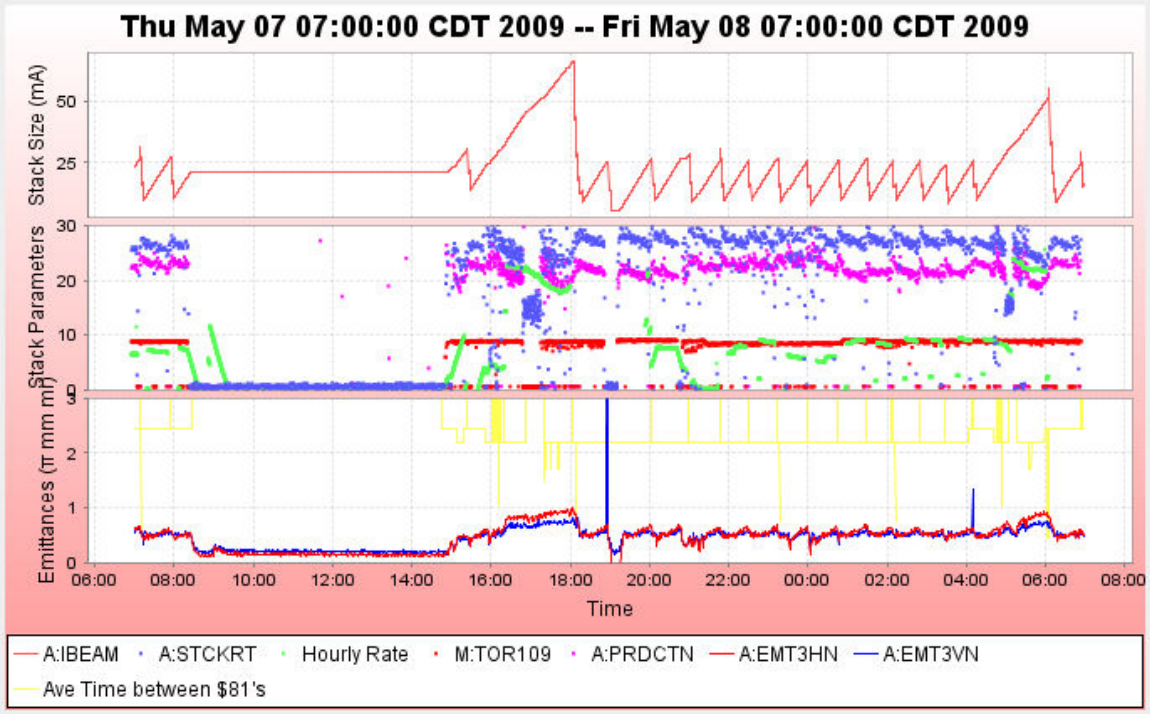
2009-05-08 Friday Morning Notes

Thursday, May 07, 2009
12:01 PM

Stacking

- During the downtime.
  - Circulated our 21.4mA stack and worked on when not stacking tuning.
  - When we went into standby, the Core 4-8GHz TWTs tripped on a bad digital flow switch indication. Avoided an access to the rings, but switching monitoring to the analog signal for the flow meter.
  - We did access the AP0 water cage to makeup water.
- Stacking returned ok.
- We stacked 409mA in 17.3 hours of stacking.
  - <stacking rate> = 25.9mA/hr
  - <production> = 21.8 e-6/proton
  - <beam on target> = 8.1e12



Transfers

- Transferred 403e10 in 41 transfers over 18 sets
  - Accumulator to Recycler efficiency was 96.2%
  - Taking out the two sets with more than two transfers we get 96.7%

