

Ckov Digitization and Bad Channels

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MIPP Software Meeting

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Outline:

Pedestals in Ckov Digitization

Which Channels are bad?

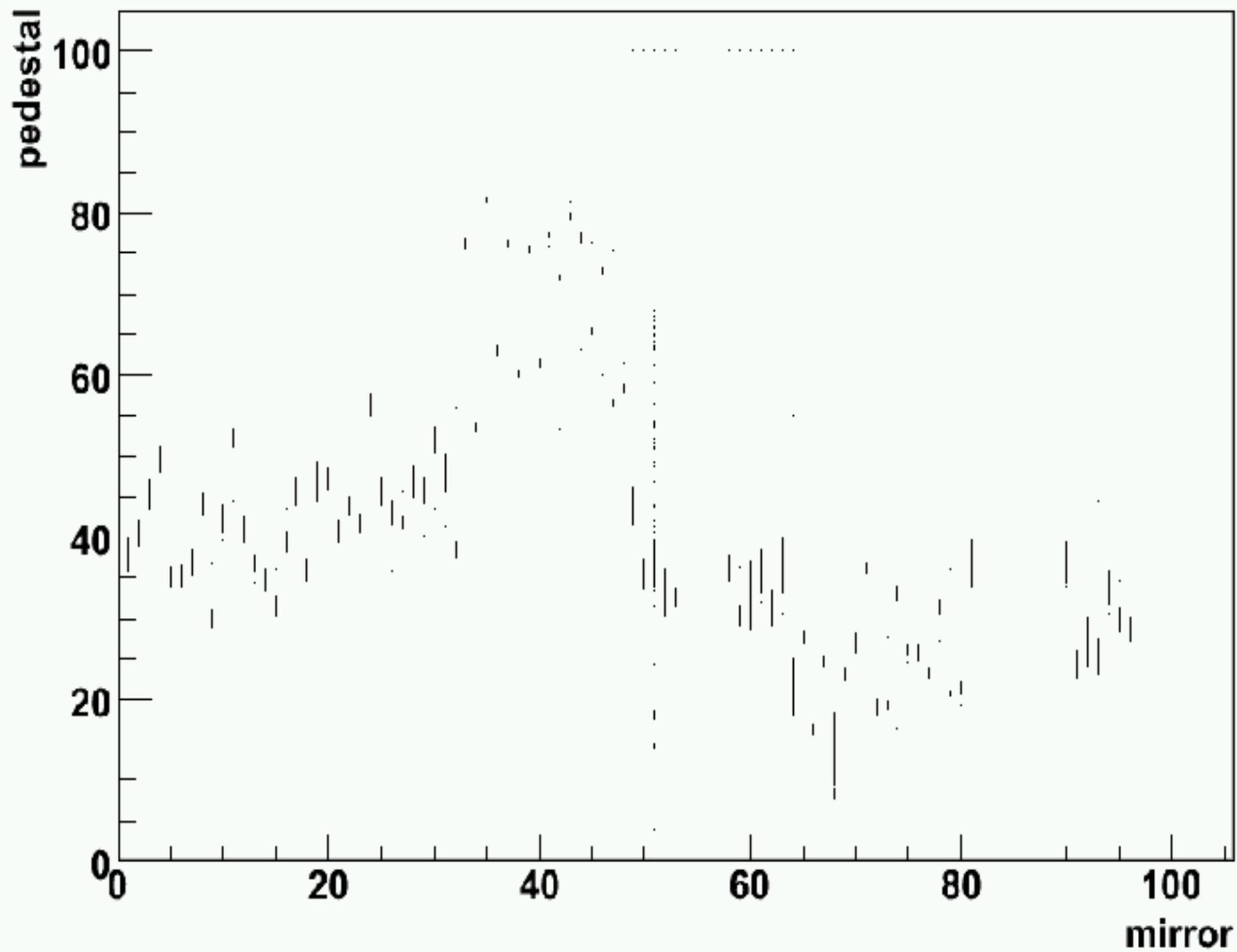
New Package: CkovBadChan

What's Next?

