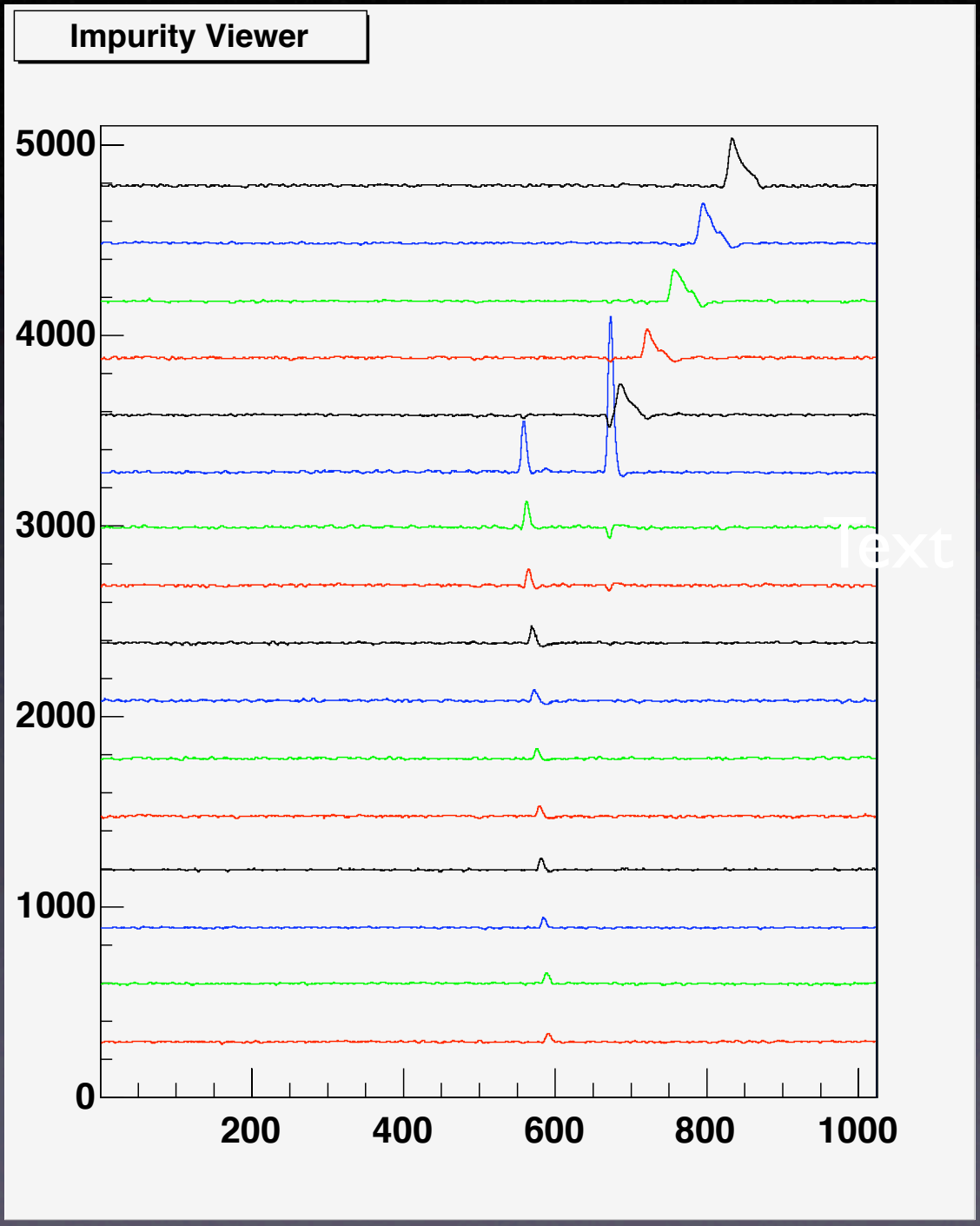
Flash ADC Analysis

Jordan Meyer



