E835 Event Display

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1. Introduction

Event Display is an important tool to observe the event online and offline for high energy experiment, it shows the hits and shower clusters on each subdetector in a direct visual way, it will give us the whole picture how the event looks like and what kind of event it is.

E835 Event Display program is written in Motif + Xlib, it adopts the Motif windowing environment, can be run on X-terminal, SGI console and Alpha console. It has 10 plots to show different views of different subdetectors, every plot is to scale.

Two differet versions of Event Display are provided, online version which gets the events from data acquisition system (Hoist) or a file (Dfm_hoist) and offline version which gets the events from a file by DAFT (Data From Tape, Fermilab product).

Get help from online help documentation when it is needed.

This Event Display is based on the Nirvana framework.

2. E835 Event Display Motif Menu

- Next Buffer (button)

  Get current buffer from hoist or dfm_hoist

- Next Event (button)

  Get next event

- Display Choices For E835 (Pulldown menu)

  - CCAL + FCAL Theta View
  - CCAL + Cerenkov Phi View
  - CCAL Rollout (2D)
  - CCAL Rollout (lego)
  - FCAL Phi View
  - Inner Detector Theta View
  - Inner Detector Phi View
  - Silicon (Outer) + SciFi + Straw Chamber Rollout
  - Silicon (Inner) + SciFi + Straw Chamber Rollout
  - Silicon + SciFi + Straw Chamber Hit Map

- Preference (Pulldown menu)

  Font selection for each plot
  ...

- Help (Pulldown menu)

  Online documentation for E835 Event Display

- File (Pulldown menu)

  Read Calibration File
  ...

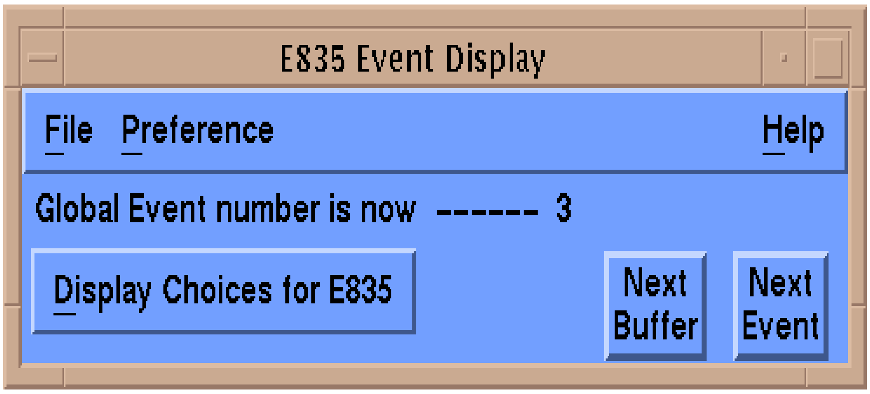
3. Run E835 Event Display

The Motif window will pop up when you run the Event Display (by typing E835_disp). Please use Display Choices pullDown menu to get the list of plots. By pressing the Next Event button, data corresponding to the next event in D.A. queue will be read in, and the previous event will be forgotten, all plots will be refreshed. Every plot is to scale, all numbers are in the unit of cm. For each plot, if there is background color, red stands for hits, if there is no background color, color stands for hits. The scale and the font of each plot can be changed by yourself anyway.

- Online Version

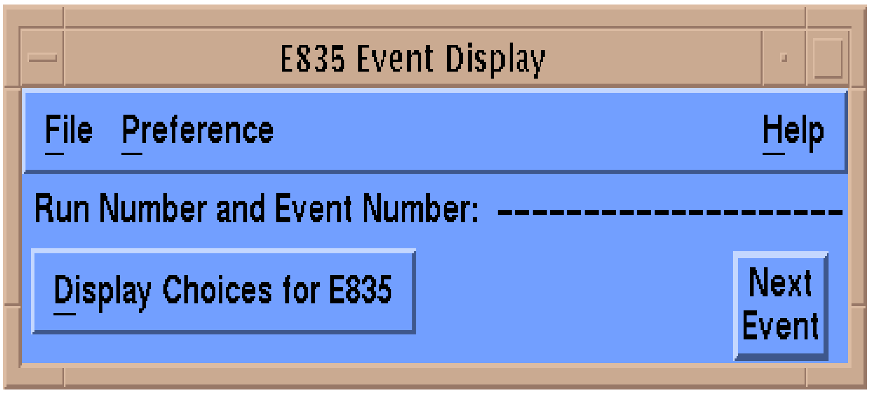
  Get event from Hoist: 20-60 events/buffer

  Get event from Dfm_Hoist: 1 event/buffer



- Offline Version

  Read the event from file by DAFT



4. Download Plot to Postscript File

A. Run UNIX shell command script

<fn835c> evtdsp_ps test
Click the pointer in the desired window, then wait ...
Bell rings once ... Bell rings twice ...
test.ps has been sucessfully produced

Attention: the disired window must be fully exposed !!!

```
====================== evtdsp_ps ==============================
#
# UNIX shell command scripts to dump an image of an X window and output
# it to a PostScript file
#
# For E835 Event Display
#
# Xiaoling Fan, Northwestern University
#
# Date: May 1996
#

if ($#argv) then
        set NAME = $1
else
        echo Please Input the Name of PostScript File
        exit 0
endif

echo Click the pointer in the desired window, then wait ...
echo Bell rings once ... Bell rings twice ...
xwd -icmap -xy -out $NAME.temp
xpr $NAME.temp -scale 4 -out $NAME.ps
rm $NAME.temp
echo $NAME.ps has been sucessfully produced
```

B. Run XV 3.00

Use "grab" function of XV to grab the plot, then save it in Postscript file.

Following Fortran common blocks have been rewritten in C structure for Event Display (also for Online Monitor).

buffers.cde	→	buffers.h
detrep.cde	→	detrep.h
geninfo.cde	→	geninfo.h
lunits.cde	→	lunits.h
partdc.cde	→	partdc.h
clust.cde	→	clust.h
errors.cde	→	errors.h
hits.cde	→	hits.h
pardef.cde	→	pardef.h
proc_status.cde	→	proc_status.h

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