

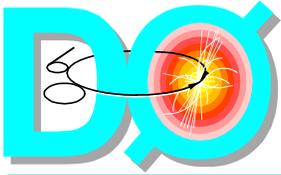
DØ Status and Operations

April 29 – May 6, 2002

- Notable “features” of the last week
 - ◆ L2 Trigger system
 - ◆ SMT IB PS trip
 - ◆ Reasonably smooth operations otherwise

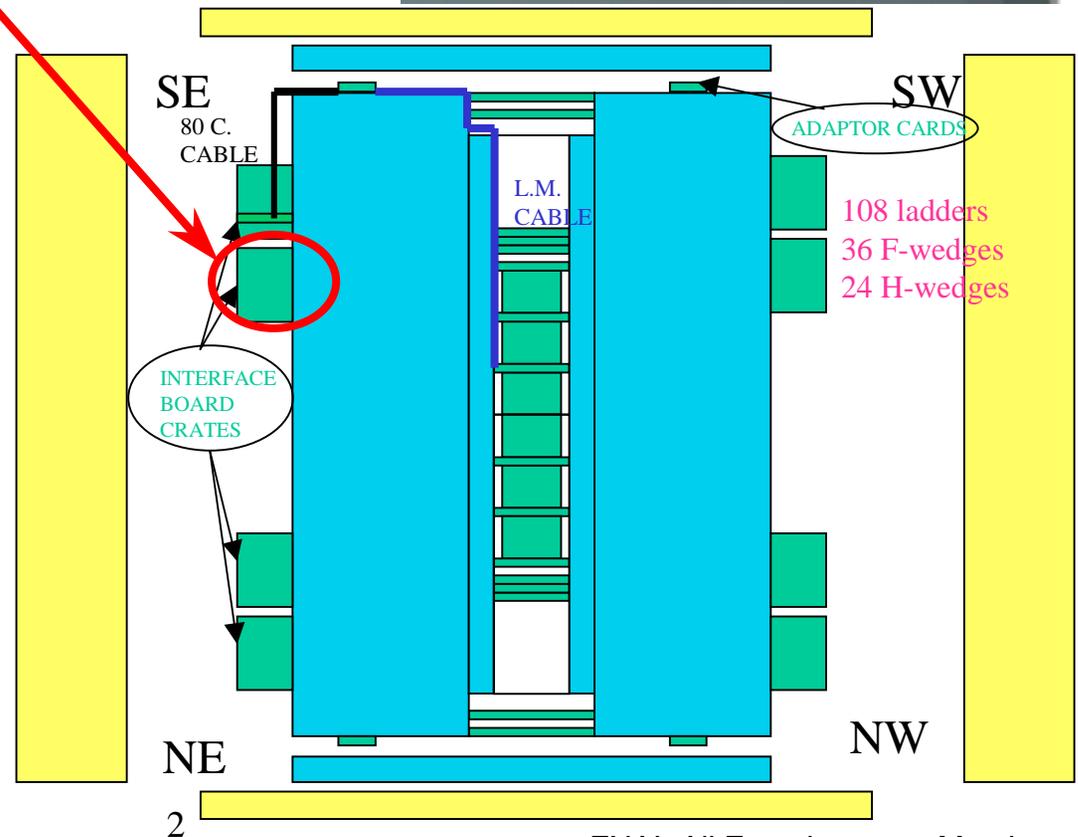
Stores	Delivered Integrated Luminosity	Utilized Luminosity	Live Luminosity	Live fraction	Rate to tape	Number of events
8	2.77pb ⁻¹	1.99 pb ⁻¹	1.16 pb ⁻¹	58.3%	16.9 Hz	3.2 million

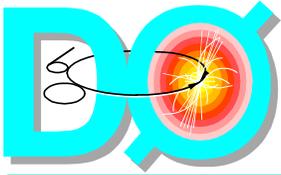




SMT Status

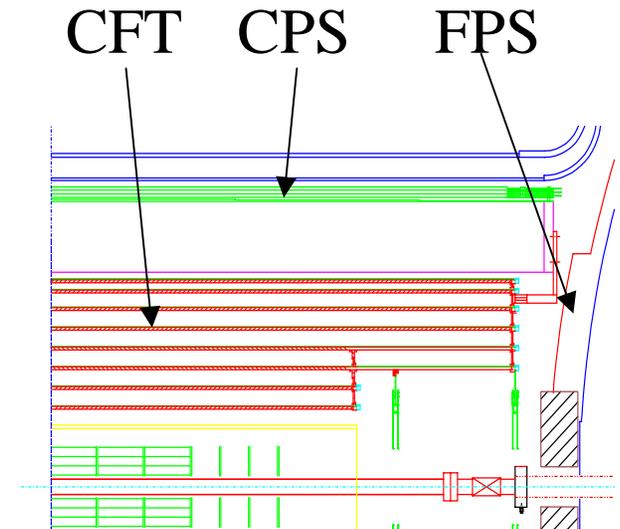
- Detector has been running fine and with good performance over last few weeks
- SE0 IB crate PS tripped on April 30
 - ◆ +15V overcurrent
 - ◆ Requires cathedral access (3-4 shifts)
 - ◆ “Unfurnished” supply (3 others)
 - ◆ Affects 90° wedge in SE detector (1/8)
 - ◆ Decision to wait until Summer shutdown or longer “natural” opportunity
- Investigation of noise issues; clustering; tick selection effects

