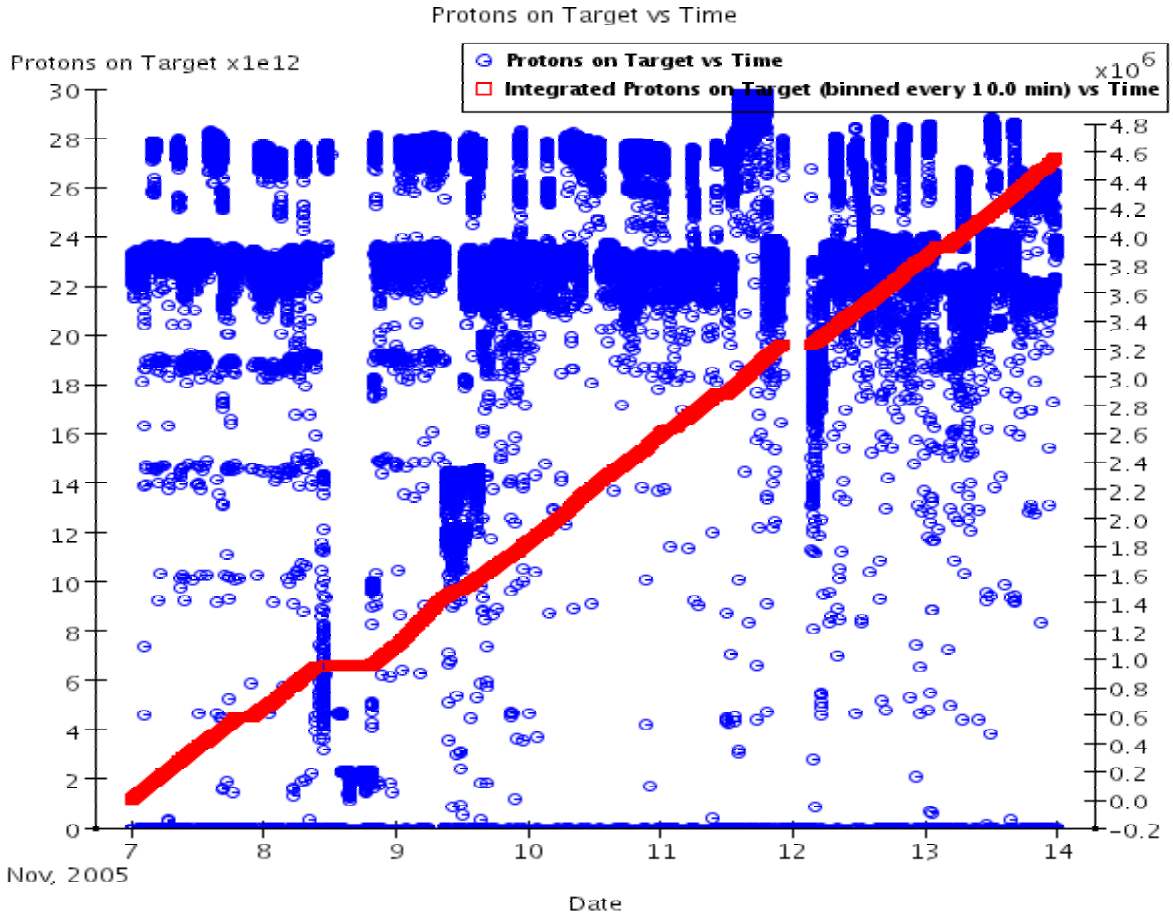
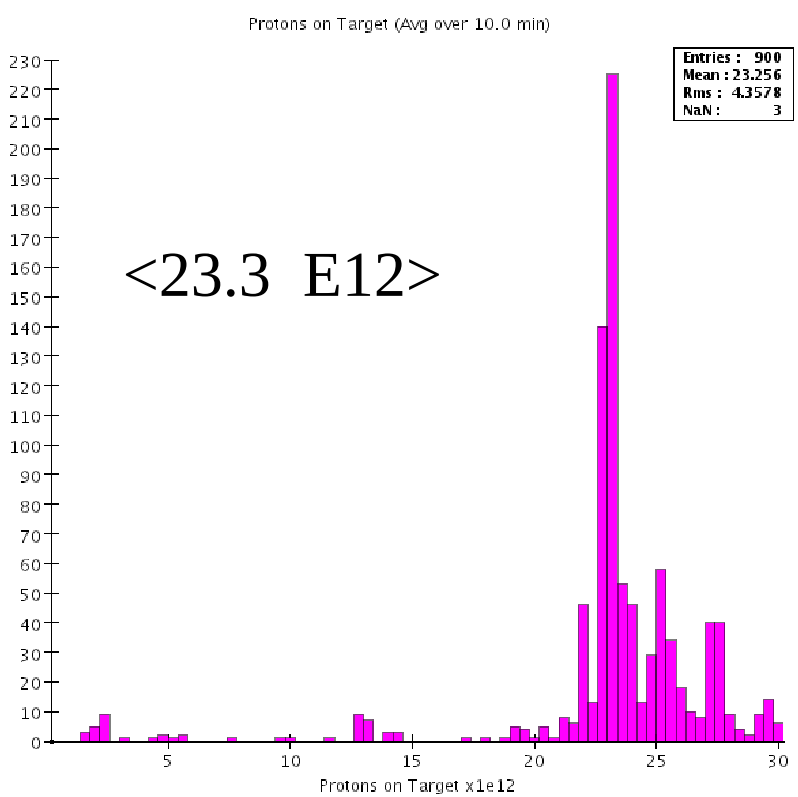
MINOS Status – All experimenters Meeting

