

Studies

- o Static Stacktail Measurements. Data is being analyzed offline.
- o Stacktail Transfer Function Measurements (<http://www-bd.fnal.gov/cgi-mach/machlog.pl?nb=pbar08&action=view&page=462&scroll=false&load=>). Data is being analyzed offline.
- o Studies finish up by 1pm

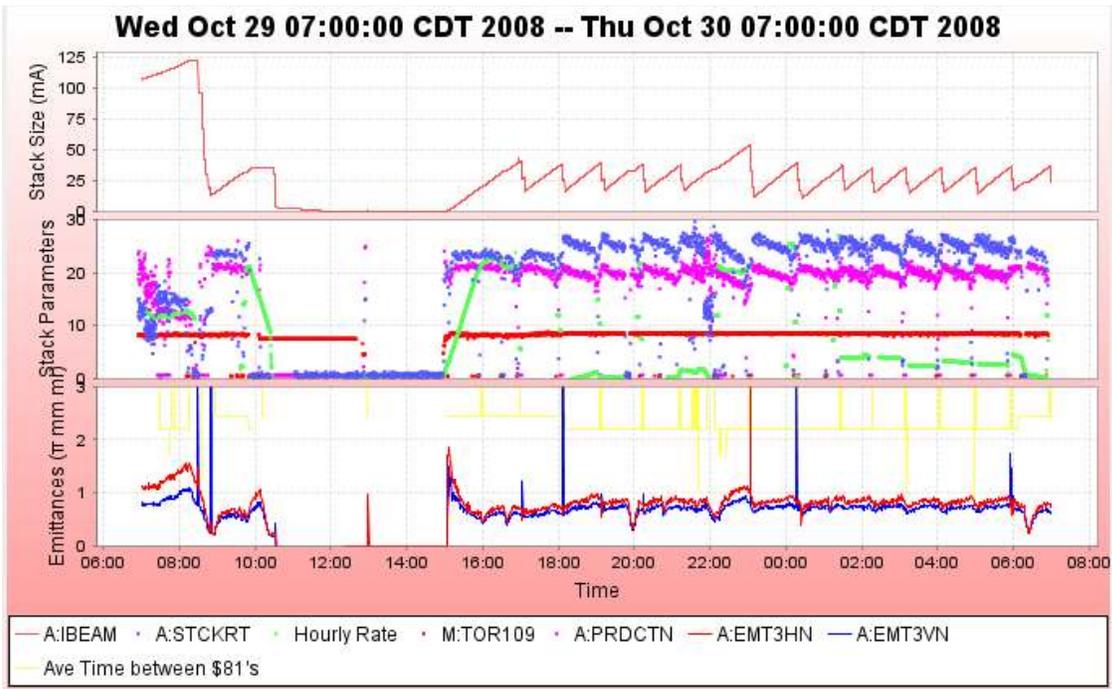
Access

Pbar			
Job Number	Type	Title	Crew
9204	Misc	Inspection of Pbar Rings. We found that the dripper LCW leak on D4SD13 was about the same as the previous access. A look through the gate, at transport showed that the puddle on the floor under IB7 was not significantly worse. Very minor LCW drippers were found on A1Q13 and A1Q14.	Songeroth, Drendel
9219	High Level RF	Measure ARF2 gap volts with a scope probe. It was found that the ARF2 readback is exaggerated. Since the flusher modifies ARF2 amplitudes based on stack size, no changes can be made to the scaling until the flusher lookup table is also modified.	Peterson, Dilday
9224	Target Station	The collimator water flow has been declining due to a clogging strainer (See PBAR elog chapter #460 for details): Accessed the water cage today to replace the collimator return line strainer. Flow increased from 3.5 to 4.1 gpm as a result. We will want to inspect the contents of the strainer basket when there is an opportunity. We also installed a provision to allow easy flushing of the strainer since it appears we may need to flush the strainer periodically. Also checked the collection lens water skid reservoir tank level; the level was down 2.75" and has been refilled.	Leveling, Kelly
9225	Stochastic Cooling	Vertical Core Cooling Gain Modifications: <ul style="list-style-type: none"> • Changed Core Vertical band 1 attenuator pad from 13dB to 6dB • Changed Core Vertical band 3 attenuator pad from 6dB to 0dB • Changed Core Vertical band 1 trombone A:CV1T2 ~9 psec longer to 288psec. 	Mueller, Sheahan
No Job #	Start-up Downtime	D:H704 had a tripped breaker. Obie reset the breaker and a critical device test was completed.	Obie

Access finished up by 2pm.

