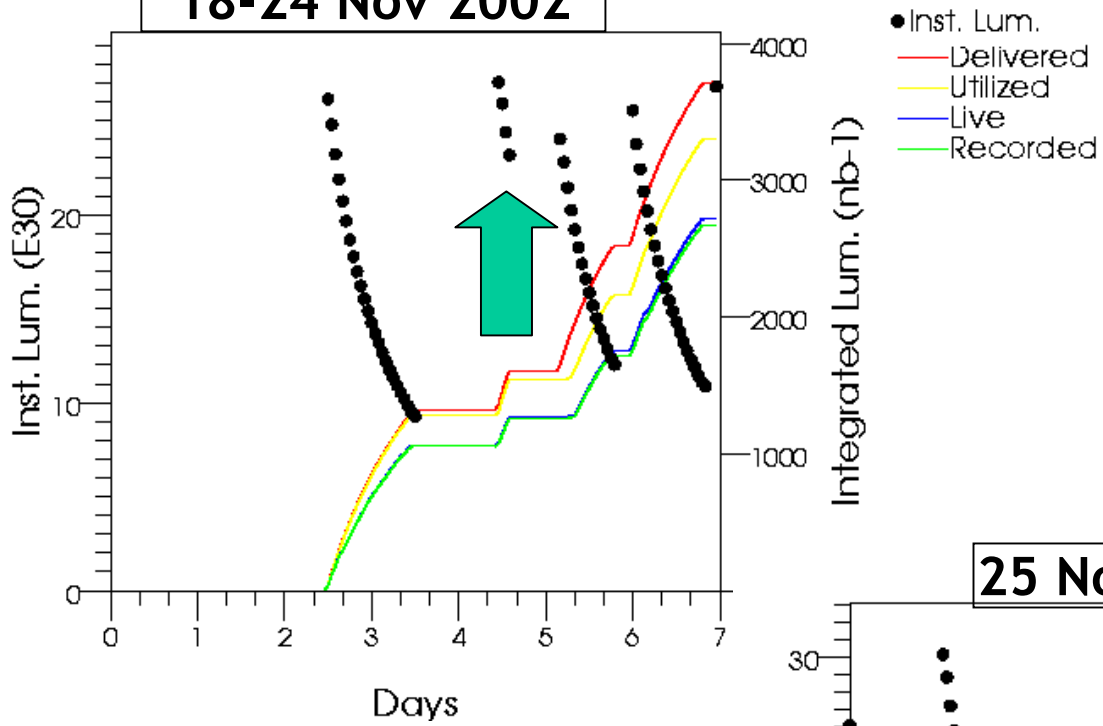
Data Taking

2002 November 22-December 5

News from the Tevatron

- Last Mtg (Nov 22nd - 14:40) was interrupted by quench of Store 1991 caused by another pre-fire abort (Pbar kicker)
  - D0 dose rate ~60 rads/s ➔ our abort rate is 12 rads/s
  - In short, there was no serious effect on D0 SMT
  - However, CDF was also affected & ran without silicon over the following three stores, so…
    - CDF has been asked to present at the AEM mtgs their efficiencies with AND without Silicon!
- In response to two pre-fires in two weeks, CDF/D0/BD have agreed to implement BD proposals, mainly to reduce losses on CDF - there should be no negative effects to D0
  - Report linked from Current Events page

