Status of The D0 Calorimeter

Nirmalya Parua

(For the Calorimeter Group)

General Overview

- **55k channel Ur/liq. Argon calorimeter**
- **Run II upgrade:**
  replacement of electronics to accommodate faster bunch crossings

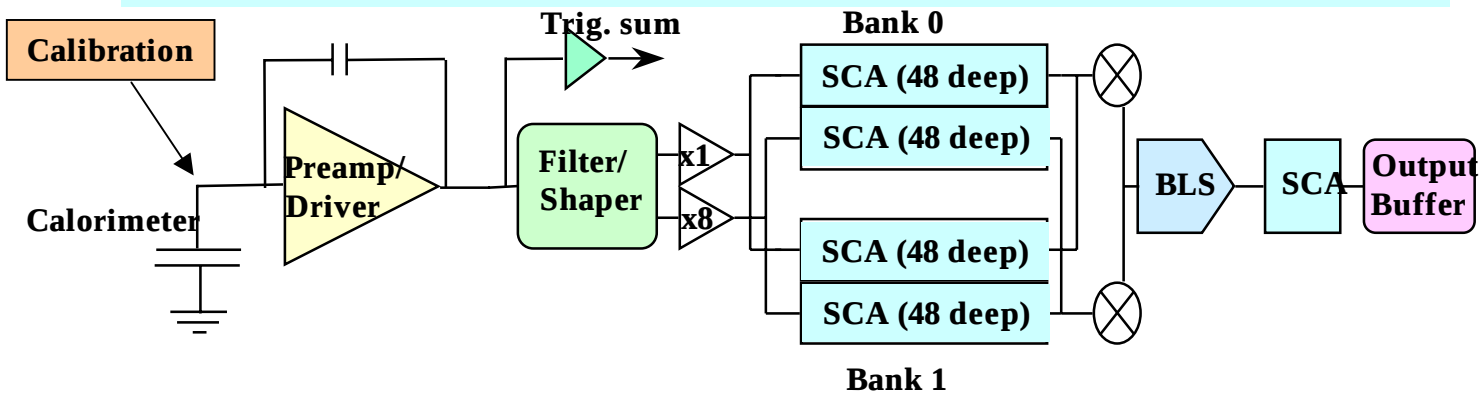
⇒ 55k dual FET PreAmps

⇒ 23k Switch Capacitor Arrays (SCA) on

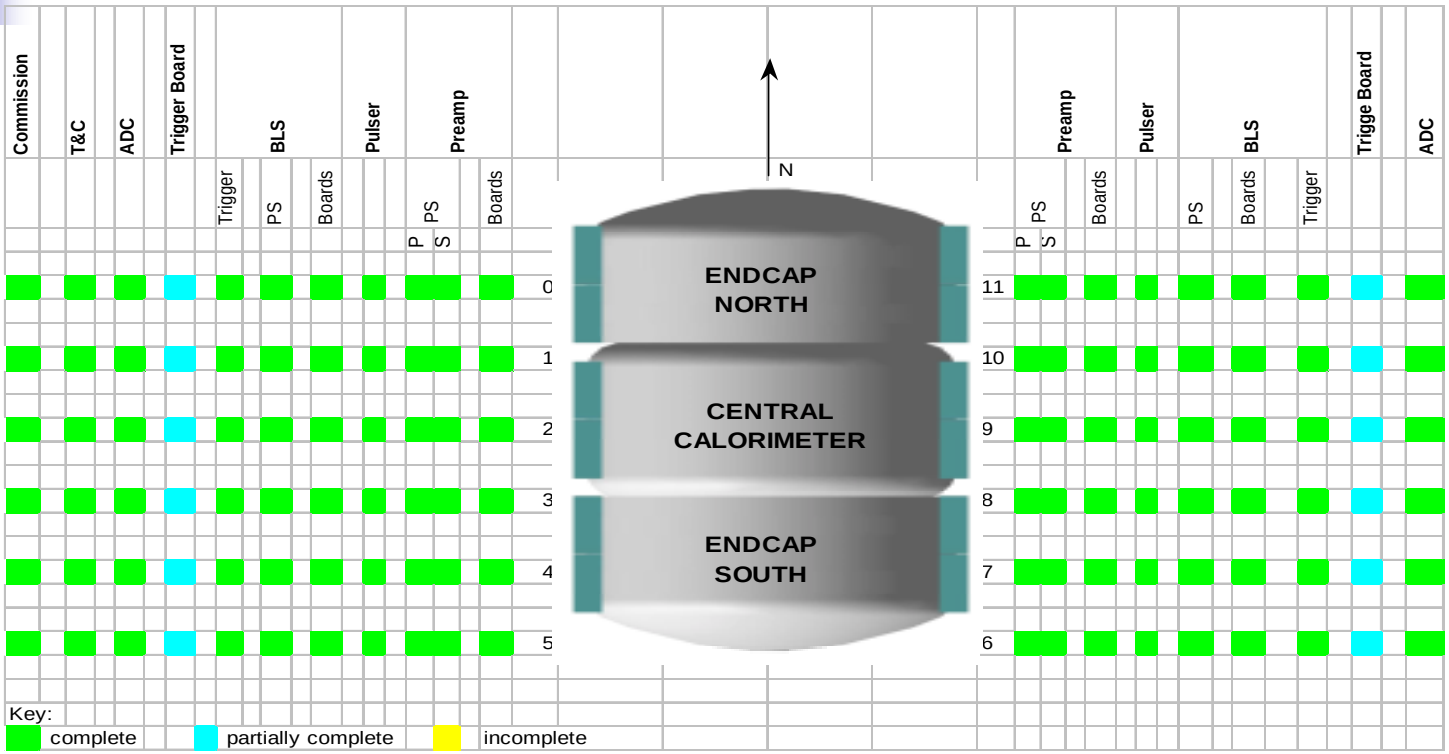
⇒1200 BaseLineSubtraction (BLS)-boards

~ 50 bad channels (~0.1%)