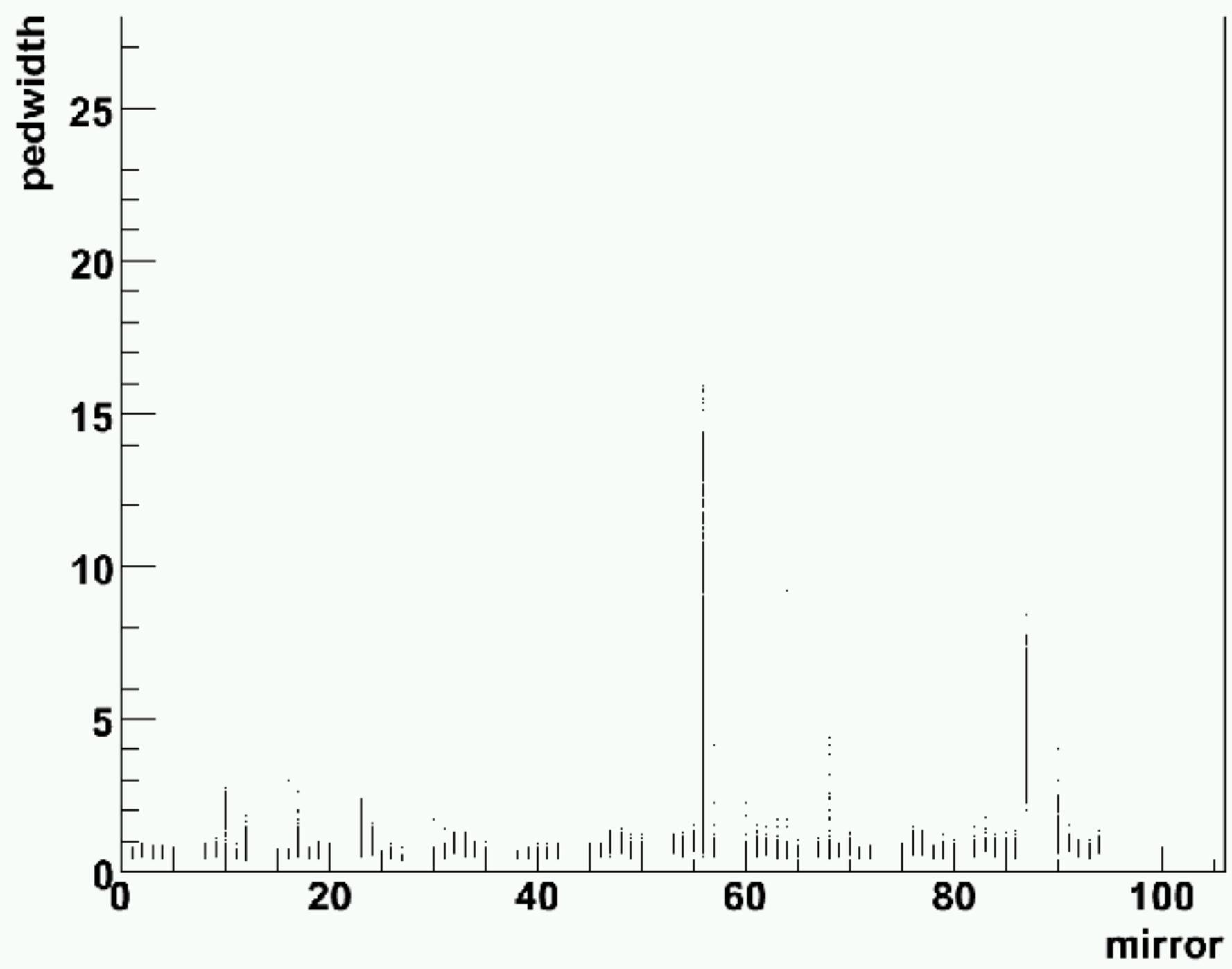
Pedestals

- Problem was that MC was not adding/subtracting the right pedestal amount for each mirror
- Calculated the average pedestal and pedwidth for each mirror from existing database data
- Put these into the database calib, table ckovpedestals for runs 10,000,000 to 99,000,000
- Rewrote CkovDigitizer::GeneratePedestals() so that it pulls the pedestals from the database