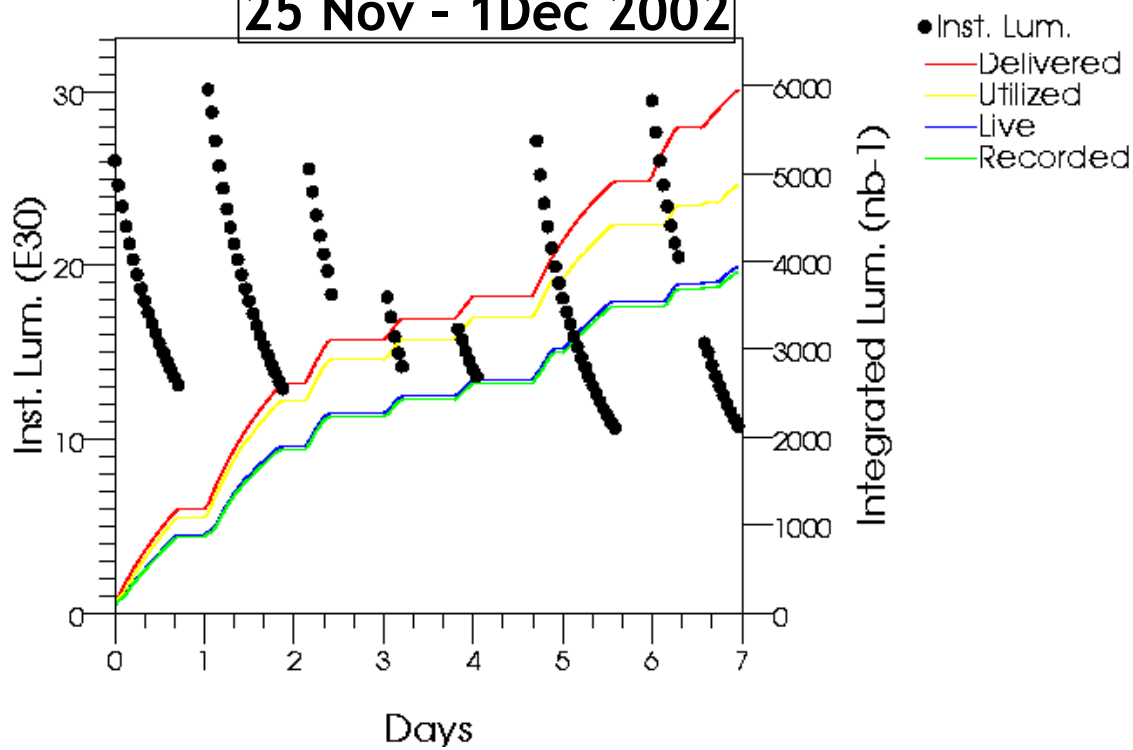
18-24 Nov 2002



- Store 1991 - prefire abort
- Stores 1993 & 1995 terminated intentionally

Stack 'N Store Week

25 Nov - 1Dec 2002



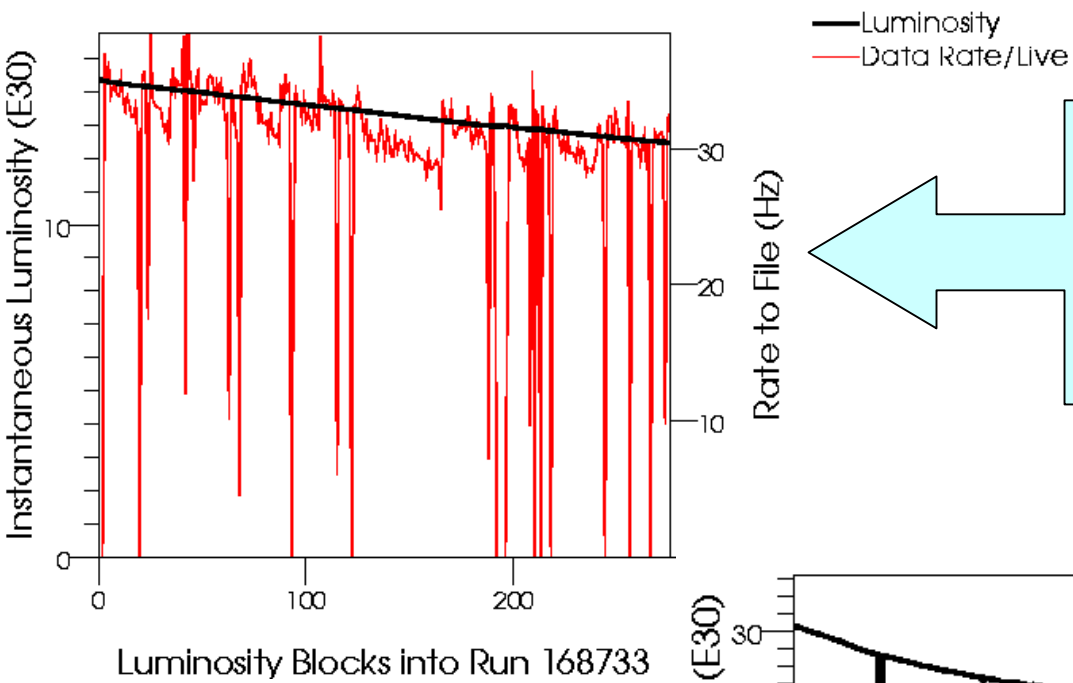
Stack 'N Store Week

Store	Initial Lumi	Deliv'd Lumi	Termination	Comments
1997	27.8	1248	Intentional	Lost 1 pbar xfer; lower chromaticity on ramp
1999	31.8	1501	Quench	Lowering chromaticity in end-of-store study
2001	27.1	525	power glitch	Raise chromaticity up ramp to 11/12 values
2005	18.9	250	AAK3 prefire	Reverted to 11/2 A1 line settings Dampers off up ramp
2013	17.2	271	A2 CC stalled	Tev pbar closure failed; separator spark
2014	29.3	1334	Intentional	Dampers still off up ramp
2015	31.3	651	power glitch	Raise vert tune +0.002 180-800 GeV
2017	15.9	660	Intentional	Retreat on tune, chrom mods; dampers on Pbar blow-up in squeeze