electronics readout chain

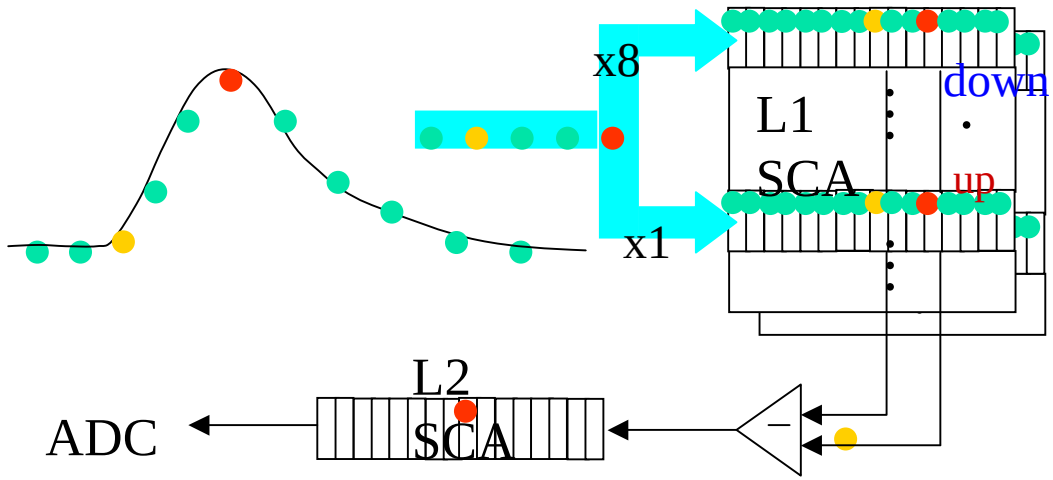


Installation & Commissioning

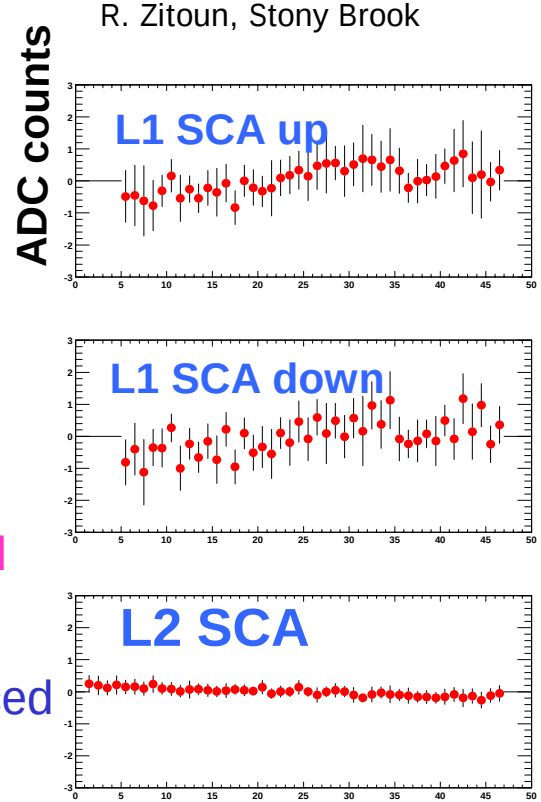


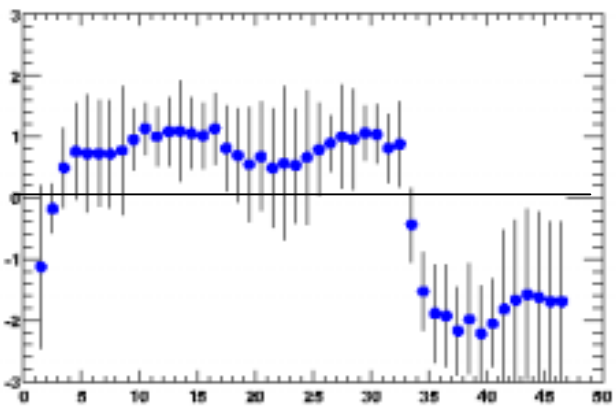
- **Only Remaining piece is Trigger readout for |η|>0.8**
- **We have occasional failure of power supplies.**

