

Todolist for PGFPlots

1.14

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1 Release TODO

The following steps have to be done for every release:

- for 1.14:

<http://tex.stackexchange.com/questions/321740/matlab2tikz-problem-with-contourf>
(see example in `tmb/contourfilled_texsx` on my machine)
<http://tex.stackexchange.com/questions/122262/make-region-plots-from-data-using-pgfplots>
(also in my local temp drive)
<http://tex.stackexchange.com/questions/122262/make-region-plots-from-data-using-pgfplots>
tell matlab2tikz guys that 1.14 supports filled contours
<http://tex.stackexchange.com/questions/297329/smooth-contour-plots-in-pgfplots>
<http://tex.stackexchange.com/questions/310252/filled-contour-from-axis-symmetric-data>
<http://tex.stackexchange.com/questions/207450/fillbetween-from-pgfplots-does-not-work>
<http://tex.stackexchange.com/questions/155194/tufte-like-axis-with-pgfplots>
<http://tex.stackexchange.com/questions/165766/tufte-style-range-frames-for-three-dime>
(this was for 1.13) advertise new possibilities on
<http://tex.stackexchange.com/questions/285144/how-to-plot-multiple-2d-filled-graphs-i>
<http://tex.stackexchange.com/questions/84863/2d-graphs-in-a-3d-plot>

<http://tex.stackexchange.com/questions/196366/stacked-bar-plot-with-explicit-axis-domain>
 ✓<http://tex.stackexchange.com/questions/207450/fillbetween-from-pgfplots-does-not-work>
<http://tex.stackexchange.com/questions/227775/pgfplot-image-messed-up-with-newer-tikz>
<http://tex.stackexchange.com/questions/276367/how-to-use-colors-from-a-pgfplots-colorbar>
<http://tex.stackexchange.com/questions/274884/pgfplots-point-meta-colormap-index-as-f>
<http://tex.stackexchange.com/questions/155194/tufte-like-axis-with-pgfplots>
<http://tex.stackexchange.com/questions/165766/tufte-style-range-frames-for-three-dime>
<http://tex.stackexchange.com/questions/35863/pgfplots-from-file-search-path-looking-f>
<http://tex.stackexchange.com/questions/237913/search-path-for-pgfplotstable>
<http://tex.stackexchange.com/questions/199563/change-pgfplot-auto-tick-distance>
<http://tex.stackexchange.com/questions/95747/pgfplots-reduce-tick-density>
<http://tex.stackexchange.com/questions/255596/imagesc-in-tikz-with-non-symmetric-matr>
<http://tex.stackexchange.com/questions/124276/matlab2tikz-imagesc-tikz-pgfplots-equiv>
<http://tex.stackexchange.com/questions/255432/plotting-matrix-image-data?lq=1>
<http://tex.stackexchange.com/questions/154051/table-vs-plot-how-to-print-table-of-val?lq=1>
<http://tex.stackexchange.com/questions/183369/tikz-and-pgfplot-problem-with-plotting>
 all links which state that one needs `opacity=0` in order to hide the axis
 (and verify them):
<http://tex.stackexchange.com/questions/126236/draw-grid-in-pgfplots-when-axis-line-no>
 should be possible with `color` of `colormap`:
<http://tex.stackexchange.com/questions/285483/how-to-match-color-of-user-placed-label>

- run tests against pgf CVS
- run tests against latest pgf stable
- finish manual
 - update the description for the `compat` key to the most recent version
 - update `pgfplots.preamble.tex` such that it contains `—compat=—newest`
 - fix warnings
 - browse through it
- ensure that the “compile” matrix (below this list) is complete for pgf CVS and the latest pgf Stable
- update `ChangeLog` with “RELEASED VERSION XXX” and update `README`
- assign git tag for new version

- run `scripts/pgfplots/pgfplotsrevisionfile.sh` to assign the package versions based on tag
(done automatically when compiling the manual)
- recompile manual (to pick up the correct version)
- run primitive example files
- run context tests (basically compile and browse-through. There are no assertions.)
 - run against pgf CVS
 - run against latest pgf stable
- adjust the release makefile to get correct file names
- assemble TDS.zip and CTAN.zip (using the release makefile)
 - `make -f pgfplots/scripts/pgfplots/Makefile.pgfpplots_release_sourceforge`
this creates the release files
 - make sure the archives do not contain wrong files.
- upload to CTAN.

```
Submitted to host
dante.ctan.org
Your name and email
    Christian Feuersnger <cfeuersaenger@users.sourceforge.net>
Filename
    pgfplots_1.6.1.ctan.flatdir.zip
Version number
    1.6.1
Location on CTAN
    /graphics/pgf/contrib/pgfplots/
Summary description
    pgfplots - Create normal/logarithmic plots in two and three dimensions for LaTeX.
License type
    gpl
Announcement text
...
Notes to maintainers
    As requested, I created a flat directory structure containing all files (i.e. it
```

Attention: the announcement text must not be too long. In particular, README extracts are too long.

- release to sourceforge.
 - Make sure to update the README at top-level.
 - make sure to mark the new TDS as “default download for all platforms”

- upload to sourceforge web space (using the release makefile)
 - `make -f pgfplots/scripts/pgfplots/Makefile.pgfplots_release_sourceforge upload`dis
this copies the manuals
 - change `Makefile.pgfplots_release_sourceforge` back to unsta-
ble
 - `make -f pgfplots/scripts/pgfplots/Makefile.pgfplots_release_sourceforge upload`
this updates the unstable
 - if necessary, update `scp://cfeuersaenger,pgfplots@web.sourceforge.net/htdocs/index.php`
- send announcement to `pgfplots-features@lists.sourceforge.net`
- use `git push origin --tags` or `git push origin 1.13` to push the
tag(s)

2 Tests

last test verifications:

	pgf CVS	pgf 3.0.1	pgf 3.0.0	pgf 2.10	pgf
regressiontests	for 1.14	for 1.14	for 1.12.1	for 1.12*	for 1
unittests	for 1.14	for 1.13	for 1.12	for 1.12	
manual	for 1.14	for 1.14	for 1.12	for 1.9	for 1
pgfplotstable.pdf	for 1.14	for 1.13	for 1.12	for 1.9	for 1
example latex	for 1.14			for 1.9	2009
example context(mkII)	for 1.13			for 1.9	2009
example context(mkIV)	for 1.13		for 1.12.1	for 1.9	2009
example plain tex	for 1.14			for 1.9	2009
tests context (mkII)	for 1.14		for 1.12	for 1.9	
tests context (mkIV)	for 1.13	context installation broken	for 1.12*		

Note that context MK IV needs the pgfplots installed in `~/texmf` (doesn't
respect environment variables)

context MK IV may need a special environment like `. ~/context/tex/setuptex`

3 Documentation todo

`pgfplotstodo.tex:208` **Documentation Todo** [open, Priority 5, Epic “]
document `\boldmath $...$` for `pgfplotstable`

`pgfplotstodo.tex:223` **Documentation Todo** [open, Priority 5, Epic “]
Document standalone vs. external

- standalone does not work with loops (compare
[http://tex.stackexchange.com/questions/191108/
how-to-avoid-copied-code-with-the-combination-pgfplots-standalone](http://tex.stackexchange.com/questions/191108/how-to-avoid-copied-code-with-the-combination-pgfplots-standalone))

- generating just one single figure without a document is simpler with standalone
- external integrates seamlessly
- external can be enabled later-on
- external supports label+ref
- external supports make out of the box
- external supports bounding box control (trim)
- ...

<code>pgfplotstodo.tex:228</code>	<p>Documentation Todo [open, Priority 5, Epic ‘]</p> <p>The new API for stacked plots + nodes near coords is missing, among it the normalized axis cs but see <code>\pgfplotspointgetnormalizedcoordinates</code></p>
<code>pgfplotstodo.tex:263</code>	<p>Documentation Todo [open, Priority 5, Epic ‘]</p> <p>document installation requirements when using lualatex (LUAINPUTS should contain pgfplots install dir)</p>
<code>pgfplotstodo.tex:352</code>	<p>Documentation Todo [open, Priority 5, Epic ‘]</p> <p>bei dem Bsp-Tex zu <code>pgfplotstable</code> scheint eine Zeile im Tex-File zu fehlen: <code>\usepackage{pgfplotstable}</code></p> <p>Auerdem wre es zum Einstieg fr das aus der Datei lesen schn, wenn es zu den Daten auch ein kurzes Beispiel-File fr einen Plot gbe.</p>
<code>pgfplotstodo.tex:609</code>	<p>Documentation Todo [open, Priority 5, Epic ‘]</p> <p>try a bar plot with individually shaded bars</p> <p>FIXME : collect details</p>
<code>pgfplotstodo.tex:625</code>	<p>Documentation Todo [open, Priority 5, Epic ‘]</p> <p>contour: a change label dist</p>
<code>pgfplotstodo.tex:658</code>	<p>Documentation Todo [open, Priority 5, Epic ‘]</p> <p>document ‘execute at begin axis’ and its new variants</p>

- pgfplotstodo.tex:663 **Documentation Todo** [open, Priority 5, Epic ‘’]
document how to plot against the coordindex
- pgfplotstodo.tex:676 **Documentation Todo** [open, Priority 5, Epic ‘’]
document how to identify the source of ”dimension too large” errors:
tracingstuff.
- pgfplotstodo.tex:691 **Documentation Todo** [open, Priority 5, Epic ‘’]
It seems as if the AMS command `$$\text{\ref{ref:to:a:plot}}$`
instantiates the `\ref` at least four times. Document somehow that it is better
to use `\hbox` instead
- pgfplotstodo.tex:700 **Documentation Todo** [open, Priority 5, Epic ‘’]
clickable lib: I have the impression that acroread fires warnings only for the
manual - not always when the clickable lib is used. Why!?

4 Bugs/Features in PGF/TikZ

- pgfplotstodo.tex:709 **pgfbug** [open, Priority 5, Epic ‘’]
external does not work
together with tcolorbox <http://tex.stackexchange.com/questions/319647/tikz-package-external-causes-an-unclosed-tikzpictureetcbhooked-environment>
- pgfplotstodo.tex:727 **pgfbug** [open, Priority 5, Epic ‘’]
topath in plots is broken since PGF 3.0.0: the following should be a single
connected line (as it used to be for 2.10):

```
\documentclass{standalone}
\usepackage{tikz}

\begin{document}

  \begin{tikzpicture}
    \draw (-1,-1) -- (0,0)
      -- plot [id=x,domain=0.7:1.0] function {x};
  \end{tikzpicture}

\end{document}
```

pgfplotstodo.tex:731 **pgfbug** [open, Priority 5, Epic ‘’]
 external lib does not properly recompile unresolved references in external files,
 see [http://texwelt.de/wissen/fragen/7948/
 markierung-in-pgfplotlegende-fehlerhaft-ubernommen?Seite=1#7973](http://texwelt.de/wissen/fragen/7948/markierung-in-pgfplotlegende-fehlerhaft-ubernommen?Seite=1#7973)

pgfplotstodo.tex:767 **pgfbug** [open, Priority 5, Epic ‘’]
 When reading the manual v2.0 I found a typo 5.1 "Styling the nodes". Just
 after the first block of code, there is a sentence saying "... can achieve them.
 Once way is to use ..." which should be "One way is to use ..."

pgfplotstodo.tex:771 **pgfbug** [open, Priority 5, Epic ‘’]
 Beamer + pgf: the default template introduces a white line on top.
 Interestingly, it happens only for PGF CVS + beamer, but it appears to be
 dependent on third-party tools as well (see mail conversation with Stefan
 Tibus)

pgfplotstodo.tex:793 **pgfbug** [open, Priority 5, Epic ‘’]
 When using externalize function together with a transform canvas, the result
 is somehow cropped. See this example, compare output with deactivated and
 activated externalize.

```
\documentclass{article}
\usepackage{tikz}
\usetikzlibrary{external}
\tikzexternalize % activate!
\begin{document}
\begin{tikzpicture}[transform canvas={scale=0.7}]
\node {root}
child {node {left}}
child {node {right}}
child {node {child}}
child {node {child}}
};
\end{tikzpicture}
A simple image is \tikz \fill (1,0) circle(5pt);.
\end{document}
```

pgfplotstodo.tex:850 **pgfbug** [open, Priority 5, Epic ‘’]
 pgf users Vol 50 issue 6:

Hi,

Thanks for TikZ. I'm trying to use the externalization library with the class file gOMS2e.cls, which is provided for the journal Optimization Methods and Software. The class file and related files/documentation can be found here:
<http://www.tandf.co.uk/journals/authors/gomslatex.zip>

My problem is that the externalized figures are shifted up and to the left significantly, cutting them off. This problem does not occur when not using externalization.

This seems to be related to the problem discussed here:

http://sourceforge.net/tracker/index.php?func=detail&aid=3037831&group_id=142562&atid=7527

and may also be related to this one:

http://sourceforge.net/mailarchive/forum.php?thread_name=4C0F342B.5040008%40ins.uni-bonn.d

In the other cases, the solution was to use `\tikzifexternalizing` for whatever conflicts with the externalization, but it seems that I can't do this when my class file is the offending bit. Is this true? I would really like to be able to use the correct `\documentclass` to generate the figures so that the size/fonts/etc. are consistent throughout the resulting document.

A minimal test example is included at the end of this message. It appears that the image is shifted ~1.25cm to the left and ~0.8cm up. The problem goes away when using `\documentclass{article}`.

I'm using the CVS version of pgf, and I get the same result when I produce postscript figures by using latex and setting

```
\tikzset{external/system call={
    latex \tikzexternalcheckshellescape -halt-on-error
-interaction=batchmode -jobname "\image" "\texsource";
dvips -o "\image".ps "\image".dvi}}
```

```
%-----
\documentclass[printer]{gOMS2e}
\usepackage{tikz}
\usetikzlibrary{external}
\tikzexternalize
\begin{document}
\begin{center}
\begin{tikzpicture}
\draw[step=.5cm] (-3,-3) grid (3,3);
\draw[blue,line width=2mm] (-0.5,-3) -- (-0.5,1.2) -- (3,1.2);
\end{tikzpicture}
\end{center}
\end{document}
%-----
```

Any help would be appreciated; I'm afraid it's over my head at this point. Thanks!

pgfplotstodo.tex:889

pgfbug [open, Priority 5, Epic ‘’]

some incompatibility

```
\documentclass{article}
\usepackage{german}
\usepackage[utf8]{inputenc} % erlaubt direkte Nutzung von Umlauten

\usepackage{pgfplots} % fuer plots

\usepackage{pgfplotstable} % fuer numeriktabellen
\usepackage{array,colortbl,booktabs}
\usetikzlibrary{external}
\tikzexternalize[force remake]

% DOESN'T WORK. Needs to disable externalization
\usepackage{vmargin}
\setpapersize{A4}
\setmarginsrb{2.5cm}{1cm}{2cm}{2cm}{8mm}{15mm}{5mm}{15mm}

\begin{document}
\begin{tikzpicture}
%\tracingmacros=2 \tracingcommands=2
\begin{axis}
\addplot {x};
\end{axis}
\end{tikzpicture}
\end{document}
```

pgfplotstodo.tex:910

pgfbug [open, Priority 5, Epic ‘’]

external bug:

```
\documentclass[
    pagesize=auto,                % 1
]{scrbook}
\usepackage{tikz}
\usetikzlibrary{external}
\tikzexternalize
\begin{document}
\KOMAOption{twoside}{semi} % 2
    test
\begin{tikzpicture}
\draw (0,0) circle (3pt);
\end{tikzpicture}
\end{document}
```

pgfplotstodo.tex:917

pgfbug [open, Priority 5, Epic ‘’]

consider a matrix style which applies only to the outer matrix node style (see feature request
https://sourceforge.net/tracker/?func=detail&atid=1060657&aid=3019259&group_id=224188
)

`pgfplotstodo.tex:921` **pgfbug** [open, Priority 5, Epic ‘’]
 make assignments to `\pgf@x` and `\pgf@y` always `\global`

`pgfplotstodo.tex:925` **pgfbug** [open, Priority 5, Epic ‘’]
 implement `\pgfmathfloattocount`

`pgfplotstodo.tex:979` **pgfbug** [open, Priority 5, Epic ‘’]
 the fpu can’t be used inside of paths. That should be fixed. ~→ the problem is that paths may use `\pgfmath...` routines directly. ~→ this should work! At least with the public math macros `\pgfmathadd`. The `\pgfmathadd@` might be implemented differently.

`pgfplotstodo.tex:1032` **pgfbug** [open, Priority 5, Epic ‘’]
 active ‘|’ characters result in compilation bugs (`\usepackage{program}`)

`pgfplotstodo.tex:1036` **pgfbug** [open, Priority 5, Epic ‘’]
 ‘text height=1em’ realisieren mit `[node font units]1em`

5 Bugs in PGFPlots

`pgfplotstodo.tex:1601` **Bug** [open, Priority 10, Epic ‘’]
 fill between fails to work with PGF 2.10

work-around: use the following patch

```
\documentclass[10pt]{beamer}
\usepackage{tikz}
\usepackage{pgf}
\usepackage{pgfplots}
\usepgfplotslibrary{fillbetween}

\makeatletter
\def\tikz@intersect@addto@path@names#1#2{%
  \edef\tikz@marshal{#2\expandafter\noexpand\csname tikz@intersect@path@name@#1\endcsname}
```

```

\expandafter\expandafter\expandafter\def\expandafter\expandafter\expandafter\tikz@marsha
\expandafter\expandafter\expandafter{\expandafter\tikz@marshal\expandafter{\tikz@inter
\expandafter\pgfutil@g@addto@macro\expandafter\tikz@intersect@namedpaths\expandafter{\ti
}
\pgfkeys{%
/tikz/name path global/.code={%
\expandafter\global\expandafter\let\csname tikz@intersect@path@name@#1\endcsname=\relax
\tikz@key@name@path@new{#1}{\gdef}%
},
/tikz/name path local/.code={%
\pgfkeys{/tikz/name path={#1}}%
},
/tikz/name path/.code={%
\tikz@key@name@path@new{#1}{\def}%
},
}
\makeatother

\begin{document}
\begin{frame}

\begin{tikzpicture}
\begin{axis}[%
axis x line*=bottom,
ymin=0,
ymax=1,
]

\addplot[name path=h,domain=-0.01:1,blue,line width=2pt] {5.5*x^4 - 8.4*x^3 + 3.2*x^2 + 0.
\path[name path=axis] (axis cs:0,0) -- (axis cs:1,0);

\only<2->{
\addplot [fill=green, fill opacity=0.2]
fill between[of=h and axis, soft clip={domain=0.0:0.4}];
}

\end{axis}
\end{tikzpicture}
\end{frame}
\end{document}

```

pgfplotstodo.tex:1057

Bug [open, Priority 5, Epic “]

external bug: the external lib must keep pgfpictureid, otherwise it mixes remembered positions!

see

[http://tex.stackexchange.com/questions/72781/
problem-tikz-pgfplots-and-external-coordinates-using-overlay/
72804#comment782265_72804](http://tex.stackexchange.com/questions/72781/problem-tikz-pgfplots-and-external-coordinates-using-overlay/72804#comment782265_72804) for a MWE

pgfplotstodo.tex:1063

Bug [open, Priority 5, Epic “]

fpu is unable to compute $\exp(-4.08893e7)$ (runs into overflow somewhere).

To do: replace it by 0

pgfplotstodo.tex:1085

Bug [open, Priority 5, Epic “]

regression in pgf CVS: dvips driver broken for `shader=interp`

bisect:

- 2016/01/01 OK
- 2016-03-15 OK
- 2016-03-20 OK
- 2016-03-01 OK
- 2016-03-21 OK
- 2016-03-22 BROKEN
this is the first broken revision. Apparently, there are new scopes in nodes, compare `tikz.code.tex` r170 and r175
but that does not seem to be all to it...
- 2016-03-23 BROKEN
- 2016-04-01 BROKEN
- 2016-05-01 BROKEN

pgfplotstodo.tex:1089

Bug [open, Priority 5, Epic “]

document [http://tex.stackexchange.com/questions/65045/
pgfplots-axis-xmode-ymode-in-user-defined-style/65069?noredirect=
1#comment721421_65069](http://tex.stackexchange.com/questions/65045/pgfplots-axis-xmode-ymode-in-user-defined-style/65069?noredirect=1#comment721421_65069) in a suitable way

pgfplotstodo.tex:1096

Bug [open, Priority 5, Epic “]

`fillbetween` fails with special `width/height` argument

[http://tex.stackexchange.com/questions/306993/
pgfplots-fill-between-changes-with-plot-width](http://tex.stackexchange.com/questions/306993/pgfplots-fill-between-changes-with-plot-width)

pgfplotstodo.tex:1102

Bug [open, Priority 5, Epic “]
external lib screws up prefix option?

[http://tex.stackexchange.com/questions/243935/
error-using-tikz-externalize-cant-write-md5-file](http://tex.stackexchange.com/questions/243935/error-using-tikz-externalize-cant-write-md5-file)

pgfplotstodo.tex:1108

Bug [open, Priority 5, Epic “]
pgfnathparse no longer compatible with heightof etc of calc package?

