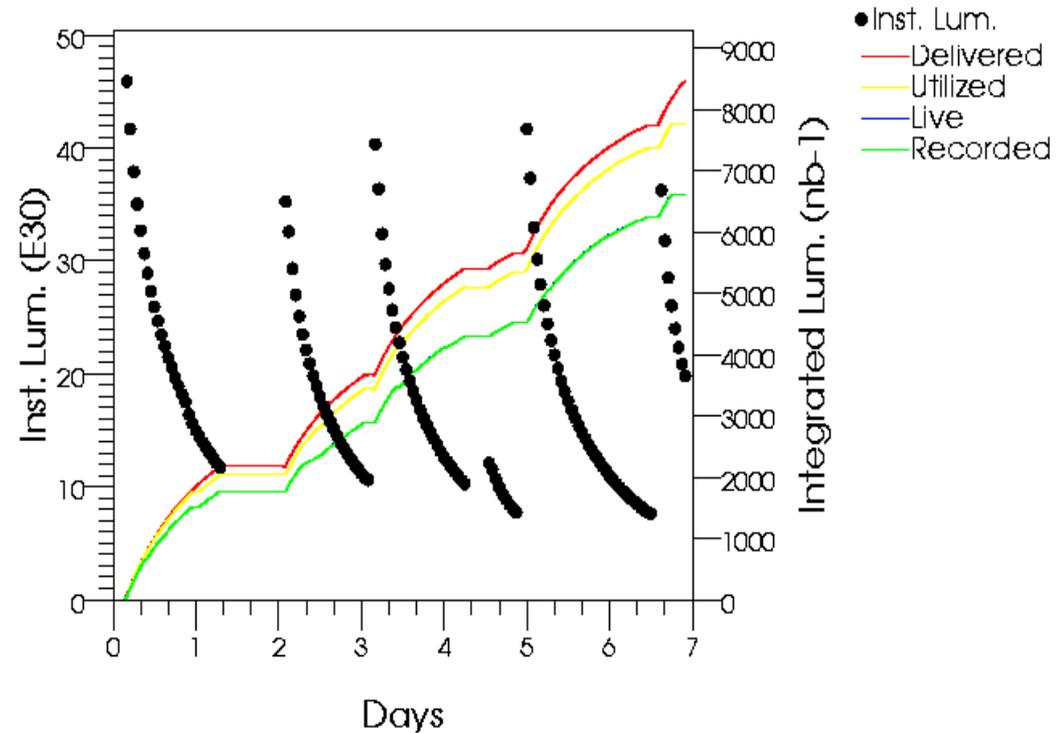
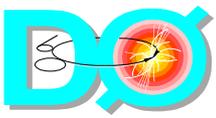


DO Data Taking Summary: January 19 to January 25

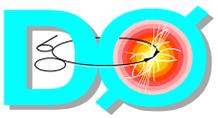
- Luminosity
 - ♦ Delivered 8.4pb-1
 - ♦ Recorded 6.9pb-1
- Data taking efficiency
 - ♦ 82% weekly
 - ♦ Below average
 - ♦ "Statistical fluctuation"
- Backgrounds
 - ♦ P and pbar halo are within specs
- Beam position
 - ♦ Within specs
- Number of events collected
 - ♦ 15mln