- **From Ron Moore – BD Run Coordinator at AEM Dec 2nd**
  - **Talk linked from the Operations page**

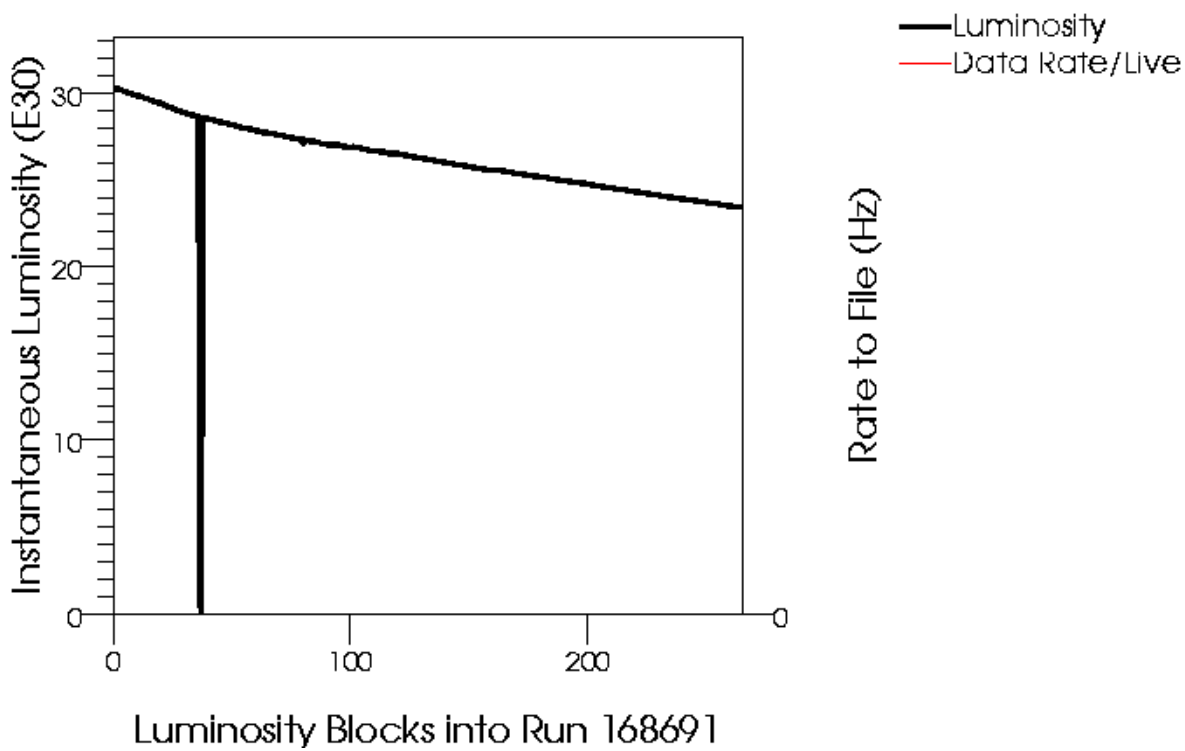
Other News

- Store 2019: 10:30 Mon Dec 2
  - Init L=29.27E30 *(~76% eff. for the store)*
- Accelerator Studies week
  - Five shifts interrupted by a quench on Tues 13:00 & a LINAC vacuum problem Tues 03:00-17:00
- A few problems with automated Lumi reports
  - Runs 168655, 168691, 168715
    - At least one was caused by restarting the Datalogger while the run was paused (see later slide)
    - In the past, Michael has been able to fix these by hand
    - Until then the efficiencies for Nov 29th, Nov 30th & Dec 1st are significantly underestimated as ~12 hours of delivered lumi was affected
- Revised zero bias prescales for non-beam periods
  - L1/L2 ~ 2k/220 Hz to "stress" system in preparation for beam



Init L = 14.35E30
46 SCL inits
1 Pause
Eff = 90.4%

Datalogger reset while run was paused around the halfway mark



Data Taking Statistics

Week of Nov 22-28

			Normalizable Luminosity (nb-1)			Hours				
Day	Date	Del	Util	Live	Rec	Store	Util	Rec	Evts (k)	Eff.
Fri	22-Nov-02	284.09	269.99	209.62	207.20	3.2	3.0	2.8	356	0.729
Sat	23-Nov-02	911.41	834.16	669.62	640.29	15.0	13.9	12.9	1124	0.703
Sun	24-Nov-02	1198.14	1142.87	968.43	958.04	20.2	19.5	18.6	2309	0.800
Mon	25-Nov-02	1185.35	1087.77	889.73	867.14	18.0	16.7	15.8	1898	0.732
Tue	26-Nov-02	1429.39	1322.01	1004.95	989.25	20.4	18.6	16.8	1963	0.692
Wed	27-Nov-02	492.01	471.07	379.51	377.90	6.2	5.9	5.5	709	0.768
Thu	28-Nov-02	445.77	430.89	341.58	338.88	7.9	7.7	7,4	758	0.760
		5946.2	5558.8	4463.4	4378.7	90.9	85.3	72.4	9117	0.736