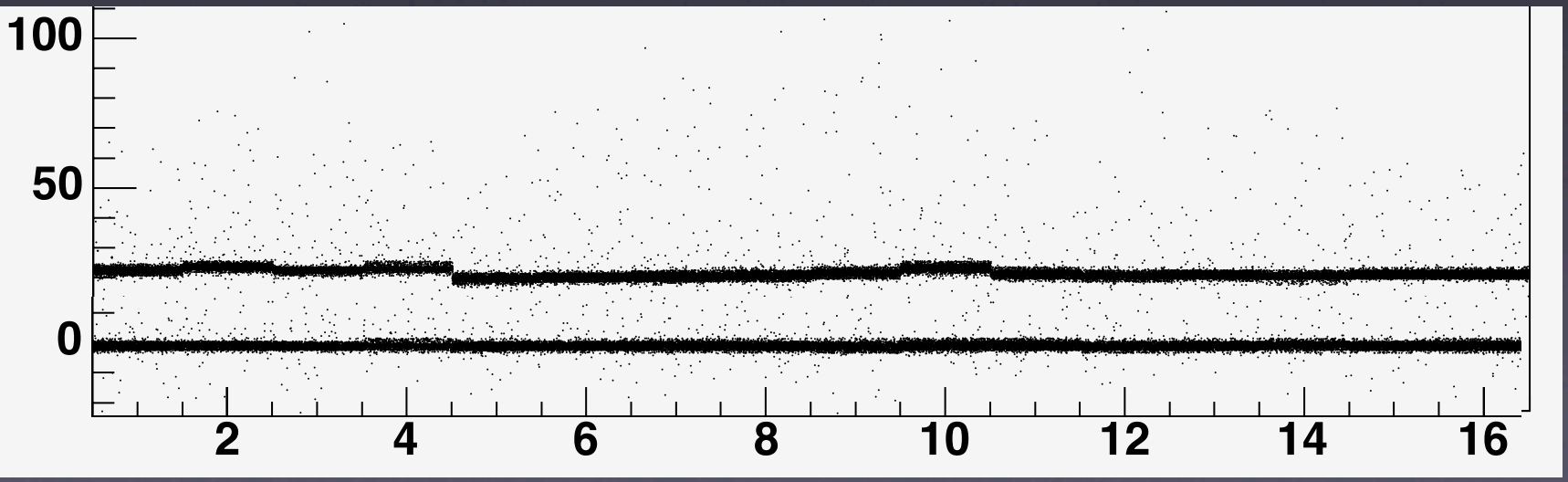
- Raw Process
- Gas Gain
- Impurity Analysis