Stacking

- o D:HT704 tripped breaker delayed turn-on.
- o Were stacking by 3pm.
- o Performance
 - Most in an hour: 24.86 mA at Thu Oct 30 00:10:18 CDT 2008
 - Average Production 16.31 e-6/proton
 - Pbars stacked: 360.23 E10 in 22.62 Hr
- o 4-8GHz Momentum array motor controller has an apparent LVDT problem. The good news is we have an independent readout.



Transfers

- Unstacked 453mA in 36 transfers over 15 sets.
 - Overall Accumulator to MI Efficiency 96% (96.6% if you don't count the set of transfers from the 121mA stack).
 - Overall Accumulator to Recycler Efficiency 94% (94.4% if you don't count the set of transfers from the 121mA stack).
- On transfer 9814, the Pbar sequencer froze when DPM_PEND on reading A:IBEAM.

Column 1 Number_0_Pbar	Column 4 Number_3_Transfer Time	Column 21 Number_20_A:IB	Unstacked (mA)	Column 24 Number_23_R:BE	Stashed	Acc to RR Eff	Column 27 Number_26_MI DCCT SMALL	Column 28 Number_27_MI Before	Acc to MI Eff	Acc to MI2 Eff	Transfers	Sets
Totals =>		7:00:00 AM	453.26		425.72	93.93%	434.91	437.40	95.95%	96.50%	36	15
9818	Thursday, October 30, 2008 6:59:01 AM	36.38	22.47	215.79	21.44	95.41%	18.61	21.41	82.83%	95.28%	2	1
9817	Thursday, October 30, 2008 5:56:25 AM	35.95	20.30	194.79	19.12	94.19%	19.98	19.91	98.41%	98.06%	2	1
9816	Thursday, October 30, 2008 4:59:53 AM	35.18	21.79	176.01	20.68	94.92%	21.01	21.12	96.41%	96.91%	2	1
9815	Thursday, October 30, 2008 4:05:55 AM	35.09	21.34	155.68	20.35	95.35%	20.71	20.49	97.06%	96.00%	2	1
9814	Thursday, October 30, 2008 3:10:50 AM	35.29	22.06	135.62	20.99	95.14%	21.53	21.71	97.60%	98.41%	2	1
9813	Thursday, October 30, 2008 2:16:51 AM	34.72	20.76	115.01	19.74	95.06%	20.18	20.14	97.18%	97.01%	2	1
9812	Thursday, October 30, 2008 1:28:46 AM	35.77	20.24	95.37	19.02	93.99%	19.44	19.53	96.05%	96.53%	2	1
9811	Thursday, October 30, 2008 12:18:01 AM	39.04	30.63	76.54	28.89	94.35%	29.55	29.60	96.50%	96.67%	3	1
9810	Wednesday, October 29, 2008 11:03:27 PM	53.23	43.55	47.85	40.52	93.04%	42.13	41.93	96.73%	96.26%	3	1
9809	Wednesday, October 29, 2008 9:13:51 PM	37.60	22.50	249.10	21.03	93.47%	21.69	21.77	96.41%	96.77%	2	1
9808	Wednesday, October 29, 2008 8:14:25 PM	38.20	23.73	228.55	22.38	94.33%	22.88	22.54	96.41%	94.99%	2	1
9807	Wednesday, October 29, 2008 7:08:22 PM	39.41	24.36	206.74	22.97	94.30%	23.51	23.39	96.54%	96.05%	2	1
9806	Wednesday, October 29, 2008 6:06:18 PM	38.24	23.43	184.22	22.13	94.46%	22.54	22.40	96.23%	95.60%	2	1
9805	Wednesday, October 29, 2008 5:02:19 PM	40.93	26.02	162.49	24.51	94.19%	25.07	25.42	96.38%	97.69%	2	1
9804	Wednesday, October 29, 2008 8:29:23 AM	121.52	110.09	139.89	101.95	92.61%	106.08	106.05	96.35%	96.33%	6	1