Finer Debugging



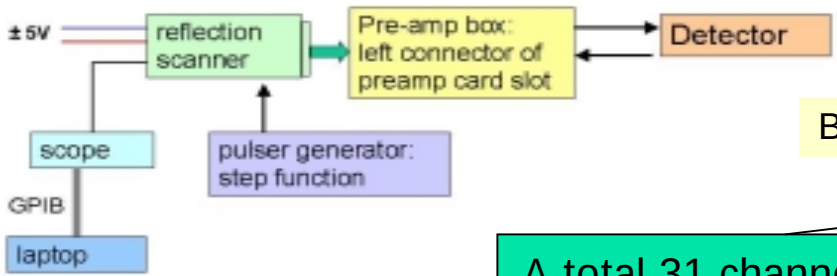
R. Zitoun, Stony Brook

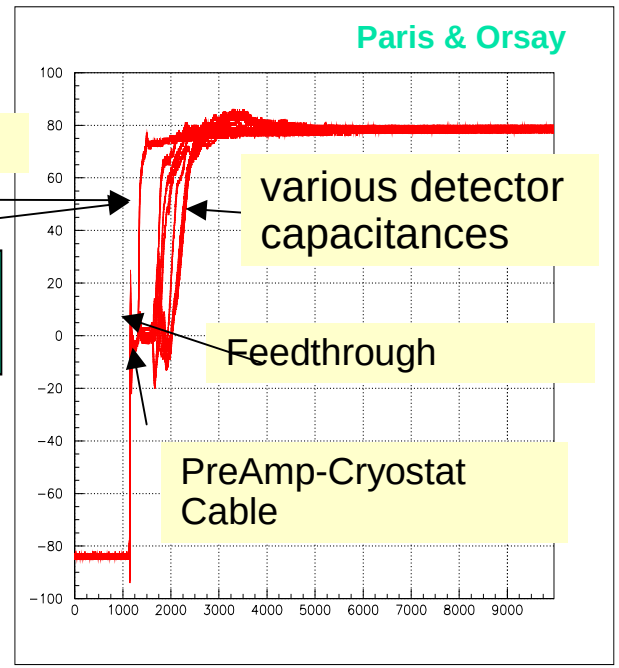




- Most problems are traced to slower SCA chips.
- More than 250 are replaced

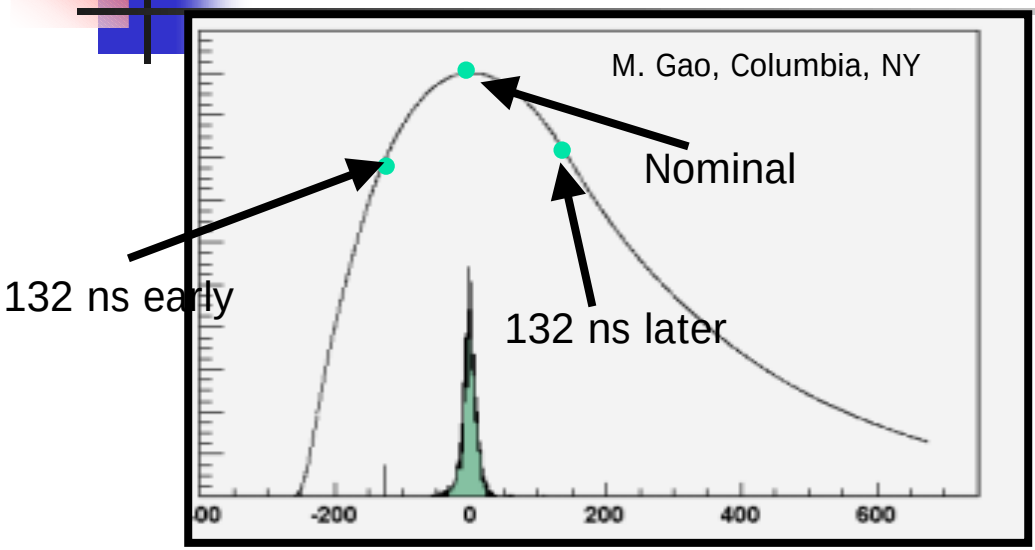
Impedance Measurement





A total 31 channels are not connected

Timing Studies



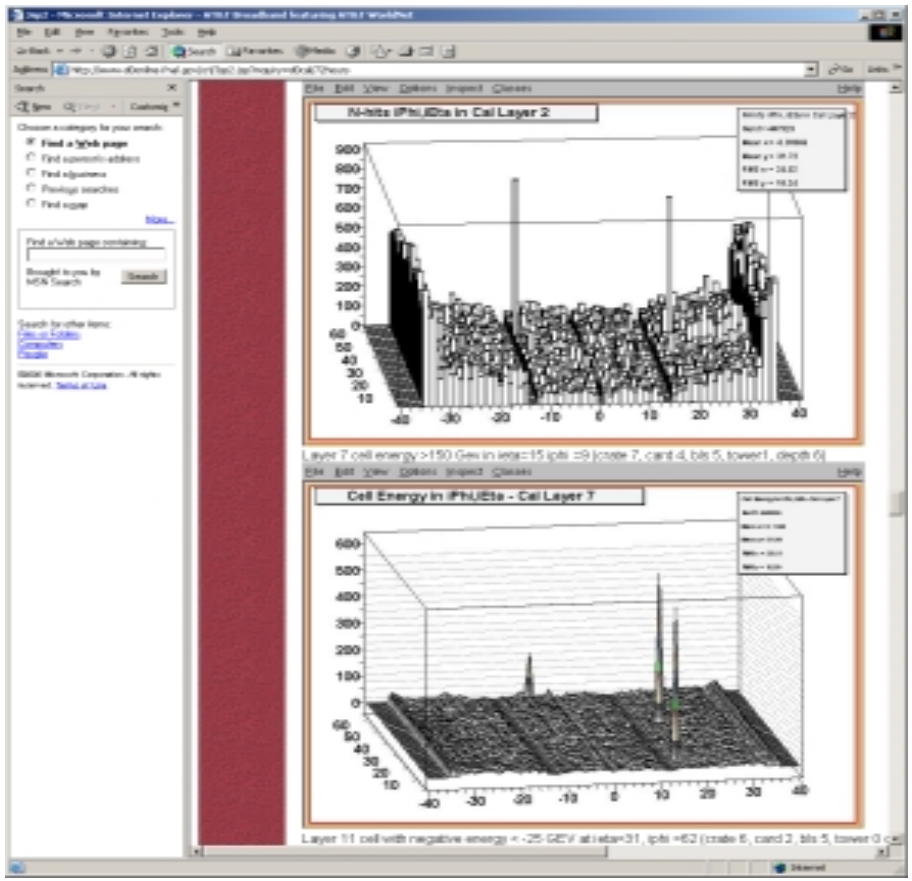
Sampling time vs amount sampled

- -50 ns 98.01%
- -20 ns 99.69%
- -10 ns 99.92%