Raw Process

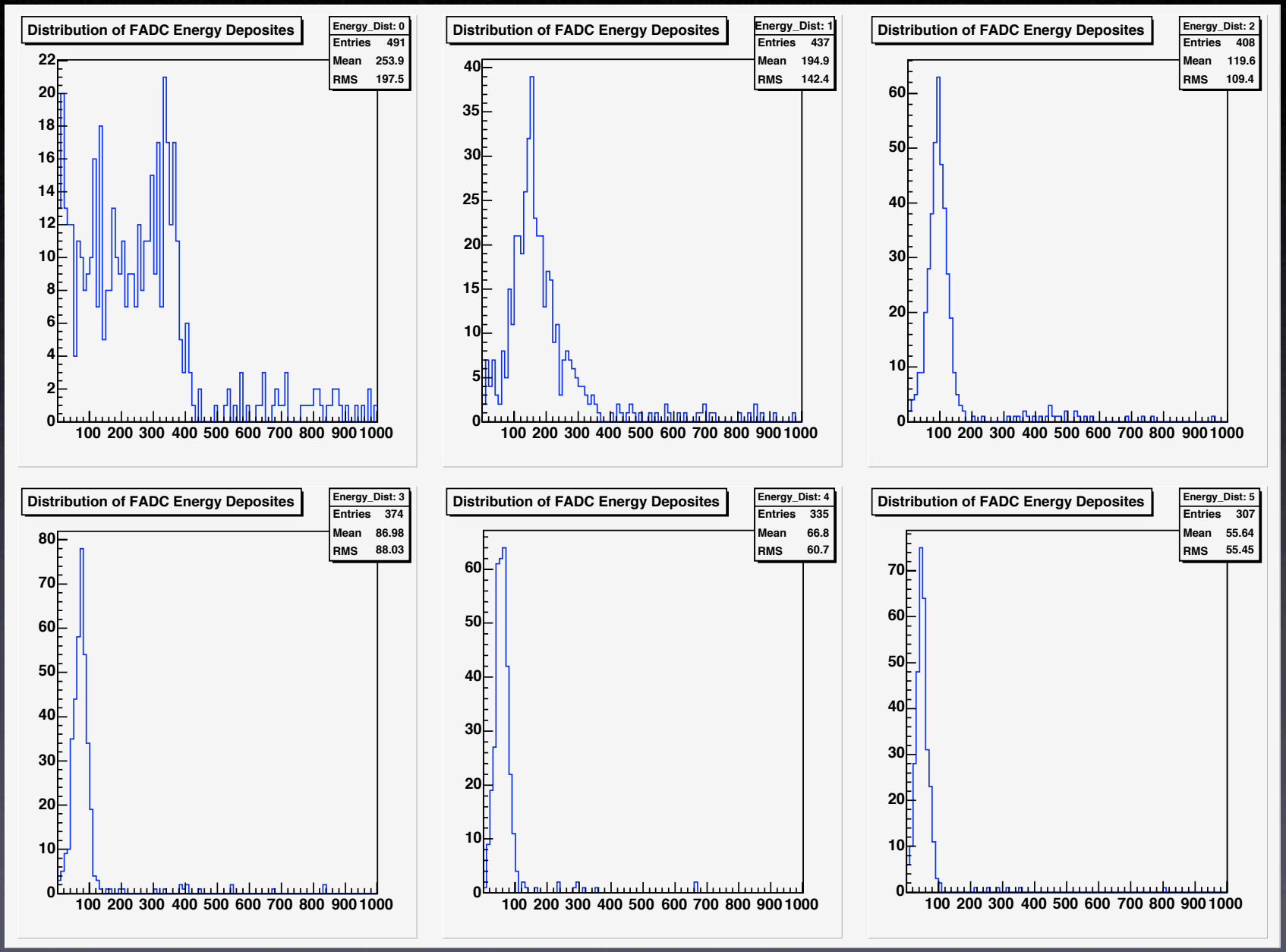
The MFadcProcessRaw module takes the raw data from the Fadc bank and creates a new bank containing relevant information about each event. Each entering muon is described by a list of variables such as: number of muons, pulse length, height, integral, anode number, and time (not calibrated to CAEN time).

Pedestal Offset

- The MFadcProcessRaw module measures and corrects for the pedestal offsets of the anodes.
- Here is a plot of the pulse height vs anode number with and without correction.