Requests

Requests

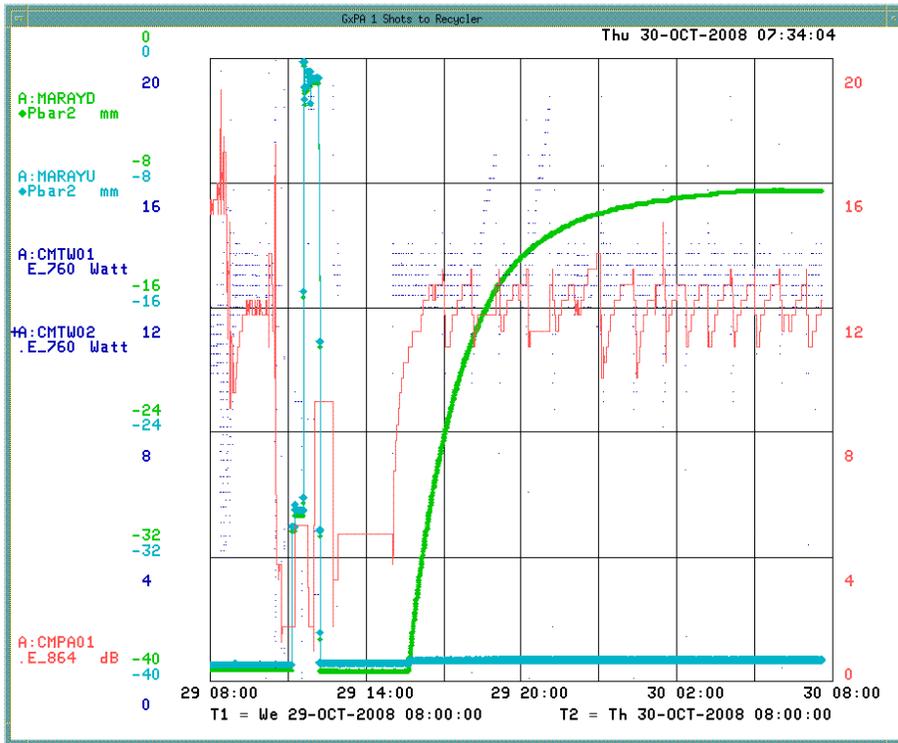
1. **Test using the same MI51 position for transfers & normal Stacking/NuMI operation**
 - The goal is to eliminate the routine orbit adjustment near MI-52 that occurs on transfers to the Recycler.
 - The positions are only 1mm different between transfers and normal stacking.
 - This should not make a difference in efficiency.
 - Initial tests were completed.
 - If efficiencies are unchanged, we'll work towards modifying the sequencer to accommodate the change in the near future.
2. **Put in Calculated Core-Vertical**
 - This can be done parasitically during stacking.
3. **Core Transverse Cooling Measurements**
 - Prerequisites:
 - The newly calculated delay and attenuation values must be in place and considered successful before this study can be started.
 - Beam conditions:
 - ~45mA of beam in the Accumulator.
 - Background
 - This is a repeat of the core cooling study completed first on the evening of Friday, October 3rd (See <http://www-bd.fnal.gov/cgi-mach/machlog.pl?nb=pbar08&action=view&page=423&anchor=202716&hilite=20:27:16->), and then again on the morning of Friday, October 17th (<http://www-bd.fnal.gov/cgi-mach/machlog.pl?nb=pbar08&action=view&page=441&load=>).
 - The October 3rd set of measurements were taken before the Core Vertical Equalizer was installed.
 - The October 17th set of measurements were taken after the Core Vertical Equalizer was installed. Initial indications are that maybe the cooling is worse with the new vertical equalizer.
 - Transfer function measurements made on October 13th (<http://www-bd.fnal.gov/cgi-mach/machlog.pl?nb=pbar08&action=view&page=433&anchor=135730&hilite=13:57:30->) determined that the trombone for each band needed to go longer by one wavelength; however, band 2 did not have enough range. This means the measurements taken on October 17th were not with a completely optimized system.
 - Adding additional cable delay requires a tunnel access, which was completed on Wednesday, October 22nd (<http://www-bd.fnal.gov/cgi-mach/machlog.pl?nb=pbar08&action=view&page=451&scroll=false&load=>).
 - After the October 22nd access was completed, a new set of Core Vertical transfer function measurements were made (<http://www-bd.fnal.gov/cgi-mach/machlog.pl?nb=pbar08&action=view&page=452&anchor=193038&hilite=19:30:38->). An additional set of TFMs were made after this. Valeri calculated ideal Core Vertical trombone and attenuator settings based on these measurements. It was determined that there was not enough gain in the Core Vertical band 2 and 3 systems to fully implement the change. The systems can be modified to accommodate the change, but another tunnel access is required.
 - On Friday, October 24th, an attempt to put in the new trombone settings and put in the correct ratio of band 1, 2 and 3 gains was made (<http://www-bd.fnal.gov/cgi-mach/machlog.pl?nb=pbar08&action=view&page=455&scroll=false&load=>). Since there was not enough room in bands 2 and 3, experts tried lowering band 1 in order to get the correct ratio. The results showed that the emittances were worse. A tunnel access is still required to get the desired gain from Core Vertical bands 2 and 3.
 - On Wednesday, October 29th, an access was made to make the desired attenuation changes to the Core Vertical systems (<http://www-bd.fnal.gov/cgi-mach/machlog.pl?nb=pbar08&action=view&page=463&anchor=152731&hilite=15:27:31->).
 - We still have to roll in Valeri's calculated changes.
 - This study repeats core vertical cooling measurements made on October 3rd and 17th, with the new equalizer in place, with the appropriate cable delays and pad removal to properly tune the trombones and attenuators.
 - The study