[http://tex.stackexchange.com/questions/289551/
how-to-resolve-conflict-between-versions-of-texlive-and-pgf](http://tex.stackexchange.com/questions/289551/how-to-resolve-conflict-between-versions-of-texlive-and-pgf)

pgfplotstodo.tex:1136

Bug [open, Priority 5, Epic “]
colormap access=piecewise constant can produce visual artifacts:

```
\documentclass{standalone}

\usepackage{pgfplots}

\pgfplotsset{compat=1.14, lua debug}

\usepgfplotslibrary{colorbrewer}

\begin{document}

\begin{tikzpicture}
\begin{axis}[
view={0}{90},
colormap/Purples-6,
colorbar,
colormap access=piecewise constant,
]
\addplot3[surf,shader=interp,] {x*y^2};
\end{axis}
\end{tikzpicture}
\end{document}
```

This has an artifact right in the middle. Acrobat reader has a slightly different one compared to xpdf

pgfplotstodo.tex:1140

Bug [open, Priority 5, Epic “]
axis description styles contain “on layer”, but they ignore it!

pgfplots.stodo.tex:1166

Bug [open, Priority 5, Epic “]

syntax highlighting issue:

```
\begin{quote}
  |edge node=node [every edge quotes,|\meta{options}]{|\meta{text}}|}
\end{quote}
```

results in

```
edge node=node [every edge quotes] options ]{ text }
```

pgfplots.stodo.tex:1191

Bug [open, Priority 5, Epic “]

tikz bug: using `-- cycle` exchanges start/end positions of nodes

[see [bugtracker/minimal_0.pdf](#)]

```
\documentclass{standalone}
\usepackage{tikz}
\begin{document}

\begin{tikzpicture}
  \fill[
    fill opacity=0.75,
    draw=orange!80!black,thick,
    fill=orange,
  ]
  (0,1) -- (1,2) -- (2,1)
  |- (0,0) -- cycle
  node [coordinate,at start,pin=above right:at start] {}
  node [coordinate,at end,pin=above left:at end] {}
  ;
\end{tikzpicture}
\end{document}
```

pgfplots.stodo.tex:1222

Bug [open, Priority 5, Epic “]

values of `visualization depends on` are always expanded

```
\documentclass{standalone}
\usepackage{pgfplots}
\pgfplotsset{compat=newest}
\begin{document}

\begin{tikzpicture}
%\tracingmacros=2 \tracingcommands=2
\begin{axis}
```

```

\addplot [
    nodes near coords=\Label,
    visualization depends on={
        value \thisrow{label} \as \Label    % <-- infinite loop
    },
]
table
{
x y label
0 0 \textsf{d}
1 1 X
};

\end{axis}
\end{tikzpicture}
\end{document}

```

pgfplotstodo.tex:1236

Bug [open, Priority 5, Epic “]

fillbetween: numerical problems

<http://tex.stackexchange.com/questions/283647/>

shaded-area-under-pgfplot-starting-with-first-data-point-outputs-wrong-shaded

pgfplotstodo.tex:1246

Bug [open, Priority 5, Epic “]

z buffer=sort appears to cause wrong results – must use min(depths) instead of mean(depths)!

<http://tex.stackexchange.com/questions/281953/>

perspective-error-in-pgfplots-surface

pgfplotstodo.tex:1296

Bug [open, Priority 5, Epic “]

pgfplotstable: dec sep align does not work if someone uses custom column type or assign column name.

See <http://tex.stackexchange.com/questions/276395/pgfplotstable-formatting-problems/277284#277284>

pgfplotstodo.tex:1301

Bug [open, Priority 5, Epic “]

add sanity check to lua backend before sending mapped coordinates to TeX:

<http://tex.stackexchange.com/questions/269656/pgfplots-with-big-data-dimension-too-large>

pgfplots-with-big-data-dimension-too-large

pgfplotstodo.tex:1410

Bug [open, Priority 5, Epic “]

Using `\thisrow{col}` merely expands to the value, but does not implicitly add parenthesis around the value.

Consequently, something like `\thisrow{col}^2` will produce unexpected results for rows like `-2`

<http://tex.stackexchange.com/questions/262774/pgfmath-misbehaving-when-reading-negative-values-from-table-in-pgfplots>

However, textual columns should still be processed as usual. And: it used to work to write `\dimen0=\thisrow{col}pt` which would break if parenthesis is added automatically

Idea: something like

```
\def\thisrow#1{-2}
\let\thisrowX=\thisrow
\def\thisrow#1{(\thisrowX{#1})}%
\edef\XXX{\thisrow{col}^2}
\message{EXPANDED: \XXX^^J}
```

before evaluating table expressions?

pgfplotstodo.tex:1416

Bug [open, Priority 5, Epic “]

inaccuracy when determining minor ticks?

<http://tex.stackexchange.com/questions/262662/pgfplots-sometimes-minor-ticks-dont-show>

pgfplotstodo.tex:1423

Bug [open, Priority 5, Epic “]

consider using `unbounded coords=jump` as default for mesh/surface plots

<http://tex.stackexchange.com/questions/259012/glitch-in-3d-surface-plot-using-pgfplots-not-solved-by-z-buffer>

pgfplotstodo.tex:1429

Bug [open, Priority 5, Epic “]

fillbetween precision bug: densely sampled plot intersection not found/wrong:

<http://tex.stackexchange.com/questions/258240/pgfplots-fill-between-with-wrong-segment-split>

pgfplotstodo.tex:1443

Bug [open, Priority 5, Epic “]

fpv bug:

```
\beginpgp
\tracingmacros=2 \tracingcommands=2
\pgfkeys{/pgf/fpv}
\pgfmathparse{exp(-3.4814e4)}\pgfmathresult
\endpgp
```

fails to compile.

<http://tex.stackexchange.com/questions/251496/fermi-dirac-in-pgfplots-dimension-too-large>

pgfplotstodo.tex:1448

Bug [open, Priority 5, Epic “]

view dir=reverse appears to result in a wrong 3d view directions and screws up z buffering, compare <http://tex.stackexchange.com/questions/250825/axis-dir-reverse-and-colormap-bug-in-tikz>

pgfplotstodo.tex:1491

Bug [open, Priority 5, Epic “]

smithchart admittance graph has wrong sign

This Mail is in German, since your name suggests, that you speak German. If that is not the case, please let me know, and I will write send you this mail again in English.

Sehr geehrter Herr Feuersnger,

ich schreibe momentan meine Bachelor-Arbeit und muss dafr Antennen vermessen und die Messergebnisse graphisch darstellen. Ich habe mit Begeisterung festgestellt, dass ich mit PGFPlot recht direkt s1p- und s2p-Dateien plotten kann. Vielen Dank dafr!

Allerdings gibt es ein paar Darstellungsprobleme:

-> Bei Admitanzgraphen, also smithchart mirrored=true werden die Koordinaten auf dem unteren Halbkreis mit negativen Vorzeichen dargestellt (dies ist auch in dem Beispiel im Manual so) Jedoch sind bei jedem Admitanz-Smith-Graph die Vorzeichen umgekehrt (da der Admitanz-Graph per Definition $1/Z_L=1/(a+bi)=a/(a^2+b^2)-ib/(a^2+b^2)$)

Gibt es eine Option das einzurichten?
y dir=reverse
bewirkt nichts.

pgfplotstodo.tex:1517

Bug [open, Priority 5, Epic “]

smithcharts: -j Ab einer Gre von 14cm funktionieren yticklabel around circle,
few smithchart ticks

etc nicht mehr. Das lsst sich manuell hinbekommen:

```
\begin{smithchart}[
title=\text{titel},
smithchart mirrored=true,
xticklabel shift=-19pt,
grid style={blue},
ticklabel style={blue},
width=15.2cm,
xtick={0.2,0.5,1,2,5},
ytick={0,0.2,0.5,1,2,5,-0.2,-0.5,-1,-2,-5},
xgrid each nth passes y={2},
ygrid each nth passes x={2},%ytick align=center,
ytick align=center,
yticklabel style={
rotate=180,
},
]
```

pgfplotstodo.tex:1665

Bug [open, Priority 5, Epic ‘substitute axis cs’]

substitute axis cs fails with smithcharts:

```
\documentclass{standalone}

\usepackage{pgfplots}
\usepgfplotslibrary{smithchart}

\pgfplotsset{compat=newest}

\begin{document}
  \begin{tikzpicture}
    \begin{smithchart}
      % \pgfplotsset{is smithchart cs}
      % \begin{scope}[/pgfplots/is smithchart cs]
        \draw [black!40,dashed] (0,0) arc (0:360:.5);
      % \end{scope}
    \end{smithchart}
  \end{tikzpicture}
\end{document}
```

pgfplotsstodo.tex:1697

Bug [open, Priority 5, Epic ‘substitute axis cs’]
substitute axis cs fails to work with ++ (0,1cm) (probably for ++ everytime)

workaround: use ++ (0cm,1cm) or compat=1.10.

```
\documentclass{article}
\usepackage{pgfplots}
\begin{document}

\pgfplotsset{compat=1.9}
\begin{tikzpicture}
\begin{axis}[
xmin=-1,xmax=1,
ymin=-1,ymax=1
]
\draw (axis cs:0,0) -- ++(0,1cm);
\end{axis}
\end{tikzpicture}

\pgfplotsset{compat=1.12}
\begin{tikzpicture}
\begin{axis}[
xmin=-1,xmax=1,
ymin=-1,ymax=1
]
\draw (axis cs:0,0) -- ++(0,1cm);
\end{axis}
\end{tikzpicture}
\end{document}
```

pgfplotsstodo.tex:1770

Bug [open, Priority 5, Epic ‘’]
error bars + fill between do not work together (per email of Jerzy Wrobel Jan 28, 2015):

```
\documentclass[12pt,border=8pt]{standalone}
\usepackage[utf8]{inputenc}
\usepackage{mathtools}
\usepackage{pgfplots}
\usepackage[T1]{fontenc}
\usepackage{fouriernc}
\pgfplotsset
{
compat=newest,
every axis/.append style={line width=0.03cm,axis line style={line width=0.02cm}},
every tick/.append style={line width=0.02cm,color=black},
every axis label/.append style={font=\small},
```

```

tick label style={font=\small},
legend style={font=\small,draw=none},
title style={font=\small},
axis on top=false,
table/col sep=comma
}
\tikzset
{
every pin/.style={font=\small},
}
\pgfkeys{/pgf/number format/set thousands separator = }
\usepgfplotslibrary{fillbetween}
\usetikzlibrary{patterns}
\begin{document}
\begin{tikzpicture}
\begin{axis}
[
width=70mm,
height=70mm,
axis x line=box,
axis y line=box,
scale only axis,
enlarge x limits=true,
enlarge y limits=true,
grid=none,
xlabel=wave length (microns),
ylabel=Experiment1916 (a.u.),
extra y ticks={0},
extra y tick labels={},
extra y tick style={grid=none},
\addplot+
[
name path=1,
line join=round,
every mark/.append style={solid,fill opacity=1.0},
mark repeat=1,
mark phase=1,
error bars/.cd,
y dir=both,
y fixed=10,
]
table
[
skip first n=4,
x index=0,
y index=1,
]
{Coblentz1919.csv}
;

```

```

\path[name path=B] (0.4,0) -- (0.75,0);
\addplot[pattern=north west lines,forget plot] fill between[of=1 and B];
\end{axis}
\end{tikzpicture}
\end{document}

```

pgfplotstodo.tex:1776

Bug [open, Priority 5, Epic “]

bugs:#74 Wrong value from the \pgfplotsunit[xyz]length macro

<https://sourceforge.net/p/pgfplots/bugs/74/>

pgfplotstodo.tex:1782

Bug [open, Priority 5, Epic “]

bugs:#75 \pgfplotstablestsort doesn't sort correctly if there's a NaN in the column

<https://sourceforge.net/p/pgfplots/bugs/75/>

pgfplotstodo.tex:1788

Bug [open, Priority 5, Epic “]

|(axiscs:0,0)— is not the same as (axis cs:0,0,0) in 3d axes! something with the datascale trafo spoils it

<http://tex.stackexchange.com/questions/223623/pgfplots-tikz-interoperability-and-axis-equal>

pgfplotstodo.tex:1892

Bug [open, Priority 5, Epic “]

spurious shifts /displacement when using group plots and and discontinuities:

[http://tex.stackexchange.com/questions/183399/](http://tex.stackexchange.com/questions/183399/wrong-placement-and-or-size-of-picture-plot-with-groupplot-of-table-and)

wrong-placement-and-or-size-of-picture-plot-with-groupplot-of-table-and

pgfplotstodo.tex:1897

Bug [open, Priority 5, Epic “]

get rid of this boolean “apply@datatrafo@”. It is a synonym for “is linear”. I would even say: apply the trafo to log axes as well, perhaps with no-op configuration

pgfplotstodo.tex:2037

Bug [open, Priority 5, Epic “]

REGRESSION:

```

\documentclass{article}
\usepackage{pgfplots}

```

```

\pgfplotsset{compat=newest}

\begin{document}
\begin{tikzpicture}
\begin{axis}[ybar,
symbolic x coords={foo,bar,baz},
x=2cm,
enlarge x limits={abs=bar}, xtick=data,
]
\addplot coordinates { (foo,1) (bar,3) (baz,2) };
\end{axis}
\end{tikzpicture}
\end{document}

```

broke sometime between 1.6 (OK) and 1.7 (compile error).

the problem is the definition of

`\pgfkeysdef{/pgfplots/@enlargelimits/abs value}` which attempts to decide if the argument contains a unit. If so, it skips the standard coordinate mapper. In this case, 'abs=bar' has no unit, but the math parser bails out because the argument is no math expression at all... how can I fix that!?

pgfplotstodo.tex:2115

Bug [open, Priority 5, Epic “]

combination of dateplot and x tick label as interval does not work well together:

- one can only format one of the dates
- the description applies to the *right* end rather than the left end

[see [bugtracker/minimal_1.pdf](#)]

```

\documentclass{standalone}
\usepackage{pgfplots}
\pgfplotsset{compat=newest}
\usepgfplotslibrary{dateplot}
\begin{document}
\begin{tikzpicture}
\begin{axis}[
const plot, % unrelated but makes more sense of the plot
date coordinates in=x,
xtick=data,
xticklabel style={rotate=90,anchor=near xticklabel},
x tick label as interval,
xticklabel=\tick -- \nexttick,
]
\addplot coordinates {
(2009-01-01, 050)
(2009-02-01, 100)
(2009-03-01, 100)
}
\end{axis}
\end{tikzpicture}
\end{document}

```

```

(2009-04-01, 100)
(2009-05-01, 040)
(2009-06-01, 020)
(2009-07-01, 000)
(2009-08-01, 035)
};
\end{axis}
\end{tikzpicture}
\end{document}

```

`pgfplotstodo.tex:2119` **Bug** [open, Priority 5, Epic “]
 xtick key still relies on PGF’s basic level foreach – and the numbers inside of it are not parsed as it seems.

`pgfplotstodo.tex:2246` **Bug** [open, Priority 5, Epic “]
 fillbetween + softclip: soft clip should return the input path if the input path is contained in the soft clip region

 see http://tex.stackexchange.com/questions/195678/pgfplots-using-the-fillbetween-library/195697?noredirect=1#comment453086_195697

`pgfplotstodo.tex:2301` **Bug** [open, Priority 5, Epic “]
 extra ticks produce unwanted shifts of labels

 I’m using pgfplots 1.10 and observe the following problem. The x label shifts down a bit if I introduce extra x ticks, even if their labels are empty. The following example produces the observed behavior:

```

\documentclass{standalone}
\usepackage{pgfplots}
\pgfplotsset{compat=newest}

\begin{document}

\begin{tikzpicture}
\begin{axis}[
  width=4cm,
  xlabel=Test,
  axis x line=bottom,
  axis y line=left,
]
\addplot [black] {x^2};
\end{axis}
\end{tikzpicture}

```

```

\begin{tikzpicture}
\begin{axis}[
  width=4cm,
  xlabel=Test,
  axis x line=bottom,
  axis y line=left,
  extra x ticks={0},
  extra x tick labels={},
]
\addplot [black] {x^2};
\end{axis}
\end{tikzpicture}

\end{document}

```

It does not happen with the old, static, label placement (e. g. if I remove the `compat` setting). I was not able to test with 1.11, but there's nothing related mentioned in the release notes, if I did not overlook it. Any ideas what I'm missing or if it is a bug and how to work around it? I need two adjacent graphs in subfloats but only one of them has extra ticks, so the spacing should be equal to look reasonable. Adding an extra tick on the other plot helps, but the spacing looks better without, so that's not an option. And switching back to the old behavior means manually tweaking the distance, what makes no sense to me either.

root cause: `\pgfplots@ticklabel@maxtickdimen@finish` is called twice: once for the normal ticks and once for the extra ticks (note that the `*reset` routine is invoked just once). However, the `@finish` routine adds some `@extrashift` – and that is done twice as well. The extra shift belongs to the tick offset

`pgfplotstodo.tex:2305` **Bug** [open, Priority 5, Epic “]
 composed plot handlers (`hist`, `boxplot`, `contour`) need access to coordinate filters etc. during their first survey phase

`pgfplotstodo.tex:2339` **Bug** [open, Priority 5, Epic “]
 it seems as if the layer configuration does not really work:
`set layers={axis on top}` has a different effect than `axis on top`.
 It seems as if I need `\pgfplotsgetlayerforstyle` somewhere when drawing the individual entities – setting `on layer` is not enough.

`pgfplotstodo.tex:2343` **Bug** [open, Priority 5, Epic “]

scatter rgb is not documented

- pgfplotstodo.tex:2435 **Bug** [open, Priority 5, Epic “]
REGRESSION: pgf image externalization is broken, see comments in <https://sourceforge.net/p/pgf/bugs/229/>
- pgfplotstodo.tex:2492 **Bug** [open, Priority 5, Epic “]
pgfplots fails to handle very small number ranges on logarithmic plots (i.e. if, say, xmin and xmax are very very close to each other).

see <http://www.mrunix.de/forums/showthread.php?76399-tikz-PGFplots-Fehler-dimension-too-large&p=358818#post358818>
- pgfplotstodo.tex:2498 **Bug** [open, Priority 5, Epic “]
3d axes and y dir = reverse seems to corrupt the z ordering, see <http://texwelt.de/wissen/fragen/6131/pgfplots-3d-oberflächenproblem>
- pgfplotstodo.tex:2507 **Bug** [open, Priority 5, Epic “]
ybar interval does not work well with nodes near coords

ybar interval has an artifical last coordinate. This will also receive nodes near coords.

See <http://tex.stackexchange.com/questions/181061/pgfplots-clipping-everything-outside-a-specific-area>
- pgfplotstodo.tex:2513 **Bug** [open, Priority 5, Epic “]
ybar interval + nodes near coords: nodes are displaced.

The shift does not work here.
- pgfplotstodo.tex:2521 **Bug** [open, Priority 5, Epic “]
Coordinate filtering + error bars do not work.

Expected behavior: error coordinates should be computed and coord filters should be applied to the result. Currently, filters are evaluated first and then error coordinates.

See <http://tex.stackexchange.com/questions/154084/how-to-scale-both-data-and-error-bars-in-pgfplots>

pgfplotstodo.tex:2532 **Bug** [open, Priority 5, Epic “]
fillbetween / intersection lib bug: see minimal at
<http://tex.stackexchange.com/questions/180899/fillbetween-library-sometimes-works-and-sometimes-does-not/181224#181224>

pgfplotstodo.tex:2536 **Bug** [open, Priority 5, Epic “]
|legendto name— appears to be broken if the legend is empty (empty matrix?) TODO: verify that empty legends do not cause problems here!

pgfplotstodo.tex:2540 **Bug** [open, Priority 5, Epic “]
cube/size x has no effect if used in a 2d axis

pgfplotstodo.tex:2673 **Bug** [open, Priority 5, Epic “]
copy paste from the manual does not copy empty lines — which is quite bad for the 3d surface examples

This appears to be a known issue for pdf, with few available work-arounds. The listings package suffers from it as well (at least regarding trailing spaces/tabs); there are a couple of related questions at tex.sx

A way might be to use `\usepackage{accsupp}` with something like

```

\documentclass{article}

\usepackage{accsupp}

\begin{document}
\long\def\XXX{A
^^J
  ^^J
B}
\BeginAccSupp{method=escape,ActualText=\XXX}
First line

second line
\EndAccSupp{ }

\end{document}

```

Expected result: copy-pasting that segment should yield A (newline) B. But it does not work with newlines as it seems

One entry on tex.sx mentioned that Microsoft products can insert empty lines in copy-paste output (suggested solutions there was to generate such a pdf and include it as graphics unless I am mistaken)

I managed to get this up and running so far – but the result is unusable! both acrobat and xpdf get utterly confused unless one hits exactly on some invisible lines [\[see bugtracker/minimal_2.pdf\]](#)

```
\pdfcompresslevel=0
\documentclass{article}
\usepackage{pgfplots}
\usepackage{accsupp}
\pgfplotsset{compat=1.7}

\begin{document}

Test before

\begingroup
\catcode'\ =12\relax%
\catcode'\ ^M=13\relax%
\def^^M{^^J}%
\def\begin{\string\begin}%
\def\end{\string\end}%
\def\addplot{\string\addplot}%
\xdef\copypastable{%
\begin{tikzpicture}
\begin{axis}
\addplot3[surf] coordinates {
(0,0,0) (1,0,0) (2,0,0) (3,0,0)

(0,1,0) (1,1,0.6) (2,1,0.7) (3,1,0.5)

(0,2,0) (1,2,0.7) (2,2,0.8) (3,2,0.5)
};
\end{axis}
\end{tikzpicture}%
}\endgroup

\BeginAccSupp{%
method=escape,%
ActualText={\copypastable}}
\begin{verbatim}
\begin{tikzpicture}
\begin{axis}
\addplot3[surf] coordinates {
(0,0,0) (1,0,0) (2,0,0) (3,0,0)

(0,1,0) (1,1,0.6) (2,1,0.7) (3,1,0.5)

(0,2,0) (1,2,0.7) (2,2,0.8) (3,2,0.5)
};
\end{axis}
\end{tikzpicture}
\end{verbatim}
\EndAccSupp{}}%

Text middle

\begingroup
\catcode'\ =12\relax%
```

```

\catcode'\^^M=13\relax%
\def^^M{^^J}%
\def\begin{\string\begin}%
\def\end{\string\end}%
\def\addplot{\string\addplot}%
\xdef\copypastable{%
\begin{tikzpicture}
  \begin{axis}[small,view={0}{90}]
    \addplot3[surf,shader=interp,patch type=bilinear,
      mesh/color input=explicit]
      coordinates {
        (0,0,0) [color=blue] (1,0,0) [color=green]

        (0,1,0) [color=yellow] (1,1,1) [color=red]
      };
  \end{axis}
\end{tikzpicture}
}\endgroup

\BeginAccSupp{%
  method=escape,%
  ActualText={\copypastable}}
\begin{verbatim}
\begin{tikzpicture}
  \begin{axis}[small,view={0}{90}]
    \addplot3[surf,shader=interp,patch type=bilinear,
      mesh/color input=explicit]
      coordinates {
        (0,0,0) [color=blue] (1,0,0) [color=green]

        (0,1,0) [color=yellow] (1,1,1) [color=red]
      };
  \end{axis}
\end{tikzpicture}
\end{verbatim}
\EndAccSupp{}}%

Text after
\end{document}