Gas Gain Analysis

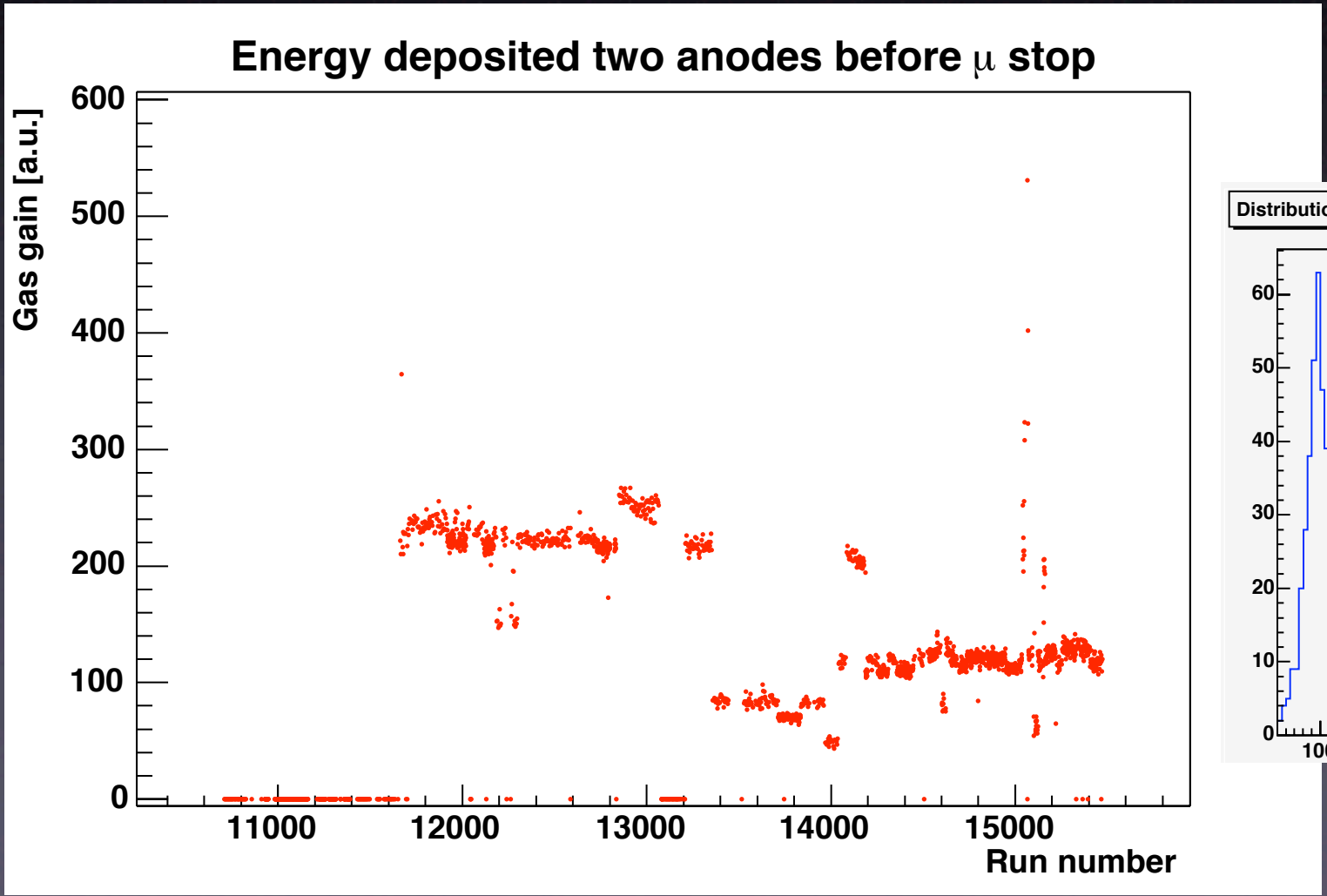


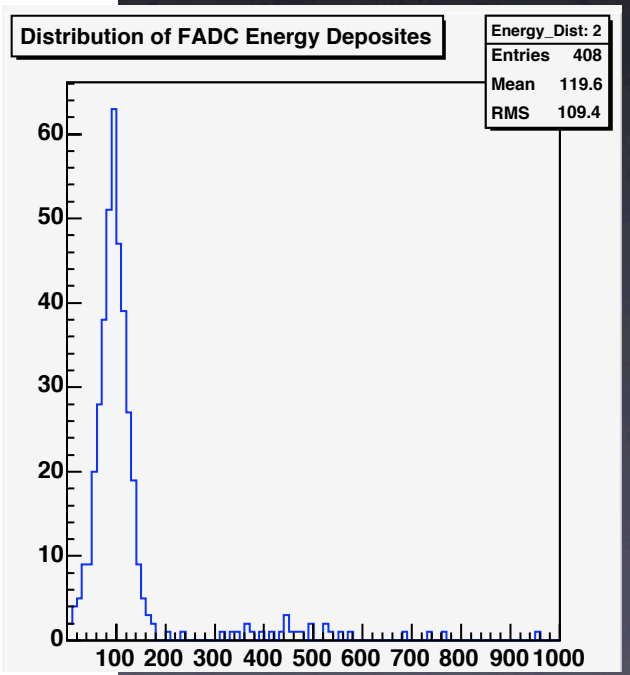
Gas Gain

- Uses track sniffer to find the stopping anode
- Records energy for this anode and up to six anodes below it
- Only counts events with one entering muon
- Energy is measured by integral under the pulse

