

MINERvA Operations Report

Fermilab AEM

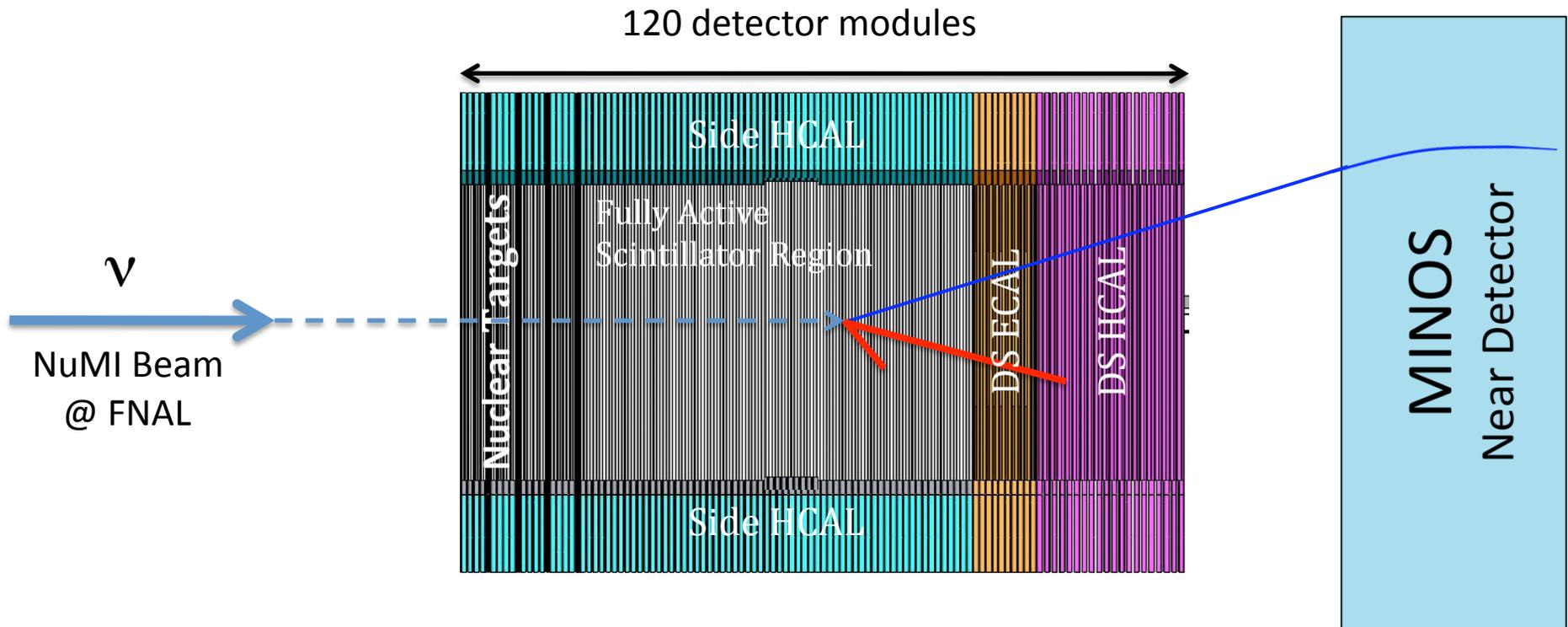
April 19, 2010

Dave Schmitz, Fermilab

A New Era for MINERvA

- Today marks the first AEM where MINERvA presents a non “Special Topics” report
- Main MINERvA detector installation completed in mid March
- Gain balancing of 31.5k PMT channels was completed based on data from in-situ light injection system before switching horn polarity
- NuMI beamline configuration changed from antineutrino to neutrino mode on Monday, March 22.