```

Problems here:

- one has to mark the right segments, and these can only be found by trial and error
- hitting the wrong one will copy nothing or only parts
- in the manual, I often had the wrong content in my clipboard (some older state of the clipboard, no idea where that came from)

pgfplotstodo.tex:2677

Bug [open, Priority 5, Epic “]

tikz intersections: the “store in macro” methods do not use global macros. Should they!?

pgfplotstodo.tex:2684

Bug [open, Priority 5, Epic “]

fill between:

```
addplot [draw=green!80,fill=green!20] fill between [of=lower and axis, soxft clip={(inters
```

produces no “unknown key soxft clip” error

pgfplotstodo.tex:2722

Bug [open, Priority 5, Epic “]

fill between / intersections lib bug: spurious intersections

[http://tex.stackexchange.com/questions/180127/](http://tex.stackexchange.com/questions/180127/stacking-plots-in-animation-using-fill-between-library-with-dynamic-calculation/180299#180299)

[stacking-plots-in-animation-using-fill-between-library-with-dynamic-calculation/180299#180299](http://tex.stackexchange.com/questions/180127/stacking-plots-in-animation-using-fill-between-library-with-dynamic-calculation/180299#180299)

analysis in ~/tmp/bug_intersectionlibs.tex: problem seems to be the duplicate detection

problem: almost parallel lines:

```
\begin{tikzpicture}
\makeatletter
\def\A{%
  \pgfsyssoftpath@movetotoken{15.60165pt}{0.60783pt}%
\pgfsyssoftpath@linetotoken{0pt}{0pt}%
}%
\def\B{%
  \pgfsyssoftpath@movetotoken{15.60165pt}{0.81604pt}%
\pgfsyssoftpath@linetotoken{0.0pt}{0.33199pt}%
}%
\draw[blue] \pgfextra{\pgfsetpathandBB\A};
\draw[red] \pgfextra{\pgfsetpathandBB\B};
  \pgfintersectionofpaths%
    {%
      \pgfsetpath\A
    }%
    {%
      \pgfsetpath\B
    }%

\pgfmathloop%
\ifnum\pgfmathcounter>\pgfintersectionsolutions\relax%
\else%
\draw[red] \pgfextra{\pgftransformshift{\pgfpointintersectionsolution{\pgfmathcounter}}\mes
node[anchor=center] {\pgfmathcounter/\pgfintersectionsolutions};
\repeatpgfmathloop%

\end{tikzpicture}
```

pgfplotstodo.tex:2726

Bug [open, Priority 5, Epic “]

pgfplotstable appears to have problems with # in col names, compare
[http://tex.stackexchange.com/questions/175395/
how-can-csv-files-be-put-into-latex-without-having-to-adjust-much](http://tex.stackexchange.com/questions/175395/how-can-csv-files-be-put-into-latex-without-having-to-adjust-much)

pgfplotstodo.tex:3053

Bug [open, Priority 5, Epic “]

[http://tex.stackexchange.com/questions/104010/
why-does-loading-pgfplots-after-tikz-break-the-default-layers-in-a-tikzpicture](http://tex.stackexchange.com/questions/104010/why-does-loading-pgfplots-after-tikz-break-the-default-layers-in-a-tikzpicture)
is still active .

Solution: backgrounds lib must be loaded after pgfplots. Apparently, the backwards layer stuff overwrites hooks of the backgrounds lib

pgfplotstodo.tex:3086

Bug [open, Priority 5, Epic “]

default tick labels are placed outside of displayed area if
`unit vector ratio*=1` is in effect

```
\documentclass{article}
\usepackage{pgfplots}
\usetikzlibrary{decorations.markings}
\pgfplotsset{compat=1.8}

\begin{document}

\begin{tikzpicture}
\begin{axis}[axis lines = middle,smooth,xlabel =  $x$ , ylabel =  $y$ , minor tick num =1, grid
\addplot[smooth, thick, -stealth,variable=\t, domain=0:2, ]
({t^2}, {t^4});

\addplot[thick, red,-stealth,samples=8,variable=\t, domain=0:2,quiver={
u=2*t, v=4*t^3, scale arrows=0.05,
}]
({t^2}, {t^4});
\end{axis}
\end{tikzpicture}

\end{document}
```

pgfplotstodo.tex:3099

Bug [open, Priority 5, Epic “]

`|ytick=data|` does not work together with stacked plots because, by design, it merely considers coordinates of the *first* plot. That’s nonsense for stacked plots.

pgfplotstodo.tex:3123	<p>Bug [open, Priority 5, Epic “]</p> <p>Tick labels suffer from inexact arithmetics in Tikz foreach:</p> <p>KAPUTT:</p> <pre>\foreach \x in {1,1.1,...,2} {\x\par}</pre> <p>OK:</p> <pre>\foreach \x in {1,1.1,...,2.001} {\x\par}</pre>
pgfplotstodo.tex:3127	<p>Bug [open, Priority 5, Epic “]</p> <p>ytick=data combined with minor y tick num does not work as expected: minor tick lines will be skipped below the lowest limit.</p>
pgfplotstodo.tex:3133	<p>Bug [open, Priority 5, Epic “]</p> <p>pgfplotstable does not apply postproc cell content in every row styles</p> <p>see http://tex.stackexchange.com/questions/111492/postprocess-row-with-pgfplotstable</p>
pgfplotstodo.tex:3139	<p>Bug [open, Priority 5, Epic “]</p> <p>no markers: it appears to be impossible to switch off markers, only for scatter plots.</p> <p>See http://tex.stackexchange.com/questions/105850/pgfplots-points-with-no-marks-but-errorbars</p>
pgfplotstodo.tex:3181	<p>Bug [open, Priority 5, Epic “]</p> <p> ... and rounding:</p> <p>Generell erscheint mir die ...-Syntax nicht robust. Bei kleinen, durchaus nicht ungewöhnlichen, Intervallen kommt es zu Rundungsfehlern:</p> <p>Hauptgitter:</p> <pre>ytick={0.99,1.00,1.01,1.02,1.03,1.04,1.05,1.06,1.07,1.08}</pre> <p>Hilfsgitter:</p> <pre>minor ytick={0.99,0.991,...,1.08}</pre>

Fhrt dazu, dass die Hilfslinien mit zunehmender Gre immer weiter von den Hauptgitterlinien verschoben sind, obwohl diese aufeinanderliegen sollten. Mit Hilfsgitter komplett ausgeschrieben:

```
minor ytick={0.99,0.991,0.992,0.993,.....,1.08}
```

passt es. Die ...-Syntax ist daher absolut mit Vorsicht zu genieen.

pgfplotstodo.tex:3185 **Bug** [open, Priority 5, Epic “]
box plots with draw direction=y and xtick=data fail to provide the correct xtick locations

pgfplotstodo.tex:3210 **Bug** [open, Priority 5, Epic “]
presets for mark size and tiny / footnotesize are wrong

pgfplotstodo.tex:3228 **Bug** [open, Priority 5, Epic “]
clipping of tick lines does not respect the line width of the axis lines.

<http://tex.stackexchange.com/questions/91517/how-to-make-the-tick-thickness-as-the-axis-line/91645#91645>

pgfplotstodo.tex:3252 **Bug** [open, Priority 5, Epic “]
Inf geht nicht im math parser:

```
\documentclass[a4paper]{article}

\usepackage{pgfplots}

\begin{document}

\pgfmathfloatparsenumber{Inf}
\pgfmathresult

{
\pgfkeys{/pgf/fpu}
\pgfmathparse{Inf}
\pgfmathresult
}

\end{document}
```


pgfplotsstodo.tex:3271

Bug [open, Priority 5, Epic “]

`\disablelogfilter,ymax=1e-6,ymode=log—` fails. Apparently, the coordinate is not parsed at all.

pgfplotsstodo.tex:3283

Bug [open, Priority 5, Epic “]

`|\closedcycle|` does not work together with jumps / interrupted plots

pgfplotsstodo.tex:3307

Bug [open, Priority 5, Epic “]

auto tick label assignment can sometimes produce strange results:

[see [bugtracker/minimal_3.pdf](#)]

```
\documentclass{article}
\usepackage{pgfplots}
\pgfplotsset{compat=1.6.1}

\begin{document}

\begin{tikzpicture}
\begin{axis}[%
scale only axis,
xmin=0, xmax=0.02,
ymin=-1, ymax=1]
\end{axis}
\end{tikzpicture}%
\end{document}
```

See also the examples for boxplots in the manual

pgfplotsstodo.tex:3349

Bug [open, Priority 5, Epic “]

the3d clip path is sometimes bad: perhaps it should be the bounding box instead!?

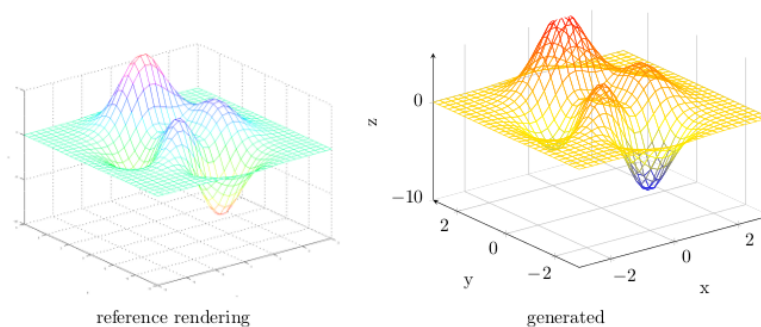


Figure 44: Mesh plot. `meshPlot`

pgfplotstodo.tex:3381	<p>Bug [open, Priority 5, Epic “]</p> <p>One cannot manually load a table inside of a pgfplots axis if it contains empty lines: the scanline callback is active</p>
pgfplotstodo.tex:3385	<p>Bug [open, Priority 5, Epic “]</p> <p> ybarlegend— does not contain ybar (sourceforge 3482770)</p>
pgfplotstodo.tex:3389	<p>Bug [open, Priority 5, Epic “]</p> <p> refstyle does only include partial information of the reference style. (sourceforge 3482770)</p>
pgfplotstodo.tex:3395	<p>Bug [open, Priority 5, Epic “]</p> <p>Using square brackets as first char inside of \legend leads to a failure: \legend{[\ion{Ne}{2}],...}.</p> <p>Cause: the \legend command does not properly insert [] in front of every entry (as it ought to).</p>
pgfplotstodo.tex:3401	<p>Bug [open, Priority 5, Epic “]</p> <p>Adding error bars/.cd to \addplot options causes the \ref image to fail.</p> <p>The problem is the key filtering apparently: it discards the /pgfplots/.cd but leaves the error bars/.cd.</p>
pgfplotstodo.tex:3405	<p>Bug [open, Priority 5, Epic “]</p> <p>quiver plots: the clip path does not respect arrow paths</p>
pgfplotstodo.tex:3462	<p>Bug [open, Priority 5, Epic “]</p> <p>Alignment bug: axis x line=middle combined with a yshift shifts the xlabel incorrectly: [see bugtracker/minimal_4.pdf]</p> <pre> \documentclass{report} \usepackage{pgfplots} \pgfplotsset{compat=1.3} \begin{document} \begin{tikzpicture} \draw (0,0) circle (5pt); \begin{scope}[yshift=-3cm] \begin{axis}[width=10cm,height=3cm,xlabel={x\$}, axis x line = middle] \addplot coordinates { (0,1) (1,-1) (2,1) </pre>

```

    };
    \end{axis}
    \end{scope}
    \end{tikzpicture}
\end{document}

```

Using `xlabel style = {yshift=3cm}` in the plot will correctly position the x label (to its default position).

`pgfplotstodo.tex:3539` **Bug** [open, Priority 5, Epic “]
cannot provide clip path usage in pgfplots commands because of the nested scopes.

to reproduce, try to give `\addplot+[/tikz/clip]` to some plot.

`pgfplotstodo.tex:3547` **Bug** [open, Priority 5, Epic “]
`|\pgfplotsforeachungrouped|` cannot be combined with three or more arguments like `\foreach`

`pgfplotstodo.tex:3646` **Bug** [open, Priority 5, Epic “]
the below example of a latex file gives the following error upon the 2nd run of latex. The first run works fine. This happens both when running `dvilualatex` and just `latex`, both from TexLive 2011.

The error:

```

...
(/usr/local/texlive/2011/texmf-dist/tex/generic/tex4ht/color.4ht)
(/usr/local/texlive/2011/texmf-dist/tex/generic/tex4ht/html4.4ht)
(/usr/local/texlive/2011/texmf-dist/tex/generic/tex4ht/html4-math.4ht)
(./epub.aux)
! Missing \endcsname inserted.
<to be read again>

```

```

\protect
1.30 \ref{govconsumptionlegend}

```

?

```

\makeatletter

```

```

\def\HCode{\futurelet\HCode\HChar}\def\HChar{\ifx"\HCode\def\HCode"##1"{\Link##1}\expandafter

```

```

\makeatother

```

```

\HCode "xhtml,png,charset=utf-8".a.b.c.

\documentclass[11pt,a4paper]{book}

\def\pgfsysdriver{pgfsys-tex4ht.def}
\usepackage{pgfplots}

\pgfplotsset{width=\textwidth,compat=1.3,every axis/.append style={font=\footnotesize},cyc

\begin{document}
\begin{tikzpicture}

\begin{axis}[ylabel=\%,x tick label style={ /pgf/number format/1000 sep=},ymin=0,xmin=1950
\addplot[smooth,solid] coordinates {
(1950,12.98732304) (1951,11.18937899) (1952,10.63447043) (1953,11.25741618) (1954,11.35201
};
\addlegendentry{Country 1}
\addplot[smooth,dotted] coordinates {
(1950,8.90574995) (1951,9.181850378) (1952,9.4040808) (1953,9.790597533) (1954,9.766571438
};
\addlegendentry{Country 2}
\end{axis}\end{tikzpicture}

\ref{govconsumptionlegend}

\end{document}

```

pgfplotstodo.tex:3895

Bug [open, Priority 5, Epic “]

<http://groups.google.at/group/comp.text.tex/msg/adcb1d071c2cba40>

If I use a yshift in a scope to draw two graphs superimposed, the x label in the second plot (the one in the yshift scope) is not positioned correctly. I need to manually add another yshift, with the same value in the opposite direction, to get the label at the correct place. This happens if the `axis x line = middle` option is used. Without that option, the x label is positioned correctly.

Example follows: [\[see bugtracker/minimal_5.pdf\]](#)

```

\documentclass{article}

\usepackage{pgfplots}

\pgfplotsset{compat=1.3}

\begin{document}

\begin{tikzpicture}
\begin{axis}[width=10cm,height=3cm,xlabel={\$x\$}]
\addplot coordinates {
(0,1) (1,-1) (2,1)
};

```

```

\end{axis}
\begin{scope}[yshift=-3cm]
\begin{axis}[width=10cm,height=3cm,xlabel={\textit{x}},
axis x line = middle]
\addplot coordinates {
(0,1) (1,-1) (2,1)
};
\end{axis}
\end{scope}
\end{tikzpicture}
\end{document}

```

Using `xlabel style = {yshift=3cm}` in the second plot will correctly position the x label (to its default position).

Gab

`pgfplotstodo.tex:4071` **Bug** [open, Priority 5, Epic “] after using a preset key (`milli`) with x SI prefix, Next, I want to switch to the normal mode, so I write simply: `x SI prefix=none`, unfortunately the ‘none’ value is undefined and the compilation can not proceed

`pgfplotstodo.tex:4137` **Bug** [open, Priority 5, Epic “] check y tick scale label for 2nd y axis

`pgfplotstodo.tex:4154` **Bug** [open, Priority 5, Epic “] `groupplots` + extra braces or `foreach` are incompatible.

`pgfplotstodo.tex:4158` **Bug** [open, Priority 5, Epic “] `numplotspertype` and `forget plot` and `ybar interval` yields errors.

`pgfplotstodo.tex:4164` **Bug** [open, Priority 5, Epic “] expression plotting and empty ‘y’ results in errors. Perhaps it would be better to handle that explicitly somehow? (occurs for `hist` when one input line is empty)

`pgfplotstodo.tex:4184` **Bug** [open, Priority 5, Epic “] `/pgfplots/samples at` and `/tikz/samples at` work on the same axe. Tantau says that this key support `foreach` statement and thus the dots notation. However, when I want to use two or more different dots notation within `pgfplots`, latex crashes ! Here is an example which clarify this issue :

```

\addplot+[mark=none,variable={\t}, samples at = {\foreach \x in {0,10,...,180,200,...340}

```

<code>pgfplotstodo.tex:4194</code>	<p>Bug [open, Priority 5, Epic “]</p> <p>groupplots: mixing 2d/3d in one groupplot doesn't reset 'zmin,zmax' ?</p>
<code>pgfplotstodo.tex:4215</code>	<p>Bug [open, Priority 5, Epic “]</p> <p>3D axes: it is difficult to get an 1:1 correspondence to tikz.</p>
<code>pgfplotstodo.tex:4231</code>	<p>Bug [open, Priority 5, Epic “]</p> <p>3D axis: provide support for manual axis configuration, - depth (n vector), - foreground/background, - tick label axes, - ...</p>
<code>pgfplotstodo.tex:4260</code>	<p>Bug [open, Priority 5, Epic “]</p> <p>plot graphics: <code>\ref</code> legend doesn't work properly</p>
<code>pgfplotstodo.tex:4281</code>	<p>Bug [open, Priority 5, Epic “]</p> <p>ternary axes: the 'marker clipping' doesn't work (naturally)</p>
<code>pgfplotstodo.tex:4291</code>	<p>Bug [open, Priority 5, Epic “]</p> <p>polar axes:</p> <ul style="list-style-type: none"> • ✓ is wrong since 'near ticklabel' anchor uses pointunitx which is not correctly initialised for polar axes. • axis equal • ✓ data scaling needs to be disabled for X axis. • ✓ auto tick labels work only for the case of disabledatascaling
<code>pgfplotstodo.tex:4296</code>	<p>Bug [open, Priority 5, Epic “]</p> <p>contour: the table/meta=2 default is wrong.</p>
<code>pgfplotstodo.tex:4309</code>	<p>Bug [open, Priority 5, Epic “]</p> <p>dimension too large sanity checking: TeX uses the maximum value instead. Perhaps that can be checked?</p>

- pgfplotstodo.tex:4345 **Bug** [open, Priority 5, Epic “]
the quiver/scale arrows thing might need an “auto” option. If I don’t add it now, it’ll probably never work in the future.
- pgfplotstodo.tex:4350 **Bug** [open, Priority 5, Epic “]
‘1.23456e4;’ in a log plot resulted in hard-to-read error messages. Improve sanity checking here.
- pgfplotstodo.tex:4369 **Bug** [open, Priority 5, Epic ‘Usability’]
avoid dimension too large errors which occur due to a data range restrictions. Example: data range = 0:6000 view range = 0:1 \rightsquigarrow results in error. But that’s easy to detect! Just compute the point coordinate in float (after the scaling is complete). Then, install a filter somewhere. perhaps an “a posteriori” filter in the pointxyz command?

DUPLICATE: the nasty dimension-to-large message could probably be avoided if pgfplots would simply clip the results to TeX’s range
- pgfplotstodo.tex:4383 **Bug** [open, Priority 5, Epic “]
`|yticklabels={<list>},extra y ticks=...`— is incompatible since the extra ticks share the same tick typesetting routine (which, in turn, queries the `|listi`).
- pgfplotstodo.tex:4397 **Bug** [open, Priority 5, Epic “]
The ‘text depth’ in legend entries is incompatible with ‘text width’. The problem: text width is implemented using `\begin{minipage}[t]` so its contents is all in the depth. Setting text depths overrides the height!
- pgfplotstodo.tex:4407 **Bug** [open, Priority 5, Epic “]
one can’t provide ‘disable log filter’ to addplot (but it might be interesting)
- pgfplotstodo.tex:4411 **Bug** [open, Priority 5, Epic “]
FPU: atan doesn’t check for unbounded inputs.
- pgfplotstodo.tex:4416 **Bug** [open, Priority 5, Epic “]
unbounded inputs: improve warning messages: they should not contain low level FPU args.