- 10 ns 99.93%
- 20 ns 99.71%
- 50 ns 98.23%

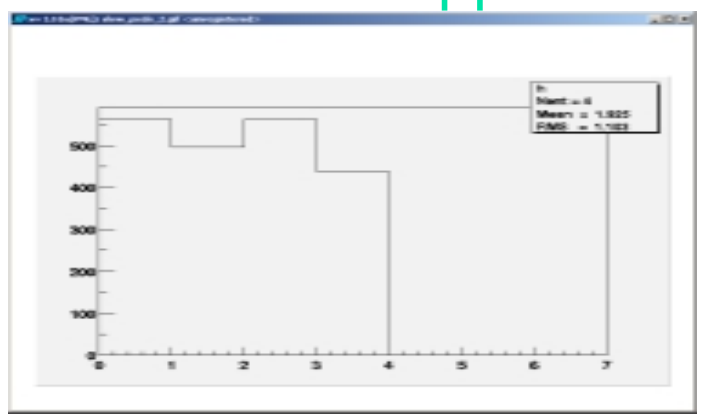
- Pedestal Values were different for Early, Nominal or Late sampling.
- Corrected after putting additional CAPS on BLS boards.

Nominal sampling time varies from –6 ns to 35ns

Online Data Quality Check



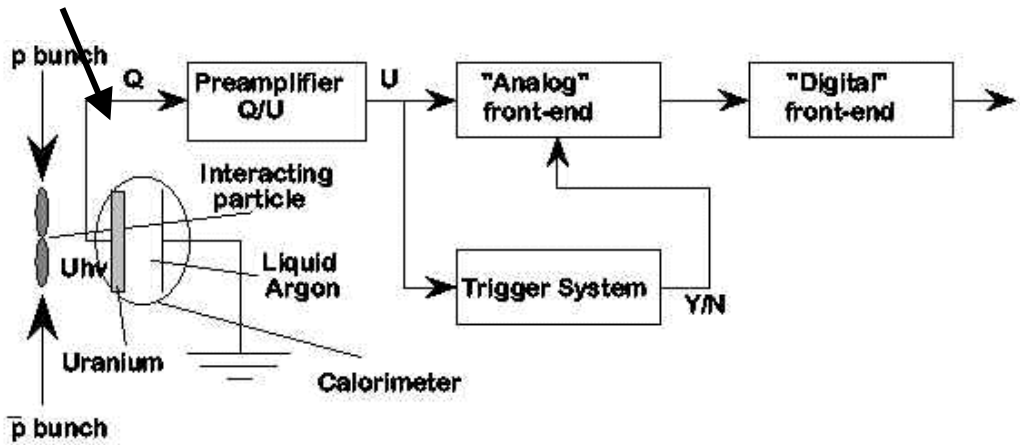
- Shifter's are continuously monitoring quality of data.
- When hot cells are found corresponding readout channels are suppressed.