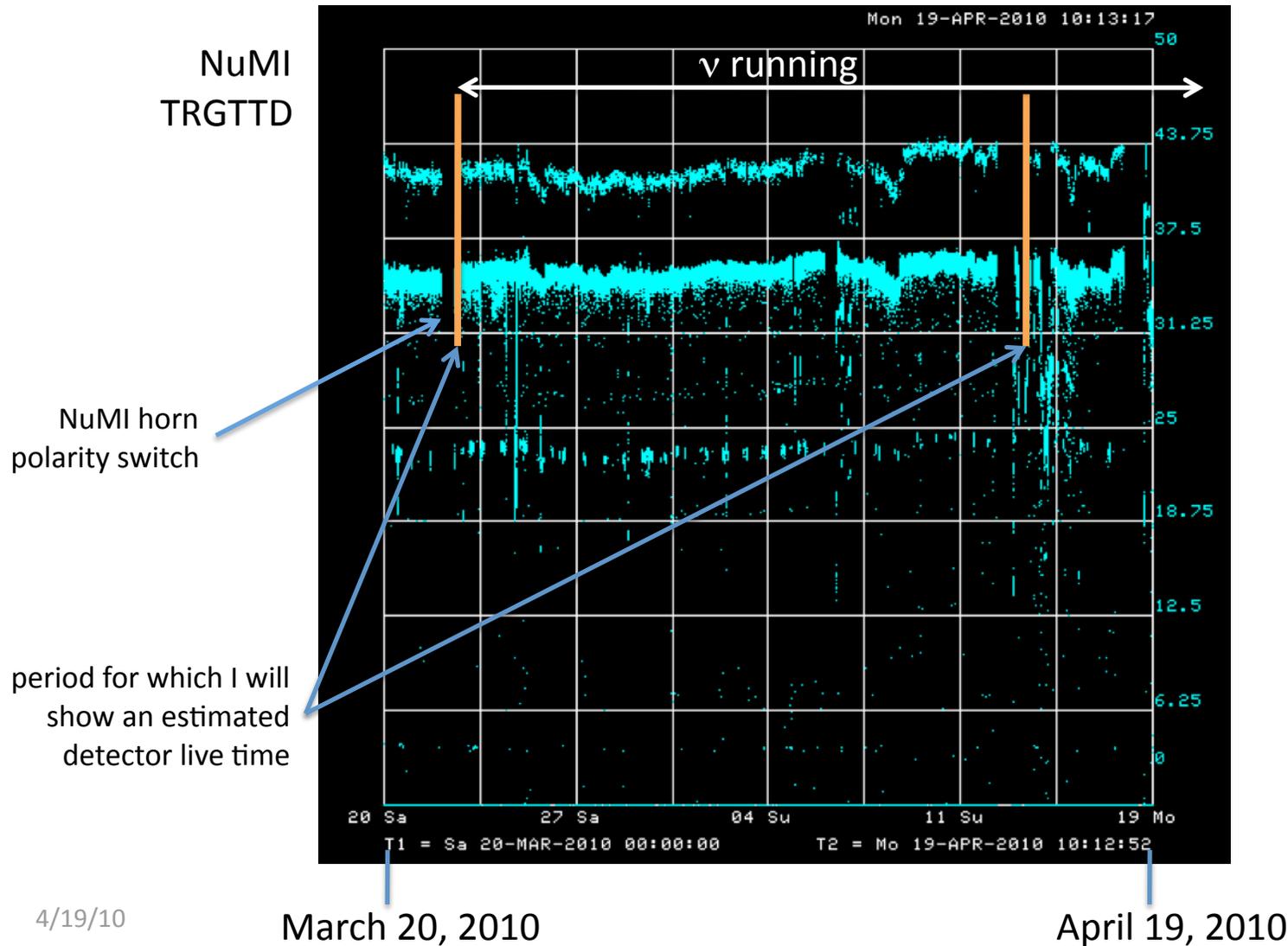
Main MINERvA Detector Fully Installed



nuclear targets C, Fe, Pb, CH installed

H₂O and He targets under construction,
to be installed spring/fall, respectively

NuMI POT since switch to neutrino mode



Estimating detector live time

- MINERvA relies on MINOS data for muon tracks escaping the back of MINERvA
- MINOS data is also currently our conduit to NuMI beam data from ACNET
 1. start with a NuMI spill recorded in MINERvA
 2. use the time stamp of the event to find the same spill recorded in the MINOS near detector
 3. MINOS data file contains MINOS track information as well as spill-by-spill NuMI beam data which we integrate into MINERvA data stream

Estimating detector live time

Start	End	Days	POT		MINOS-MNv matching	Live Time	
			delivered	recorded			
Mon Mar 22 23:30:05 2010	Thu Mar 25 00:21:32 2010	2.04	2.41E+18	2.12E+18	99.88%	87.80%	
Wed Mar 24 23:44:34 2010	Wed Mar 31 20:32:01 2010	6.87	8.44E+18	7.29E+18	99.83%	86.41%	
Thu Apr 1 07:06:22 2010	Thu Apr 8 06:03:59 2010	6.96	8.36E+18	7.16E+18	99.64%	85.62%	
Thu Apr 8 05:38:46 2010	Sat Apr 10 01:59:30 2010	1.85	2.27E+18	2.12E+18	99.63%	93.20%	
Sat Apr 10 02:26:11 2010	Tue Apr 13 05:48:21 2010	3.14	3.99E+18	3.82E+18	99.78%	95.62%	
			20.85	2.55E+19	2.250E+19	99.75%	88.33%

Total POT worth of neutrino data recorded by MINERvA detector between late on March 22, 2010 and morning of April 13, 2010

Estimated **detector live time** during this period (measured against POT delivered by NuMI beamline)

Summary

- MINERvA detector has been recording physics data with completed detector since the NuMI horn polarity switch on March 22, 2010
- Average detector live time during 3 week period is found to be 88%
- Live time during the latest week analyzed is ~94%
- We are continuing to implement more sophisticated checks of our detector and reviewing running procedures to further improve live time of the detector