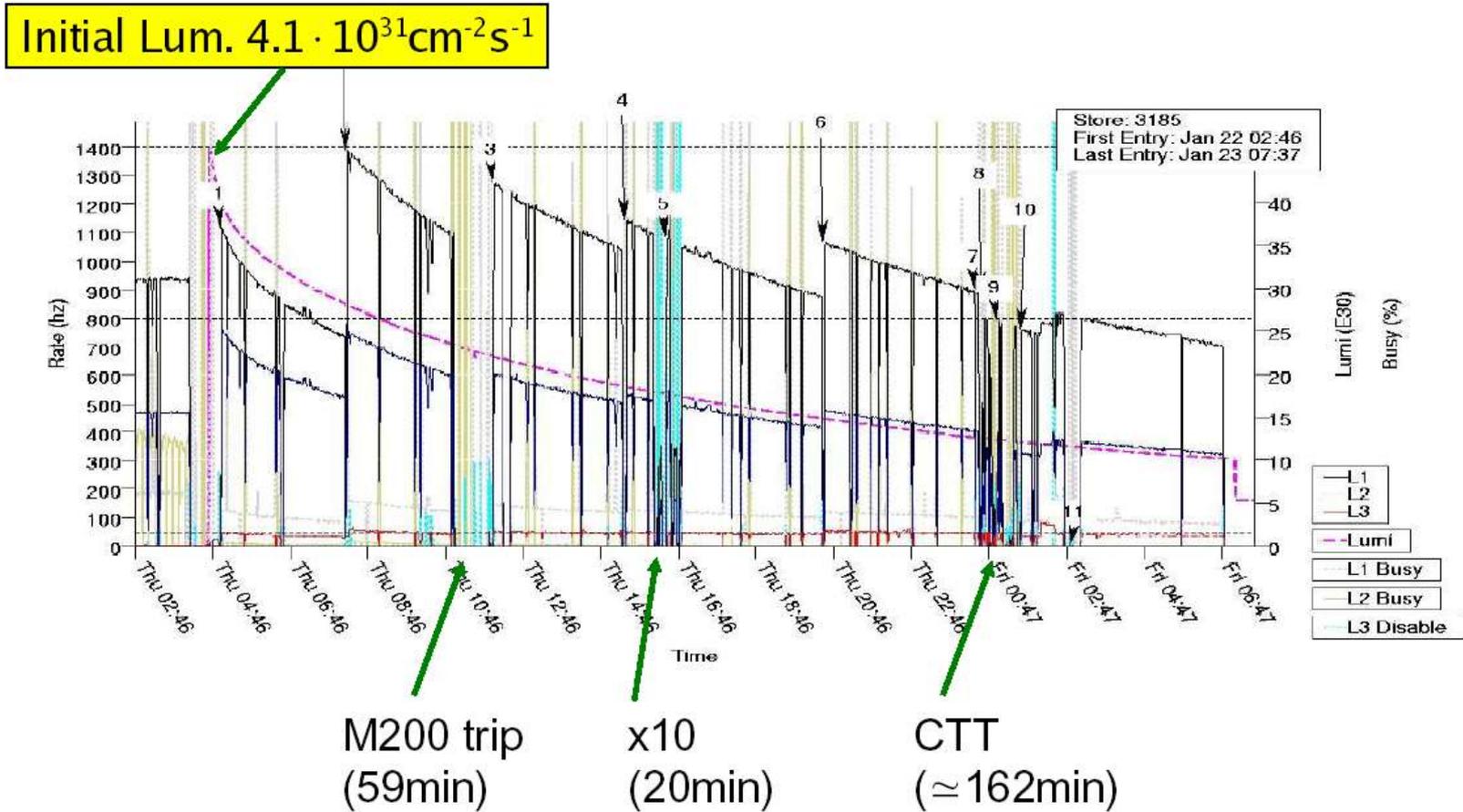


Detectors Status

- Luminosity
 - ◆ Stable Data taking, new constant
- Silicon
 - ◆ Number of working HDIs is stable
 - ▲ ~88%
 - ◆ Water drip alarm/power off on Wednesday
 - ▲ Lost ~1.5 hours
 - ▲ Not repeated since that time
- Fiber tracker and preshowers
 - ◆ Stable data taking
 - ◆ Problems with tracking trigger power supply trip
 - ▲ ~1.5 hours of downtime
- Calorimeter
 - ◆ No problems with detector
- Muon system
 - ◆ Power supply failure, broken wire in tracking detector
 - ▲ Required two accesses
- Forward proton detector
 - ◆ All 18 pots are in operation!
 - ◆ Pots are inserted by experts at the beginning of every store and data are written to tapes using standard DAQ system
 - ◆ Working on results analysis, developing automatic insertion procedure and FPD triggering



