CKOV Status - CM32

• Spring 2011 we realized significant bck light condition in the CKOVS. (G4MICE result)
  There exists a 5pe noise below momentum threshold.
• Maybe the Quartz window, less likely but not excluded: Delta rays , gas scintillation, etc.
• June 2011 we replaced the Quartz windows in CKOVa/b and panel reflectors in CKOVa.
• Waiting for verification of improvement based on successful December 2011 running.

•Two runs are shown below where muons are tagged by the TOF, momenta are
 determined by tof01. The PE vs p plot displays the problem.

ckova (n=1.12)   2010 runs
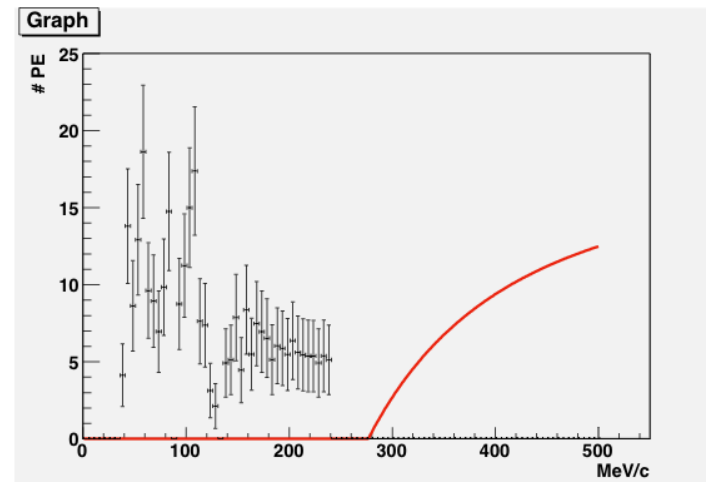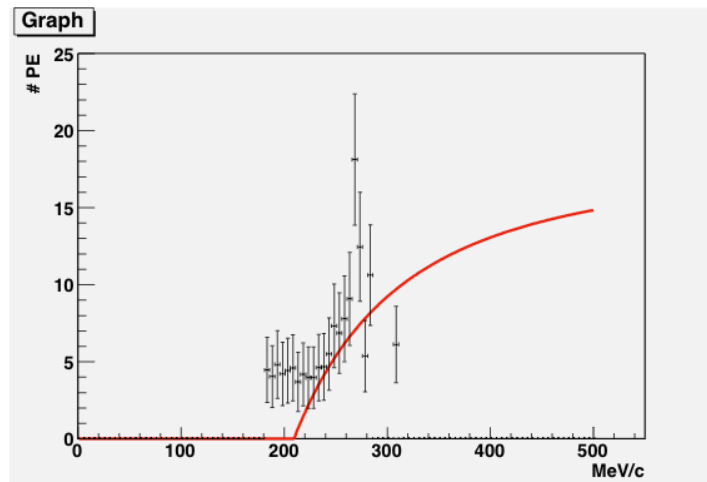
Peak Search function