- - The studier is Jim Morgan
 - The estimated time is 2+ hours.
 - The study involves blowing the beam up and cooling it back down for each core vertical cooling band.

The Numbers

- Paul's Numbers
 - Most in an hour: 24.86 mA at Thu Oct 30 00:10:18 CDT 2008
 - Best: 37.52 mA on 25-Oct-08
 - Average Production 16.31 e-6/proton Best: 25.41 e-6/proton on 01/30/2008
 - Average Protons on Target 7.30 e12 Best: 8.77 e12 on 07/24/2007
 - Largest Stack 122.70 mA Best: 313.58 mA on 02/18/2008
- Al's Numbers
 - Stacking
 - Pbars stacked: 360.23 E10
 - Time stacking: 22.62 Hr
 - Average stacking rate: 15.92 E10/Hr
 - Uptime
 - Number of pulses while in stacking mode: 3869
 - Number of pulses with beam: 3383
 - Fraction of up pulses was: 87.44%
 - The uptime's effect on the stacking numbers
 - Corrected time stacking: 19.78 Hr
 - Possible average stacking rate: 18.21 E10/Hr
 - Could have stacked: 411.98 E10/Hr
 - Recycler Transfers
 - Pbars sent to the Recycler: 443.98 E10
 - Number of transfers : 35
 - Number of transfer sets: 15
 - Average Number of transfer per set: 2.33
 - Time taken to shoot including reverse proton tuneup: 00.22 Hr
 - Transfer efficiency: 93.34%
 - Other Info
 - Average POT : 7.52 E12
 - Average production: 141.64 pbars/E6 protons
 -

Other



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