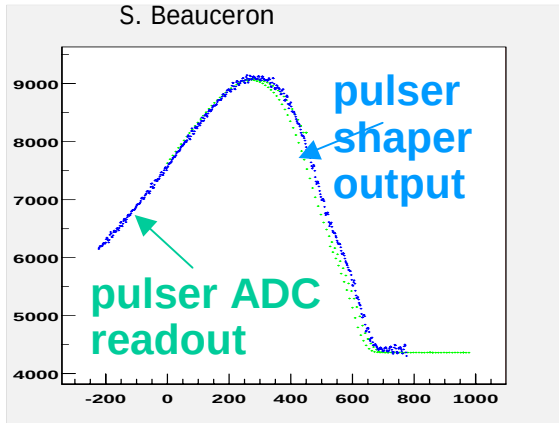


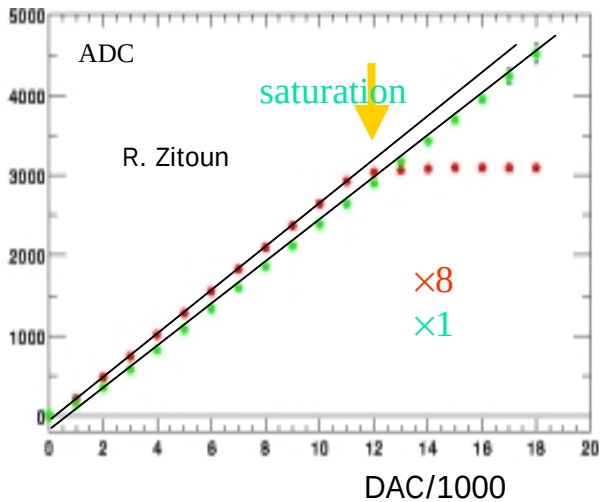
N.Parua

Pulser Calibration

Pulser signal injected here (measured in DAC counts)

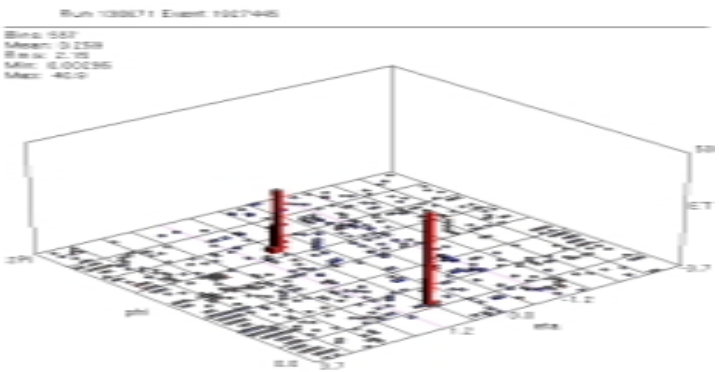


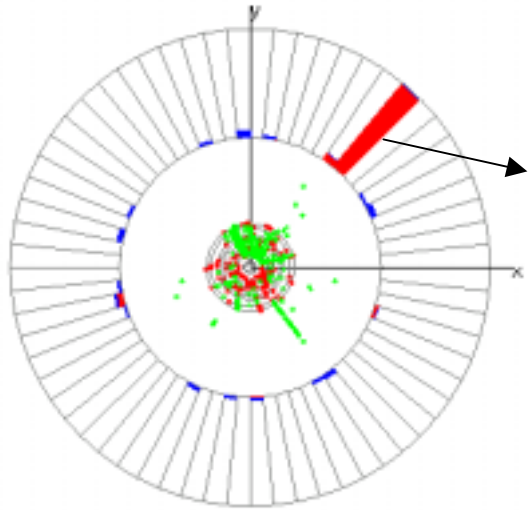




- Non linearity <0.3% for DAC>1000
- For Lower DAC values non linearity is parametrized (same for all channels).