- `pgfplotstodo.tex:4422` **Bug** [open, Priority 5, Epic “]
the user interface to set `'tickwidth=0'` for a SINGLE axis is not very good: it seems one needs `'xtick style=/pgfplots/tickwidth=0'` to do so... \rightsquigarrow can be solved if `tickwidth` has a family, I guess. Something like `'draw'` which will not be pulled by `pgfplots`. But then remains a problem of key paths.
- `pgfplotstodo.tex:4430` **Bug** [open, Priority 5, Epic “]
I have seen that `'plot table'` with very large files can produce pool size problems – even if the coordinates are all filtered away. In other words: the code can't simply read a file and throw its contents away. The problem appears to be some math parsing using the `table/x` expr and friends. `'pool size = names of control sequences and file name'` \rightsquigarrow the math parser could be improved with `ifcsname`
- `pgfplotstodo.tex:4445` **Bug** [open, Priority 5, Epic “]
providing `zmin/xmax` to an axis activates 3D mode, ok – but lower dimensional input routines appear to fail.
- `pgfplotstodo.tex:4449` **Bug** [open, Priority 5, Epic “]
one can't provide `'scale'` as argument to a (3d) axis
- `pgfplotstodo.tex:4458` **Bug** [open, Priority 5, Epic “]
it may still happen that log-axes get only **one** tick label (in my case $10^{-0.2}$). That should never happen. The range is about `ymin=4.7e-1`, `ymax=9.5e-1`
- `pgfplotstodo.tex:4462` **Bug** [open, Priority 5, Epic “]
log samples in plot expression for 3D plots
- `pgfplotstodo.tex:4466` **Bug** [open, Priority 5, Epic “]
different log bases and gnuplot
- `pgfplotstodo.tex:4480` **Bug** [open, Priority 5, Epic “]
I tried placing a named coordinate inside one axis and using it in another. It failed.
- CF: The axis is drawn inside of its own picture which will only be shifted if everything has been drawn. That will be the origin of this problem I guess

Miraculously I can use the coordinate outside axis env. So I have reached the following solution:

- pgfplotstodo.tex:4486 **Bug** [open, Priority 5, Epic “]
plot coordinates doesn’t check too well if 1. addplot3 is used but only two coords are given 2. addplot is given but three coordinates are provided (also for plot expression)
- pgfplotstodo.tex:4499 **Bug** [open, Priority 5, Epic “]
the compat things are not yet complete: I wanted to check when it is really necessary (for example if ‘x dir’ is used)
- pgfplotstodo.tex:4504 **Bug** [open, Priority 5, Epic “]
the nodes near coords feature produces unexpected results when used together with markers \rightsquigarrow this is due to the default configuration of scatter plots.
- pgfplotstodo.tex:4515 **Bug** [open, Priority 5, Epic “]
the ybar style won’t be set inside of `\label{}`
- pgfplotstodo.tex:4520 **Bug** [open, Priority 5, Epic “]
axis equal for semilog plots is not correct (?)
- pgfplotstodo.tex:4528 **Bug** [open, Priority 5, Epic “]
backwards compatibility problem: axis descriptions can’t contain `/pgfplots/` styles any longer! This is a key path issue :-)
- pgfplotstodo.tex:4533 **Bug** [open, Priority 5, Epic “]
BUG: in empty axes, `'xtick=\empty'` is ignored.
- pgfplotstodo.tex:4550 **Bug** [open, Priority 5, Epic “]
The automatic tick labeling sometimes produces inconsistent or confusing labels: 1. engineering and fixed number style are mixed up. 2. If range of an axis is so small that the labels differ only on the third decimal, still only two decimals are used.

pgfplotstodo.tex:4565

Bug [open, Priority 5, Epic “]

3D: error bars and stacked plots need to be updated.

Is this still current? There has been a major revision some time ago...

pgfplotstodo.tex:4603

Bug [open, Priority 5, Epic “]

addplot3 vs addplot:

3D: the use of `\addplot3` and `\addplot` is not sanitized properly
Possibilities:

- used `\addplot` when `\addplot3` should have been used
- used `\addplot3` where `\addplot` should have been used.

What can happen here!? Shouldn't this work in every case?

- The "xtick" value is not applied unless there is a coordinate in the x range:
\$\\leadsto\$ that's the handling of empty figures...

not working:

```
\begin{axis}[xtick=0]
\end{axis}
```

not working:

```
\begin{axis}[xmin=-5,xmax=5,xtick=0]
\end{axis}
```

not working:

```
\begin{axis}[xmin=-5,xmax=5,xtick=0]
\addplot coordinates { (-10, 0) };
\end{axis}
```

working:

```
\begin{axis}[xmin=-5,xmax=5,xtick=0]
\addplot coordinates { (0, 0) };
\end{axis}
```

pgfplotstodo.tex:2936

Bug [open, Priority 4, Epic “]

adding a post action with decoration to a pgfplots style results in an error if markers are active

pgfplotstodo.tex:2129

Bug [open, Priority 3, Epic “]

TikZ wastes time during its point evaluations (i.e. expressions of sorts $(1,2)$): it calls `tikz@checkunit` in order to check for units and throws the math result away (and computes it again afterwards).

pgfplotstodo.tex:2427

Bug [open, Priority 3, Epic “]

contour plot handler does not allow 'name path'.

pgfplotstodo.tex:2888

Bug [open, Priority 3, Epic “]

fill between: `soft clip={domain=1:2}` might fail if the function in question touches the y boundary within the domain. In this case, the soft clip path produces unwanted side-effects.

Cure: enlarge the soft clip path generated by `domain`. It should be bigger than the function in question (with respect to y)

(I have a not-quite-minimal example in my tmp folder)

pgfplotstodo.tex:2997

Bug [open, Priority 3, Epic “]

Usability issues around histograms: <http://tex.stackexchange.com/questions/151411/histogram-frequeention-polygon/151551#151551>

[see [bugtracker/minimal_6.pdf](#)]

```
\documentclass{standalone}
\usepackage{tikz}
\usetikzlibrary{calc,intersections,through,backgrounds,snakes}
\usepackage{pgfplots}
\pgfplotsset{compat=1.8}
\usepgfplotslibrary{statistics}
\begin{document}
\begin{tikzpicture}
\begin{axis}[
width=1*\textwidth,
height=8cm,
ymin=0,
ymax=7,
title=Histogram lichaamslengte,
ybar interval,
xticklabel={[\pgfmathprintnumber\tick--\pgfmathprintnumber\nexttick []],
\addplot+[hist={bins=4, data max=12,data min=0}]
table[row sep=\\,y index=0] {
data\\
1\\ 2\\ 1\\ 5\\ 4\\ 10\\ 4\\ 5\\ 7\\ 10\\ 9\\ 8\\ 9\\ 9\\ 11\\
};

\addplot[
%
% there seems to be a bug in pgfplots which would shift the two
% 'hist' plots as if both were bar plots.
% This is one possible work-around:
forget plot,
%
mark=*,
hist={bins=4, data max=12,data min=0,
% this here should *not* become an ybar interval:
handler/.style={sharp plot},intervals=false,
},
%
% .. but since the other plot is shown with intervals, we should
% shift this here accordingly:
shift={({axis direction cs:1.5,0})},
]
table[row sep=\\,y index=0] {
data\\
```

```

1\\ 2\\ 1\\ 5\\ 4\\ 10\\ 4\\ 5\\ 7\\ 10\\ 9\\ 8\\ 9\\ 9\\ 11\\
};
\end{axis}
\end{tikzpicture}
\end{document}

```

Problems:

- point meta uses the wrong values (try out nodes near coords)
- ybar interval is active for the second plot
- interval=false should be deduced automatically

pgfplotstodo.tex:3159

Bug [open, Priority 3, Epic “]
units and square brackets

Dann habe ich noch eine Anmerkung bzgl. der Verwendung von Einheiten in Achsbeschriftungen

----- Zitat

ANMERKUNG;

Die eckigen Klammern drfen nicht um Einheitenzeichen gesetzt werden. Angaben wie [kg] sind

----- Ende Zitat

’DIN 461: Graphische Darstellung in Koordinatensystemen’ gibt Beispiele, wie es gemacht we

Hintergrund: formaler Zusammenhang ist $X=\{X\}[X]$. Das heit: $X=5N \rightarrow \{X\}=5$ und $[X]=N$. Unsinn

Wie gesagt: leider eine sehr schlechte Angewohnheit und den meisten unbekannt oder schlich

While I understand the problem, I am inclined to keep it as-is... I cannot break backwards compatibility now, and I hear few complaints. I suppose the units stuff could be reviewed at some time

pgfplotstodo.tex:3275

Bug [open, Priority 3, Epic “]
gnuplot interface: unbounded coords are not recognized as such (type=u).

pgfplotstodo.tex:3343

Bug [open, Priority 3, Epic “]
x tick scale label for style `tiny` has an unsuitable shift

pgfplotstodo.tex:3934

Bug [open, Priority 3, Epic “]
`|\addplottable[blue]`— ignores the color options!

pgfplots.stodo.tex:4653

Bug [open, Priority 3, Epic “]

3D case : tick/grid lines are on top of the axis lines. This leads to poor quality.

... but nobody has ever complaint so far

pgfplots.stodo.tex:1635

Bug [open, Priority 2, Epic “]

The following fails to compile with lualatex (due to the double quotes apparently). It works in pdflatex

Low prio because the point meta is not actually used – and if it is used correctly, it works in both lualatex and pdflatex

```
\documentclass{standalone}
\usepackage{pgfplots}
\pgfplotsset{%
    compat=newest,
}
\begin{document}
\begin{tikzpicture}
\begin{axis}[
    %point meta=explicit symbolic,
    %nodes near coords=\pgfplotspointmeta,
]
\addplot table[x index={1}, y expr=\coordindex, header=false, meta index={0}] {
    "i" 62.099
    "i" 62.046
    "i" 56.304
    "i" -44.258
    "2" -28.826
    "i" 18.740
    "i" -14.653
    "i" 14.402
    "i" -12.907
    "i" 12.295
};
\end{axis}
\end{tikzpicture}
\end{document}
```

pgfplots.stodo.tex:1887

Bug [open, Priority 2, Epic “]

It seems that quiver combined with `every arrow` and `-\Latex[width=2pt]` produces some unwanted side effect:

it produces entirely different output than without the arrow spec

```

\documentclass{standalone}
\usepackage{pgfplots}
\pgfplotsset{compat=1.11}
\usetikzlibrary{arrows.meta}
\begin{document}
\begin{tikzpicture}
\begin{axis}[domain=-3:3, view={0}{90}]
\addplot3[blue,
point meta=x,
quiver={
u=-x,
v=-y,
scale arrows=0.085,
every arrow/.append style={%
-Latex[width=2pt]},
%arrows={-Latex[width=2pt,length=3pt]}},
},
},
samples=21,
]
{0};
\end{axis}
\end{tikzpicture}

\end{document}

```

pgfplotstodo.tex:2819

Bug [open, Priority 2, Epic “]

context + color mix produces spurious shifts

I’m using pgfplots to create some bar charts with error bars in ConTeXt, and I want to use custom colours for them. This works, but if I mix a custom colour with another colour, it results in a gap between the error bar line and the error bar mark. If two custom colours are mixed, the gap seems to be doubled. Mixing with predefined colours works normally. MWE:

```

\usemodule[tikz]
\usemodule[pgfplots]

\definecolor [Blue] [h=3465a4]
\definecolor [White] [h=ffffff]

\pgfplotsset{compat=newest}

\starttext
\starttikzpicture

```

```

\startaxis[ybar, error bars/y dir=both, error bars/y explicit]
\addplot+[blue!50!white] coordinates {(1,5) +- (0,3)};
\addplot+[Blue] coordinates {(1,5) +- (0,3)};
\addplot+[Blue!50!white] coordinates {(1,5) +- (0,3)};
\addplot+[Blue!50!White] coordinates {(1,5) +- (0,3)};
\stopaxis
\stoptikzpicture
\stoptext

```

Here you can see the result:

<http://666kb.com/i/cl86t0mfpin35tth7.png>

pgfplotstodo.tex:2932

Bug [open, Priority 2, Epic “]

Adding user decorations to axis lines might interfere with the discontinuities which are also decorations, compare

http://tex.stackexchange.com/questions/160936/random-decoration-of-plot-axis-messes-up-direction-of-axis-arrow/161025#comment368659_161025

I already added Jake’s workaround to the code, but might still need more cleanup (and for non-centered axis lines as well)

pgfplotstodo.tex:3001

Bug [open, Priority 2, Epic “]

Loading a pgfplots library via `\usetikzlibrary{pgfplots...}` fails unless pgfplots is loaded. This should be reported properly (or perhaps load pgfplots implicitly?)

pgfplotstodo.tex:3045

Bug [open, Priority 2, Epic “]

some issue regarding extra ticks in log axes has been reported in <http://tex.stackexchange.com/questions/148703/bug-pgfplots-extra-ticks>

pgfplotstodo.tex:3110

Bug [open, Priority 2, Epic “]

The combination of 3d unit vectors and `scale mode=stretch to fill` is useful, but unsupported.

I made a brief experiment to verify that it does something useful if

- the data scaling is disabled in `setunitvector`
- the first if branch of `...@prepare@plotbox@limits` is activated.

References: <http://tex.stackexchange.com/questions/139686/controlling-orientation-in-3d-pgf-plots>

- pgfplotstodo.tex:3190 **Bug** [open, Priority 2, Epic “]
boxplots: predefined legend entries need to be improved
- pgfplotstodo.tex:3279 **Bug** [open, Priority 2, Epic “]
gnuplot interface + raw gnuplot does not handle log scale properly (?)
- pgfplotstodo.tex:3319 **Bug** [open, Priority 2, Epic “]
new layered graphics stuff: the style changes of the layer config are read too late; it is impossible to overwrite them within the same axis (for example using `set layers,tick style={on layer=...}`)
- pgfplotstodo.tex:3658 **Bug** [open, Priority 2, Epic “]
#3213889 hyperref boxes are in wrong position for vertical labels

see <http://tex.stackexchange.com/questions/13364/how-to-make-pgfplots-vertical-labels-have-proper-hyperref-erence-box> for problem description and potential fixes
- pgfplotstodo.tex:3753 **Bug** [open, Priority 2, Epic “]
The clipping of tick lines uses the middle of axis lines; it does not incorporate the line width of the axis lines. [see [bugtracker/minimal_7.pdf](#)]

```
\documentclass{article}
\usepackage{pgfplots}
\pgfplotsset{compat=1.3,
  every axis/.append style={semithick},
  every tick/.append style={semithick,color=black},
  tick align=outside
}
\begin{document}
\thispagestyle{empty}
\begin{figure}[p]
\centering
\begin{tikzpicture}
\begin{axis}[xmin=0,
  xmax=30,
  ymin=0,
  ymax=1.2
]
\end{axis}
\end{tikzpicture}
\end{figure}
\end{document}
```


pgfplotstodo.tex:3780

Bug [open, Priority 2, Epic “]

can someone confirm the following behavior. The y label of a plot gets truncated in some circumstances if the external library is used. This happens for me if no title is specified for a plot. Consider the following example:

[see [bugtracker/minimal_8.pdf](#)]

```
\documentclass[11pt,a4paper]{article}

\usepackage{tikz}
\usepackage{pgfplots}

\pgfplotsset{compat=1.3}
\usepgfplotslibrary{external}
\tikzexternalize[force remake]

\begin{document}
\begin{tikzpicture}
\begin{axis}[y tick scale label style={inner sep=1pt}]
\addplot {x * 10^8};
\end{axis}
\end{tikzpicture}
\end{document}
```

pgfplotstodo.tex:4189

Bug [open, Priority 2, Epic “]

potential incompatibility: clickable and external. The clickable lib writes into pgfplots.djs which might cause multithreaded problems.

pgfplotstodo.tex:4302

Bug [open, Priority 2, Epic “]

OK : 'every node near coord/.append style=scale=0.7' NOT OK: 'every node near coord/.append style=scale=0.7,ybar' -> sequence of shift and scale matters ...

pgfplotstodo.tex:4315

Bug [open, Priority 2, Epic “]

view=090 and enlargelimits=auto is not always satisfactory: it disables enlarged limits, but for contours, I'd like to have it. What is to do?

pgfplotstodo.tex:4336

Bug [open, Priority 2, Epic “]

contour external doesn't handle explicitly provided matrix data (mesh/rows and mesh/cols) yet.

pgfplotstodo.tex:4340

Bug [open, Priority 2, Epic “]

contour external doesn't handle the ordering flag correctly.

- pgfplotstodo.tex:4355 **Bug** [open, Priority 2, Epic “]
the title style for ‘footnotesize’ is not as I want it to: it doesn’t respect the depth below the baseline. Or does it need a `\strut`?
- pgfplotstodo.tex:4575 **Bug** [open, Priority 2, Epic “]
interp shader is displayed transparently in evince

Bug in evince (for sure). What is to be done?
- pgfplotstodo.tex:2431 **Bug** [open, Priority 1, Epic “]
contour plot handler does not allow to specify draw and fill – which might be useful if just one contour is drawn/filled
- pgfplotstodo.tex:3011 **Bug** [open, Priority 1, Epic “]
The special feature
`patch,patch type=quadratic spline, point meta=none` which produces global paths appears to duplicate the low level path. I suppose this can only be seen in the resulting pdf file or in a debugger, but it makes a big difference when used together with decorations or fill between.

This feature should be documented in more places as well.

FOUND IT: the problem is stated incorrectly: the path is generated once (and only once). BUT: `\tikz@mode` is invoked twice, once by the mesh plot handler and once by tikz. This is idempotent, in general – but not if we have `name path=A` in place! In this case, the softpath will be *appended* every time `\tikz@mode` is being executed.

INACTIVE: at the time of this writing, the offending “append” feature of `name path` is inactive; this bug does not happen anymore
- pgfplotstodo.tex:3036 **Bug** [open, Priority 1, Epic “]
`|\usepackage[gray]{xcolor}` does not seem to work as good as for cmyk... in particular, the default color map is not being converted correctly!? Probably because xcolor does not convert the colors if they are RGB

This appears to be irrelevant because RGB gray colors can be translated losslessly to scalar gray values!?
- pgfplotstodo.tex:3353 **Bug** [open, Priority 1, Epic “]
Internal coordmath framework: it is not used everywhere

pgfplots.stodo.tex:3377

Bug [open, Priority 1, Epic “]

|lognumber format code— is a global variable and cannot be set for individual axes.

This applies to log ticks with fixed point as well.

pgfplots.stodo.tex:3679

Bug [open, Priority 1, Epic “]

CRASH: [see [bugtracker/minimal_9.pdf](#)]

```
\begin{tikzpicture}
  \begin{axis}[
    scale mode=scale uniformly,
    x={(1pt,0pt)},
    y={(-0.5pt,0.5pt)},
    z={(0pt,1pt)},
  ]

  % addplot3 works (with 3d coords):
  \addplot coordinates {
    (0,0) (1,0) (0,1)
  };

\end{axis}
\end{tikzpicture}
```

pgfplots.stodo.tex:3724

Bug [open, Priority 1, Epic “]

Using 0 in pgfplots coordinate systems does not necessarily mean “no offset”.

This is misleading. Bug sourceforge #3168030: [see [bugtracker/minimal_10.pdf](#)]

```
\documentclass[a4paper]{article}
\usepackage{german}
\usepackage[utf8]{inputenc}

\usepackage{pgfplots}

\usepackage{pgfplotstable}
\usepackage{booktabs}
\usepackage{array}
\usepackage{colortbl}

\begin{document}

\begin{tikzpicture}
  \begin{axis}[enlarge x limits=false, extra description/.code={\draw[very thick] (axis cs:2.5,0) -- ++(re
    \addplot coordinates{
      (0,1)
      (1,2)
      (2,3)
      (3,4)
      (4,5)};

  \end{axis}
\end{tikzpicture}

\begin{tikzpicture}
```

```

\begin{axis}[enlarge x limits=true, extra description/.code={\draw[very thick] (axis cs:2.5,0) -- ++(rel
\addplot coordinates{
(0,1)
(1,2)
(2,3)
(3,4)
(4,5)};
\end{axis}
\end{tikzpicture}
\end{document}

\end{document}

```

pgfplots.stodo.tex:3852

Bug [open, Priority 1, Epic “]

The legend has the `text depth=0.15em` initial configuration, which is extremely bad for legend entries with huge depth (large fractionals or formulas?)

pgfplots.stodo.tex:3972

Bug [open, Priority 1, Epic “]

The mark `list` produces a lot of

```

\XC@edef #1#2->\begingroup \ifnum \catcode '\!=13 \edef !{\string !}\fi \ifnum \catcode '\
[.....]
{\if}

\@@tmp ->.!80!black
{true}
{the character !}
Missing character: There is no ! in font nullfont!
{the character 8}
Missing character: There is no 8 in font nullfont!
{the character 0}
Missing character: There is no 0 in font nullfont!
{the character !}
Missing character: There is no ! in font nullfont!
{the character b}
Missing character: There is no b in font nullfont!
{the character l}
Missing character: There is no l in font nullfont!
{the character a}
Missing character: There is no a in font nullfont!
{the character c}
Missing character: There is no c in font nullfont!
{the character k}
Missing character: There is no k in font nullfont!
{\def}
{\else}

```

bugs. Probably fixed with more recent version of xcolor?

- pgfplotstodo.tex:4039 **Bug** [open, Priority 1, Epic “] providing `\legend{}` without any `\addplot` commands causes a problem
- pgfplotstodo.tex:4128 **Bug** [open, Priority 1, Epic “] the axis line combination styles can't be adjusted for 3D because they are evaluated too early.
- pgfplotstodo.tex:4325 **Bug** [open, Priority 1, Epic “] there are a lot of .code 2 args styles which do not support spaces between their arguments. Fix this.
- pgfplotstodo.tex:4402 **Bug** [open, Priority 1, Epic “] the `'/pgfplots/table/.search also'` is overwritten during `\addplot table` with `/.search also=/pgfplots`. That's not so good.
- pgfplotstodo.tex:4641 **Bug** [open, Priority 1, Epic “] In 3D case axis `[xyz]` line `!= box`, there is just ONE hyperplane. My implementation works only if either ALL are box or ALL are 'middle'.
- pgfplotstodo.tex:4676 **Bug** [open, Priority 1, Epic “] javascript stuff does not work if the complete figure is rotated (`sidewaysfigure`).
- pgfplotstodo.tex:4691 **Bug** [open, Priority 1, Epic “] javascript: incompatiblity with external library: 1. filenames: `\jobname` contains characters with incompatible catcodes and that funny `insdljs` package tries to assemble macros with these characters. \rightsquigarrow fixed; I simply use `pgfplotsJS` as temporary file name. 2. the images as such have corrupted forms \rightsquigarrow Can be fixed if `\usepackage{eforms}` is used BEFORE loading pgf. The reason: `\begin{Form}` and the shipout-hackery of the pgf externalization bite each other. `\begin{Form}` must come before the shipout hackery of pgf. 3. `\includegraphics` does not preserve PDF forms.
- pgfplotstodo.tex:4698 **Bug** [open, Priority 1, Epic “] the interrupt bounding box feature should still update the data bounding box. Otherwise, transformations may fail.