N. Saoulidou, Fermilab, 11/14/05

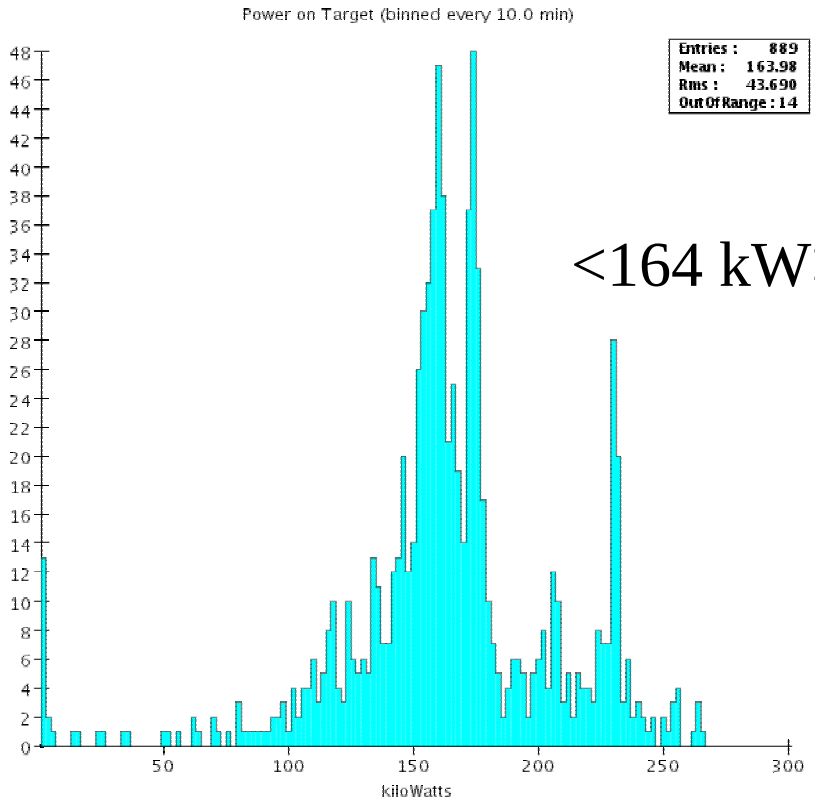
NuMI Beam: 07-13 Nov '05 4.6E18 POT



Average intensity & beam power

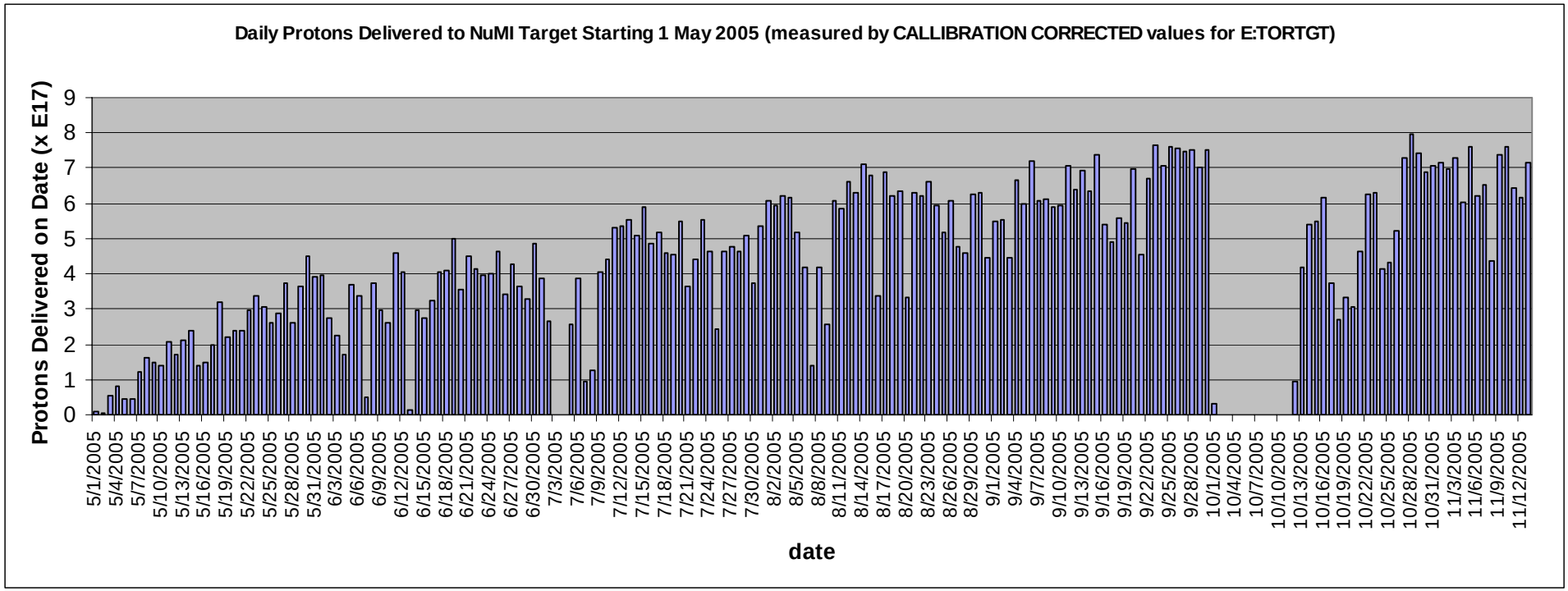


<23.3 E12>



<164 kW>

Daily Protons since 1 May



> 8.5E19 POT total to NuMI

He backpressure flow & Chiller

- There is a modest increase in the He backpressure. The He flow had been fluctuating between 0.1 and 0.5 L/m, now @ 0.7 L/m. Target operating stably.

- During weekend (Saturday) target pile air system chiller tripped. Oil from the compressor got hung up somewhere else in chiller.

- Able to baby-sit chiller to keep it running, but looking for modification to chiller to make it run more reliably.

