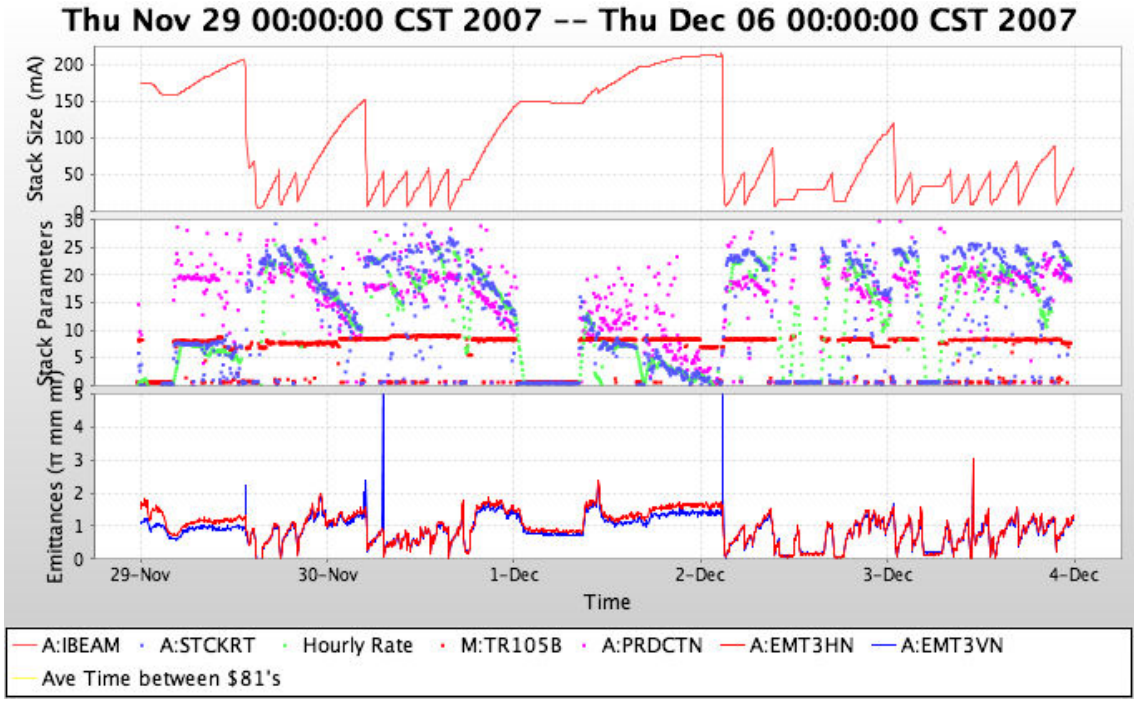
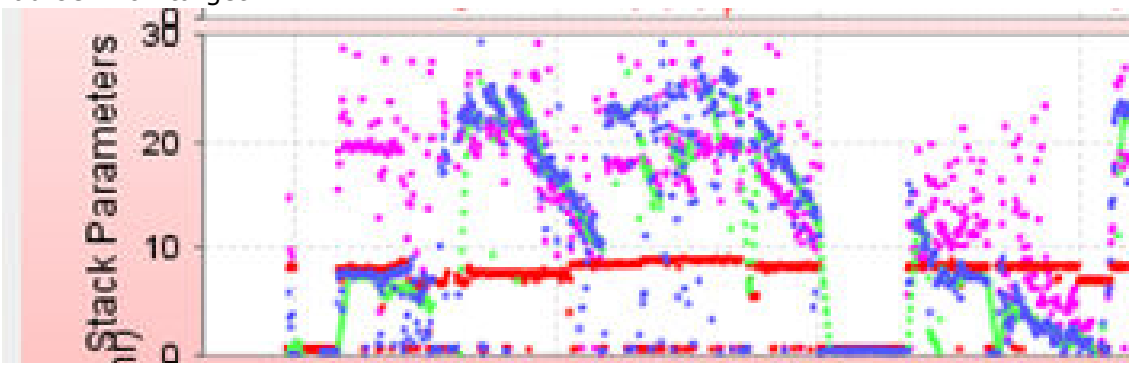
2007-12-06 Pbar Department Meeting

Thursday, December 06, 2007
9:44 AM

Pbar Performance:



- Briefly had 8e12 on target
  - 

- Set stacking record.