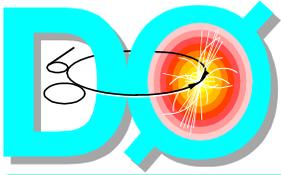




CFT Status

- Detectors are running smoothly
- 176 of 198 AFE boards installed
 - ◆ 11 need temp and bias control circuit revision work
- 100% CFT axial + stereo instrumented
- 100% CPS axial + stereo instrumented
- 31% FPS instrumented (10/32)
- Integration of CPS/FPS readout and thresholds
- Still working on sequencer firmware to solve “split pedestal” problem
 - ◆ Not seen on test stand
 - ◆ requires access to the detector platform
- Ongoing work on monitoring and stability





Calorimeter/Muon/FPD Status

- **Calorimeter**

- ◆ Running very smoothly
- ◆ Studies underway for electronics pedestal thresholds and energy scale calibration

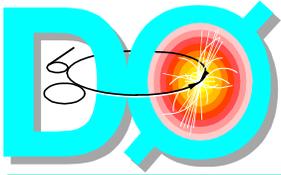
- **Muon**

- ◆ Detectors are running very smoothly
- ◆ New Muon Fanout Cards (MFC) have arrived and are being certified
- ◆ Prototype has demonstrated that these resolve a number of readout glitch issues
- ◆ Expect to install all MFCs this week

- **FPD**

- ◆ Recorded 3 million events with elastic trigger
- ◆ Working on diffractive trigger
- ◆ Expect to integrate with DØ DAQ during summer
- ◆ Investigating low voltage power supply failures in tunnel





L1 Trigger

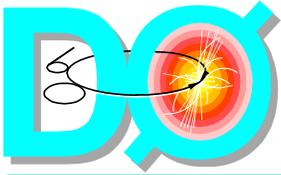
- **L1 CTT**

- ◆ Hardware Complete
- ◆ Focusing on Firmware integration
- ◆ Have succeeded in transmitting test patterns from AFE to L1Muon at Combined Test Stand. Now attempting transmission of test patterns from AFE to L1Muon on platform
- ◆ Integration of L1 and L2 triggering capabilities underway at Combined Test Stand

- **L1CAL**

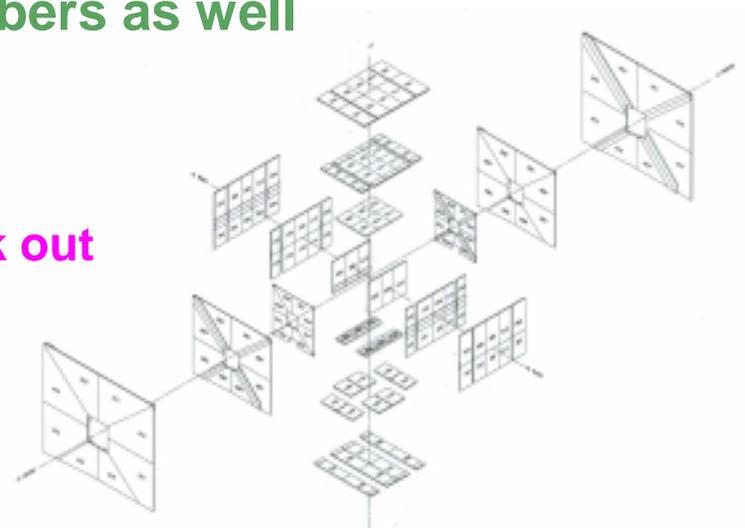
- ◆ Modification of CTFE receiver cards and burning PROMs for extension of eta coverage (0.8→1.6→2.5)
- ◆ Install in next 2-3 weeks

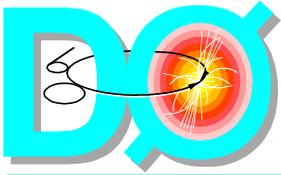




L2 Trigger

- L2 Trigger now running as part of regular data taking
- Integration with other subsystems for run configurations
- L2 currently rejecting on “copies” of L1 single muon triggers
- Rejection factor of about 1.3-1.6 for “loose” muon definition with >99% efficiency
- Can increase rejection factor to ~5-6 with about 90% efficiency with “medium” muon definition (requiring a p_t cut on the muon) – currently under study
- L2 muon trigger inputs use wire chambers as well
 - look for track segments in PDT (6k cells) and MDT (50k cells)
 - ◆ Improving online monitoring for these systems and adding capability to mask out noisy channels quickly
- Calorimeter triggers soon
- Details next week...





Continuing DAQ upgrade

- **L3/cDAQ**

- ◆ 75/82 Single Board Computers (SBCs) delivered
- ◆ 2 preproduction extender cards received – one working, few correctable flaws in the other
- ◆ Bulk of extender cards expected in ~1 week
- ◆ Ethernet etc. cabling for all floors of the readout almost complete
- ◆ Expect to start installing SBCs in ~1 week
 - ▲ 6 installed now
- ◆ Ongoing debugging, enhancements and performance monitoring as well as real world operations experience

- **Multi-buffer readout**

- ◆ VME Readout Buffer Controllers (VRBC) are working in multi-buffer readout in TFW and Tracking crates
- ◆ Needed for operation at > few hundred Hz and to reduce latency dead-time in L2 trigger (expect immediate improvement of 10-20% in L1→L2 rate)
- ◆ Upgrade firmware for all tracking crates this week; further tests *in situ*
- ◆ Other systems have been tested already

