Event Display

Chris Jones

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Outline

- What is the Event Display?
- Basic Concepts
- Examples
- Suggestions for making pretty pictures

What is the Event Display?

- Group of Processors that visualize an Event
  - SpExtract*Proc
    - know how to 'extract' some piece of data from the Frame and then make it available to the event display
  - SpViewerProc
    - controls the graphic 'window'
- What can it display?
  - trigger info, detector hits, detector geometry, MC hits, tagged Ds, track seeds and fits, MCDecayTree, Showers, Ks
- What is is used for?
  - online data monitoring
  - understanding failures of pattern recognition
  - qualitative understanding of signal events
  - ...

Basic Concepts

- Provides multiple 'views' of the same data
  - Hierarchical List
  - 2D Cartesian projections
  - 2D Cylindrical Projections
  - Information window
- Data are objects
  - all views use the same color when drawing an object
  - all views let you select an object (shown highlighted in all views)
- Can modify graphical representation of objects
  - can change the representations of an object class
    - e.g. draw tracks as 'trajectories' or 3 vectors
  - can change properties of selected objects: Pick then Act
    - color (hue and brightness separately), and visibility

Examples

- Standard 'view' scripts are in $C3_SCRIPTS
  - viewDTags.tcl, viewMCDecayTree.tcl, viewMCPass2.tcl, viewPass2.tcl, viewTrackFinder.tcl, viewTrackFitter.tcl viewHits.tcl
- Open new views
- Modify 2D View
- Select and act on objects
- Change representations
- Select by attribute
- Print a picture
  - change background color
- Use a Filter Processor in front of SpViewerProc
  - e.g. want to see signal MC that passes your cuts
  - e.g. want to see signal MC that fail your cuts

Making Pretty Pictures

- Background Color
  - Preferences/Adjust Color ...
  - can use either black or white
    - white is best when printing
    - for use in talk, choose to match brightness of slide background
    - white usually needs to have brightness of objects modified
      - try using 'Preferences/Adjust Color...' Brightness
- Emphasize what is important in the picture
  - choose distinct colors and a high emphasis for most important data
    - for maximum emphasis, select the data so it is highlighted
  - lower the emphasis for less important data
  - can make unneeded info invisible
    - NOTE: do not make something invisible just because it does not support your hypothesis

Notes on the Example Scripts

- The scripts used to run the examples are available on the course website
- The viewHits.tcl script was added yesterday to $C3_SCRIPTS, to get it do
  - cleo3cvs co SuezScripts
  - then run c101_viewHits.tcl in the directory holding SuezScripts
  - for some reason, this script fails on Linux