pedestal:mirror



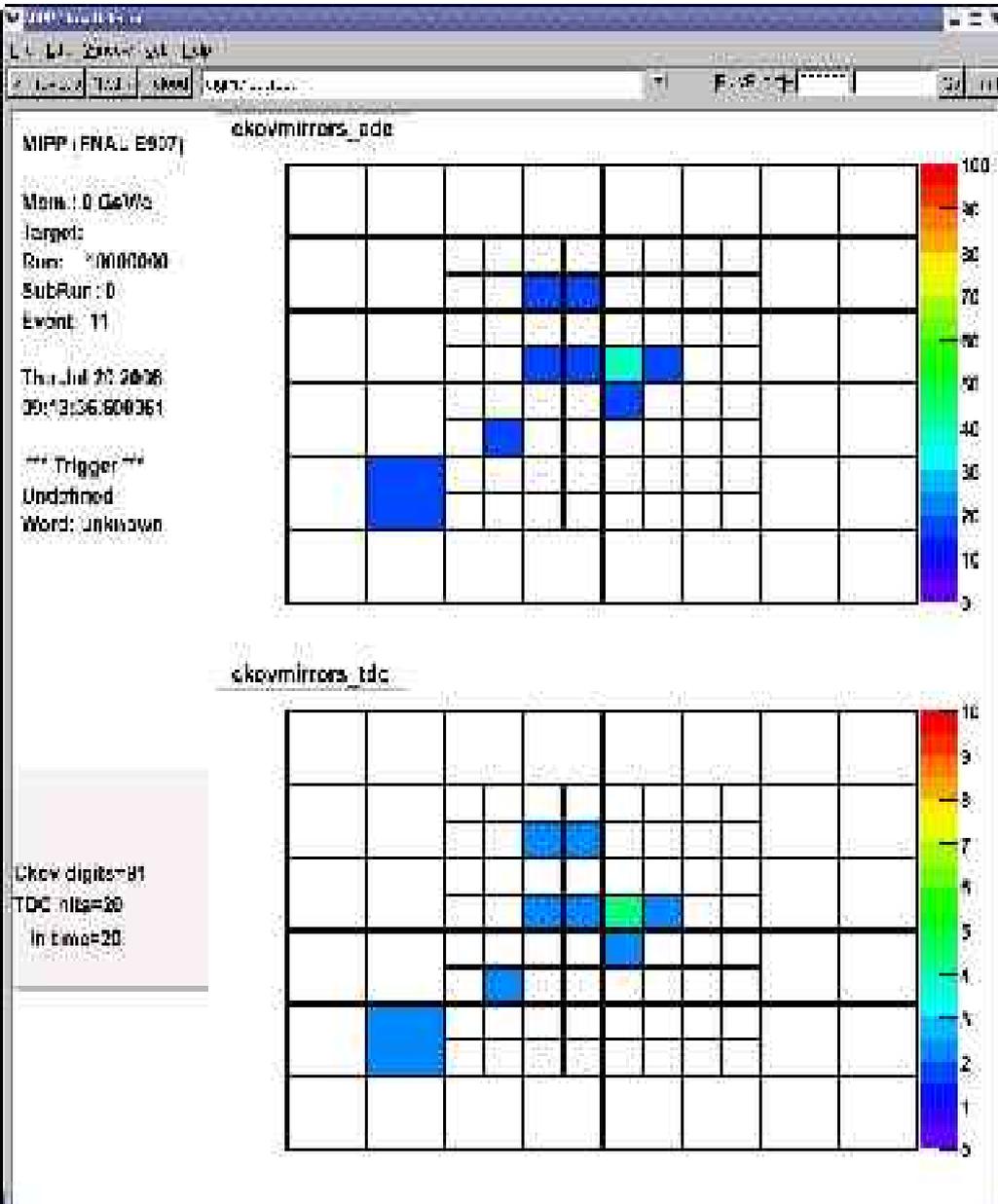
pedwidth:mirror



Event Display

MC

DATA



MIPP (FNAL E907)

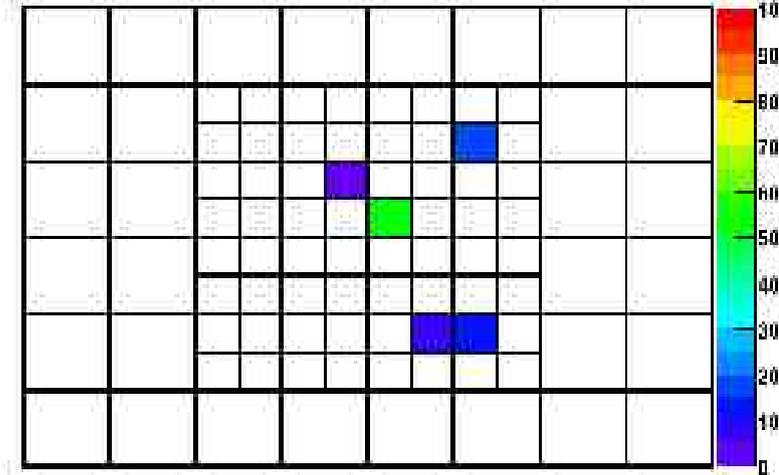
Mon: 59 GeV/c
Target: LHC
Run: 16500
SubRun: 0
Event: 42