Column 1 Number_0_Pbar Transfer Shot #	Column 4 Number_3_Transfer Time		Column 21 Number_20_A:IBEAMB sampled on $91 (A:BEAM7), E10	Column 22 Number_21_A:IBEAMB sampled on $94 (A:BEAM9), E10	Unstacked (mA)	Column 23 Number_22_R: BEAMS (R:BEAME0[0]) pre xfer E10	Column 24 Number_23_R: BEAM (R:BEAME0[1]) post xfer, E10	Stashed	Acc to RR Eff	Acc to MI Eff	Acc to MI2 Eff	Transfers	Sets	Column 5 Number_4_Acc Horizontal Emittance	Column 6 Number_5_Acc Vertical Emittance	Column 8 Number_7_Acc Longitudinal Emittance
	Totals =>				403.71			388.35	96.19%	97.66%	97.21%	41	18	4.8901	4.5122	1.8761
13052	Friday, May 08, 2009	6:56	25.53	9.98	16.91	54.64	70.95	16.31	96.43%	97.39%	97.16%	2	1	4.851	4.566	1.891
13051	Friday, May 08, 2009	4:11	52.14	9.00	46.97	10.53	54.80	44.72	95.20%	97.08%	97.39%	4	1	6.186	5.454	1.931
13050	Friday, May 08, 2009	3:28	25.85	9.82	17.38	358.08	374.63	16.72	96.21%	97.13%	97.92%	2	1	4.746	4.624	1.911
13049	Friday, May 08, 2009	2:50	24.15	8.54	16.95	342.93	359.21	16.43	96.93%	97.72%	98.70%	2	1	4.379	4.166	1.878
13048	Friday, May 08, 2009	2:09	25.95	9.50	17.74	326.85	343.83	17.07	96.24%	97.50%	97.10%	2	1	4.972	4.653	1.876
13047	Friday, May 08, 2009	1:29	25.78	9.41	17.65	310.76	327.74	17.08	96.76%	98.52%	96.53%	2	1	4.812	4.605	1.882
13046	Friday, May 08, 2009	0:46	27.04	9.76	18.59	293.77	311.58	17.84	95.98%	97.19%	96.36%	2	1	5.461	4.858	1.872
13045	Friday, May 08, 2009	0:00	25.91	9.37	17.82	277.34	294.48	17.23	96.73%	96.99%	97.91%	2	1	4.917	4.485	1.875
13044	Friday, May 08, 2009	23:14	26.18	7.73	18.92	259.76	277.97	18.27	96.55%	98.08%	96.34%	2	1	4.235	4.091	1.823
13043	Thursday, May 07, 2009	22:30	27.00	8.97	19.28	241.73	260.37	18.71	97.09%	98.61%	96.01%	2	1	4.879	4.548	1.881
13042	Thursday, May 07, 2009	21:48	26.05	9.58	17.79	225.22	242.29	17.11	96.19%	96.55%	97.14%	2	1	5.148	4.611	1.868
13041	Thursday, May 07, 2009	21:00	26.67	9.33	18.61	207.61	225.56	17.99	96.71%	97.76%	97.52%	2	1	5.162	4.582	1.873
13040	Thursday, May 07, 2009	20:03	28.53	8.66	20.66	187.86	207.94	20.09	97.27%	97.84%	97.75%	2	1	3.587	3.467	1.831
13039	Thursday, May 07, 2009	18:57	26.98	9.50	18.75	170.12	188.19	18.12	96.62%	98.49%	96.14%	2	1	5.584	4.605	1.88
13038	Thursday, May 07, 2009	18:05	25.65	5.78	19.88	151.15	170.47	19.37	97.44%	98.79%	97.85%	2	1	3.115	3.557	1.748
13037	Thursday, May 07, 2009	15:24	66.81	8.64	63.13	92.14	151.45	59.63	94.45%	97.42%	96.79%	5	1	6.856	5.739	1.955
13036	Thursday, May 07, 2009	7:55	30.68	13.64	18.26	444.81	462.45	17.75	97.20%	98.34%	99.42%	2	1	4.289	3.736	1.9
13035	Thursday, May 07, 2009	7:09	27.48	10.35	18.43	434.32	451.93	17.90	97.12%	97.68%	96.67%	2	1	4.843	4.873	1.895

