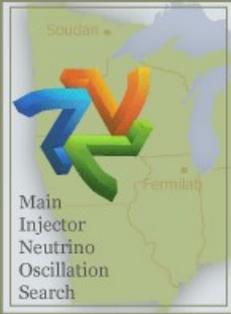


# NuMI-MINOS Status Report - Nick Graf



## NEAR DETECTOR

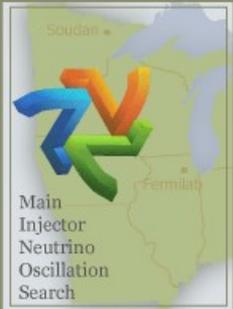


Near Detector: Monday May 2 - Sunday May8

- Live Time: 43.5% good physics data.
- POT fraction: 42.6% good physics data.
- Front End Electronics
  - Cycles through 4 sets of capacitors.
  - CapID identifies which one to read out.
  - If all channels in a board do not have the same CapID, an error is generated.

## CapID Errors

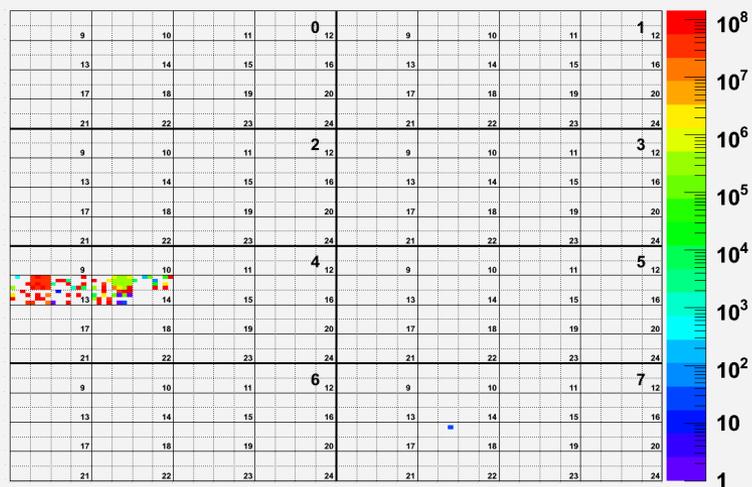
- Intermittent problems since last December.
- Errors start in few channels and spread throughout one crate, with increasing frequency.
- Show up for a few days to a week and then disappear.
- All of our attempts determine cause (swapping boards, cables, power supplies, etc.) had failed.



# NuMI-MINOS Status Report - Nick Graf

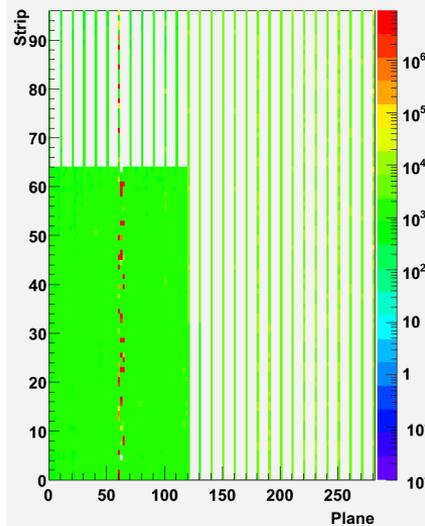
Run 19950 05/04/2011 03:47

CAPID errors

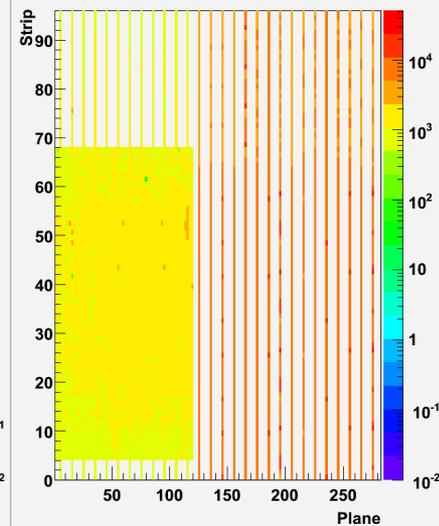


Run 19950 05/04/2011 03:47

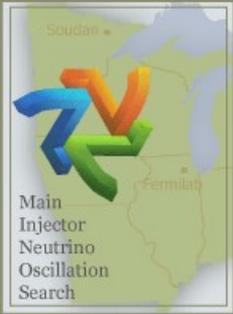
SGATE hit map: U+



SGATE hit map: V+



Large numbers of CapID errors affect data quality.  
Exactly how will need to be determined.  
Problem became even worse than shown here.  
Removed this crate from the readout (3 planes near middle of detector).  
Reason for low live time fractions.



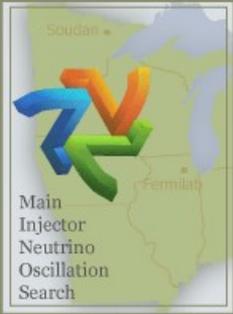
## NuMI-MINOS Status Report - Nick Graf

### Solving the problem

- Tried swapping just about everything we could think of.
- Help from Gary Drake at Argonne, who designed the electronics.
- Noticed that severity increased with the number boards in the crate.
- Suggested a power supply problem.
- Had previously tried swapping the core of the Wiener.
- Checked PS chassis and found loose connections.
- Not easily accessible; took several people ~2 hours.
- No previous experience working with chassis.
- Possible that connections loosened over time from fan vibrations.
- May happen again in other crates.

**Many thanks to Gary Drake**

# NuMI-MINOS Status Report - Nick Graf



## FAR DETECTOR



Soudan: Last week

- Contractors began cleaning residual foam and debris. Expected to finish May 10.
- New sprinkler feed pipe installed between 25<sup>th</sup> and 27<sup>th</sup> levels. Sprinkler system holds pressure and is operational.
- Magnet UPS energized and checked out. No problems.
- Electronics continuing to run. 2 or 3 bad channels to fix.

This week

- Inspection of lab elevator this Wednesday.
- Annual inspection and maintenance for fire detection system this Thursday.
- Started testing magnet coil today.
  - Start with low voltage to check for ground faults.
  - Slowly increase voltage.