Mon Oct 03 2005
10:08:39.911591

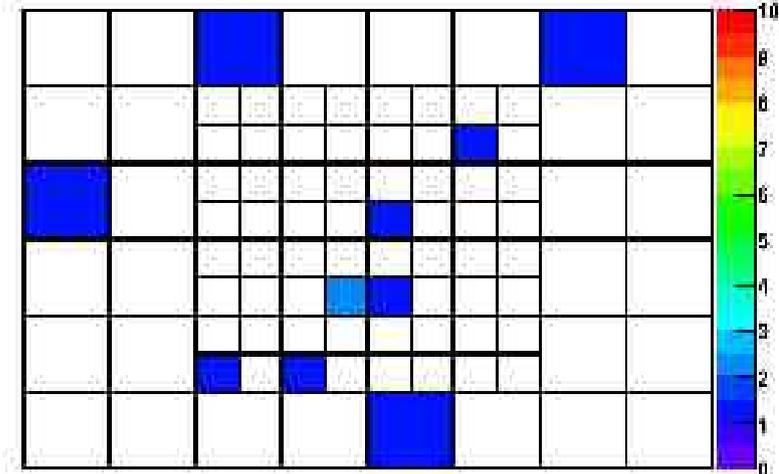
*** Trigger ***
Beam
Word: 0200
Bits: 4227

Ekov digits=96
TDC hits=160
In time=11

ekovmirrors_adc



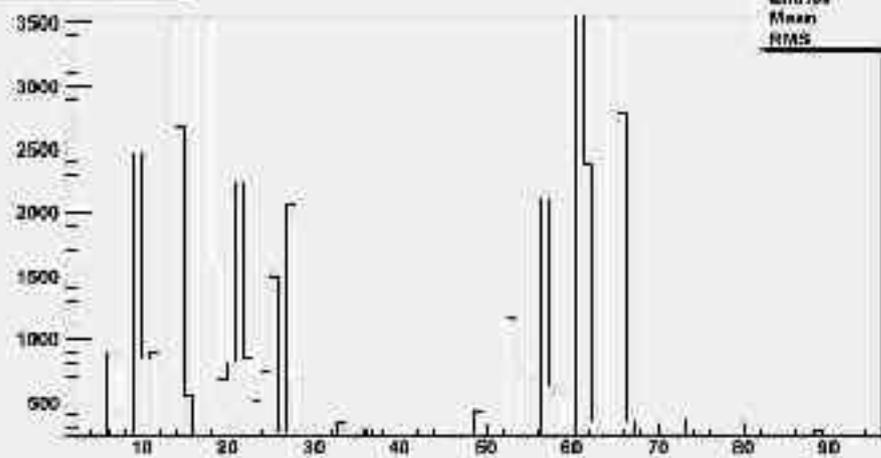
ekovmirrors_tdc



Ckov Bad Channels

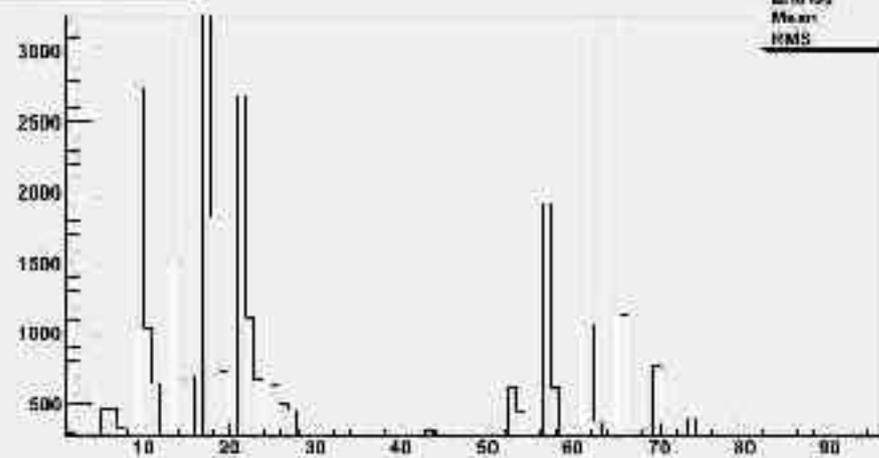
- Checked the number of tdc and adc hits per mirror for a total of 83 runs (from DSTs)
- Holger and I decided there were not enough statistics to distinguish dead channels