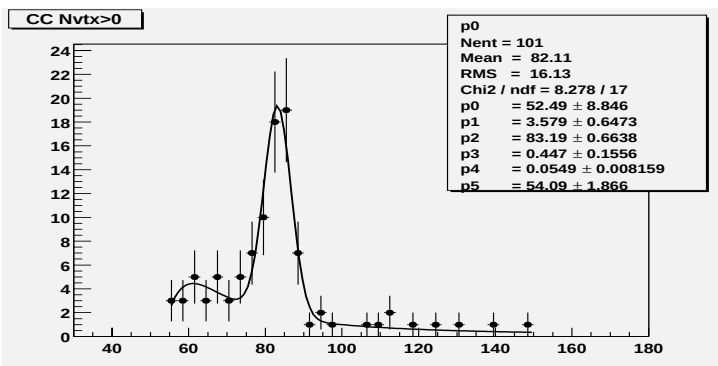
W/Z candidate

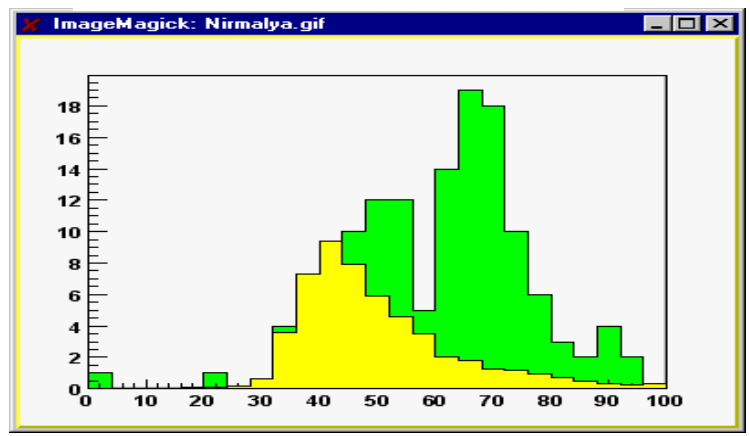




Em Cluster
with track

Chan, Zutshi





Invariant Mass

Yuri Gerstein

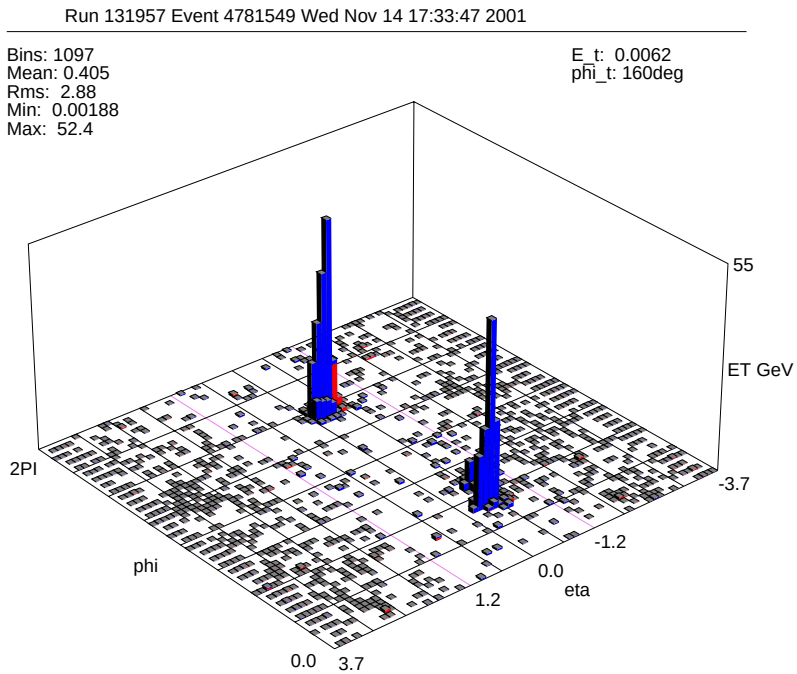
kado, zitoun

Transverse mass

Nirmalya Parua

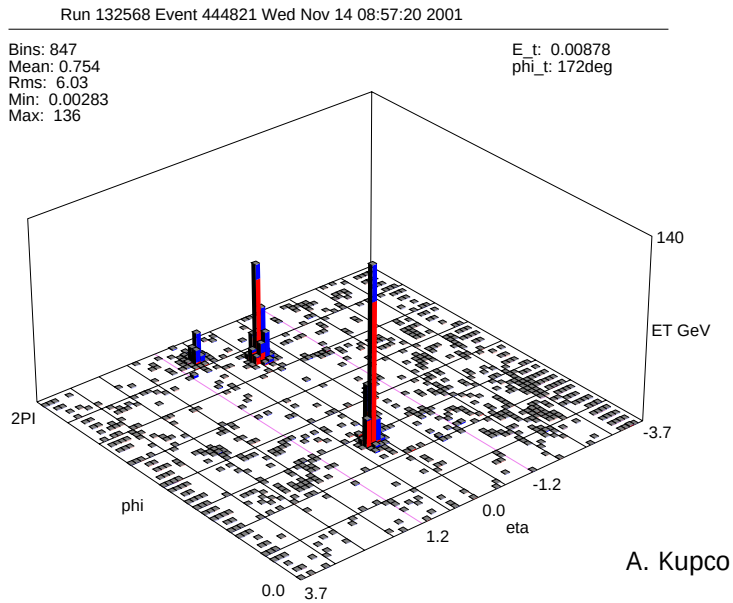
02/11/02

Multi jet events



2-jets event

- E_T^{jet1}~230GeV
- E_T^{jet2}~190GeV