6 Feature Proposals PGFPlots

pgfplotstodo.tex:5502

Bug [open, Priority 5, Epic “]

Unbounded point meta data should be filtered out.

<http://tex.stackexchange.com/questions/164250/pgfplots-surf-plot-dont-draw-nan?lq=1>

However, it seems as if this “filter out” should not be done as for coordinates (which would filter out all adjacent patch segments). It should merely filter out the current one.

pgfplotstodo.tex:7435

Feature Proposal [open, Priority 6, Epic “]

It is certainly possible to write some sort of CELL-BASED ‘mesh/surf’ shader - a combination of ‘flat corner’ and cell based rectangles:

... perhaps combined with a matrix-like input file as in
<http://tex.stackexchange.com/questions/123719/drawing-a-large-binary-matrix-as-colored-grid-in-tikz>

imagesc

<http://tex.stackexchange.com/questions/255596/imagesc-in-tikz-with-non-symmetric-matrices-and-squared-axis>

<http://tex.stackexchange.com/questions/124276/matlab2tikz-imagesc-tikz-pgfplots-equivalent>

<http://tex.stackexchange.com/questions/255432/plotting-matrix-image-data?lq=1>

<http://tex.stackexchange.com/questions/154051/table-vs-plot-how-to-print-table-of-values-with-colors-representing-values?lq=1>

- every coordinate denotes a CELL instead of a corner,
- the “shader” maps the cdata into the colormap to determine the cell color
- details?
 - to get well-defined cells, I have to enforce either a non-parametric lattice grid or do a LOT of additional operations (?).
 - alternative: define N*M cells by N+1 * M+1 points.
 - perhaps a combination of both? \rightsquigarrow that’s more or less the same as ‘flat mean’ up to the further row/column pair

- it would be generally useful to have an "interval" or "cell" mode: the idea is that every input coordinate defines an interval (1d) or a cell (2d). To define the last cell, one needs to add one "mesh width" somehow. I just don't know where:
 - the artificial cell should be processed with the normal streams - including limit updates, stacking etc.
 - the artificial cell needs to know when the end-of-stream occurs. For 1d plots, that may be possible. For 2D plots, this information requires a valid 'cols' key.
 - I suppose it would be best to patch @stream@coord.. at least for the 'cell' mode.
 - Idea:
 - * the \pgfplots@coord@stream@coord implementation realizes the cell-mode: after every 'cols' coordinate, a further one is replicated. This needs the "last mesh width". Furthermore, it needs to accumulate a row vector, the "last row". This last row is need during stream@end to replicate the further row:
 - * the \pgfplots@coord@stream@end implementation has to realize the last step of cell mode: the replication of a further row. It also has to realize the implementation of 'interval' mode (replication of last coordinate). My idea is to simply use an applist for this row accumulation. The format should be compatible with \pgfplots@coord@stream@foreach@NORMALIZED. That doesn't produce problems, even when the end command is invoked within a foreach@NORMALIZED loop - because the loop has already ended.

pgfplotstodo.tex:4724

Feature Proposal [open, Priority 5, Epic '']

it would be nice to have an way to overcome weaknesses of the old pgfplots without breaking everything.

Idea: \usepackage{pgfplots2} ... or compat=2.0 ?

This affects

- changes covered already by compat level
- key naming conventions, compare <http://tex.stackexchange.com/questions/315812/is-there-a-general-rule-when-to-write-pgfplots-keywords-together>
- trig format plots
- ?

pgfplotstodo.tex:4728

Feature Proposal [open, Priority 5, Epic “]

add support for `list` and `make` under windows. Perhaps powershell script or bat file?

pgfplotstodo.tex:4763

Feature Proposal [open, Priority 5, Epic “]

Loading matrix data which contains just Z coordinates is quite involved.

- streamline defaults which allow to read scanline number and the index in the current scanline as x resp y coordinates
- think about a “plain” matrix input routine

The current implementation already contains support for

```
\begin{tikzpicture}
  \begin{axis}
% this yields a 3x4 matrix:
\addplot3[surf] table[x expr=\pgfplotsscanlinecurrentlength,y expr=\pgfplotsscanlineindex,
0
0
0
0

0
0.6
0.7
0.5

0
0.7
0.8
0.5

];
\end{axis}
\end{tikzpicture}
```

pgfplotstodo.tex:4771

Feature Proposal [open, Priority 5, Epic “]

One question that I got was about support for hexbin plots. Something along the lines of this: https://cran.r-project.org/web/packages/hexbin/vignettes/hexagon_binning.pdf Gadfly.jl also supports it: http://dcjones.github.io/Gadfly.jl/geom_hexbin.html

pgfplotstodo.tex:4821

Feature Proposal [open, Priority 5, Epic ‘Stefan Pinnow CM’]

simplify visualization of barymetric surface data

Example data can be retrieved from

<http://ferret.pmel.noaa.gov/NVODS/UI.vm#panelHeaderHidden=false;ifferences=false;autoCont>

<http://pyhogs.github.io/colormap-bathymetry.html>

To do:

- test matrix input routine
- document matrix input routine
- finalize ideas about ‘colormap to legend’
- test ‘target pos min’ and its friends
- document ‘target pos min’ and its friends
- styles for logarithmic samples?

pgfplotstodo.tex:4851

Feature Proposal [open, Priority 5, Epic ‘Stefan Pinnow CM’]

add support to build a *nonuniform* colormap of a colormap

- on input, the user provides a list of non-uniform *positions* and (optionally) a colormap name
- pgfplots samples a suitable number of colors (one per position) *uniformly* from the source colormap
- each uniformly sampled number is assigned to the associated *target* position in the resulting map

Related, but not the same:

- on input, the user provides a list of non-uniform *positions* and (optionally) a colormap name
- pgfplots uses this list of positions for both *source* and *target*
- this will be necessary for contour filled

look-and feel:

```

colormap={name}{colors of colormap={of xyz, target pos=-1000,-300,-200, range=-2000:+20000}}
colormap={name}{colors of colormap={of xyz, target pos=0,300,800}}}
... I suppose that this key-value syntax _needs_ an ' of ' statement somewhere:
colormap={name}{colors of colormap={of current, target pos=0,300,800}}}
colormap={name}{colors of colormap={{-1000,-300,-200} of xyz, range=-2000:+20000}}}

colormap={name}{colors of colormap={{-1000,-300,-200}, range=-2000:+20000}}}
or perhaps it also needs ' of ':
colormap={name}{colors of colormap={-1000,-300,-200 of current, range=-2000:+20000}}}

```

pgfplotstodo.tex:4857

Feature Proposal [open, Priority 5, Epic ‘Stefan Pinnow CM’]

add style to reverse a colormap (including positions)

<https://sourceforge.net/p/pgfplots/feature-requests/50/>

pgfplotstodo.tex:4862

Feature Proposal [open, Priority 5, Epic ‘Stefan Pinnow CM’]

allow colormaps of size 1

pgfplotstodo.tex:4885

Feature Proposal [open, Priority 5, Epic ‘Stefan Pinnow CM’]

allow to define colormaps with arbitrary positions which are then mapped to [0,1000]

something like

```
colormap={name}{color(-1000)=(red) color(1e6)=(blue)}
```

would have the same effect as

```
colormap={name}{color(0pt)=(red) color(1pt)=(blue)}
```

Ideas:

- eliminate restriction that it must start at 0 ✓
- eliminate pgfmathapproxeto
- eliminate TeX arithmetics in reinterpolate
is no problem: it only applies TeX arithmetics to the fractional part
- activate FPU for the parsing procedure (only)

Feature Proposal [open, Priority 5, Epic ‘Stefan Pinnow CM’]

Allow to build colormaps based on what we see in a colorbar (not map!)

something like

```
colormap={name}{colors of colorbar={-1000,-4000} of xyz}}
```

Ideas:

- color interpolation is based on the current value of colormap access
- uses the current point meta min and max

Idea: also add

```
colormap={name}{color of colormap=-1000 of xyz using -2000:+20000}}
colormap={name}{color of colormap=-1000 using -2000:+20000}}
colormap={name}{color of colormap=-1000 using -2000:+20000 of xyz}}
```

or (better!):

```
colormap={name}{color of colormap={-1000 of xyz using range=-2000:+20000}}}
colormap={name}{color of colormap={-1000 using range=-2000:+20000}}}
```

I suppose “range” is better than “domain” in this context

the general form could be

```
colormap={name}{color of colormap={<arg> using <keys>}}}
colormap={name}{color of colormap={<arg> of <name> using <keys>}}}
or even
```

```
colormap={name}{of colormap={<keys>}}
```

Example:

```
color of colormap={500 of xyz}
```

```
->of colormap={name=xyz, access=map, selection=500},
```

```
index of colormap={5 of xyz}
```

```
->of colormap={name=xyz, access=direct, selection=5},
```

```
indices of colormap={5,7 of xyz}
```

```
->of colormap={name=xyz, access=direct, selection={5,7}},
```

```
const colors of colormap={550,700 of xyz}
```

```
->of colormap={name=xyz, access=piecewise constant, selection={550,700}},
```

valid <keys> could be

colormap access
range
?

TODO:

- document that curly braces *and* round braces are supported
- document new syntax elements
- provide consistent feature for both colormap and cycle list
- document new of `colormap={initial}`
- implement that positions are in sync with the target positions of a const plot. This is non-trivial

pgfplotstodo.tex:4965

Feature Proposal [open, Priority 5, Epic ‘Stefan Pinnow CM’]

|colorbarstyle=ytick data—

<http://pyhogs.github.io/colormap-bathymetry.html>

TODO:

- implement ✓
- test
- document
- document `samples at colormap pos`

pgfplotstodo.tex:4979

Feature Proposal [open, Priority 5, Epic ‘Stefan Pinnow CM’]

add open-ended colorbars, preferably by adding triangles to the first resp.
last tick labels in the colorbar

see email of Stefan Pinnow of Dec 31, 2015

<http://pyhogs.github.io/colormap-bathymetry.html>

also needed: define the color as well

optimally `color=.` (i.e deduce from context) per default

pgfplotstodo.tex:4983

Feature Proposal [open, Priority 5, Epic ‘Stefan Pinnow CM’]

Add `\pgfplotscolormapsizeof{current}` and
`\pgfplotscolormaplastindexof{current}` in order to avoid
`\pgfkeysvalueof{/pgfplots/colormap name}`

pgfplotstodo.tex:4995

Feature Proposal [open, Priority 5, Epic ‘Stefan Pinnow CM’]

Think how to implement a straight-forward style for colorbars with “uniform colors and non-uniform distances”:

- colorbars contain the same width for each color
- the tick labels show the non-uniformity

This could be related to `colormap access=direct` (i.e. access via index)

<http://pyhogs.github.io/colormap-bathymetry.html>

pgfplotstodo.tex:5010

Feature Proposal [open, Priority 5, Epic ‘Stefan Pinnow CM’]

color of colormap mit piecewise const

Ideas:

- add a dedicated input method of sorts
`colormap={name}{const of colormap={520}}`
✓
To be done: tests
- inside of `color of colorbar` (see above): deduce interpolation order automatically from the settings of the colorbar

pgfplotstodo.tex:5014

Feature Proposal [open, Priority 5, Epic ‘’]

implement waterfall charts (?)

pgfplotstodo.tex:5064

Feature Proposal [open, Priority 5, Epic ‘’]

finish + document `plot yshift auto` (idea: allow something like bar shift, but for all plots and including marker support)

finish + document `axis plot except legend style`

Idea: use that in order to also allow markers in

```

\documentclass{standalone}

\usepackage{pgfplots}

\pgfplotsset{compat=1.12}

\pgfplotstableread{
Year      Cat1  Cat2      Cat3   Cat4
2005       10   50       -10    30
2006      -40   60       -15    90
2007      -20   60       -15    60
}\mytable

\begin{document}%

    \begin{tikzpicture}
        \tracingmacros=2 \tracingcommands=2
        \begin{axis}[
            xbar stacked,
% area legend,
xmajorgrids,
legend pos=outer north east,
bar width=10pt,
bar shift auto,
nodes near coords,
nodes near coords style={font=\tiny},
enlarge y limits=0.3,
extra x ticks={0},
extra x tick style={grid style={black},xticklabel=\empty},
        ]
            \addplot+[mark=*] table [x index=1,y=Year] {\mytable};
            \addplot+[mark=otimes] table [x index=2,y=Year] {\mytable};
            \addplot+[mark=square*] table [x index=3,y=Year] {\mytable};
            \addplot table [x index=4,y=Year] {\mytable};
            \legend{Cat1,Cat2,Cat3,Cat4}
        \end{axis}
    \end{tikzpicture}

\end{document}

```

pgfplotstodo.tex:5068

Feature Proposal [open, Priority 5, Epic “]

stacked plot with support for negative values <http://tex.stackexchange.com/questions/196366/stacked-bar-plot-with-explicit-axis-domain>

pgfplotstodo.tex:5077

Feature Proposal [open, Priority 5, Epic “]

polar axes and `axis x line shift` (i.e. shift the circles).

Ideas:

modify the #1 argument of
`\pgfplots@drawgridlines@onorientedsurf@fromto@polar`. Furthermore,
try to inject a “b axis shift” into the associated tick labels ...

pgfplotstodo.tex:5110

Feature Proposal [open, Priority 5, Epic “]

```
>
>> Zu cycle multi list*: verstehe ich es recht, dass Du sowas wie folgt
>> meinst:
>>
>> cycle multi list*={
>>   red,blue\nextlist
>>   solid,{dotted,mark options={solid}}\nextlist
>>   mark=*,mark=x
>> },
>>
>> sodass man damit zwei plots machen kann, der erste mit
>>   red,solid,mark=*
>> und der zweite mit
>>   blue,dotted,mark options={solid},mark=x
>> ? D.h. dass der i.te Zugriff aus jeder Liste das element i nimmt?
>> Das waere ja recht einfach, denke ich.
>
> Genau das meine ich, wenn das auch mit zuvor generierten Listen
> funktioniert. Also zum Beispiel
>   cycle multi list*={
>       color list\nextlist
>       line list\nextlist
>       mark list
>   },
> (Weil ich baue ja gerade _nur_ an der ersten Liste ...)
> Wenn dann auch noch das "Using Sub-Lists, also zum Beispiel
>   [2 of]color list
> funktioniert wre das groartig.
```

pgfplotstodo.tex:5121

Feature Proposal [open, Priority 5, Epic “]

add expressions ‘row’ and ‘col’ which expand to the current row/col index of
an input matrix.

Implementation is ready on branch `rowcolgetters`, with the following todo
list left:

1. LUA backed
2. doku
3. empty line=jump is broken!

pgfplotstodo.tex:5125

Feature Proposal [open, Priority 5, Epic ‘’]

fillbetween: add support to style the “positive” and “negative” region, respectively.

pgfplotstodo.tex:5165

Feature Proposal [open, Priority 5, Epic ‘’]

<http://tex.stackexchange.com/questions/247973/customize-length-of-y-major-grids-in-pgfplots>

tuftes range frames and easier adoptions of grid lines

<http://tex.stackexchange.com/questions/165766/tufte-style-range-frames-for-three-dimensional-plots/165889#165889>

<http://tex.stackexchange.com/questions/125444/draw-reduced-graph-with-pgfplot>

see experimental git branch `range_frames` and the mail of Juernjakob Dugge

related:

<http://tex.stackexchange.com/questions/264222/is-there-a-way-to-automatically-force-xticks-on-first-and-last-data-point-in-pgf>

pgfplotstodo.tex:5180

Feature Proposal [open, Priority 5, Epic ‘’]

implement special math formulas for cube roots

<http://tex.stackexchange.com/questions/69411/pgfplots-cant-plot-some-usual-mathematical-functions>. More

generally: solve

$$y(x) = x^{1/n}$$

for odd n and negative x : in this case, it holds that

$$y(x) = -|x|^{1/n}$$

also implement feature requests to PGF with gamma function etc

[http://tex.stackexchange.com/questions/281865/
part-of-function-domain-omitted-using-pgfplots](http://tex.stackexchange.com/questions/281865/part-of-function-domain-omitted-using-pgfplots)

pgfplotstodo.tex:5184

Feature Proposal [open, Priority 5, Epic “]

allow a simple way to connect coordinates of different axes, i.e. something like
(axis1 cs:1,1) -- (axis 2 cs:3,4) (Tim Esser, per Mail Apr. 28, 2015)

pgfplotstodo.tex:5188

Feature Proposal [open, Priority 5, Epic “]

add enlarge limits=to next tick label, see [http://tex.
stackexchange.com/questions/229551/enlarge-limits-to-nearest-tick](http://tex.stackexchange.com/questions/229551/enlarge-limits-to-nearest-tick)

pgfplotstodo.tex:5221

Feature Proposal [open, Priority 5, Epic “]

allow # inside of inline tables: the following does not work in any pgfplots
version:

```
\documentclass{standalone}
\usepackage{pgfplots}
\pgfplotsset{%
    compat=newest,
}
\begin{document}
\begin{tikzpicture}
\begin{axis}[
    % point meta=explicit symbolic,
]
\addplot table[x index={1}, y expr=\coordindex, header=false, meta index={0}] {
#Re 750 K
"i" 62.099
"i" 62.046
"i" 56.304
"i" -44.258
"2" -28.826
"i" 18.740
"i" -14.653
"i" 14.402
"i" -12.907
"i" 12.295
};
\end{axis}
\end{tikzpicture}
\end{document}
```

pgfplots`todo.tex`:5231

Feature Proposal [open, Priority 5, Epic “]

write a script which applies the entire “release todo” over night:

- clone into tmp repo, compile manual from scratch with latest PGF
- clone into different tmp repo, compile tests against latest PGF
- same for all supported PGF versions
- improve reporting somehow (log files and summaries somewhere)

pgfplots`todo.tex`:5237

Feature Proposal [open, Priority 5, Epic “]

stream plots: contour plots in which each contour line is actually of type `mesh` with a specific value of `point meta`

<http://stackoverflow.com/questions/8296617/how-to-plot-a-streamlines-when-i-know-u-and-v-components-of-velocitynumpy-2d>

pgfplots`todo.tex`:5243

Feature Proposal [open, Priority 5, Epic “]

#30 Legend entries from different plots in `groupplot`

<https://sourceforge.net/p/pgfplots/feature-requests/30/>

pgfplots`todo.tex`:5249

Feature Proposal [open, Priority 5, Epic “]

feature-requests:#41 RFE: Add every quiver plot style key

<https://sourceforge.net/p/pgfplots/feature-requests/41>

pgfplots`todo.tex`:5253

Feature Proposal [open, Priority 5, Epic “]

lua backend support for `restrict expr to domain`

pgfplots`todo.tex`:5268

Feature Proposal [open, Priority 5, Epic “]

feature-requests:#42 Option for automatic trigonometric axis (ticks and labels)

I suppose the underlying request would be to plug in strategies to determine tick positions combined with a suitable formatter

Feature Proposal [open, Priority 5, Epic “]

improve the outcome of `log ticks with fixed point` if the data range is of order $O(1)$.

Hi Benjamin Voigt,

thanks for the detailed email!

A appreciate the level of detail for this feature request, and I am glad that my package p

You asked for preferences: if possible, I always prefer reduced (optimally: minimal) exampl

The feature request(s) are, of course, closely related. The overall theme is "improve log t

I believe I understand most of them, although I would need to think through it more carefu

First, let me make some small comments.

1. I believe the requirement list for an algorithm which chooses tick positions + labels i

- generate tick labels automatically
- make it clear that they are in log format
- ensure that there are enough tick labels to fill the axis
- the algorithm has to work reasonably on `_every_` possible order of magnitude
- ensure that the tick labels have some commonly recognized form

You see that I made rather abstract formulations. The current implementation in pgfplots w

$10^{-3}, 10^{-2}, 10^{-1}, 10^0$

$10^{-3}, 10^0, 10^3, 10^6$

$10^{-1.3}, 10^{-1}, 10^{-0.7}, 10^{-0.3}, 10^0$

addresses these issues using the standard exponential notation.

Why do I say that? Well, improving the quality of log ticks with fixed point for $O(1)$ numb

2. This is really just a side note: you may want to take a look at the existing key "log i
There is also some tick fine tuning in section "4.15.4 Tick Fine-Tuning" (the number may v

3. The current tick placement algorithm has no predefined lists of real numbers. It operat

My current priorities in the development of pgfplots are as follows:
Release 1.11 is the current public stable.

Release 1.12 will have the theme "scalability and performance". It will come with a new ba

Release 1.13 (or whatever it will be called) will probably become a feature release to add

I typically take six months per release; and 1.12 is planned for end of this year. That me

The effort as such is probably quite low; it's just that I have to make a strong focus to

In other words: if you are willing to invest time on this special project, I would be will

Entry points would be <http://tex.stackexchange.com/questions/12668/where-do-i-start-latex->

I will copy this email to my todo list (I assume your suggestions and thought in this mail

What do you think?