tdc hits by mirror



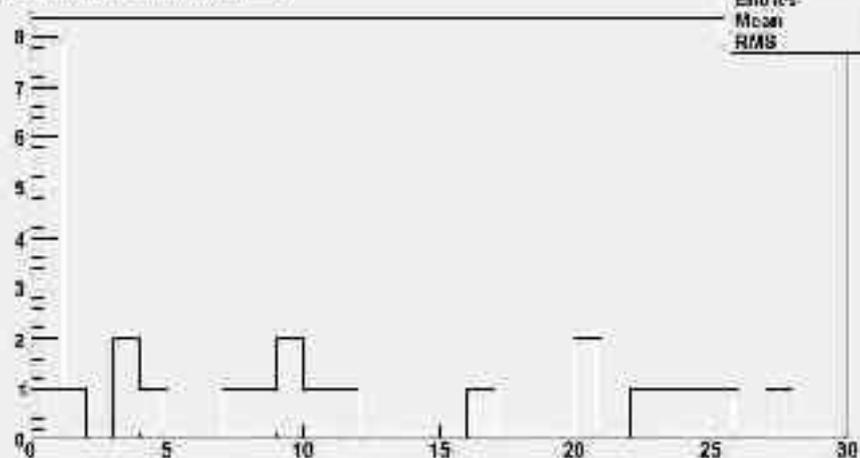
HistoTdcHits	
Entries	129339
Mean	26.05
RMS	19.61

adc hits by mirror



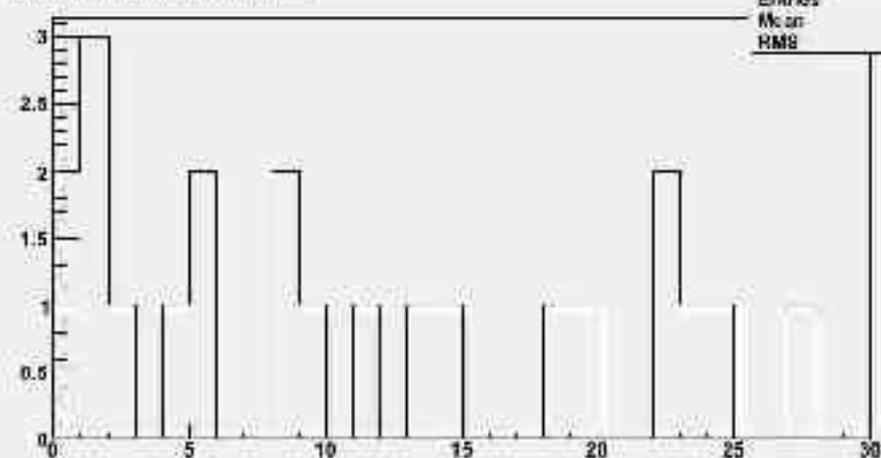
HistoAdcHits	
Entries	130751
Mean	26.48
RMS	19.67

num tdc hits for each mirror



HistoHits	
Entries	96
Mean	9.808
RMS	9.359

num adc hits for each mirror



HistoAdc	
Entries	96
Mean	11.27
RMS	8.766

Bad Channels cont...

- Created a new package to work with bad channels
- CkovBadChanFilter gets the bad channels from the database and filters out digits from bad mirrors from a vector of digits
 - if ADC is bad, it sets it to zero (maybe should be ped?)
 - if TDC is bad, it clears the tdc vector
 - if both are bad, it removes the digit completely
- CkovBadChanTable provides an interface to the database table that contains bad channels
- CkovDigitizer now calls the Filter in order to mimic the real data

What's Next?

- Check Ckov Dead Channels with more statistics
- move database to calib and put in the actual dead channels
- Make CkovReco call the filter, possible in CkovBasicHisto.cxx and CkovMatchTrk.cxx