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Saving Canvas in TeX

Being able to generate TeX graphics can be useful for several reasons:

- To have an easy to modify the image, in particular the labels and titles (ASCII file).
- To have the same font in all labels, legends, plot titles etc. as in the text body of a document.
- Render Math formulae using TeX.

The TeX text engine is powerful and can render any complex math formulae. But more tricky is the graphics rendering: lines, polygons, markers etc ... One possibility is to render them using PDF or PostScript and render the text using TeX. But that's not very practical as two files are needed to render one picture. A better way is to use a dedicated environment like PGF/TikZ.

"PGF (A Portable Graphic Format for TeX) is a macro package for creating graphics. It is platform- and format-independent and works together with the most important TeX backend drivers, including pdfTeX and dvips. It comes with a user-friendly syntax layer called TikZ." (<http://pgf.sourceforge.net/> [2])

The new class TTeXDump allows to generate PGF/TikZ files. To generate a such file in ROOT it is enough to do:

```
gStyle->SetPaperSize(10.,10.);
hpx->Draw();
gPad->Print("hpx.tex");
```

Then, the generated file (hpx.tex) can be included in a LaTeX document (simple.tex) in the following way:

```
\documentclass{article}
\usepackage{tikz}
\usetikzlibrary{patterns}
\usetikzlibrary{plotmarks}
\title{A simple LaTeX example}
\date{July 2013}
\author{O.Couet}
\begin{document}
\maketitle
```

The following image as been generated using the TTeXDump class. To include it in a LaTeX document it is enough to specify the following three directive at the top of the LaTeX document:

```
\begin{verbatim}
\usepackage{tikz}
\usetikzlibrary{patterns}
\usetikzlibrary{plotmarks}
\end{verbatim}
```

Then to include the picture (`\tt hpx.tex` in this case) in a LaTeX document it is done the usual way:

```
\begin{verbatim}
\scalebox{0.3}{\input{hpx.tex}}
\end{verbatim}
\par
```

A simple LaTeX example

O.Couet

July 2013

The following image (hpx.tex) as been generated using the TTeXDump class. To include it in a LaTeX document it is enough to specify the following three directives at the top of the LaTeX document ...

```
\usepackage{tikz}
\usetikzlibrary{patterns}
\usetikzlibrary{plotmarks}
```

... and to include the picture in a LaTeX document with:

```
\scalebox{0.3}{\input{hpx.tex}}
```

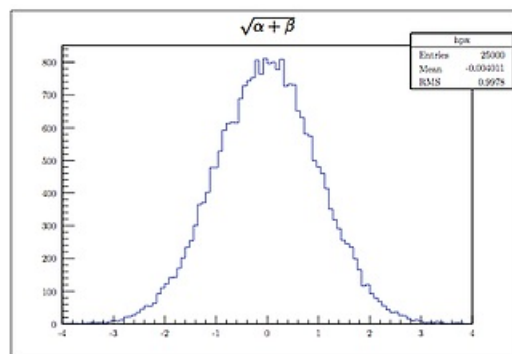


Figure 1: Image (hpx.tex) generated thanks to TTeXDump

```
\begin{figure}[htbp]
\begin{center}
\scalebox{0.5}{\input{hpx.tex}}
\caption{Image ({\tt hpx.tex}) generated thanks to {\tt TTeXDump}}
\end{center}
\end{figure}
\end{document}
```

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Source URL: <http://root.cern.ch/drupal/content/saving-canvas-tex>

Links:

- [1] <http://root.cern.ch/drupal/content/example-ttexdump-usage>
- [2] <http://pgf.sourceforge.net/>