Kind regards

Christian

PS

Your name sounds like german origins - or some other european country. Do you come from he

Am 26.10.2014 04:08, schrieb richardvoigt@gmail.com:

```
>
> Hi Dr. Feuersnger,
>
> To being with, thanks *very* much for all the hard work you've done on pgfplots already,
>
> This is related to the Tex.SE post "pgfplot log axis more than one tick label per decade
> http://tex.stackexchange.com/questions/208891/pgfplot-log-axis-more-than-one-tick-label-
>
> Great idea moving to email, among other advantages I can share unredacted pieces of my t
>
> My suggestion is that the following sets of labels be made available:
>
> 10^{-3},10^{-2},10^{-1},10^0                current default
> 10^{-3},10^0,10^3,10^6                      current default, when range is huge
>
> 0.001, 0.01, 0.1, 1 currently gotten from "log ticks with fixed point"
> 0.1,1,10,100,1000                          currently gotten from "log ticks with fix
> 0.1, 0.2, 0.5, 1, 2, 5                    given in my Tex.SE answer
> 0.001,0.002,0.005,0.01,0.02               given in Tex.SE answer
> 50,100,200,500,1000,2000                  given in Tex.SE answer
> 0.001,0.003,0.01,0.03,0.1,0.3,1          can use technique from Tex.SE answer
> 10,30,100,300,1000,3000                  can use technique from Tex.SE answer
>
> 10^{-1.3},10^{-1},10^{-0.7},10^{-0.3},10^0 use technique from Tex.SE answer, removing "1
>
> 1\mu,2\mu,5\mu,10\mu,20\mu,50\mu,100\mu    this would be nice, for values where "log
> 100k, 200k, 500k, 1M, 2M, 5M, 10M same
> 1m, 1, 1k, 1M same, when range is huge
>
> 1 \cdot 10^{-6}, 2 \cdot 10^{-6}, 5 \cdot 10^{-6}, 1 \cdot 10^{-5}, 2 \cdot 10^{-5}
> maybe call this "log ticks with integer exponent"
> 1 \cdot 10^{-6}, 3 \cdot 10^{-6}, 1 \cdot 10^{-5}, 3 \cdot 10^{-5}, 1 \cdot 10^{-4}, 3 \cdot
> same idea, wider range
```

```

>
> Since the magnitude of my data is reasonably close to 1, I prefer the second group, and
>
> I just don't like fractional exponents. In my mind, log plots are for presenting data w
>
> I also don't have to let my data get far away from zero, because I can label my axis as
>
> But I realize that other people may see their data differently, or work with different d
>
> As you commented, there really are two discrete things here: tick placement, and label f
>
> I propose something like "log rational ticks" to switch to whichever of 1-10,1-3-10,1-2-
>
> And then formats of default (mantissa = 1 always, exponent varies), "log ticks with fixe
>
> It seems like pgfplots has a lot of customization points with a path of tag/.code I don
>
> Again, thanks for the awesome work that is pgfplots 1.9. When I say that "I doubt anyon
>
> R Benjamin Voigt
>

```

pgfplotstodo.tex:5398

Feature Proposal [open, Priority 5, Epic “]

Add support for a transformation which allows TIME input data (i.e. without date)

see <http://tex.stackexchange.com/q/79252/18401>

pgfplotstodo.tex:5407

Feature Proposal [open, Priority 5, Epic “]

slanted and sloped text (projected onto some axis plane)

see <http://tex.stackexchange.com/questions/212699/text-projection-onto-plane-in-3d-pgf-plots>

this also has math formulas to set up the trafo

pgfplotstodo.tex:5413

Feature Proposal [open, Priority 5, Epic “]

external lib: rerun externalization in case of unresolved references.

see

<http://www.texwelt.de/wissen/fragen/9476/labels-an-pgfplots/9527>
for a sketch and use-case

- pgfplotstodo.tex:5429 **Feature Proposal** [open, Priority 5, Epic ‘’]
allow some simply style of sorts “xtick should have a distance of 10. Get it done.”
- pgfplotstodo.tex:5437 **Feature Proposal** [open, Priority 5, Epic ‘’]
add styles to format seconds using some time format

see <http://tex.stackexchange.com/questions/198706/convert-gnuplot-script-to-pgfplots-using-raw-gnuplot-option>

see <http://tex.stackexchange.com/questions/118676/increasing-dateplots-resolution-to-seconds/219447#219447>
- pgfplotstodo.tex:5445 **Feature Proposal** [open, Priority 5, Epic ‘’]
get in touch with the author of the colorbrewer styles on
<http://www.traag.net/2014/06/05/281/>

these colors look better than the current default

see <http://tex.stackexchange.com/questions/119161/pre-defined-color-cycles-%C3%A0-la-r-colorbrewer>
- pgfplotstodo.tex:5453 **Feature Proposal** [open, Priority 5, Epic ‘Usability’]
parse elements of tick positions with math parser

<http://tex.stackexchange.com/questions/187115/with-pgfplots-how-to-manually-enter-ticks-as-fractions>

<http://tex.stackexchange.com/questions/249953/locating-tick-marks-at-integral-multiples-of-pi-2>
- pgfplotstodo.tex:5459 **Feature Proposal** [open, Priority 5, Epic ‘’]
table package: Add style “modify content for the following row indices”

can be copy-pasted from
<http://tex.stackexchange.com/questions/187067/how-to-have-different-colormaps-for-different-columns-in-the-same-heatmaps-table/187099#187099>
- pgfplotstodo.tex:5467 **Feature Proposal** [open, Priority 5, Epic ‘’]
fillbetween: accept `soft path={inner x range}` or something like that,
compare <http://tex.stackexchange.com/questions/180127/>

stacking-plots-in-animation-using-fill-between-library-with-dynamic-calculation/
180299?noredirect=1#comment416484_180299

pgfplotstodo.tex:5473

Feature Proposal [open, Priority 5, Epic “]

allow predicates styles of sorts **every intersection below $y=\{0\}$ or, even better: every lower intersection segment** – after all, “upper” and “lower” can be identified by means of scalar productions with same directed vector. The directed vector can be plugged in from the axis → think about solutions

see http://tex.stackexchange.com/questions/207042/pgfplots-addplot-color-depending-on-sign/207157#comment535403_207157

pgfplotstodo.tex:5489

Feature Proposal [open, Priority 5, Epic “]

ich bin es nochmal. Ich habe nochmal eine Anmerkung zu den decorations. Ich bin gerade dabei, meine Plots mit Pfeilen zu versehen wie ich es in dem Bild zuvor bereits getan habe. Leider kann ich fr die decorations nur folgende Angabe machen:

```
mark = at position 0.15 with {\arrow [scale=1]{stealth}},
```

Jedoch kommt es bei Kurven hufiger vor, dass ich nicht gut abschtzen kann, ob es sich dabei um Position 0.1 oder 0.15 oder dergleichen handelt. Ich habe es so verstanden, dass der Compiler die Strecke der Kurve vermisst und bei bspw.

```
mark = at position 0.5 with {\arrow [scale=1]{stealth}},
```

eine Dekoration bei der Hlfte der Kurve macht. Doch wo ist die Hlfte der Kurve, wenn diese gekrmmt und gewunden ist? Nun ist es umstndlich immer diese Dekorationen anzupassen und ich wrde lieber eine x oder y Koordinate verwenden und sagen knnen:

```
mark = at x position 40 with {\arrow [scale=1]{stealth}},
```

So kann ich mir sicher sein, dass der Pfeil dann der x-Koordinate 40 zugeordnet wird und auf der Kurve landet.

pgfplotstodo.tex:5493

Feature Proposal [open, Priority 5, Epic “]

Implement something like `pos={x=40}`

pgfplotstodo.tex:5509

Feature Proposal [open, Priority 5, Epic “]

addplot graphics: support “scale to natural dimensions” of the input graphics

there is a half-ready solution in
<http://tex.stackexchange.com/questions/175618/addplot-graphics-maintaining-images-aspect-ratio-despite-different-scaling-of-175726#175726>

pgfplotstodo.tex:5582

Feature Proposal [open, Priority 5, Epic ‘Usability’]

The distinction into survey phase and visualization phase is technically reasonable, but causes confusion.

Is there a way to simplify loop operations during the survey phase as in
<http://tex.stackexchange.com/questions/172917/pgfplots-and-using-axis-cs-to-add-points> ?

pgfplotstodo.tex:5592

Feature Proposal [open, Priority 5, Epic ‘Usability’]

Pgfplots requires user input to distinguish between parameterized 3d plots and matrix-like 3d plots.

Why can’t PGFPlots determine automatically if `z buffer=sort` is adequate?

<http://tex.stackexchange.com/questions/172753/pgfplots-and-gnuplot-with-addplot3>

ATTENTION: what about 3d sampled line plots!? this would break with `z buffer sort`.

pgfplotstodo.tex:5622

Feature Proposal [open, Priority 5, Epic ‘Usability’]

pgfplots math expressions always yield internal FPU formats which confuses users.

Return SCI representation instead.

TO BE CLARIFIED: which operations should be replaced? REplacing ‘`x filter`’ and its friends might actually make things worse because FPU functions will no longer accept the argument.

It might be useful to improve the FPU such that `declarefunction` for a function which does *not* expect FPU arguments accept it.

This could be done by patching `\pgfmath@stack@push@operation` - and check if the argument is a function and that function has a known FPU implementation (its float-backup exists). If not: generate a dummy which converts to fixed points. Use the function’s arity!

see

<http://tex.stackexchange.com/questions/171263/plotting-a-function-defined-with-pgfmathdecl>

see

<http://texwelt.de/wissen/fragen/3960/fraktale-mit-pgfplots?Seite=1#3993>

I started to work on a solution for the second one, see the uncommented call to `\pgfplots@expression@normalize@floats`

pgfplotstodo.tex:5647

Feature Proposal [open, Priority 5, Epic “]

bullet graphs:

<http://tex.stackexchange.com/questions/146538/how-to-create-vertical-bullet-graphs-with-pstricks>

Inspiration:

<http://img35.imageshack.us/img35/1061/snap2134.png>

I started a prototype. To do items:

- make sure that color schemes can be exchanged in a simple way
- prepare the package for up to 3 discriminative markers
- regarding data files: TO CLARIFY

branch ‘bulletplots’

perhaps this would be a good contribution together with

<http://tex.stackexchange.com/questions/29293/is-there-a-package-that-provides-graphing-in-the-style-of-ed-tufte/29311#29311>

pgfplotstodo.tex:5653

Feature Proposal [open, Priority 5, Epic “]

Given some PGF point, allow to access the high-level coordinates.

see <http://tex.stackexchange.com/questions/174404/convert-unit-to-coordinate-works-for-x-coordinate-but-not-for-y-coordinate/174443#174443> for a use-case and note that there is a work-around which works for ‘pin’ in the pgfplots manual - and that is awkward.

pgfplotstodo.tex:5659

Feature Proposal [open, Priority 5, Epic “]

add “stackable tick labels” (tick labels with vertical shifts if they are too close).

compare <http://tex.stackexchange.com/questions/164673/positioning-even-or-odd-x-axis-tick-labels-in-pgfplots>

pgfplotstodo.tex:5694

Feature Proposal [open, Priority 5, Epic “]

suppress tick-line cross in 3d for view directions in which the cross degenerates to a very thick line

compare

```
\documentclass[tikz,12pt]{standalone}
\usepackage{tikz,pgfplots,pgfplotstable}

\pgfplotsset{compat=1.10}

\pgfplotsset{every axis/.append style={tick style={line width=0.7pt}}}

\pgfplotstableread{
a b
-0.1 0.2
0.1 0.5
}\testdata

\begin{document}
\foreach \h in {5,10,...,360} {
\begin{tikzpicture}

\begin{axis}[title=\h,axis lines=center, ymin=-0.22,ymax=0.22, xmin=-0.2,xmax=0.2,xlabel=x
\addplot3 [color=blue,] table[x expr=0,y=a,z=b] {\testdata};
\end{axis}

\end{tikzpicture}
\par
}

\end{document}
```

pgfplotstodo.tex:5711

Feature Proposal [open, Priority 5, Epic “]

Tufte-style range frames for 3d <http://tex.stackexchange.com/questions/165766/tufte-style-range-frames-for-three-dimensional-plots>

pgfplotstodo.tex:5717

Feature Proposal [open, Priority 5, Epic “]

Add option of sorts “shift along outer normal vector of current axis” while generating paths for axes, ticks, tick labels, and perhaps even grid lines.

<http://tex.stackexchange.com/questions/165766/tufte-style-range-frames-for-three-dimensional-plots>

pgfplotstodo.tex:5727

Feature Proposal [open, Priority 5, Epic ‘’]

Allow to shift (x) tick labels vertically if they are too dense.

Sometimes one needs lots of tick labels. It would be cool if every second would be shifted vertically, perhaps with an edge to the original location

pgfplotstodo.tex:5765

Feature Proposal [open, Priority 5, Epic ‘’]

the ... syntax in tick label position lists is inherently limited to $[-16384, 16384]$ (it inherits the limitations of `\foreach`). Think about alternatives

pgfplotstodo.tex:5814

Feature Proposal [open, Priority 5, Epic ‘’]

Implement document-level javascript for the clickable lib WITHOUT the eforms/insdljs package

should be quite straight-forward. Unless resource-acquisition problems occur (i.e. interoperability issues with other packages)

See

<http://tex.stackexchange.com/questions/3080/what-is-the-best-way-to-insert-document-level-javascript-in-latex-documents?rq=1>

pgfplotstodo.tex:5820

Feature Proposal [open, Priority 5, Epic ‘’]

Implement a custom legend environment such that one doesn't need to collect all options manually

<http://tex.stackexchange.com/questions/54794/using-a-pgfplots-style-legend-in-a-plain-old->

pgfplotstodo.tex:5826

Feature Proposal [open, Priority 5, Epic ‘’]

improve grid line placement for grouped bar plots: grid lines should not pass through the middle of the bar group

<http://tex.stackexchange.com/questions/248807/draw-grid-lines-for-grouped-bar-chart-diagram>

pgfplotstodo.tex:5834

Feature Proposal [open, Priority 5, Epic ‘Bar plots’]

provide a way to provide more customization to stacked plots as in

<http://tex.stackexchange.com/questions/13627/pgfplots-multiple-shifted-stacked-plots-in-on>

(stacked and clustered bar charts)

pgfplotstodo.tex:5842

Feature Proposal [open, Priority 5, Epic ‘Bar plots’]

staggered tick labels

<http://peltiertech.com/Excel/Charts/Staggered.html>

implement a feature which applies a “suitable” `yshift` to every second tick label such that they can be denser

pgfplotstodo.tex:5877

Feature Proposal [open, Priority 5, Epic ‘Bar plots’]

interrupted bar plots

see the interesting things at

<http://peltiertech.com/Excel/Charts/axes.html#Broken> broken (y) axis:

remove interval $[a,b]$ idea: if $y|_a$: visualize as usual if $a|y|b$: use coordinate $y=a$ if $b|y$: use coordinate $y=y-(b-a)$ axis:

- compute two sets of axis descriptions. Perhaps one can try to compute the step size just once, and discard only $[a,b]$ afterwards? This would require to use a canvas axis length corresponding to the unremoved axis range. BTW: I need access to the unremoved axis range; both for tick computation and for ‘nodes near coords’ or the clickable lib.
- draw a decoration at the break.
- perhaps also a decoration near affected coords.
- perhaps I should apply the thing during the visualization phase, not before. Then, I have all limits and the correct coordinates; only canvas coords are affected.

discontinuity in the middle of a plot (as an example see the phase diagram of water http://pruffle.mit.edu/3.00/Lecture_29_web/img20.gif)

<http://peltiertech.com/images/2011-11/Ybroken.png>

[http:](http://tex.stackexchange.com/questions/46422/axis-break-in-pgfplots)

[//tex.stackexchange.com/questions/46422/axis-break-in-pgfplots](http://tex.stackexchange.com/questions/46422/axis-break-in-pgfplots)

pgfplotstodo.tex:5881

Feature Proposal [open, Priority 5, Epic ‘Bar plots’]

bar plots: Introduce significance stars (see GROUP BARS on page 107)

pgfplots todo.tex:5887

Feature Proposal [open, Priority 5, Epic 'Bar plots']

Handle negative values in stacked plots properly

<http://tex.stackexchange.com/questions/232892/hidden-data-in-stacked-bar-plot>

pgfplots todo.tex:6166

Feature Proposal [open, Priority 5, Epic 'Bar plots']

GROUP BARS

Bar plots: simplify grouped bars

related: suppress bar shift if one group element is missing <http://tex.stackexchange.com/questions/71350/two-level-labels-in-bar-plot>

related: Nested groups: <http://tex.stackexchange.com/questions/198943/unclutter-a-bar-plot-with-pgfplot>

Hi Joshua,

as already mentioned, your old mails from January have slipped my discipline... I am sorry

You asked for a simpler way to

- a) position groups of bars without having to compute 'bar shift' manually
- b) a simpler way to get "significance stars".

First, grouped bar charts are an open feature request in pgfplots, and your input will even

The first request is actually possible, assuming that you always provide them in the sequence

The default is

```
/pgfplots/ybar/.style={
  /pgf/bar shift={%
    % total width = n*w + (n-1)*skip
    % -> subtract half for centering
    -0.5*(\numplotsofactualtype*\pgfplotbarwidth + (\numplotsofactualtype-1)*#1),%
    % the '0.5*w' is for centering
    (.5*\plotnumofactualtype)*\pgfplotbarwidth + \plotnumofactualtype*#1},%
}
```

and my modification substitutes every index and 'n' by half of it:

```
\pgfplotsset{
  % #1 = separation between bars
  bar shift for half number plots/.style={%
    /pgf/bar shift={%
      % total width = n*w + (n-1)*skip
      % -> subtract half for centering
```

```

-0.5*(\numplotsofactualtype/2*\pgfplotbarwidth + (\numplotsofactualtype/2-
% the '0.5*w' is for centering
(.5+div(\plotnumofactualtype,2))*\pgfplotbarwidth + div(\plotnumofactualty
},%
},%
bar shift for half number plots/.default=2pt,
}

```

With this definition, you do not have to write 'bar shift' in your styles.

The whole figure becomes

```

\usemodule[pgfplots]
\pgfplotsset{compat=newest}

\pgfplotsset{HeartControl/.style=
{
    red, fill=red!33!white,
    %bar shift=-0.1667
}}
\pgfplotsset{HeartDiabetes/.style=
{
    red!33!black, fill=red!66!white,
    %bar shift=+0.1667
}}
\pgfplotsset{KidneyControl/.style=
{
    orange, fill=orange!33!white,
    %bar shift=-0.1667
}}
\pgfplotsset{KidneyDiabetes/.style=
{
    orange!33!black, fill=orange!66!white,
    %bar shift=+0.1667
}}

\pgfplotsset{/pgfplots/ybar legend/.style=
{
    /pgfplots/legend image code/.code={%
        \draw[
            ##1, /tikz/.cd,
            bar width=0.25em,
            yshift=-0.27em,
            bar shift=0pt
        ]
        plot coordinates {(0pt,0.8em)};
    }
}}

```

```

\pgfplotsset{
  % #1 = separation between bars
  bar shift for half number plots/.style={%
    /pgf/bar shift={%
      % total width = n*w + (n-1)*skip
      % -> subtract half for centering
      -0.5*(\numplotsofactualtype/2*\pgfplotbarwidth + (\numplotsofactualtype/2-
      % the '0.5*w' is for centering
      (.5+div(\plotnumofactualtype,2))*\pgfplotbarwidth + div(\plotnumofactualty
    },%
  },%
  bar shift for half number plots/.default=2pt,
}

\starttext

\starttikzpicture
  \startaxis
  [
    bar width=0.3,
    ybar,
    bar shift for half number plots=5pt,
    xtick=data,
    ylabel={mRNA level},
    ymin=0,
    xmin=0.333, xmax=2.667,
    xtick={1,2}, xticklabels={Heart,Kidney},
    error bars/y dir=both,
    error bars/y explicit,
    legend columns=2,
    legend pos=outer north east,
    legend cell align=left
  ]

  \addplot+[HeartControl] coordinates {(1,1) +- (0,0.1)};
  \addplot+[KidneyControl] coordinates {(2,1) +- (0,0.12)};
  \addplot+[HeartDiabetes] coordinates {(1,1.1) +- (0,0.2)};
  \addplot+[KidneyDiabetes] coordinates {(2,0.8) +- (0,0.05)};

  \draw (axis cs:2,1.15) +(-2.2em,0) -- +(2.2em,0);
  \node[anchor=south, yshift=-1ex] at (axis cs:2,1.15) {*};

  \legend{{\kern-0.1em}, Control, {\kern-0.1em}, Diabetes}

  \stopaxis
\stoptikzpicture

\stoptext

```

I suppose you could even simplify the styles by means of a cycle list or whatever.

I also experimented with symbolic x coords, but how would you write "xmin=0.3333" or "bar

You can use

```
\def\heartUnit{1}  
\def\kidneyUnit{2}
```

to introduce constants - this might make it more readable.

I am aware of the fact that this solution comes way too late. Perhaps it proves to be useful

Kind regards

Christian

Am 21.01.2014 13:29, schrieb Joshua Krmer:

> Dear pgfplots developers!