• Multi Peak search function in MAUS which determines pedestals, locates maximum peak, searches for coincidences, defines integration interval (-20ns+40ns), records TOArival.
• Working on a fixed window routine for comparisoms.
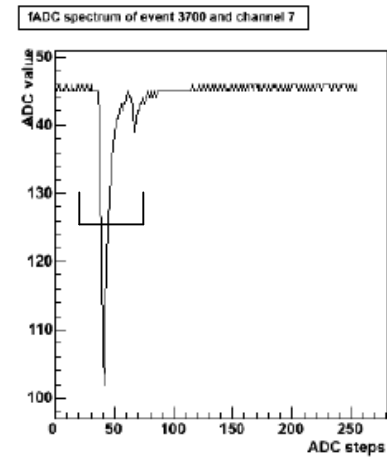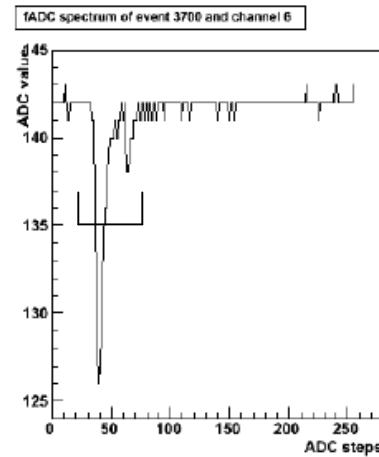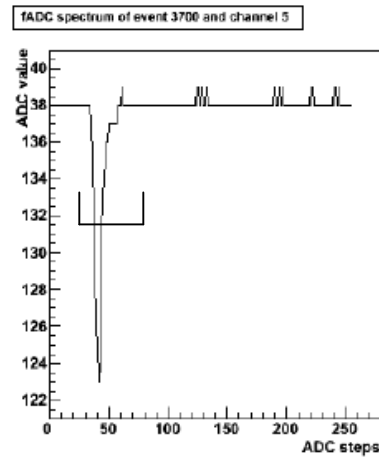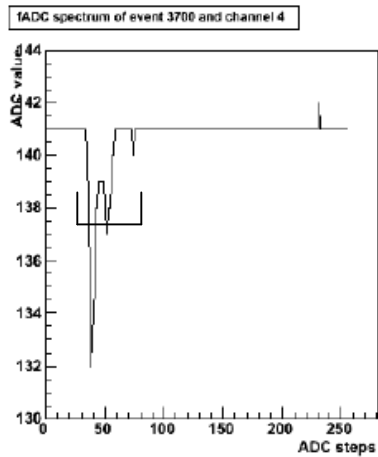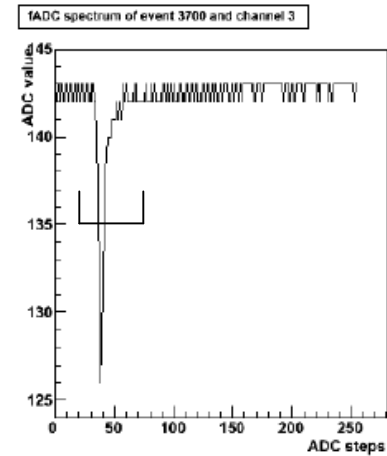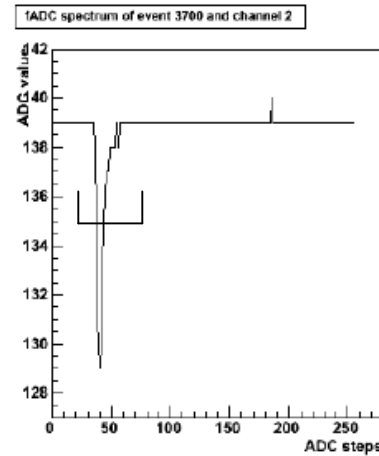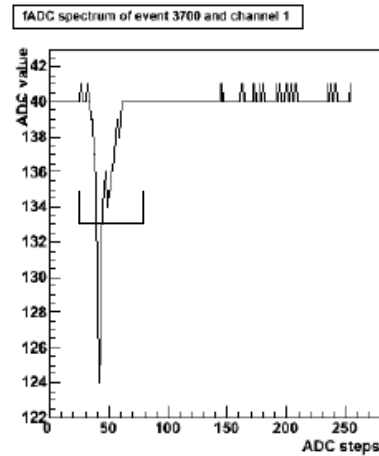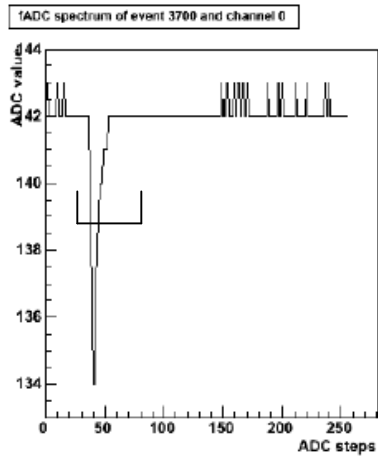
- Plot showing charge integration after peak search in ckova pmts 1-4 summed.
- The 1 pe level is seen as 6-7 counts.
- For true calibration each tube must have a well determined individual 1 pe count.

