will be easier to just wait for the old usage to cause errors.

3. The

`arrowsize=dim num1 num2 num3`

parameter has been replaced by

`arrowsize=dim num1`
`arrowlength=num2`
`arrowinset=num3`

How to fix files: Search for `arrowsize`, and break up your parameter change. You can also just do nothing, because if you use the old syntax for `arrowsize`, `num2` and `num3` will simply be ignored.

4. The

`tbarsize=dim num1 num2`

parameter has been replaced by

`tbarsize=dim num1`
`bracketlength=num2` % For square brackets.
`rbracketlength=num2` % For round brackets.

How to fix files: Search for `tbarsize`, and break up your parameter change. You can also just do nothing, because if you use the old syntax for `tbarsize`, `num2` will simply be ignored.

5. `\pscustom` has changed substantially. E.g., (i) there is no (x,y) argument, (ii) plots (`\psplot`, etc.) no longer run backwards, and (iii) the treatment of the currentpoint is much different. Also, most of the special commands for use only within `\pscustom` have changed. See the User's Guide for details.

How to fix files: You must search for each use of `\pscustom`, and make the following changes:

- Replace `\pscustom`'s old (`<x>`, `<y>`) argument by `\moveto(<x>`, `<y>`) at the beginning of `\pscustom`'s main argument.
- Make the following substitutions inside `\pscustom`'s main argument:

<i>Old</i>	<i>New</i>
<code>\pscode</code>	<code>\code</code>
<code>\pscoor</code>	<code>\coor</code>
<code>\psdim</code>	<code>\dim</code>
<code>\psmove</code>	<code>\moveto</code>
<code>\pscclosepath</code>	<code>\closepath</code>
<code>\psgroup{<stuff>}</code>	<code>\gsave <i>stuff</i> \grestore</code>
<code>\psstroke</code>	<code>\stroke</code>
<code>\psfill</code>	<code>\fill</code>

You can instead define, e.g.,

`\def\pscode{\code}` , or
`\newcommand{\pscode}{\code}`

and

`\def\psgroup#1{\gsave #1 \grestore}` , or
`\newcommand{\psgroup}{\gsave #1 \grestore}`

- Check the output from your `\pscustom` command. If, after making the above changes, things come out differently than inspected, it is probably because the plot commands run "forwards" rather than "backwards", or because of the new way that `\pscustom` treats the current point. Fix these on a case-by-case basis.

6. `\listplot`, `\psplot` and `\parametricplot` no longer have an $(\langle x \rangle, \langle y \rangle)$ argument. Use the origin parameter instead.

How to fix files: Search for `\listplot`, `\psplot` and `\parametricplot`. Replace any $(\langle x \rangle, \langle y \rangle)$ argument by the parameter change `[origin={\langle x \rangle, \langle y \rangle}]`.

7. To suppress labels with `\psaxes`, use `labels=none/x/y`, rather than setting `Dx` and `Dy` to empty values.

How to fix files: Search for `=}`, `=`, and `=]`. Remove the `Dx=`, and other such parameter settings you find, and replace instead by `labels=none/x/y`, depending on whether you want no labels, labels on the x-axes only, or labels on the y-axis only.

8. The `\scalebox` macro should use a space rather than a comma to separate the x and y scaling factors, when two scaling factors are given.

How to fix files: Wait to get error about bad numbers, or search for `\scalebox` and replace `\scalebox{<num1>, <num2>}` by `\scalebox{<num1> <num2>}`.

9. The `dblframewidth` parameter is gone, because `\psdblframebox` is now just a variant of `\psframebox` with `doubleline=true`. The width of each frame is now just `linewidth`

How to fix files: Search for `dblframewidth` and replace the parameter setting be a `linewidth` parameter setting.

10. The `\OldPsput` and `\NewPsput` commands are gone. These were originally devised to retain compatibility with an older version of PSTricks that had a `\psput` command instead of `\rput`.