>

> First, thanks a lot for your great package. I'm using it to create
> diagrams in ConTeXt. Please consider the following (M)WE. I hope you
> can run it, otherwise, you can see the output here:

> <http://666kb.com/i/cl5sdm34i4ig69mkk.png>

>

> \usemodule[pgfplots]

> \pgfplotsset{compat=newest}

>

> \pgfplotsset{HeartControl/.style=

> {

> red, fill=red!33!white,

> bar shift=-0.1667

> }}

> \pgfplotsset{HeartDiabetes/.style=

> {

> red!33!black, fill=red!66!white,

> bar shift=+0.1667

> }}

> \pgfplotsset{KidneyControl/.style=

> {

> orange, fill=orange!33!white,

> bar shift=-0.1667

> }}

> \pgfplotsset{KidneyDiabetes/.style=

> {

> orange!33!black, fill=orange!66!white,


```

> bar shift=+0.1667
> }}
>
> \pgfplotsset{/pgfplots/ybar legend/.style=
> {
> /pgfplots/legend image code/.code={%
> \draw[
> ##1, /tikz/.cd,
> bar width=0.25em,
> yshift=-0.27em,
> bar shift=0pt
> ]
> plot coordinates {(0pt,0.8em)};
> }
> }}
>
> \starttext
>
> \starttikzpicture
> \startaxis
> [
> ybar,
> xtick=data,
> ylabel={mRNA level},
> ymin=0,
> xmin=0.333, xmax=2.667,
> xtick={1,2}, xticklabels={Heart,Kidney},
> error bars/y dir=both,
> error bars/y explicit,
> bar width=0.3,
> legend columns=2,
> legend pos=outer north east,
> legend cell align=left
> ]
>
> \addplot+[HeartControl] coordinates {(1,1) +- (0,0.1)};
> \addplot+[KidneyControl] coordinates {(2,1) +- (0,0.12)};
> \addplot+[HeartDiabetes] coordinates {(1,1.1) +- (0,0.2)};
> \addplot+[KidneyDiabetes] coordinates {(2,0.8) +- (0,0.05)};
>
> \draw (axis cs:2,1.15) +(-2.2em,0) -- +(2.2em,0);
> \node[anchor=south, yshift=-1ex] at (axis cs:2,1.15) {*};
>
> \legend{{\kern-0.1em}, Control, {\kern-0.1em}, Diabetes}
>
> \stopaxis
> \stoptikzpicture
>
> \stoptext
>

```

```

> As you can see, I have two groups (organs: hearts, kidneys), sometimes
> more, and two conditions (control, Diabetes). To make it easier to
> compare the diagrams (there are many), I want to use consistent colours
> for the same organs, and two brightnesses for the two conditions. The
> code above works, but automatic positioning would be much nicer, so I
> could just set something like "bar width=..." and "bar separation=..."
> and let the bars be positioned automatically. This would also allow me
> to use symbolic coordinates, avoiding the pseudo coordinates (1 and
> 2). Is there a better way to get the desired result than what I've
> done?
>
> I also hope there is a better way to create significance stars. If two
> values are significantly different, there is a horizontal line to be
> added which spans the two bars, and a symbol above it. The symbols
> usually are one till three stars (depending on the degree of
> significance), sometimes other symbols are used in the literature. At
> least it would be nice if I could define the coordinates for the
> horizontal line with something like "max(errormark1, errormark2) +a",
> ie, the higher of the two error marks involved plus some separation.
>
> Kind regards,
> Joshua Krmer
>
>
>
> -----
> CenturyLink Cloud: The Leader in Enterprise Cloud Services.
> Learn Why More Businesses Are Choosing CenturyLink Cloud For
> Critical Workloads, Development Environments & Everything In Between.
> Get a Quote or Start a Free Trial Today.
> http://pubads.g.doubleclick.net/gampad/clk?id=119420431&iu=/4140/ostg.clktrk
> -----
> Pgplots-features mailing list
> Pgplots-features@lists.sourceforge.net
> https://lists.sourceforge.net/lists/listinfo/pgplots-features

```

pgfplotstodo.tex:6174

Feature Proposal [open, Priority 5, Epic 'Bar plots']

It is surprisingly difficult to have JUST axis ticks and tick labels and labels, but NO axis line. This is because I accidentally made `axis x line=none` equivalent to `hide x axis`. Too bad.

Idea: implement keys `axis x line hidden=true,false`. Perhaps with options `axis x line=bottom hidden` which is the same as `axis x line hidden,axis x line=bottom?`

pgfplotstodo.tex:6183

Feature Proposal [open, Priority 5, Epic 'Bar plots']

feature-requests:#43 Option to set the BaseValue of a bar plot
<https://sourceforge.net/p/pgfplots/feature-requests/43/>

Is it possible to have bar plots which do not start from the x or y axis?. For example a bar plot from (0,2) to (0,3).

<http://tex.stackexchange.com/questions/161530/how-can-i-create-unbound-horizontal-bar-plots>

pgfplotstodo.tex:6188

Feature Proposal [open, Priority 5, Epic ‘Bar plots’]

Allow 3d bar plots (see also <http://tex.stackexchange.com/questions/176347/2d-bar-chart-in-3d-space/176363#176363>)

pgfplotstodo.tex:6202

Feature Proposal [open, Priority 5, Epic ‘Bar plots’]

Individual bars: allow to modify / adjust the bar plot handler(s) such that each bar can have its individual appearance

- create individual `\path` instructions for every bar
- discard the outer `\path` at the end
- allow simple styles of sorts `bar 1/.style={...}` or `bar value 1.23/.style={...}` perhaps using prefix search? similar to the request for nodes near coords
- should be dependent on point meta (like scatter plots)

There is some preparation key `at begin bar` combined with `at end bar` in the bar plot handlers. It can be used as low-level backend, but it still needs to be worked out (see `unittest_bar_shade_atbeginbar.tex`)

<http://tex.stackexchange.com/questions/116765/particular-bar-plot-with-pgfplots-bar-color-category>

pgfplotstodo.tex:6206

Feature Proposal [open, Priority 5, Epic ‘Bar plots’]

nodes near coords: allow styles of sorts `node near coord 1/.style={...}` or `node near coord value 1.23/.style={...}` (similar to the feature request for bar plots)

pgfplotstodo.tex:6217

Feature Proposal [open, Priority 5, Epic ‘Bar plots’]

bar plots: auto-select axis limits, unit size, bar width, and bar shift.

Perhaps it is sufficient to auto-select bar width.

In particular, the default settings should never hide a bar (especially not half of a bar)

<http://w3facility.org/question/spacing-in-pgfplots-bar-plot/>

<http://tex.stackexchange.com/questions/147945/pgfplots-bar-graph-axis-distance>

pgfplotstodo.tex:6223

Feature Proposal [open, Priority 5, Epic ‘’]

allow better default styles for bar plots, compare

https://www.queryxchange.com/q/24_239801/fontawesome-scaling-deedy-resume-pgfplots-axis-xetex-luatex-issues/

pgfplotstodo.tex:6231

Feature Proposal [open, Priority 5, Epic ‘’]

allow to rotate polar plots and fix rotation of tick labels.

see

<http://tex.stackexchange.com/questions/116830/polar-plot-x-and-y-ticks-and-units>

pgfplotstodo.tex:6236

Feature Proposal [open, Priority 5, Epic ‘Bar plots’]

polar axes: polar bar plots (see sourceforge feature request and http://matplotlib.sourceforge.net/examples/pylab_examples/polar_bar.html)

pgfplotstodo.tex:6240

Feature Proposal [open, Priority 5, Epic ‘Bar plots’]

chunked bars: interrupt the bars at predefined coordinates (like white grid lines)

pgfplotstodo.tex:6251

Feature Proposal [open, Priority 5, Epic ‘Bar plots’]

bar plots:

- bar interval plot handler which *assumes* uniform distances. This allows to eliminate the last, superfluous grid point (because it can be generated automatically as $x_{\text{last}} + h$ for known h)
- in fact, I could also implement $x_{\text{last}} + h_{\text{last}}$ and introduce a new name like ‘bar interval*’ or something like that

Feature Proposal [open, Priority 5, Epic ‘Bar plots’]

Mails from Stefan Ruhstorfer:

- Gruppierte Säulendiagramme sind nach meinem Wissenstand nur dann möglich wenn man in der Axis-Definiton die Bedingung ybar angibt. Ich finde diese Ausrichtung sehr unflexible, da ich sehr oft über das Problem stolpere, dass ich in meinem gruppierten Säulendiagramm noch eine waagrechte Linie oder ähnliches einzeichnen möchte um z.B. meine obere Toleranzgrenze einzuzeichnen. Bis jetzt mache ich das über den normalen draw Modus, was auch ausgezeichnet funktioniert. Jedoch habe ich dann das Problem, dass ich keinen schönen Legendeintrag mehr bekomme. Hier hätte ich 2 Vorschläge. Zum einen die Legende ”freier” zu gestalten. Also so, dass man beliebig (ggf. auch ohne Plot) ein Legendelement hinzufügen kann und vllt. noch das zugehörige Symbol festlegen kann. (Bis jetzt habe ich das Problem, das ich mit tricksen zwar meine Obere Toleranzgrenze in die Legende bekomme, dann jedoch mit einem Säulenzeichnen davor). Der andere Vorschlag ist, dass Säulendiagramm anders zu definiern. So das ich auch noch einen Plot hinzufügen kann, der mir eine waagrechte Linie ohne zu tricksen einzeichnen lässt.
- Eine Gruppierung von stacked bars ist nach meinem Wissen nicht möglich. Es ist zwar schwer sich ein Anwendungsgebiet dafür vorzustellen, aber wenn sie danach mal suchen (speziell im Excelbereich) werden sie sehen, dass viele Leute so eine Funktion benutzen. \rightsquigarrow siehe auch folgemails mit Beispielskizzen \rightsquigarrow beachte: Fall 2.) erfordert mehr arbeit als lediglich ‘line legend’, weil ybar ja den koordinatenindex verarbeitet!

grouped + stacked bar: <http://tex.stackexchange.com/questions/71350/two-level-labels-in-bar-plot>

Feature Proposal [open, Priority 5, Epic ‘Bar plots’]

let stacked bar plots respect the line width when stacking them on top of each other

Feature Proposal [open, Priority 5, Epic ‘Bar plots’]

On input: provide the desired distance between adjacent bars. The bar width should be automatically determined in a way which shows all bars.

An extreme case would degenerate to ycomb.

If the plot area does is insufficient, bar distances should be restricted (?)

Note: if (and only if) the bars have unit distance 1, a relative distance is already supported by providing bar width=0.9 or something like that...

Note: if we knew the distance between adjacent ticks, and we assume that each tick has its associated bar plot, we could define the bar width in terms of the tick distance... perhaps I should expose read-only access to the list of (computed) tick positions; with a convenience method to access the common distance? Or just a common distance?

see also <http://www.faqsys.info/pgf-plots-barplot-irregular-spacing-between-barscolumns/>

pgfplotstodo.tex:6296

Feature Proposal [open, Priority 5, Epic ‘Bar plots’]

bar plots: if you provide both, the desired distance between adjacent bars and the bar width, the axis limits should be increased or decreased automatically.

This is actually a more generic concept: it would be ‘scale mode=limits only’ (?)

pgfplotstodo.tex:6300

Feature Proposal [open, Priority 5, Epic ‘Bar plots’]

Default bar plot styles should always include the (correct) origin in the visible axis range.

pgfplotstodo.tex:6306

Feature Proposal [open, Priority 5, Epic ‘Bar plots’]

It should be simpler to customize the position of nodes near coords in a way to position them in the middle or below each bar.

This is particularly difficult for stacked bar plots

pgfplotstodo.tex:6324

Feature Proposal [open, Priority 5, Epic ‘’]

modify the `node[at=<pos>]` feature such that `node[at value=42.4]` or `at max value` or `at min value` or `node[at coordindex=3]`

pgfplotstodo.tex:6331

Feature Proposal [open, Priority 5, Epic ‘’]

Layered graphics: consider drawing tick lines which are on the “outer part” of the axis on the foreground layer.

See

<http://tex.stackexchange.com/questions/31708/draw-a-bivariate-normal-distribution-in-tikz/> for a motivation (the tick lines are hidden by the surface)

pgfplotstodo.tex:6335

Feature Proposal [open, Priority 5, Epic “]

allow support for units in `bar width` and `bar shift` (compare the implementation for circles/ellipses)

pgfplotstodo.tex:6352

Feature Proposal [open, Priority 5, Epic “]

it would be nice to have automatic PNG export for huge graphics. Such an approach, combined with plot graphics, could result in considerably smaller pdfs and faster rendering. At the same time, it would not suffer the limitation which arises if one uses the external lib and converts the complete figure to png (including axis descriptions)

pgfplotstodo.tex:6362

Feature Proposal [open, Priority 5, Epic “]

There is no simple way to provide LOG colorbars:

1. `ymode=log` is not supported in ‘every colorbar’ due to key filtering problems
2. `disablelogfilter` appears to be useless and does not respect ‘log basis’

If those two this would be fixed, one could provide `colorbar style={ymode=log,disablelogfilter}` and would get a proper logarithmic colorbar. Perhaps even combined with `log basis ...` ?

pgfplotstodo.tex:6366

Feature Proposal [open, Priority 5, Epic “]

Cases-statement in math parser

pgfplotstodo.tex:6370

Feature Proposal [open, Priority 5, Epic “]

the `empty line` feature should produce a log notice when it finds an empty line in compat mode.

pgfplotstodo.tex:6378

Feature Proposal [open, Priority 5, Epic “]

Support something like

`\addplot table[x symbolic expr={\thisrow{year}-\thisrow{month}-\thisrow{day}}]`.

pgfplotstodo.tex:6382

Feature Proposal [open, Priority 5, Epic “]

What about a ‘draft’ mode which does nothing but typeset an empty axis without descriptions?

pgfplotstodo.tex:6390	<p>Feature Proposal [open, Priority 5, Epic “]</p> <p>Provide features of an axis <i>outside</i> of the axis environment. For a start, this could use the <code>axis cs</code> (or an alias to it).</p> <p>Details and examples:</p> <p>https://sourceforge.net/tracker/?func=detail&atid=1060659&aid=3086794&group_id=224188</p>
pgfplotstodo.tex:6394	<p>Feature Proposal [open, Priority 5, Epic “]</p> <p>add ‘force 2d axis’ key (or similar)</p>
pgfplotstodo.tex:6412	<p>Feature Proposal [open, Priority 5, Epic “]</p> <p>Support standard filters for <code>hist</code> and its variants.</p> <p>Improve filtering for <code>hist</code> and similar plot handlers.</p> <p>I already added the <code>hist/data filter</code> and <code>pre filter</code> keys (undocumented!). Use them.</p>
pgfplotstodo.tex:6417	<p>Feature Proposal [open, Priority 5, Epic “]</p> <p>the ‘xtick’ syntax accepts only numbers, not even constant expressions are possible (and ‘pi’ is even more complicated).</p>
pgfplotstodo.tex:6422	<p>Feature Proposal [open, Priority 5, Epic “]</p> <p>Table Package: support context-based <code>row predicates</code> (some kind of WHERE clauses)</p>
pgfplotstodo.tex:6426	<p>Feature Proposal [open, Priority 5, Epic “]</p> <p>support the <code>/data point/x</code> method for all key filters and in all contexts (i.e. in the same context where <code>\thisrow</code> is accepted)</p>
pgfplotstodo.tex:6430	<p>Feature Proposal [open, Priority 5, Epic “]</p> <p>Support selection of individual 3D axis lines which shall be drawn (or “floor”)</p>
pgfplotstodo.tex:6443	<p>Feature Proposal [open, Priority 5, Epic “]</p> <p>linear regression which passes through (0,0) (see mail of Stefan Pinnow)</p>

<code>pgfplotstodo.tex:6448</code>	<p>Feature Proposal [open, Priority 5, Epic “]</p> <p>plot graphics 3D: handle the case when the first two points share the same x (or y) coordinate</p>
<code>pgfplotstodo.tex:6452</code>	<p>Feature Proposal [open, Priority 5, Epic “]</p> <p>hist does not allow modifications to the data range</p>
<code>pgfplotstodo.tex:6462</code>	<p>Feature Proposal [open, Priority 5, Epic “]</p> <p>feature to replicate axis descriptions on both sides</p>
<code>pgfplotstodo.tex:6469</code>	<p>Feature Proposal [open, Priority 5, Epic “]</p> <p>couldn't you add something like <code>\providecommand*\pgfplotsset[1]{} to the "tikzexternal.sty"</code> so one doesn't have to do it by hand when switching from tikz/pgfplots?</p>
<code>pgfplotstodo.tex:6539</code>	<p>Feature Proposal [open, Priority 5, Epic “]</p> <p>Das pos= feature funktioniert nur ungenau fuer smooth. Implementiere es genauer.</p>
<code>pgfplotstodo.tex:6544</code>	<p>Feature Proposal [open, Priority 5, Epic “]</p> <p>make work <code>\matrix in \matrix</code> so one can use groupplots or "Allignment in Array Form" (section 4.18.4) with legends</p>
<code>pgfplotstodo.tex:6572</code>	<p>Feature Proposal [open, Priority 5, Epic “]</p> <p>groupplots: group-wide axis labels</p>
<code>pgfplotstodo.tex:6590</code>	<p>Feature Proposal [open, Priority 5, Epic “]</p> <p>is there a way to get the current row/col index during addplot?</p>
<code>pgfplotstodo.tex:6616</code>	<p>Feature Proposal [open, Priority 5, Epic “]</p> <p>plot shell: - It would be nice if the standard shell interpreter could be replaced. Idea: <code>\pgfkeys{/pgfplots/plot shell/interpreter/.code 2 args={sh #1 > #2}}</code> then in the code <code>\pgfkeysvalueof{/pgfplots/plot shell/interpreter/.cmd}{#1.sh}{#1.out}\pgfeov</code> - the pgfshell macro is quite general and could be added to pgf (as suggested by you, Stefan). However, this would also need modifications in tikz.code.tex</p>

to get some sort of high-level user interface. I find plot shell very useful, and it could be added easily. My suggestion: Either write a high level user interface for tikz or rename the command to pgfplotshell and put it into pgfplotscoordprocessing.code.tex. In the meantime, I added it to pgfplotscoordprocessing.code.tex (bottom). - there is a potential difficulty with the 'addplot table shell' command (which is a good solution!): the semicolon in this routine will have a fixed catcode. But packages like babel with french language will change it to active, so french people can't use addplot table shell. The solution is technical and I am not proud of my own anyway... we'll just have to think about one. - documentation for the 'table shell' feature is missing yet. - I am not sure if the replication of /tikz/prefix and /tikz/id is helpful or confusing....

pgfplotstodo.tex:6634

Feature Proposal [open, Priority 5, Epic “]

new `\plotnumofactualtype` thing: if you set `/tikz/` plot handlers in `\begin{axis}`, they won't be set before the visualization phase. consequently, I can't count them! Idea: add a 'family' to each of them. Or write a coord filter which checks for `\tikz@plot@handler`. Or write pgfplots styles which set them.

pgfplotstodo.tex:6759

Feature Proposal [open, Priority 5, Epic “]

polar:

- is my current datascaling approach correct? I mean, is the linear trafo feasible at all?
- the `*affine*` radius `datascaletrafo` could be enabled, if only parts of the circle are drawn at all, for example `xmin=0,xmax=45`, `ymin=1e-4,ymax=1.003e-4` Idea: check arc size and disable the radius `*affine*` data scaling only if the arc has more than 90 (?) degrees Is that mathematically correct? And: is it useful at all?
- handle "empty axis". It should reset to a circle, not a box.

pgfplotstodo.tex:6763

Feature Proposal [open, Priority 5, Epic “]

patch visualization: provide displacement input format

pgfplotstodo.tex:6795

Feature Proposal [open, Priority 5, Epic “]

the following keys should process their argument with `pgfmathparse`:

xyz tick,

- min/max

- tickmin/max
- meta min/max
- domain/ y domain,
- error bar arguments,
- without FPU: width/height/ view
- check optimizations of the math parser!
- check if I can activate the FPU during the survey phase!

TODO: check which ones are missing. Some of them have been added in the meantime

pgfplotstodo.tex:6805

Feature Proposal [open, Priority 5, Epic ‘’]

Idea for input stuff: implement high level user interface for coordinate input, similar to the pgf basic level framework. Then, add styles on top of it (try to be compatible with DV engine)

pgfplotstodo.tex:6827

Feature Proposal [open, Priority 5, Epic ‘’]

new plot structure : use the ‘/data point’ key interface coming with pgf CVS

pgfplotstodo.tex:6905

Feature Proposal [open, Priority 5, Epic ‘’]

quiver plots:

- allow to disable update of axis limits
- provide rescaling of arrows such that they don’t overlap. manual rescaling is simple, auto is more difficult. auto: if I have a matrix, I could rescale such that its mesh width is larger than the largest vector. Same fo a vector of input data. But what if I don’t know whether it’s a vector or matrix? \rightsquigarrow second run. \rightsquigarrow after the first, it should be possible to autocomplete the mesh rows/cols. Try it. If that works, we have a matrix. \rightsquigarrow could be done from within the scanlinelength routines: auto-detect mesh/rows mesh/cols mesh/ordering mesh/width but that fails if there is no scanline marker.
- what with log plots? What with other axis features like symbolic trafos? \rightsquigarrow need difference type!
- that is: quiver plots in log coords are *multiplicative* and invoke the same routines. make special handling for ‘0’.
- allow feature where (u,v) are *coords*, not vectors. this could allow additive log quiver plots.

pgfplotstodo.tex:6909

Feature Proposal [open, Priority 5, Epic “]

plot expression: make the sampling parameters available within survey phase

pgfplotstodo.tex:6913

Feature Proposal [open, Priority 5, Epic “]

the table package uses a lot of logs – but it can’t change the log basis.

pgfplotstodo.tex:6918

Feature Proposal [open, Priority 5, Epic “]

3D + axis line variants: someone might prefer GRID LINES as for the boxed case combined with axis line=left...

pgfplotstodo.tex:6962

Feature Proposal [open, Priority 5, Epic “]

Mail by Hubertus Bromberger:

- ✓Period in legend, without the need of using the math environment?
`\legend{ML spcm$.$, CW spcm$.$, ML AC};`
- Maybe a more straight forward way for legend to implement something like shown in the graph. (see his mail .tex) \rightsquigarrow plot marks only at specific points. thus, the legend image should contain both lines and marks, but there are effectively two addplot commands.
- As a physicist, I often have the problem to fit curves. A job gnuplot can do very well. It should be possible using ”raw gnuplot” but maybe you can either provide an example or even implement a more straight forward way for this purpose.
- The color scheme is not really my taste. In CONTEXT:

```
cycle list={%
{Col1,mark=*},
{Col2,mark=square*},
{Col3,mark=diamond*},
{Col4,mark=star},
{Col5,mark=pentagon*},
{Col6,mark=square*},
{Col7,mark=diamond*},
{Col8,mark=triangle* } }
\definecolor[Col1][r=0.24106,g=0.05490,b=0.90588] % blau
\definecolor[Col2][r=1,g=0.05490,b=0.06667] % rot
\definecolor[Col3][r=0.65490,g=0.73333,b=0.01176] % grn
\definecolor[Col4][r=0.08627,g=0.92549,b=0.91373] % tyrkis
\definecolor[Col5][r=1,g=0.5,b=0] % orange
\definecolor[Col6][r=0.54118,g=0.51765,b=0.51765] % grau
\definecolor[Col7][r=0.80784,g=0.49804,b=0.06275] % okker
\definecolor[Col8][r=0.74902,g=0.07451,b=0.91765] % lila
```

