Description of Macros in the Online Folder

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Getting the scripts from GitHub

The analysis macros can be found online in the repository at:
https://github.com/rachel-m/HodoSW.git
To clone it and navigate to the right directory:

- git clone https://github.com/rachel-m/HodoSW.git
- cd online
- ls to see the macros

Replaying Raw Hits

If one wishes to write out all raw TDC hits, this has to be specifically declared in the replay script. In the replay directory in the git hub repository there are two replay scripts replay_BBHodo.C and replay_BBHodoRaw.C. The second one is the one to write out all raw TDC hits.

Creating TDC Histograms

To extract the TDC histograms from the SBS-offline replayed files, use either PlotRawTDC.C or PlotGoodTDC.C.

- PlotRawTDC.C requires SBS-offline to have been run using a replay file which stores all raw TDC hits, ie replay_BBHodoRaw.C. It creates an output root files with all the relevant histograms necessary for the online display software, eg LE and TE spectra and hit multiplicities. To execute:
  analyzer
  .L PlotRawTDC.C+
  PlotRawTDC("filename", nevents)
  Where filename is the filename without the root suffix and nevents is the number of events you want to run.
- PlotGoodTDC.C. SBS-offline can have been run using a replay file which stores all raw TDC hits or only good hits. It will only look at the good hit leaves, ie the individual hits in each channel which lie closest to the good timing hit cuts. It creates an output root file with all the relevant histograms necessary for the online display software, eg LE and TE spectra and hit multiplicities.
  analyzer
  .L PlotGoodTDC.C+
  PlotRawTDC("filename", nevents)
  Where filename is the filename without the root suffix and nevents is the number of events you want to run.

Standard Hall A Online Display Software

More information about this software in general and its use can be found at:

https://userweb.jlab.org/~moffit/onlineGUI/guiHOWTO2007.pdf
The necessary files are found in the online directory of the git hub repository.
To execute:
analyzer
.L online.C++
Online("config",runNo)
Config is the configuration file – this defines what plots you want to view. There are currently several configuration files. There is

- BBTH_RawTDC.cfg. Use this to monitor all raw TDC hits. This will be useful to set the good timing cuts for the reference and TDC channels in the db file. Multiplicity plots are also shown. LE and TE for the reference and TDC channels are also shown. The config file also makes use of the macros RawTDCdrawL.C and RawTDCdrawR.C and RawRefTDCdrawL.C and RawRedTDCdrawR.C to plot the LE and TE histos on the same canvases. Requires PlotRawTDC.C to have been ran.
- BBTH_GoodTDC.cfg. Use this to monitor TDC hits after setting the good timing cut values in the db files – ie when SBS offline is recording the good hit for each channel and reference channel. Multiplicity plots are shown. LE and TE for the reference and TDC channels are shown. The config file also makes use of the macros GoodTDCdrawL.C and GoodTDCdrawR.C and GoodRefTDCdrawL.C and GoodRefTDCdrawR.C to plot the LE and TE histos on the same canvases. This is the setting recommended for standard shift taking. Requires PlotGoodTDC.C to have been ran.
- BBTH_Bars.cfg. Use this to monitor bar level quantities, eg mean time, t ime difference, hit position. Requires PlotGoodTDC.C to have been ran.