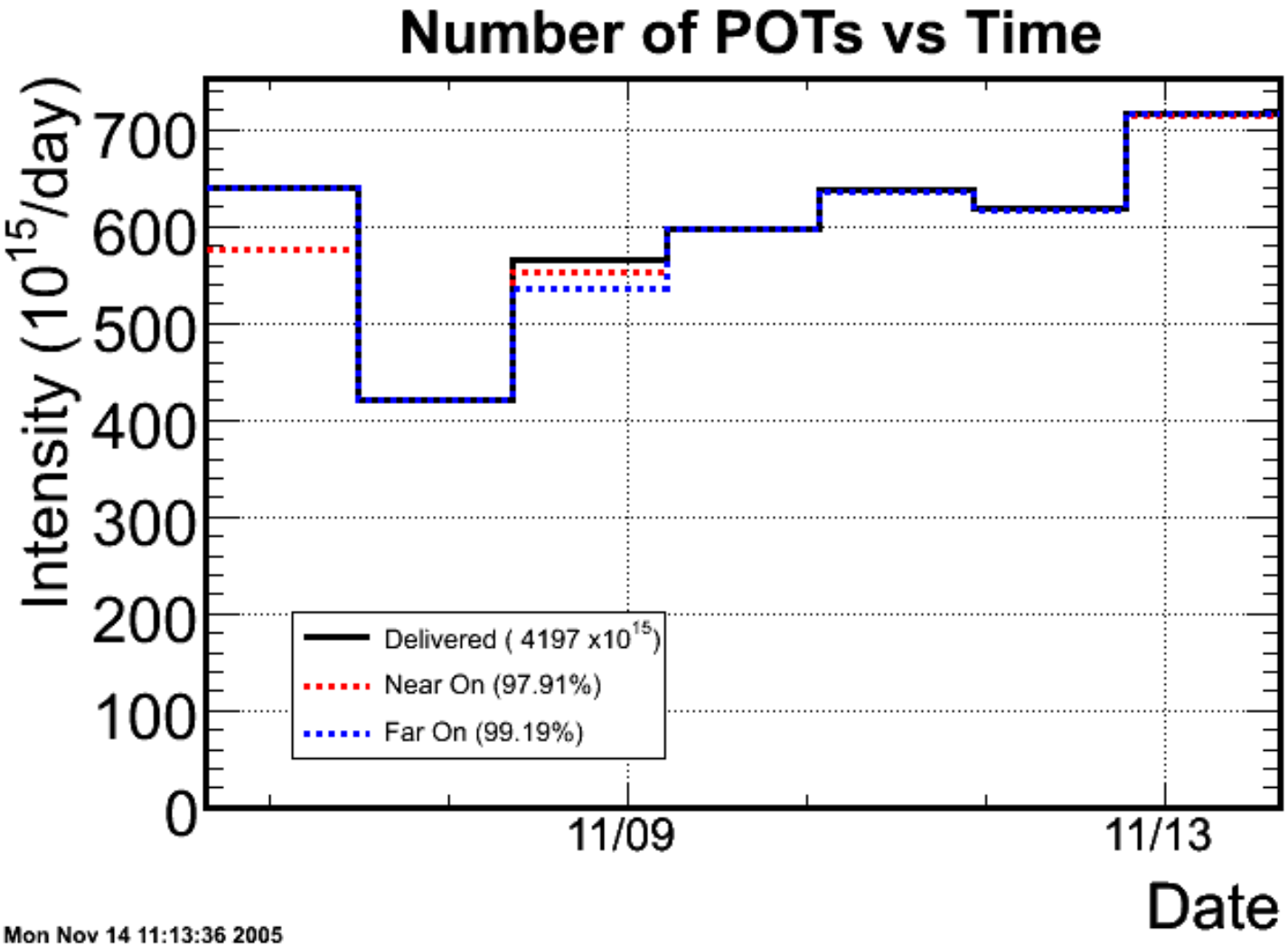
Maintenance Work

- Near Detector:
  - 7 bad channels swapped

    (Work is being done at Argonne to replace existing fuses on QIE boards with resettable ones that could eliminate or reduce current failure rate)

- Far Detector:
  - Will replace flow valve in upstairs chiller that failed during power outage.

Detectors UPTIME



Status of Data Taking

For June - October (nominal configuration) we have ~7x10E19 POTs.