- This plot shows how the gas gain changes from run to run

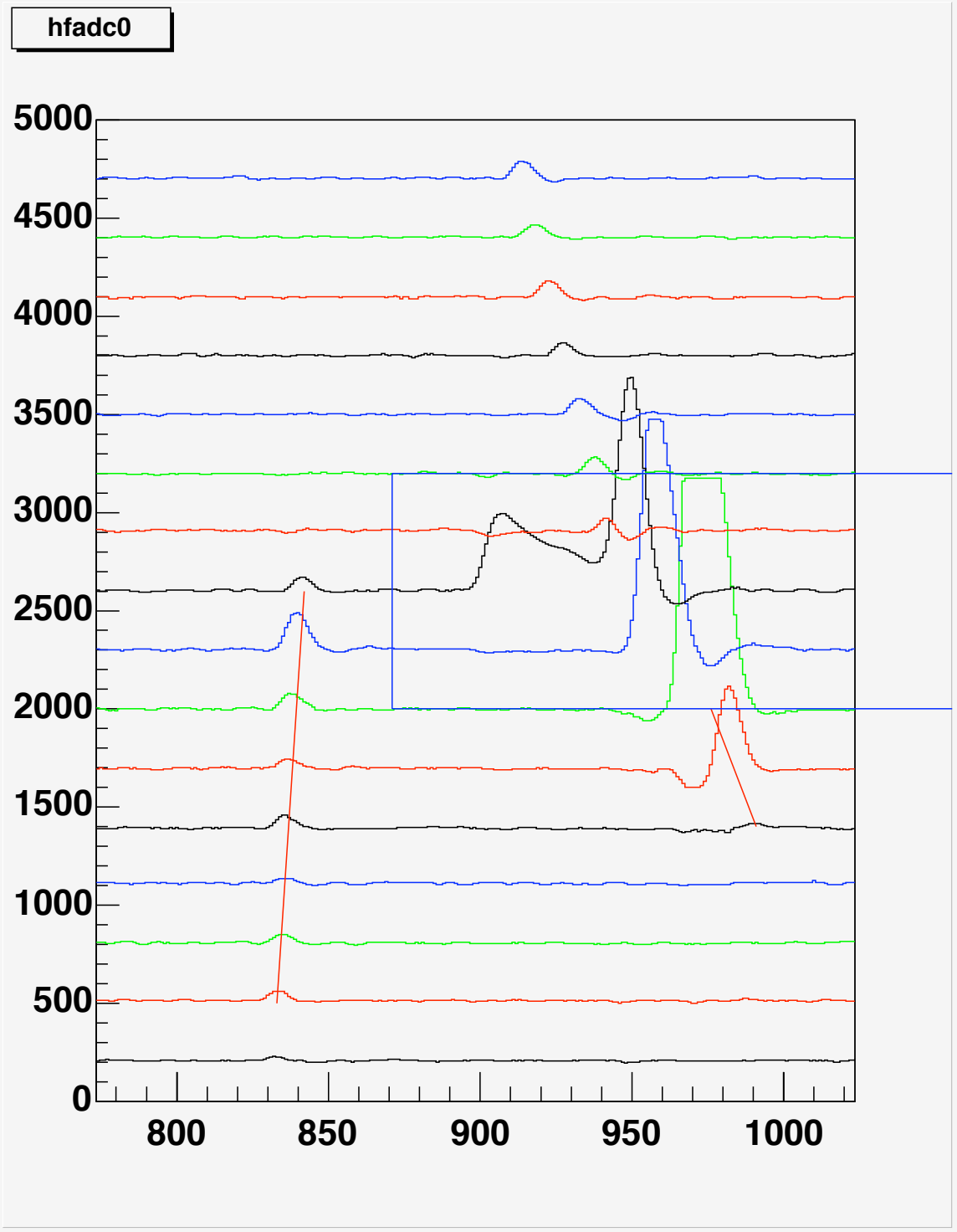
- The gain of each run is calculated by looking at the mean energy deposited two anodes before the stopping anode





Impurity Finder

- The MFadcAnalysis module looks for FADC events in close proximity to impurity captures that are found by Tom's impurity finder
- It uses the same track sniffer to find the incoming muon tracks
- Once an impurity event is identified the module records information in a TTree
- The TTree also stores graphical information so that the events can be looked viewed at a later time



The TTree Holds:

- Largest Energy Peak
- Total Energy of Capture
- Energy deposited on the stop anode plus or minus 2 anodes (box shown)
- Number of anodes hit by Capture
- Energy deposited on stopping anode
- Difference between calculated time and CAEN time
- An array of Raw data that can be displayed graphically

(Any guesses as to the nature of this event?)