$$npe = (q-q0)/q1$$

charge

1pe ~ 6-7 cnts
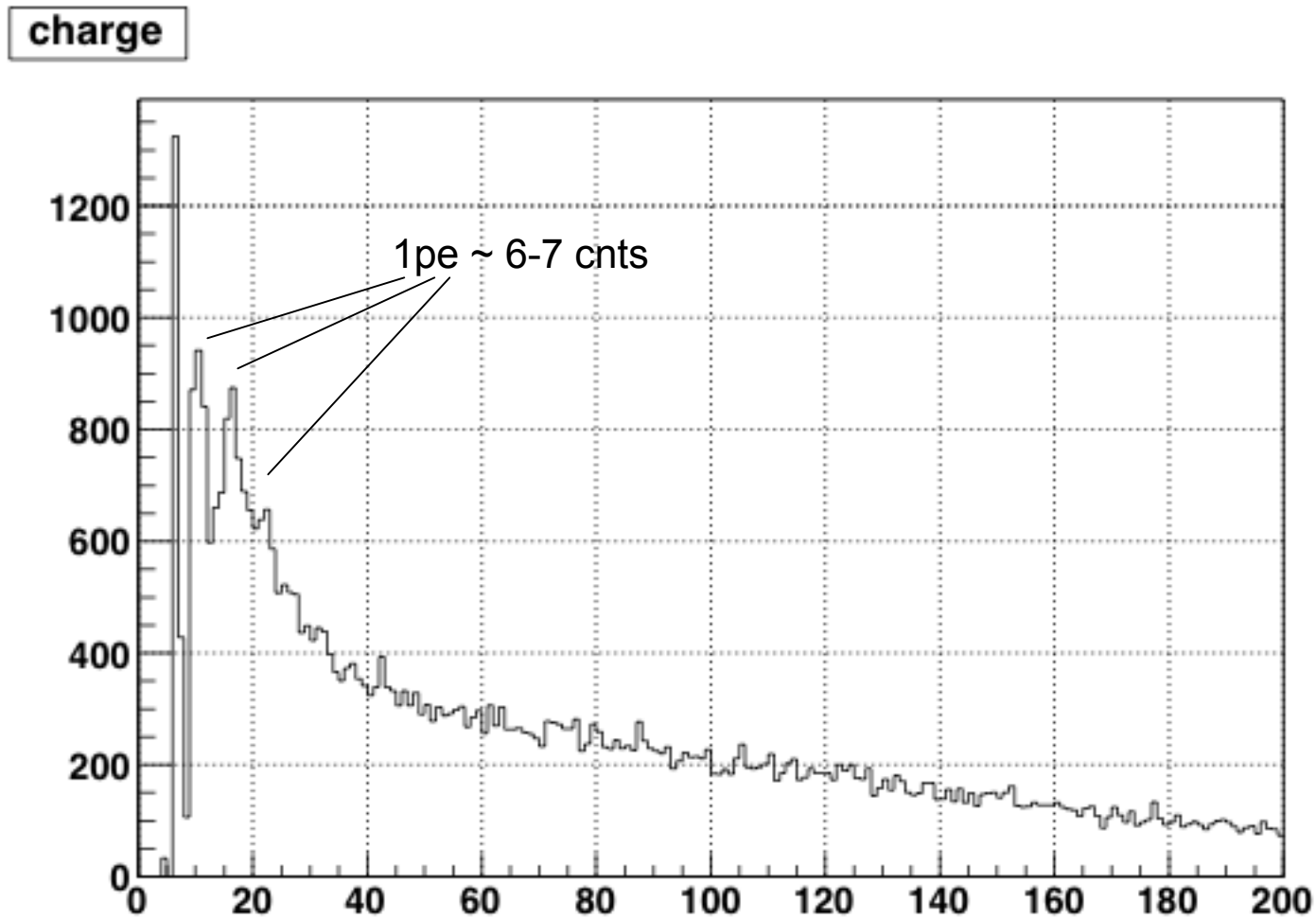
- Plot showing peak times of arrivals in ckova.   (Similar to G4MICE analysis)
- Charge collection on the right.
- These are quantities that can be monitored.
- No tof information at this time.