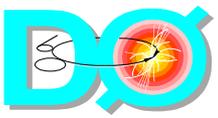
Thursday-Friday Store





Triggering and Data Taking Efficiency

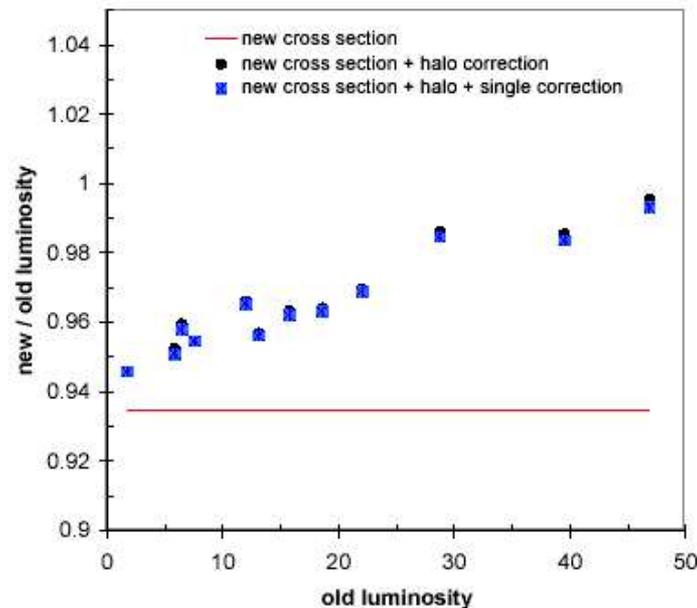
- Collecting physics data stably with trigger list v12.32
 - ◆ Level 1 ~1.4kHz
 - ◆ Level 2 ~0.8kHz
 - ◆ Level 3 ~50Hz
- Actively progressing with Silicon Track Trigger (STT) commissioning
 - ◆ All hardware is installed
 - ◆ Running ~50% of crates in global runs (not triggering yet)
 - ▲ Concentrating on firmware debugging
 - ▲ Have to do with real trigger rates/inputs from silicon and fiber tracker
 - ▲ Cause some downtime during physics data taking
 - ~3%-4%
- Developing new trigger list v13
 - ◆ Better efficiencies/rejections for high luminosity operation
 - ◆ New tools in fiber tracker and muon Level 1 triggers, better filtering on Level 3 farm
- Last week efficiency loss
 - ◆ ~4% front-end busy
 - ◆ ~4% silicon trigger commissioning (!)
 - ◆ ~2% begin/end store, begin/end runs, etc.
 - ◆ ~8% different failures (!)
- Back to ~88% over weekend

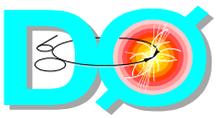


New Luminosity "Constant"

- On Monday, January 19 D0 adjusted parameters in the formula converting measured interactions rates to luminosity number
 - ♦ New world average value for inelastic cross sections is used
 - ▲ $60.7 \pm 2.4 \text{ mb}$
 - ♦ Better estimates of acceptance and efficiency
 - ▲ $75.8 \pm 3.8\%$
 - ♦ Corrections to dead-time due to proton and anti-proton halo
- As a major results error on luminosity measurement has been decreased from $\sim 10\%$ to $\sim 6.5\%$
- Measured value of luminosity is decreased between $\sim 1\%$ at $L=40E30$ to $\sim 4\%$ at $L=10E30$

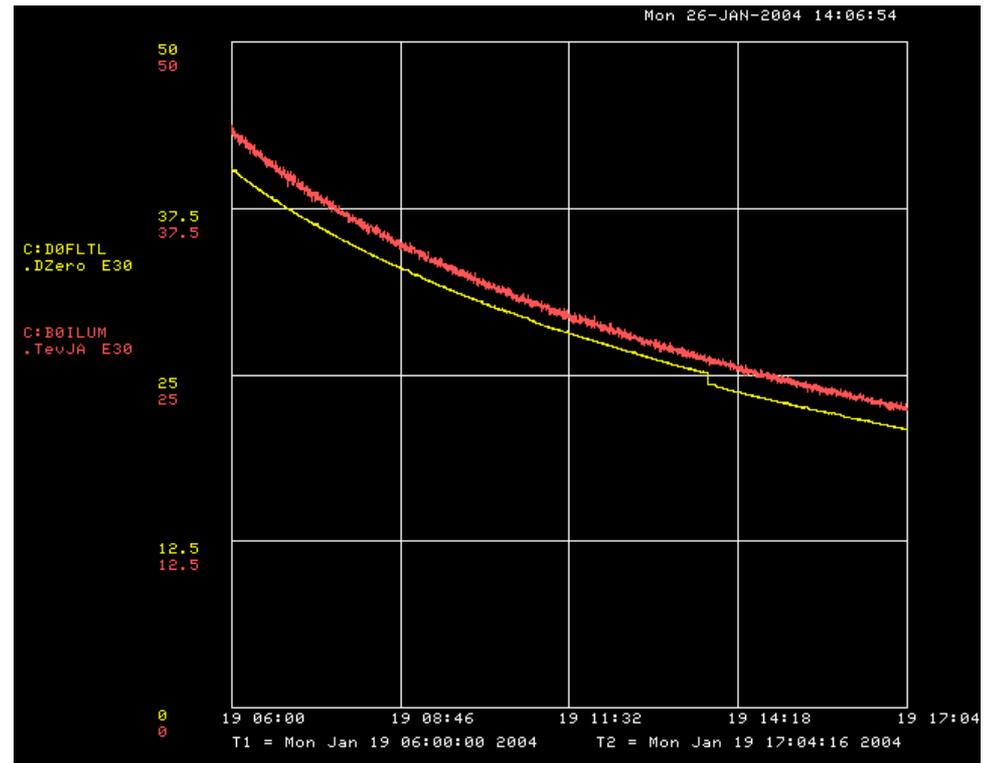
Comparison of old and new D0 Luminosity Measurements