		POT	SPILLS
JUNE	:	1.02E19	595861
JULY	:	1.33E19	654317
AUGUST	:	1.73E19	833206
SEPTEMBER	:	1.90E19	852123
OCTOBER	:	0.97E19	429065

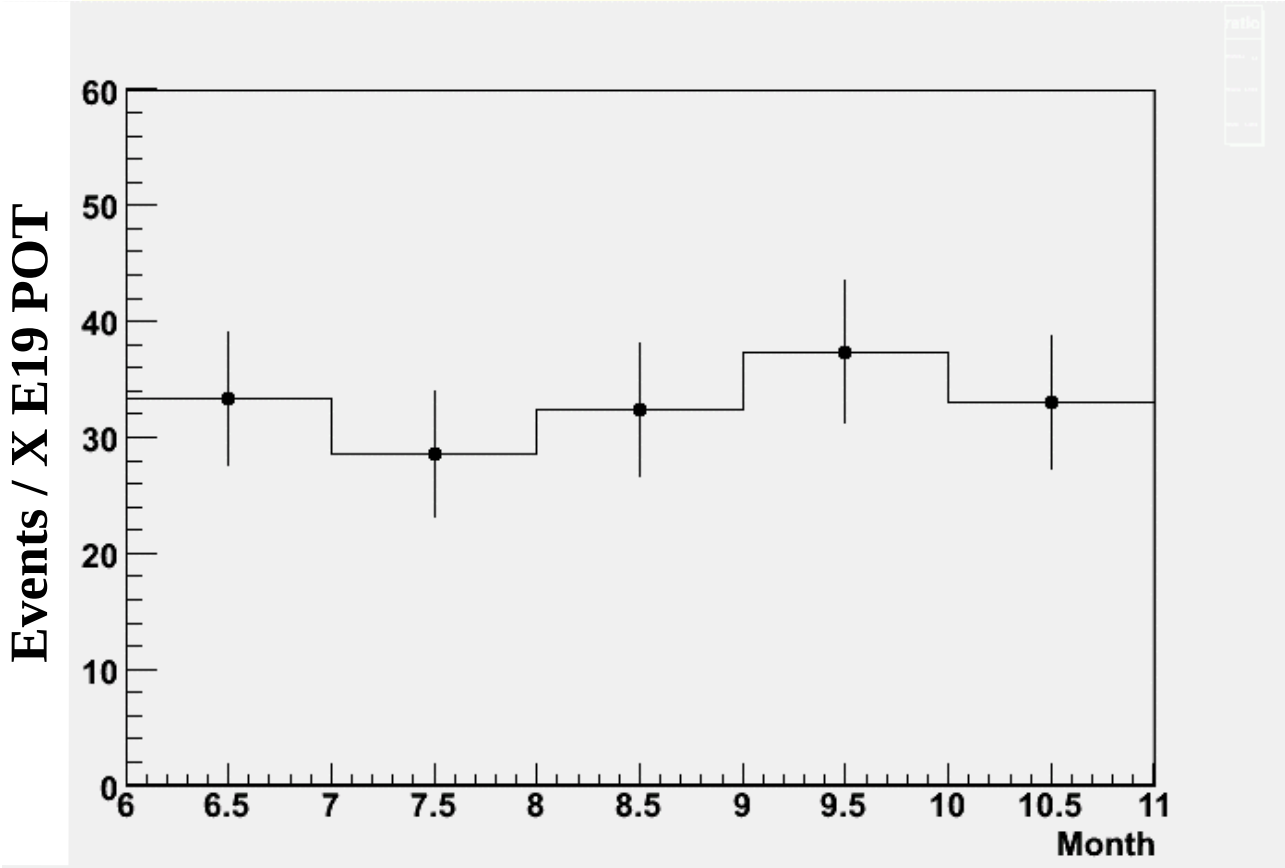
NEAR DETECTOR

- For this period we have ~ 16000000 events anywhere in the detector including rock muons.
- For this period we have > 2100000 neutrino interactions in the fiducial region (1m radius 4m in z)

FAR DETECTOR

- Performing blind analysis. Currently analyzing data from the open sample

Status of Data Taking



- Ratio of Far Detector Neutrino Events (in the open sample) per XE19 POT.
- Ratio is stable as a function of time

Run: 32177, Snarl: 44038, Slice: 1(/1), Event 1(/1)