- Sometimes it would be good to have a bit more of a programming language, but still that's not what tex is made for. The python-script looks promising, it's just, that I think it doesn't work with context.

pgfplotstodo.tex:6971 **Feature Proposal** [open, Priority 5, Epic “]
add something like

```
\pgfplotstabletypeset[
  cell { 1 }{ 2 }={\multirow{*}{3}{text}}
]
```

pgfplotstodo.tex:7015 **Feature Proposal** [open, Priority 5, Epic “]
ternary diagrams todo:

- the `\pgfplotsqpointoutsideofaxis` work only for position 1, nothing in-between (since it doesn't compute the other axis components correctly)
- data ranges are currently only correct if in $[0,1]$ or if one provides the `[xyz]min` and `[xyz]max` keys (and the ternary limits `relative=false`). How should it work!?

pgfplotstodo.tex:7032 **Feature Proposal** [open, Priority 5, Epic “]
contour:

- `labels=true,false,auto` \rightsquigarrow auto should deactivate labels if there are too many contour lines.
- labels should not be clipped...
- add label position shifting facilities. \rightsquigarrow identify by contour label *and* an optional index. There may be more than one line.

pgfplotstodo.tex:7038 **Feature Proposal** [open, Priority 5, Epic “]
filled contour plots (prototype is 10% ready)

works by means of gnuplot if the outer region is extended artificially. However, color data needs to be compensated etc.

pgfplotstodo.tex:7047

Feature Proposal [open, Priority 5, Epic ‘’]

DUPLICATE contourf: I guess filled contour plots could be possible if always two adjacent color levels are combined into a single path which is then filled with the simplified even/odd rule (not the winding fill rule). With the underlying smoothness assumption C^0 , there can't be any level between two adjacent ones, and there can't be self-intersections.

pgfplotstodo.tex:7052

Feature Proposal [open, Priority 5, Epic ‘’]

it would be very interesting to allow more flexible handling of empty lines in input data, especially files.

pgfplotstodo.tex:7071

Feature Proposal [open, Priority 5, Epic ‘’]

contour draft TODO:

- color of text nodes
- make sure there is at least one label node
- implement contourf
 - often: use 'even odd rule' to fill adjacent contours.
 - but this works only if adjacent contours are contained in each other.
 - if that's not the case, perhaps I need to add an artificial path from the data limits.
 - idea: in case I know the corner values, I'd know which contour plateau requires the artificial path.
 - other idea: I could implement some sort of even-odd rule in TeX. This should also yield the information.

pgfplotstodo.tex:7077

Feature Proposal [open, Priority 5, Epic ‘’]

implement simplified constructions to access DIFFERENCE coordinates. For example, `\draw ellipse` needs x radius and y radius.

pgfplotstodo.tex:7098

Feature Proposal [open, Priority 5, Epic ‘’]

the 'table/y index' should be changed. It should be `min(numcols,1)` instead of 1.

pgfplots.sty:7109

Feature Proposal [open, Priority 5, Epic “]

table package and axes should improve their communication. Namely:

-
- communicate table names.
- communicate xmode/ymode
- communicate log basis [xy]

pgfplots.sty:7114

Feature Proposal [open, Priority 5, Epic “]

provide and document access to (sanitized?) mesh/rows and mesh/cols fields during the survey phase. This might allow 2d key filters

pgfplots.sty:7121

Feature Proposal [open, Priority 5, Epic “]

Praktisch fände ich, wenn man folgende Dinge spezifizieren kann: 1. Welche Zeilen aus der Datei ausgelesen sollen (häufig gibt es nicht nur 1, sondern mehrere Header-Zeilen, oder auch am Ende noch sonstige Zeilen)

pgfplots.sty:7148

Feature Proposal [open, Priority 5, Epic “]

improve support for multiple ordinates

1.

```
* \pgfplotsset{set layers}
* scale only axis
* xmin=..., xmax=...,
* axis y line*=left
* axis y line*=right
* axis x line=none
```

would be hidden in the doubleaxis definition,

2. the first addplot would be the left one and the second, the right one, (???)
3. the comma separated list in the legend command's argument applies successively to the two addplot.
4. the colours of the two plots are given by the color cycle list.

pgfplotstodo.tex:7161

Feature Proposal [open, Priority 5, Epic “]

it would be useful if the clipping could be disabled for certain parts of the axis.
Is that possible?

- yes. Idea: start clipping for every axis element separately! Shouldn't be much more expensive than a single marker path.
- should work in the same way as before, there is no difference!
- scopes should introduce no further problems
- I could eliminate the nasty marker list

pgfplotstodo.tex:7166

Feature Proposal [open, Priority 5, Epic “]

provide a `\pgfplotspathcube` command as generalization from the cube marker. The cube command should work similar to `pathrectangle` or `rectanglecorners`.

pgfplotstodo.tex:7176

Feature Proposal [open, Priority 5, Epic “]

re-implement sampling loops. I should discard the compatibility with `foreach` internally in order to gain accuracy! Maybe it is necessary to invoke different loops - one for `tikz foreach` (samples at) and one "standard" sampling routine.

todo : activate

`pgfplotsforeachgroupeduniform@loop@mathengine@PRECISE@CURRENTLY@UNUSED@`

pgfplotstodo.tex:7219

Feature Proposal [open, Priority 5, Epic “]

optimization ideas:

- replace `\pgfpointscale` with a 'q' version \rightsquigarrow it invokes the expensive math parser.
- `pgfmultipartnode` evaluates every anchor twice
- implement a cache for expensive, repeated math operations like 'view' directions or common results of $1/||e_i||$.
- search for unnecessary math parser invocations; replace with 'q' versions if possible.
- implement a hierarchical generalization of the 'applist' container (a tree applist of arbitrary length)
- eliminate the deprecated 'non-legend-option' processing.
- remove the different (empty) paths of the axis node – it appears they are not necessary and waste only time and mem.

- try implementing an abstract 'serialize' and 'unserialize' method - it might be faster to re-process input streams instead of generating preprocessed coordinate lists.
- try to reduce invocations of pgfkeys
- optimize the filtered pgfkeys invocations - the filter is slower than necessary!
- the plot mark code invokes a lot of math parsing routines - which is a waste of time in my opinion. All expressions etc. have already been parsed.
- the point meta transform is set up twice for scatter plots.
- my elementary data structures always use `\string` to support macros as data structure names. I fear this might be ineffective. Perhaps its better to check if the argument is a macro (at creation time, thus only once) and call `\edef#1{\string#1}` to assign some sort of name to it. This will invoke `\string` only once. Is this faster?
- eliminate the 'veclength' invocations for single axes - they can be replaced with "inverse unit length * (max-min)"
- the key setting things can be optimized with pgfkeysdef
- create the /pgfplots/.unknown handler (.search also=/tikz) once and remember it.
- the (new) tick label code might be very expensive:
 - check for (unnecessary) calls to `\pgfpointnormalised` – the normal vectors are already normalised!
 - check the cost for bounding box size control of the tick labels – maybe this can be optimized away if it is not used. But this decision is not easy.

pgfplotstodo.tex:7224 **Feature Proposal** [open, Priority 5, Epic “]
 perhaps math style
`{grid=major, axis x line=middle, axis y line=center, tick align=outside}`

pgfplotstodo.tex:7233 **Feature Proposal** [open, Priority 5, Epic “]
 provide access to axis limits and data bounding box. It would be useful to get access to axis coordinates, for example in 'circle (XXX)'

pgfplotstodo.tex:7238 **Feature Proposal** [open, Priority 5, Epic “]
 allow math expressions for axis limits etc. Idea: try float parsing routine; if it fails: use math parser first.

pgfplotstodo.tex:7245

Feature Proposal [open, Priority 5, Epic ‘]

write a public math interface which provides access to axis internals like limits, the ‘dimen-to-coordinate’ method and so on. ~> it might be useful to use pgfmathparse for any numerical input argument as well.

pgfplotstodo.tex:7281

Feature Proposal [open, Priority 5, Epic ‘]

Store the axis limits into the axis’ node as saved macros. This would allow

- ‘use [xy] limits of= axis name ’
- access to axis limits from other macros.
- provide a command `\pgfplotslimits{current axis}{x}{min}` which expands to the ‘xmin’ limit. PROBLEM: to WHICH limit: the untransformed one? The transformed one? The logarithmized one?
 - \int I can’t compute $\exp(\text{xmin})$ in log plots!
 - Ideas:
 - provide both, if possible. It is NOT possible for log axes.
 - use log-limits (possibly combined with ‘logxmin=’ option ?)
 - The operation requires several operations because floats need to be converted. Idea: do that only for NAMED AXES.
 - all user-interface macros must be expandable!
 - I don’t want to spent time for number format conversions unnecessarily here!
 - provide `\pgfplotslimits` and `\pgfplotstransformedlimits` combined with simpler key-value interfaces
 - I could also provide access to the unit lengths (they are available as macro anyway)
 - ALTERNATIVE: implement access to axis limits as a math function which simply defines `\pgfmathresult`.
 - that is probably the most efficient way to do it. I only need to register the new function(s) to PGF MATH.
 - PGF 2.00: use `\csname pgfmath@parsefunction@\pgfmath@parsedfunctionname\endcsname`
 - PGF \int 2.00: use `\pgfmathdeclarefunction` Is it possible to provide ‘string’ arguments which are not parsed? No.

pgfplotstodo.tex:7287

Feature Proposal [open, Priority 5, Epic ‘]

I could provide public macros for the data transformations (and inverse transformations). This would also allow relatively simple access to axis limits.

pgfplotstodo.tex:7291

Feature Proposal [open, Priority 5, Epic ‘’]

cycle list should be implemented using an array structure. That’s faster.

pgfplotstodo.tex:7297

Feature Proposal [open, Priority 5, Epic ‘’]

what about a feature like ‘draw[xmin=...,xmax=...] fitline between points (a) (b)’?

pgfplotstodo.tex:7301

Feature Proposal [open, Priority 5, Epic ‘’]

interpolate missing coordinates for stacked plots.

pgfplotstodo.tex:7307

Feature Proposal [open, Priority 5, Epic ‘’]

the error bar implementation is relatively inefficient. Think about something like ‘pgfplots/error bars/prepare drawing’ which sets common style keys for every error bar

pgfplotstodo.tex:7337

Feature Proposal [open, Priority 5, Epic ‘’]

think about using a combination of the visualization engine of pgf CVS and my prepared-list-structure. Maybe I can adjust the list format for the current plot type? I need

- scatter/line plots 2D
- meta coords
- quiver may need extra vectors
- matrix plots may need twodimensional structure
- error bars could be handled more consistently
- ...
- $\hat{}$ implement a visualization class which provides methods
 - prepare()
 - visualize()
 - serialize()
 - visualizestream() and provide protected pgfplots methods
 - axis \rightsquigarrow preprocesscoordinate (filters, logs)
 - visualizer \rightsquigarrow prepare()
 - axis \rightsquigarrow processcoordinate()
 - visualizer \rightsquigarrow serialize()

- axis \rightsquigarrow postprocesscoordinate() The markers as they are implemented now don't really fit into this framework. The clipping region is not really what I want here... Idea: enable/disable clipping separately for each drawing command!

pgfplotstodo.tex:7341

Feature Proposal [open, Priority 5, Epic “]

the coordindex shouldn't be changed by z buffer=sort

pgfplotstodo.tex:7374

Feature Proposal [open, Priority 5, Epic “]

table package: provide abstract layer for low level storage interface. Idea: the interface should allow the container interface

- push_back()
- get(i)
- set(i)
- foreach()
- pop_front()
- newempty()
- clone()
- unscope()
- startPushBackSequence()
- stopPushBackSequence()

\rightsquigarrow this could allow to use arrays for fast algorithms. At least it would make things easier to read. Problem as always: the 'unscope()' operation. Currently, I have two different structures: the applists which have fast construction properties and the standard lists which implement the rest. Can I combine both? Yes, by means of the incremental construction pattern:

```
\startPushBackSequence
\push_back
\push_back
\push_back
\stopPushBackSequence
```

\rightsquigarrow inside of the construction, only `\push_back` is allowed and the structure is in "locked state" (low level: applist repr) \rightsquigarrow Idea: the creation is fast, afterwards, it has flexibility.

pgfplotstodo.tex:7446

Feature Proposal [open, Priority 5, Epic “]

imagesc combined with input of sorts

```
-3 -2 -1 0 1 2 3
0 0 1 2 3 4 5 6
1 1 2 3 4 5 6 7
2 2 3 4 5 6 7 8
3 3 4 5 6 7 8 9
```

pgfplotstodo.tex:7461

Feature Proposal [open, Priority 5, Epic “]

Ein weiteres wnschenswertes Feature aus meiner Email ist, dass man die ”‘diverging”’ Colorbars von <http://colorbrewer2.org/#> symmetrisch um 0 (also z.B. von -60 bis $+60$) zuweist, dann aber nur in der Colorbar Werte von -30 bis $+60$ zeigt, weil eben keine tieferen Werte als -30 vorhanden sind. Damit wrde die 0 nach wie vor wei bzw. gelb bleiben (in den Colorbars von <http://colorbrewer2.org/#>). Der Feature-Request gilt brigens allgemein fr die Colorbar und nicht zwingend fr die `colorbar sampled`. Ich glaube, dass war eins der Features, die du aus meiner Email nicht verstanden hast. Wenn dem immer noch so sein sollte, kann ich auch gerne eine Dummy-Colorbar erstellen und daran zeigen, was ich meine. Manchmal sagt ein Bild ja mehr als 1000 Worte.

pgfplotstodo.tex:7593

Feature Proposal [open, Priority 5, Epic “]

finish colormap access=direct

- add colorbar style
- add example of a bitmap image with palette

```
\documentclass{standalone}
```

```
\usepackage{pgfplots}
```

```
\pgfplotsset{compat=1.9}
\definecolor{YlGn-B}{RGB}{255,255,204}
\definecolor{YlGn-E}{RGB}{194,230,153}
\definecolor{YlGn-G}{RGB}{120,198,121}
\definecolor{YlGn-I}{RGB}{49,163,84}
\definecolor{YlGn-K}{RGB}{0,104,55}
```

```
\pgfplotsset{colormap={brewer}{color=(YlGn-B) color=(YlGn-E) color=(YlGn-G) color=(YlGn-I)
```

```
\begin{document}
```

```
\begin{tikzpicture}[baseline]
```

```

\begin{axis}[anchor=center,enlargelimits=false,
colorbar sampled={
surf,
samples=\pgfplotscolormapsizeof{\pgfkeysvalueof{/pgfplots/colormap name}}+1,
domain=0:\pgfplotscolormapsizeof{\pgfkeysvalueof{/pgfplots/colormap name}}},
},
colorbar style={
point meta min=0,
point meta max=\pgfplotscolormapsizeof{\pgfkeysvalueof{/pgfplots/colormap name}}},
y tick label as interval,
},
]
\addplot[matrix plot,
nodes near coords=\coordindex,mark=*,
point meta=explicit,
colormap access=direct,
]
coordinates {
(0,0) [0] (1,0) [1] (2,0) [2] (3,0) [NaN]

(0,1) [3] (1,1) [4] (2,1) [5] (3,1) [99]

(0,2) [3.5] (1,2) [-1] (2,2) [2.99] (3,2) [3]
};
\end{axis}
\end{tikzpicture}
%
\def\showcolorandname#1{%
\showcolor{#1}~\texttt{#1}%
}%
\def\showcolor#1{%
\tikz \draw[black,fill={#1}] (0,0) rectangle (2em,1.6em);%
}%
%
\begin{minipage}[c]{5cm}
\showcolorandname{YlGn-B}\\
\showcolorandname{YlGn-E}\\
\showcolorandname{YlGn-G}\\
\showcolorandname{YlGn-I}\\
\showcolorandname{YlGn-K}
\end{minipage}
\end{document}

```

or

```

\documentclass{standalone}

\usepackage{pgfplots}

```

```

\pgfplotsset{compat=1.9}
\definecolor{YlGn-B}{RGB}{255,255,204}
\definecolor{YlGn-E}{RGB}{194,230,153}
\definecolor{YlGn-G}{RGB}{120,198,121}
\definecolor{YlGn-I}{RGB}{49,163,84}
\definecolor{YlGn-K}{RGB}{0,104,55}

\pgfplotsset{colormap={brewer}{color=(YlGn-B) color=(YlGn-E) color=(YlGn-G) color=(YlGn-I)

\begin{document}
  \begin{tikzpicture}[baseline]
    \begin{axis}[anchor=center,enlargelimits=false,
      colorbar sampled={
        surf,
        samples=\pgfplotscolormapsizeof{\pgfkeysvalueof{/pgfplots/colormap name}}+1,
        domain=0:\pgfplotscolormapsizeof{\pgfkeysvalueof{/pgfplots/colormap name}},
      },
      colorbar style={
        point meta min=0,
        point meta max=\pgfplotscolormapsizeof{\pgfkeysvalueof{/pgfplots/colormap name}},
        ytickmax=\pgfplotscolormaplastindexof{\pgfkeysvalueof{/pgfplots/colormap name}},
        %y tick label as interval,
      },
    ]
      \addplot[matrix plot,
        nodes near coords=\coordindex,mark=*,
        point meta=explicit,
        colormap access=direct,
      ]
        coordinates {
          (0,0) [0] (1,0) [1] (2,0) [2] (3,0) [NaN]

          (0,1) [3] (1,1) [4] (2,1) [5] (3,1) [99]

          (0,2) [3.5] (1,2) [-1] (2,2) [2.99] (3,2) [3]
        };
    \end{axis}
  \end{tikzpicture}
  %
  \def\showcolorandname#1{%
    \showcolor{#1}~\texttt{#1}%
  }%
  \def\showcolor#1{%
    \tikz \draw[black,fill={#1}] (0,0) rectangle (2em,1.6em);%
  }%
  %
  \begin{minipage}[c]{5cm}
    \showcolorandname{YlGn-B}\\
    \showcolorandname{YlGn-E}\\

```

```

\showcolorandname{YlGn-G}\\
\showcolorandname{YlGn-I}\\
\showcolorandname{YlGn-K}
\end{minipage}
\end{document}

```

pgfplotstodo.tex:7601 **Feature Proposal** [open, Priority 5, Epic ‘’]
support \multicolumn for legends

pgfplotstodo.tex:7606 **Feature Proposal** [open, Priority 5, Epic ‘’]
it appears line breaks in legend descriptions are a problem (?) \rightsquigarrow bug in pgf:
\ is overwritten and won't be restored.

pgfplotstodo.tex:7614 **Feature Proposal** [open, Priority 5, Epic ‘’]
pgfplotstable file open protocol: provide public listener interface

pgfplotstodo.tex:7618 **Feature Proposal** [open, Priority 5, Epic ‘’]

\addplot coordinates {\macro};

pgfplotstodo.tex:7642 **Feature Proposal** [open, Priority 5, Epic ‘’]
precise width calculation idea:

- Problem: total width depends on width of axis descriptions
- width of axis descriptions depends on position of axis descriptions
- position of axis descriptions depends on width of axis
- width of axis depends on width of axis descriptions
- non-linearly coupled system.
- Idea: introduce a loop.
 - details:
 1. place axis descriptions + the axis rectangle into a box.
 2. Measure box'es width, throw it away if it is too bad. Keep it and stop iteration otherwise.
 3. recompute the complete scaling.
 4. go back to step 1.) and iterate
 - one or two iterations should be enough .

- it’s not necessary to recompute the prepared and stored plots. Just keep them in main memory until the scaling is fixed.

pgfplotstodo.tex:5735	<p>Feature Proposal [open, Priority 4, Epic ‘’]</p> <p>regression line computation: also generate macros containing the coefficient of determination</p> <p>http://en.wikipedia.org/wiki/Coefficient_of_determination</p> <p>https://tex.stackexchange.com/questions/147249/pgfplots-linear-regression-mean-square-error</p>
pgfplotstodo.tex:5706	<p>Feature Proposal [open, Priority 3, Epic ‘’]</p> <p>add support for symlogs http://stackoverflow.com/questions/3305865/what-is-the-difference-between-log-and-symlog</p>
pgfplotstodo.tex:6724	<p>Feature Proposal [open, Priority 3, Epic ‘Performance’]</p> <p>disable bounding box updated during addplot – it makes no sense and wastes time (unless the axis is hidden)</p>
pgfplotstodo.tex:5702	<p>Feature Proposal [open, Priority 2, Epic ‘’]</p> <p>faceted allows to draw the entire rectangle.</p> <p>It would allow cool effects if one could draw only those lines along the x direction (or y direction).</p> <p>Compare http://tex.stackexchange.com/questions/166768/draw-a-surface-from-scattered-curves</p>
pgfplotstodo.tex:5721	<p>Feature Proposal [open, Priority 1, Epic ‘’]</p> <p>Optimization: if the same plot contains <code>name intersections</code> and <code>fill between</code> or <code>intersection segments</code>: compute the intersection points just once</p>
pgfplotstodo.tex:6562	<p>Feature Proposal [open, Priority 1, Epic ‘’]</p> <p>nested axes would be a nice feature. TODO: - update the list of global state variables - “interrupt” these variables somehow. - make sure local redefinitions of TikZ commands (like point commands) work; the <code>\let...@orig=</code> assignments should be handled somehow. - What about keys? They will be inherited from the outer axis... perhaps the best would be an</p>

```

\endgroup
<nested axis>
\begingroup
<restore state>

```

which includes the keys of the outer axis!?

pgfplotstodo.tex:6586 **Feature Proposal** [open, Priority 1, Epic “]

log plots: minor tick num would be useful here! If tick labels are placed at '1e-5, 1e0', minor tick num= 4 would lead to the minor tick lines at '1e-4,1e-3,1e-2,1e-1' which is useful. So:allow minor tick num for log axes. ~> need to adjust the check for "uniform log ticks"

pgfplotstodo.tex:7020 **Feature Proposal** [cancelled, Priority 5, Epic “]

idea: 'mesh/ordering=auto'. Just check for 'x varies' and 'y varies'! The two first points inside of a scanline are enough.