A. Kupco

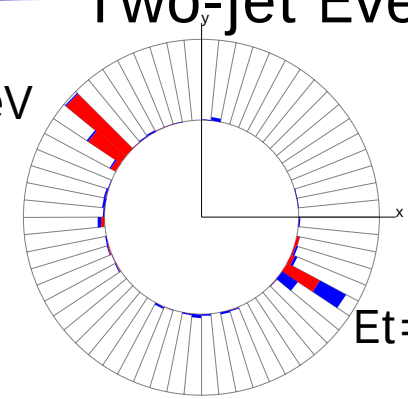
3-jets event

- E_T^{jet1}~310GeV
- E_T^{jet2}~240GeV
- E_T^{jet3}~110GeV
- E_T~8GeV

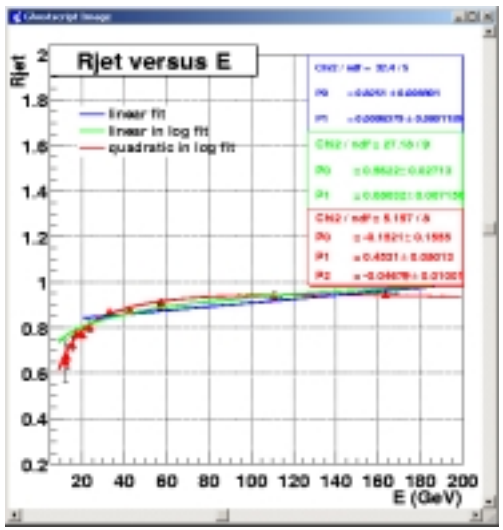
Jet Energy Scale

Two-jet Events

Et=27 GeV

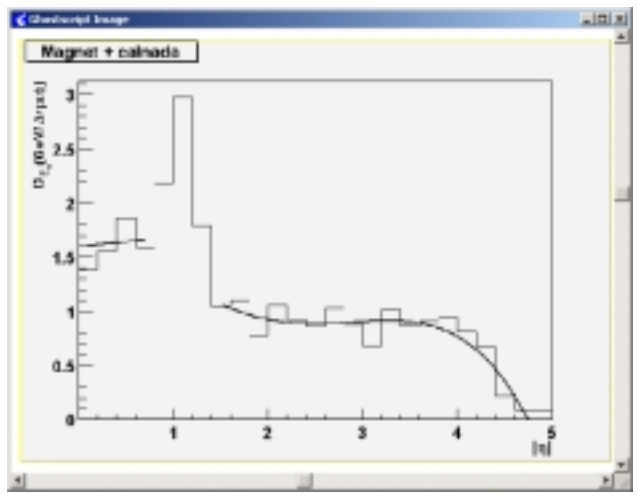


Et=24 GeV



Ia Iashvilli

Energy Density for Min-bias Data



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