Proposal for a ROOT Style for CLIC CDR Plots

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Abstract

This document shows example plots with the present CLIC CDR style for ROOT and is meant as a basis for discussion to develop the style and give everyone a chance to comment and make suggestions. Please try out the style for you plots. Comments are very welcome and needed.

The CLIC CDR Root Style

The style file defines certain global settings like font size for labels and text and the appearance of the axis. Many things are however still up to the user, for example choosing the colors and line styles. Filling and placing the legend is also user responsibility.

Using the style in a ROOT macro is simple:

gROOT—ProcessLine(".L /SampleStyle/rootstyle/CLICStyle.C"); CLICStyle();

The script and more extensive examples can be found in the subdiracty rootstyle here:

svn+ssh://svn.cern.ch/reps/crdvol3/trunk/SampleStyle

Two examples are shown including a sketch of the settings used to produce them.

Example: Graph

```
\begin{split} & TGraphErrors *gr\\ &gr {\to} SetFillColor(kWhite)\\ &gr {\to} SetMarkerColor(color)\\ &gr {\to} SetLineColor(color)\\ &gr {\to} SetMarkerStyle(24)\\ &gr {\to} SetTitle("no cut")\\ &gr {\to} GetXaxis() {\to} SetTitle("E\_jet [GeV]")\\ &gr {\to} GetYaxis() {\to} SetTitle("rms\_90/mean\_90 [\%]")\\ &TCanvas *c1=new TCanvas("c1","c1")\\ &gr {\to} Draw("AP")\\ &TLegend *leg=gPad {\to} BuildLegend(0.6,0.7,0.8,0.9,"CLIC\_ILD")\\ &leg {\to} SetTextSize(0.05) \end{split}
```

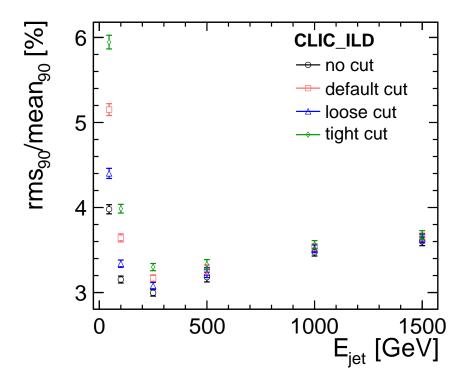


Figure 1: Example for a graph

Example: Histogram

```
TH1F *histo TLegend *leg=new TLegend(0.2,0.6,0.5,0.9,"CLIC_ILD") histo\rightarrowGetXaxis()\rightarrowSetTitle("Energy [GeV]") histo\rightarrowGetYaxis()\rightarrowSetTitle("Entries [GeV]") histo\rightarrowSetTitle("No cut") leg\rightarrowAddEntry(histo,"","l") leg\rightarrowSetTextSize(0.05)
```

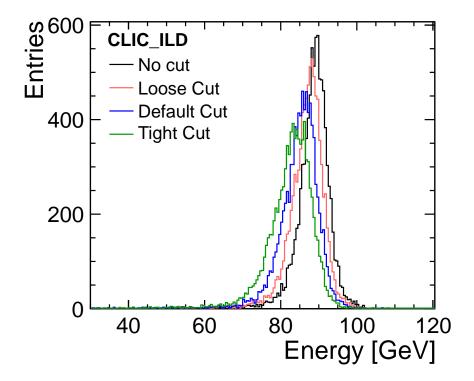


Figure 2: Example for a histogram

Conventions

As important as the style or even more so are conventions on how to choose the aspects of the plot style that are in the users hand. This includes for example:

• Size of the canvas (aspect ratio):

Use the default (800,700) whenever possible.

• Axes label:

Capital letters for the first word

• Number of curves:

Limit number of curves in one plot to 4 or 5, limits information overflow and improves readability.

• Color choices:

Should be distinctive also in black and white print.

Suggestion: kBlack, kRed-7, kBlue, kGreen+2, kCyan+1, kRed+2, kOrange, kViolet+2

• Line styles:

Make distinction by color rather than dashed and dotted lines. If dashed lines are used also choose a dark colors.

• Marker styles:

Should be easy to distinguish.

Suggestion: kOpenCircle, kOpenSquare, kOpenTriangleUp, kOpenDiamond, kOpenCross

• Legend:

Large enough to be readable but maximum of 25-30% of the plot size. Use test size of 0.05.

• Saving the plot:

No pixel graphics! Save as pdf or eps and also save in addition as .C root macro for further editing if necessary later.

This might not work for all plots, but if possible it should be used. If there are problems, suggestions or comments please let me know: amunnich@cern.ch