DO Luminosity

- Actual change in measured luminosity is in good agreement with expectations
- Ratio between DO and CDF luminosity is "more stable"
 - ◆ ~8% at 40E30 luminosity
 - ◆ ~4% at 10E30 luminosity
- Error on ratio of two luminosities (without correlations)
 - ◆ ~6%
 - ◆ The difference between luminosities in two detectors is ~1 sigma
- Does DO really getting less collisions?
 - ◆ Answer from AD/CDF/DO luminosity working group

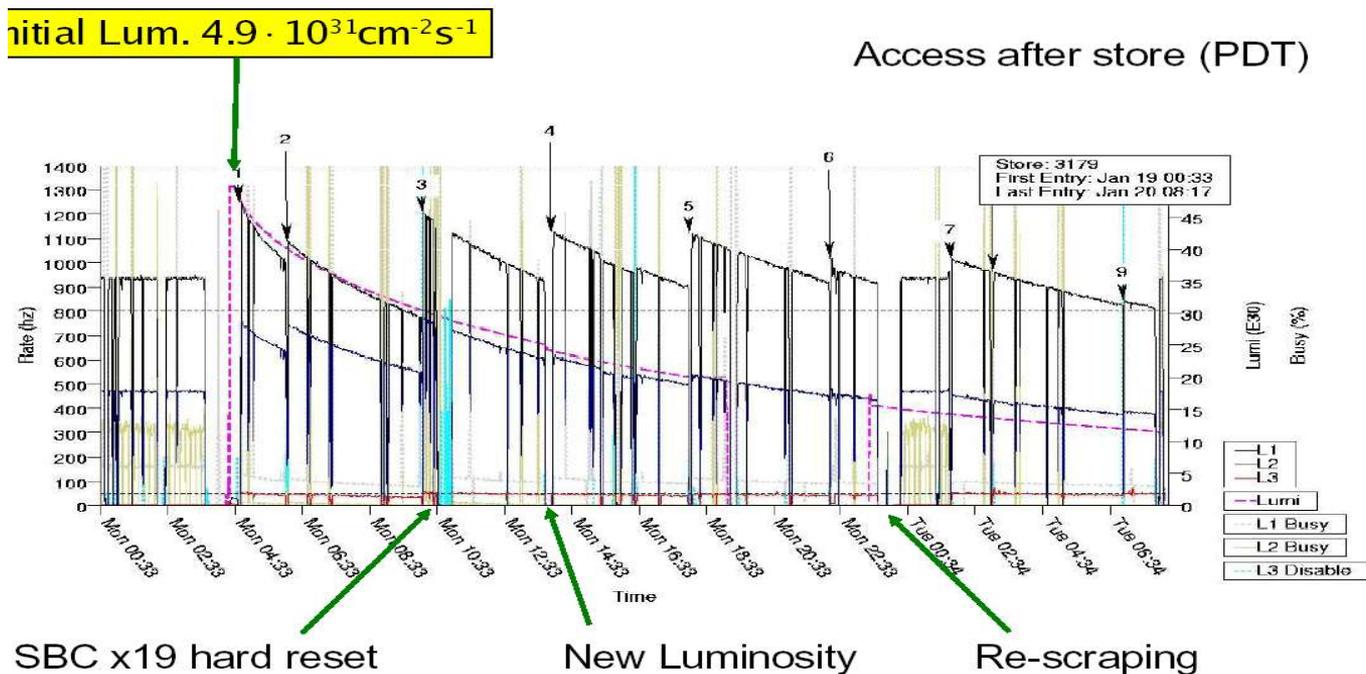


January 19 store luminosity change



Stores Re-scraping

- Over last couple of weeks re-scraping of already colliding stores has happened
 - ◆ Loosing physics luminosity
 - ▲ End run, ramp HVs, end stores, etc.
 - ◆ Compromising data taking accounting
 - ◆ Aging detectors by ramping high voltages up and down
- Would like to see reduction in re-scraping downtime
 - ◆ Did not have similar issues before





D0 Summary

- Stably collecting physics data
 - ◆ Data taking efficiency on lower side last week ~82%
 - ◆ Problems are all understood and addressed
- Pleased to collect data in store with pbars from recycler
 - ◆ Smoothly collected physics data in that store
 - ◆ Might have Higgs event on tapes from pbars circulated in recycler...
 - ◆ Congratulations to AD from all of us at D0!
- In stable data taking mode
 - ◆ No access requests
- Actively working on data analysis for Winter Conferences