How to fix files: If you used `\psput` with the new syntax, then search for `\psput` and replace by `\rput`.

If you used `\psput` with the old syntax, then either search for `\psput` commands and replace with `\rput` commands with the new syntax, or put the following in a file so that the `\OldPsput` command defines `\psput` with the old syntax:

```
\def\old@psput{\begingroup\old@psput@}
\def\old@psput@{%
  \def\refpoint@x{.5}\def\refpoint@y{.5}%
  \pst@ifstar{\@ifnextchar[%
    {\old@psput@i}{\def\pst@rot{}\old@psput@ii}}
  \def\old@psput@i[#1]{\pst@getangle{#1}\pst@rot\old@psput@ii}
  \def\old@psput@ii{\@ifnextchar<{\old@psput@iii}{\old@psput@iv}}
  \def\old@psput@iii<#1>{\pst@getref\old@psput@iv[#1]}
  \def\old@psput@iv{%
    \@ifnextchar({\end@psput\rput@i}{\end@psput\rput@i(0,0)}}
  \def\OldPsput{\let\psput\old@psput}
  \def\NewPsput{\let\psput\rput}
```

1.2 New files with old stuff

Remember to input these files when needed. To have these files loaded automatically, put an `\input` command after `\customization` in the configuration file (`pstricks.con`).

pst-node All the node stuff has been put in `pst-node.tex` / `pst-node.sty`.

pst-plot The plot commands (`\psplot`, etc.) and the `\psaxes` command have been put in `pst-plot.tex` / `pst-plot.sty`. (`pst-plot.tex` automatically loads `multido.tex`,

which is required by the axes macros.) There are also some variants of `\listplot`, `\fileplot` and `\dataplot`, that are less likely to exceed PostScript operand stack limits.

colortab The table coloring commands have been put in `colortab.tex` / `colortab.sty`. This is no longer PSTricks specific, but most of the old stuff works the same as before. The only exception is that `\omit{}` is not needed when a column is not to be colored. The documentation for `colortab.tex` is in `colortab.doc`. There are also some new features:

- `\SP` and `\RP`: These let `\LCC ... \ECC` work with nested arrays or `\multicolumns` when using Mittelbach's `array.sty`. See `colortab.doc` for details.
- `LColors`, `\LC`, `\LCi`, `\LCii`, `\LCiii`, `\LCz`, for shading the cells in the `longtable` environment. See `colortab.doc` for details.
- `LColors`, `\LC`, `\LCi`, `\LCii`, `\LCiii`, `\LCz`, for shading the cells in the `longtable` environment. See `colortab.doc` for details.

1.3 Obsolete but retained features

The features listed below are obsolete and are documented in footnotes.

- `\Polar`: Use `\SpecialCoor` and `(r;a)` instead.
- `\Cartesian(x,y)` Use `\psset{xunit=x,yunit=y}` instead.
- `\Rput`: Use `\uput` instead.
- `\Lput` and `\Mput`: Use `\aput`, `\bput`, `\Aput` and `\Bput` instead.

1.4 New features

This is a partial listing. See also the next section on new files.

- `\uput`: Replaces `\Rput`.
- `\aput`, `\bput`, `\Aput`, `\Bput`: Replace `\Lput` and `\Mput`.
- `\clipbox` has optional argument [`<dim>`] that sets the clippath distance *dim* from box. E.g., `\clipbox[1pt]{foo}`.
- `\newsstyle`: E.g.,

```
\newsstyle{foo}{linewidth=5pt,linestyle=dashed}
\psline[style=foo](4,5)
```
- `\PSTricksOff` suppresses the PostScript. Useful for printing or previewing drafts of your document with a non-PostScript driver.
- New arrow styles: `>-<`, `«-»`, `»-«`. `|*-|*` .
- Many new features for the `\pscustom` command.
- `dimen` parameter (for controlling whether dimensions for `\psframe`, `\pscircle`, `\pswedge` and `\psellipse` refer to the inside, outside or middle of the boundary.
- `bordercolor` parameter.