Run 3547
Time of arrival

Run 3547
charge

Log not
working
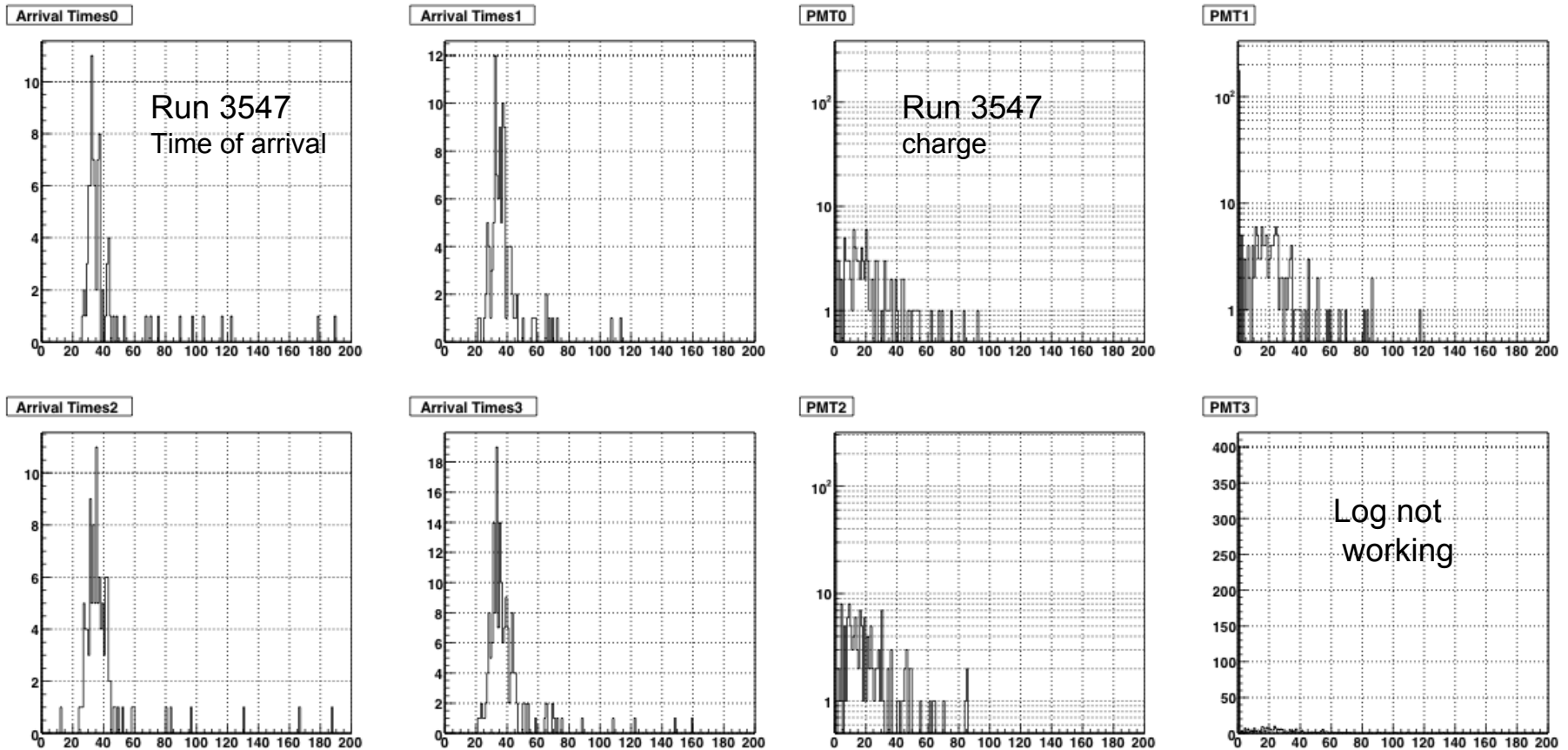
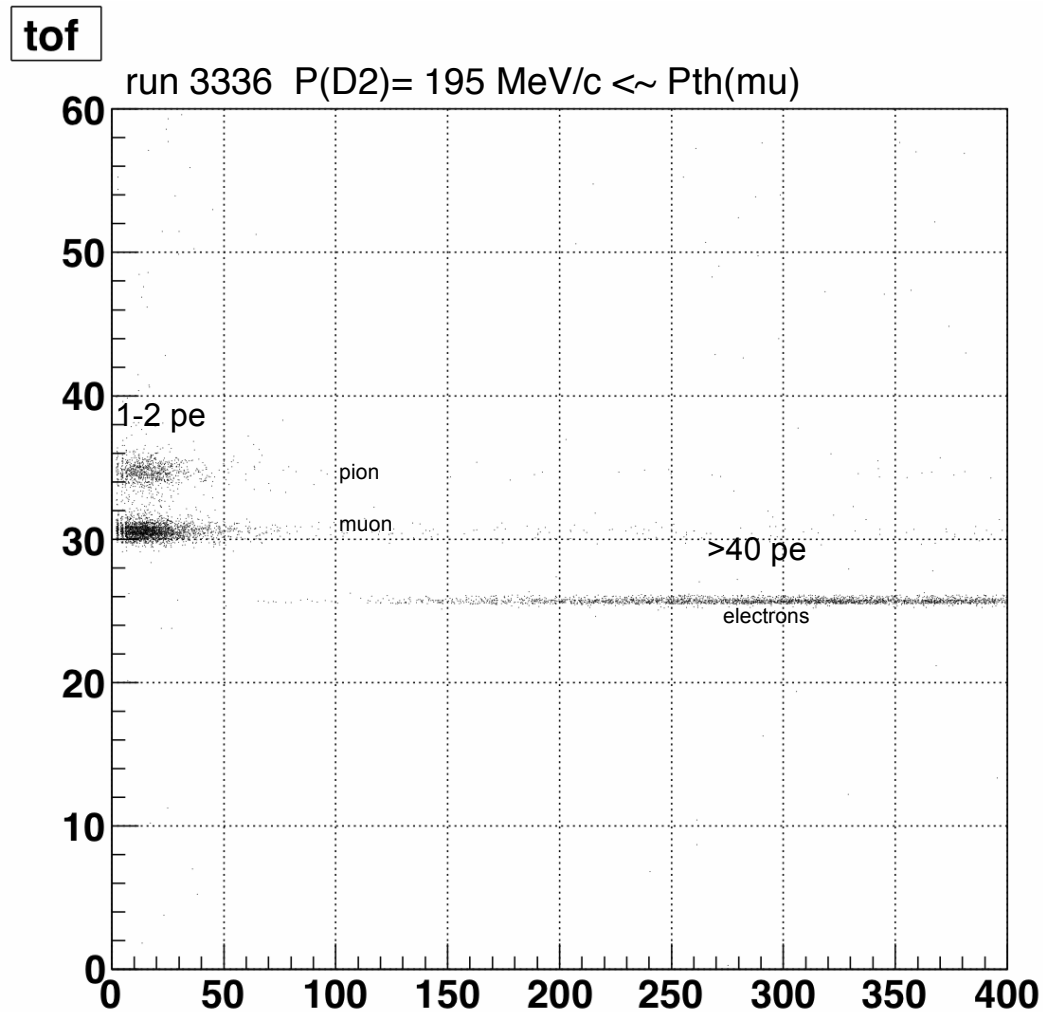- Latest MAUS handles tof calibation files and Gene able to unpak tof information.
- Recent plot showing low momentum mu/pi run with raw ckova cnt vs tof01.
- Suggests >40 pe collected on electron transit!, 1-2 pe collected on muon/pion transit.
- Further investigation necessary on p distributions.

run 3336 P(D2)= 195 MeV/c <~ Pth(mu)

CKOV Summary

• Migration to MAUS code by Gene Kafka going well.
• MAUS CKOV Peak search code is seems working. Need to look for coding traps.

• MAUS CODE release now able to read tof info from December data files.

• December data files should be batch processed at some point.

• Can not say yet if PE yields are good? But some supporting evidence.
• Background problem may be mitgated, but still lingering until we fully understand.

• Gene will show more plots in the afternoon at the Sotware session.