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13052	Friday, May 08, 2009	6:56	25.53	9.98	16.91	54.64	70.95	16.31	96.43%	97.39%	97.16%	2	1	4.851	4.566	1.891
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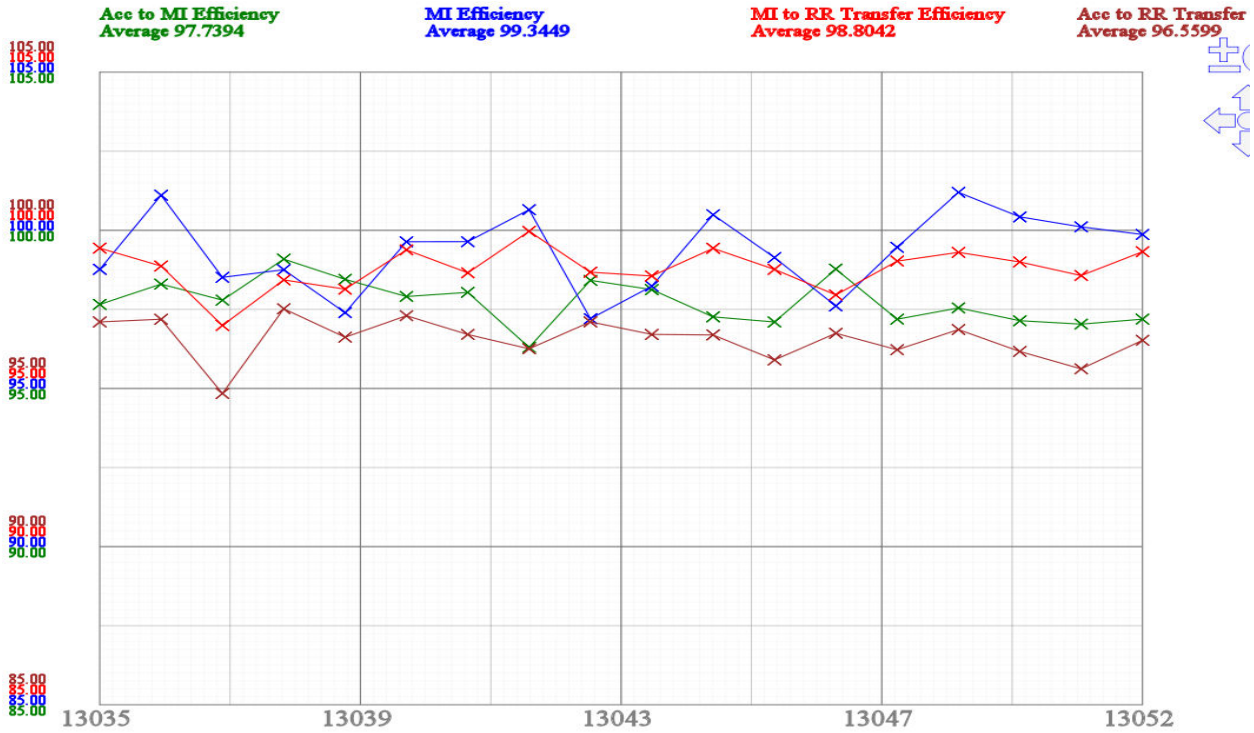


Requests

Studies

The Numbers

- Paul's Numbers
  - Most in a half hour: 13.52 mA at Fri May 08 01:19:53 CDT 2009
  - Best Hour: 28.56 mA on 20-Dec-08
  - Average Production 22.23 e-6/proton Best: 25.41 e-6/proton on 01/30/2008
  - Average Protons on Target 7.02 e12 Best: 8.77 e12 on 07/24/2007
  - Largest Stack 66.43 mA Best: 313.58 mA on 02/18/2008

    Pasted from <http://www-bd.fnal.gov/pplot/today/PbarSummaryTables.html>

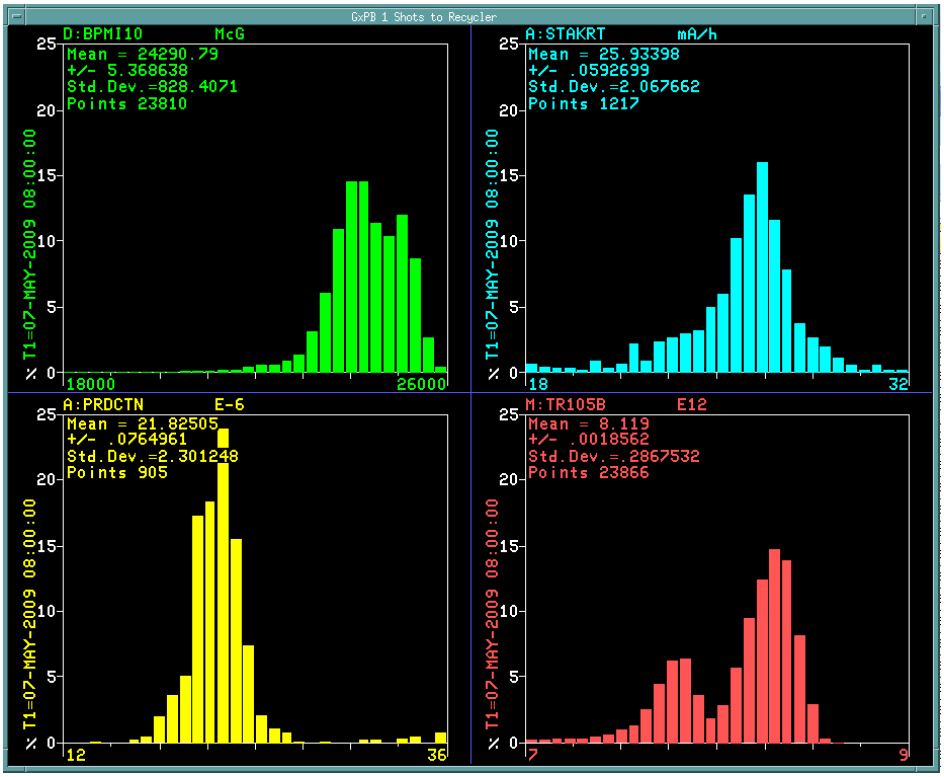
- Al's Numbers
  - Stacking
    - Pbars stacked: 409.27 E10
    - Time stacking: 17.31 Hr
    - Average stacking rate: 23.65 E10/Hr
  - Uptime
    - Number of pulses while in stacking mode: 26793
    - Number of pulses with beam: 24731
    - Fraction of up pulses was: 92.30%
  - The uptime's effect on the stacking numbers
    - Corrected time stacking: 15.97 Hr
    - Possible average stacking rate: 25.62 E10/Hr
    - Could have stacked: 443.39 E10/Hr
  - Recycler Transfers
    - Pbars sent to the Recycler: 422.55 E10
    - Number of transfers : 43
    - Number of transfer sets: 19