- `doubleline`, `doublesep` and `doublecolor` parameters.
- `ticks` and `labels` parameters, for suppressing ticks and labels with `\psaxes`.
- `shadow` and `shadowangle` parameters.
- Shadow parameters now apply to all graphics objects.
- `\psmathboxtrue`, `\psmathboxfalse`, for controlling whether box macros preserve math mode.
- `\pslongbox`: For making box environment out of box commands.
- `\psverbboxtrue`, `\psverbboxfalse`: For controlling whether verbatim text is allowed in box commands.

1.5 New files with new stuff

pst-coil Contains `\pscoil`, `\psCoil`, `\pszigzag`, `\nccoil` and `\nczigzag`. Uses `pst-coil.pro` (optionally).

pst2eps Contains `\TeXtoEPS`, to make it easier to convert \TeX boxes to EPS files with `dvips`, and `\PSTtoEPS`, for creating EPS files directly from PSTricks graphics.

textpath Contains `\pstextpath` command, for typesetting text along a path. Use `textpath.pro`.

gradient gradient fillstyle. Uses `gradient.pro`.

charpath Contains `\pscharpath` command, for stroking and filling character paths. Also, `\pscharclip ... \endpscharclip` sets clipping path as well.

piecharts.sh A sh/awk script by Denis Girou for converting data to PSTricks piecharts.

1.6 Bug fixes

This list is incomplete.

- `\scalebox` and `\scaleboxto` now work when the vertical scaling factor is less than 1.
- `\lput` and company now work with `dvips` 4.90 and later.
- `\multips` can now be nested.
- `\psclip` fixed.
- `\clipbox` and `clip` option for `\pspicture` fixed.

1.7 Other changes

In some cases, there is a small chance these will require that you modify old files.

- Specifying `\rput`'s *refpoint* argument as, e.g., `[.3,1]` rather than `[br]` is now an undocumented feature.
- All arguments to `\psplot`, `\listplot` and `\parametric` plot are passed on directly as PostScript.

- Dictionaries when including raw PostScript have changed. See appendix of User's Guide for details.
- `\psset{unit=dim}` always changes `\psunit`, `\psxunit` and `\psyunit`. To change only `\psunit`, use `runit=dim`.
- `border` parameter affects closed curves.
- The `hatchsep` parameter now refers to the width of the space between the lines, rather than the distance between the middle of the lines.

2 VERSION 0.92

2.1 Incompatible changes

! V0.91 had two curve interpolation algorithms: `\pscurve` and `\psdoodle` (and variants). These have been merged into a single algorithm retaining the names `\pscurve`, etc. Now the three curvature parameter has three numbers:

```
num1 num2 num3
```

When `num3` is 0 (the default), you get the old `\psdoodle` algorithm, and `num1` and `num2` act just like the old `doodature` parameter. When `num3=-1`, you get the old `\pscurve` algorithm, but positive values are usually nicer.

If you have used `\pscurve` or its variants, the shape of the curves will change under 0.92. If you have also used the curvature parameter, you will get errors because the old curvature parameter is a single number and the new curvature parameter consists of 3 numbers.

If you have used `\psdoodle` or its variants, then you can either search and replace `doodle->curve` and your use of `doodature` (which had 2 numbers) to `curvature` (which has 3 number), or you can put the following in the customization section of `pstricks.con`:

```
\let\psdoodle\pscurve
\let\psedoodle\psecurve
\let\pscdoodle\psccurve
\def\psset@doodature#1{\psset@curvature{#1 0}}
```

! In `\psdblframebox`: The inner frame now has `\pslinewidth`, and the outer frame now has `width` (`dblframewidth` x `\pslinewidth`), where `dblframewidth` is a new graphics parameter whose default value is 2.

! The `angle`, `angleA` and `angleB` parameters no longer apply to `\ncarc`, and the default values have been changed to 0. For `\ncarc`, the angle is now controlled by the `arcangle`, `arcangleA` and `arcangleB` parameters. The default is still 8.