Reco

#Trks: 1

#Shws: 2

q/p: -0.182 +/- 0.005, p/q: -5.492

TrkRangeEnergy: 5.633 RecoShwEnergy: 7.090

Vtx: 3.97, 1.25, 11.55

Truth

N/A

N/A

N/A

N/A

N/A

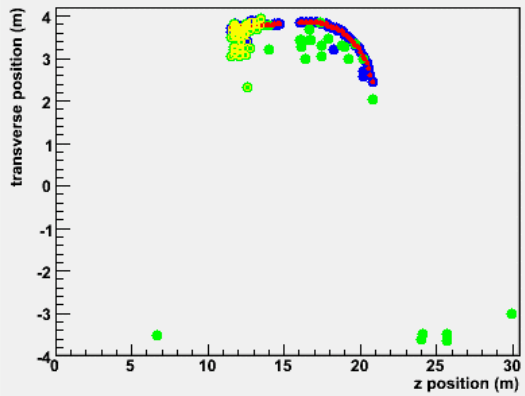
N/A

Ignore	Previous Pass		Next Pass	
NuMu	Step Back		Step Forward	
NuE	Prev Slc	Next Slc	Prev Evt	Next Evt
NC	Prev MC	Next MC	Skip to... Run,Snart...	AutoMatch
CC	Refresh Overlay	Lego? Clusters?	Print	Quit

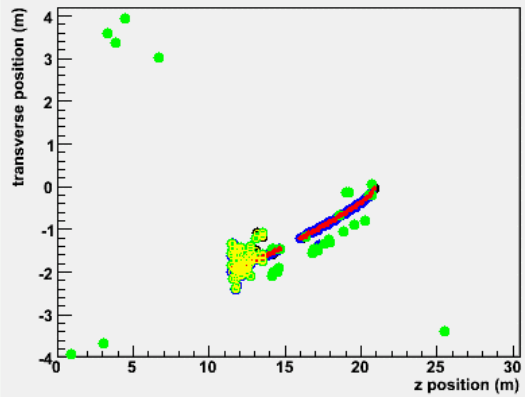
Reco
- Summed NPEs < 2.0
- 2.0 < Summed NPEs < 20.0
- Summed NPEs > 20.0
- Reconstructed Track Hit
- Reconstructed Shower Hit (cyan=EM)

Truth: e, μ, p, n, $\pi^{+/-}$, π^0, $K^{+/-/0}$, γ, τ, final ν, initial ν

Transverse vs Z view - U Planes



Transverse vs Z view - V Planes



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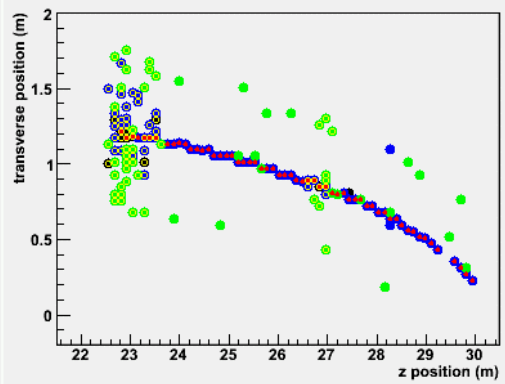
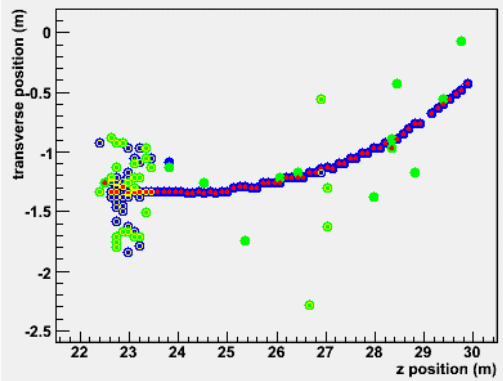


Transverse vs Z view - V Planes



Far Detector Event Selection

Far Detector Events are selected based on :

- Timing (+-50 usec from spill timing signal)
- Topology

(From ~ 3,300,000 spills only 2131 had a reconstructed event)

Events are categorized as:

- Neutrino Interactions
- Rock Muons
- Cosmics
- Noise

For neutrino event selection visually scanned events satisfying timing criteria. An automated way (using successive cuts) was also used (that retains ~ 90% of signal and 0.05 % of background) and results were in agreement with Visual Scan Method.