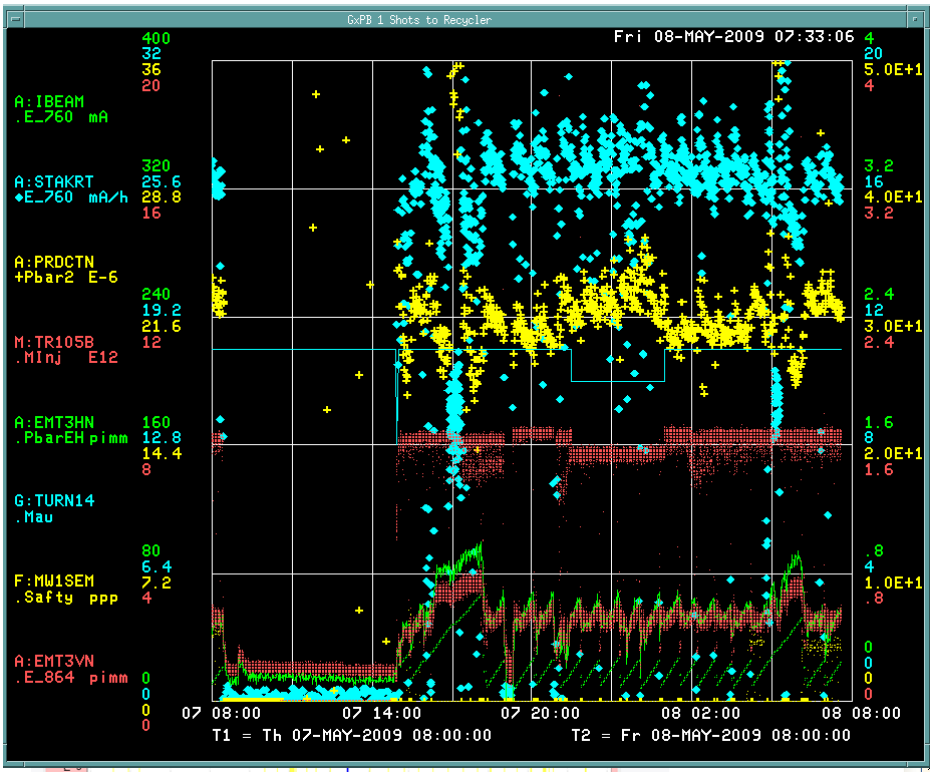
- Number of transfer sets: 19
- Average Number of transfer per set: 2.26
- Time taken to shoot including reverse proton tuneup: 00.22 Hr
- Transfer efficiency: 96.35%

- Other Info
  - Average POT : 8.10 E12
  - Average production: 20.44 pbars/E6 protons

- * Missed one or more A:IBEAM7 events somewhere in the middle of the user selected time span. Calculated time shot using 13 secs per transfer.

Misc




GxPB 1 Shots to Recycler
Fri 08-MAY-2009 07:33:06
A:IBEAM
.E_760 mA
A:STAKRT
♦E_760 mA/h
A:PRDCTN
+Pbar2 E-6
M:TR105B
.MInj E12
A:EMT3HN
.PbarEH pimm
G:TURN14
.Mau
F:MW1SEM
.Safty ppp
A:EMT3VN
.E_864 pimm
07 08:00
07 14:00
07 20:00
08 02:00
08 08:00
T1 = Th 07-MAY-2009 08:00:00
T2 = Fr 08-MAY-2009 08:00:00