- Total Data Taking Efficiency ➔ 73.6% *(82.0% week before)*
  - 387.4 nb^{-1} or 6.5% Lost due to Downtime
  - 1095.4 nb^{-1} or 18.4% Lost due to Deadtime
    - Decorrelated (L2/L3/COOR Disables)
    - Correlated (FEB, SkipNextN)
  - 84.7 nb^{-1} or 1.4% Lost at L2/L3
- 9117 k Events from Physics Runs recorded to tape with global_CMT-9.30

Data Taking Statistics

Week of Nov 29-Dec 5

			Normalizable Luminosity (nb-1)			Hours				
Day	Date	Del	Util	Live	Rec	Store	Util	Rec	Evts (k)	Eff.
Fri	29-Nov-02	615.83	493.94	388.49	386.54	8.0	6.3	5.6	769	0.628
Sat	30-Nov-02	740.34	604.36	537.16	526.29	14.8	12.3	12.2	1329	0.711
Sun	1-Dec-02	1046.93	463.72	404.22	394.81	16.4	8.3	8.2	1236	0.377
Mon	2-Dec-02	1122.66	1043.31	822.44	816.87	17.5	16.5	15.3	1737	0.728
Tue	3-Dec-02	288.49	282.60	254.14	252.94	6.0	5.9	5.8	641	0.877
Wed	4-Dec-02	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0	0.000
Thu	5-Dec-02	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0	0.000
		3814.3	2887.9	2406.5	2377.5	62.7	49.3	47.1	5712	0.623

- **Total Data Taking Efficiency ➔ 62.3%**** *(73.6% week before)*

  ** 3 Runs not properly included in the Daily Summaries for Nov 29th, Nov 30th & Dec 1st (89 nb^{-1} recorded out of 850 nb^{-1} delivered)

  - Assuming ~75% efficiency for each run
    - Weekly efficiency is closer to 2927/3814 ~ 76%

- **5712 k Events from Physics Runs recorded to tape with global_CMT-9.30**

Sources of Downtime

Nov 15-21, 2002	21-Nov-02	11:55	0.73	Hardware SCSI errors d0olb affected Datalogger
Nov 22-28, 2002	23-Nov-02	7:44	0.58	Hardware SCSI errors d0olb affected Datalogger
	24-Nov-02	4:46	0.28	Hardware SCSI errors d0olb affected Datalogger
	25-Nov-02	2:34	0.67	DAQ Problems: Datalogger & L3 Supervisor
	25-Nov-02	0:00	0.30	Begin Store 1997 & SMT HV trips
	26-Nov-02	16:33	0.27	SMT HV trips
	26-Nov-02	12:11	1.02	Special Calorimeter non-normalizable Runs
Nov 29-Dec 5, 2002	30-Nov-02	5:54	0.45	Datalogger & L3 Supervisor
	30-Nov-02	14:02	0.42	L1 CTT Non-recorded test runs
	1-Dec-02	22:52	0.25	Datalogger & L3 Supervisor
	2-Dec-02	13:39	0.60	Special Calorimeter non-normalizable Run

- Datalogger, SCSI errors, d0olb ➔ All red herrings!
  - Real problem solved Wed Dec 4th - Details from Stu…
- L3 Supervisor - details from Gordon
- Special Runs
  - L1 CTT Trigger Study
  - Calorimeter Jet Energy Scale Offset
    - Three runs: 25E30, 18E30, 12E30
- SMT HV trips - details from Eric

Due to full agenda, I will not discuss deadtime this week. I'll defer to Gordon, Dennis & other experts on progress of daqAl and its inputs Added link to the daqAl logs off the Operations page

Plans for Upcoming Week

- New trigger list (Thu Dec 5th): global_CMT-9.31
  - Small change to L2 code
- 9.40 should be online by end of next week
  - Assumes p13 online release is ready
  - L1 CTT triggers for the first time (mark & pass)
- No change to peak L1/L2/L3 rates ~ 600/250/50 Hz
  - Muon PDT interruptions every 5-7 minutes at current rates
- Request for 5 shifts of beam studies each week until the shutdown except during weak of Christmas
  - Groups should prepare non-beam task lists
- I will be taking a mini-sabbatical after today's mtg until Mon Dec 16th to work on a Shifter tutorial
  - This has been on my to-do list since June - too many distractions!
  - I will be around…just don't expect much of my attention
  - Dmitri will run next week's Operations meeting (Dec 13th)