! `\multido` has been off-loaded to the file `multido.tex`. The syntax has been changed to make it consistent with `\psmultiput` and LaTeX's `\multiput`: The variable declarations are now the first argument and the number of repetitions are now the second argument. Also, for number variables, the initial value and increment must now have the same number of digits to the right of the decimal, unless the initial value is an integer. There is no `*` version. Instead, the contents is never grouped, and there is even a variant that doesn't group the whole macro. See `multido.ps`, which is distributed with PSTricks, for details.

! `'diamond'`, `'diamond*'`, and `'x'` dotstyles are gone. Use `dotangle` parameter instead.

2.2 New features

- + New dot style: |.
- + New graphics objects: \pscustom.
- + New box framing macros: \psovalbox, \pscirclebox.
- + New box scaling macro: \scaleboxto.
- + New nodes: \ovalnode, \circnode.
- + New node connection: \ncdiagg.
- + New loop macro: \multips.
- + New graphics parameters: dotscale, dotangle, dblframewidth.
- + New arrow styles: c and C.
- + \SpecialCoor allows using nodes as coordinates and mixing coordinates.

2.3 Other changes

- * arrowscale parameter allows non-square scaling.
- * Documentation has been greatly improved.
- * A bug that caused problems with Arbortext's dvips (previously listed in pstricks.bug) was fixed.
- * Memory stats with LaTeX's article style:
 - 43290 words of memory
 - 2895 multiletter control sequences

3 VERSION 0.91

3.1 Incompatible changes

- ! \dbox and \rotate eliminated.
- ! \psput replaced by \rput, with new syntax:
 - OLD: \psput[angle]*ref point*(x,y){stuff}
 - NEW: \rput[ref point]{angle}(x,y){stuff}\OldPspu sets up \psput with the old syntax (this may disappear some day; keep it in a safe place if you expect to need it for a long time).
- ! System for specifying angles for nested rotations with \psput has changed.
 - OLD: p0{angle}, p1{angle}, p2{angle}, etc.
 - NEW: *angle works like p0{angle}; p1{angle} capability eliminated.N, S, E and W have same meaning as before.
- ! enddotsize parameter changed to dotsize.
- ! For specifying the origin as the baseline for the \pspicture environment, leave the optional argument [] empty (rather than [o]).

! B is not allowed as the y-coordinate when setting the reference point in `\rput` using coordinates. E.g., `[Bl]` and `[B]` are OK, but `[.3,B]` is not.

3.2 New features

- + `cornersize` parameter added, for specifying whether radius of corners in `\psframe` and related box macros is given in relative terms (using `framearc`) or absolute terms (using `lineararc`).
- + `\psclip` and `\clipbox` macros added.
- + `\Cartesian` and `\Polar` commands added, for switching coordinate systems.
- + `border=dim` parameter added, for giving appearance of one line crossing over another.
- + `showpoints=bool` parameter added. If true, a dot is placed at appropriate coordinates.
- + `\psdots` graphics object added.
- + `\psarc` graphics object added.
- + `\parabola` graphics object added.
- + `\pscurve`, `\psccurve`, `\psecurve`, `\psdoodle`, `\psedoodle`, and `\pscdoodle` graphics objects added.
- + `\qline` and `\qdisk` graphics objects added.
- + `\psplot`, `\parametericplot` and `\listplot` graphics objects added.
- + node connection (e.g., tree) macros added!!

3.3 Other changes

- * `\sunpatch` not needed anymore.
- * PostScript header file (if being used) is included at the beginning, rather than on demand.
- * In spite of the many new features, the input file is smaller in bytes, and runs significantly faster (at least if used with a header file). The macros use up slightly more words of memory, and significantly more command sequences. Here are the stats with LaTeX's article style:
 - 41586 words of memory
 - 2966 multiletter control sequences

4 VERSION 0.9

Much internal code was changed, and additional features were added.