  Stacking Record: 01-Dec-07: 24.37mA at Fri Nov 30 14:42:07 CST 2007

  Pasted from <http://www-bd.fnal.gov/pplot/FY08/05Dec07/besthours.txt>
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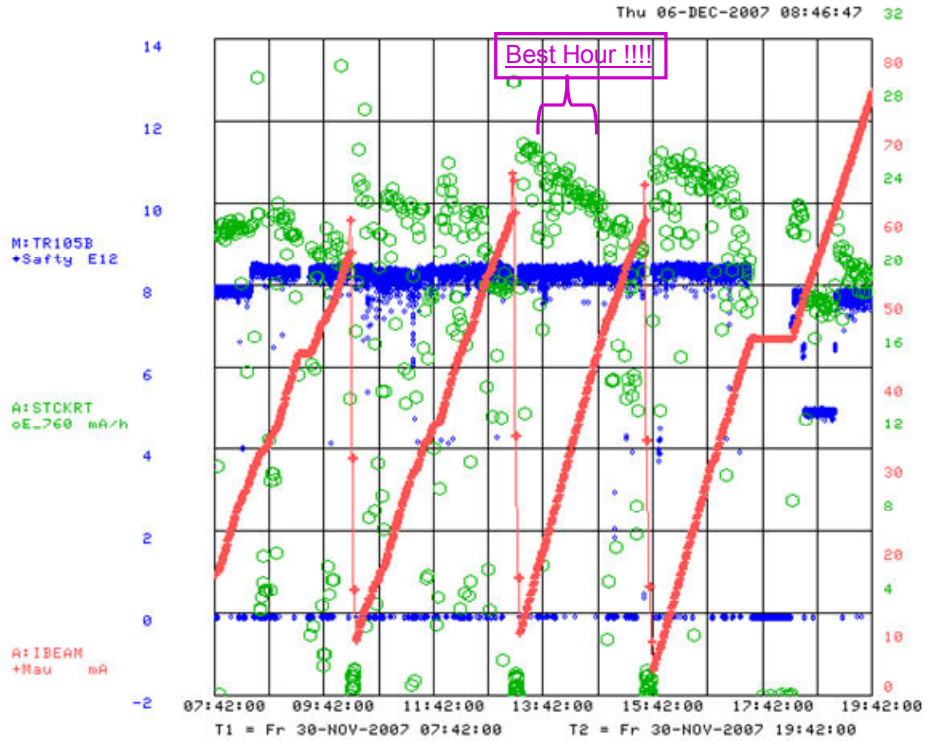
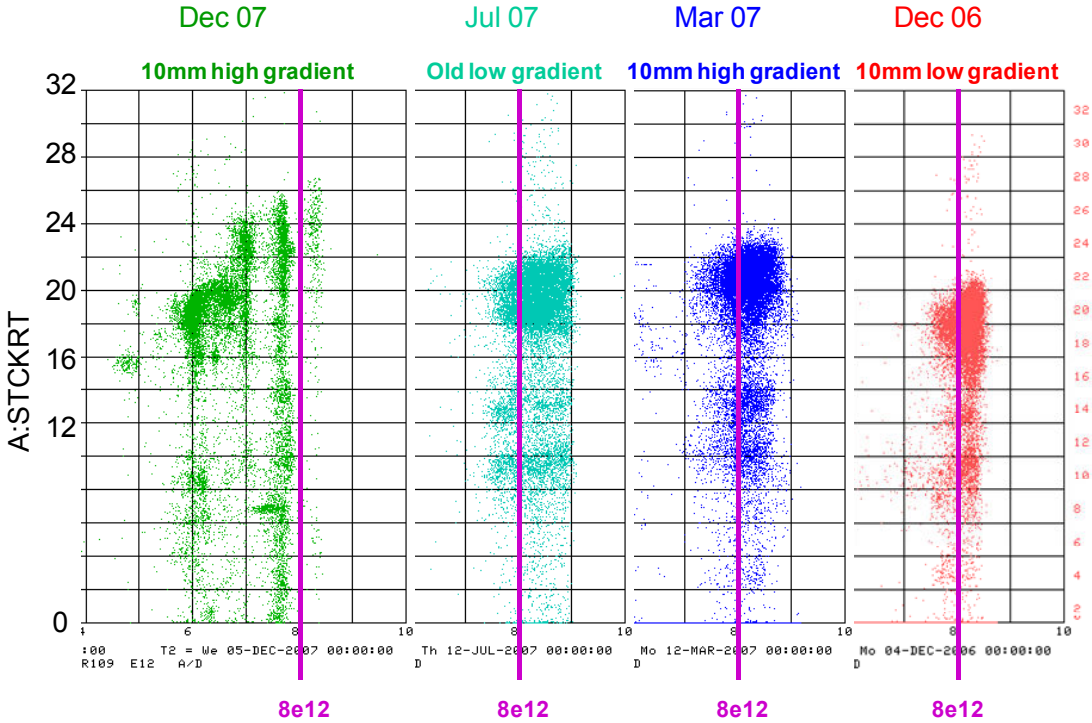
- 

  -
- Target



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- Pbar performance calculator:

  Nov. 29 - Dec 6, 2997:
  Stacking
  Pbars stacked: 1607.15 E10
  Time stacking: 105.76 Hr
  Average stacking rate: 15.20 E10/Hr

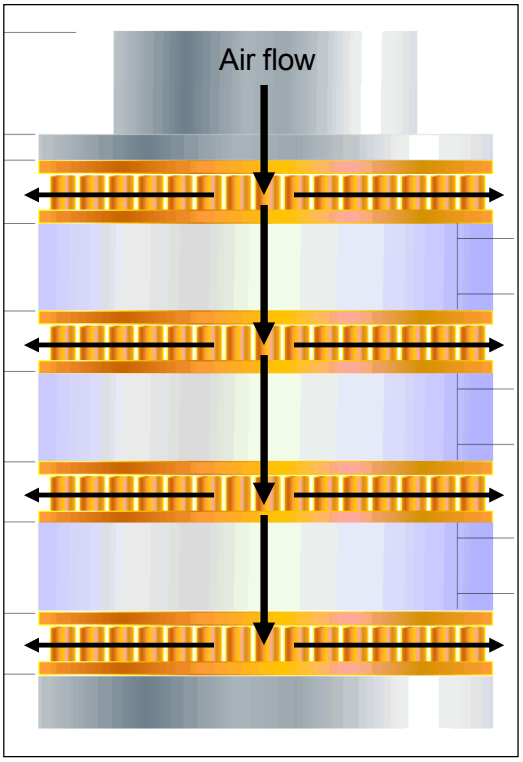
  Uptime
  Number of pulses while in stacking mode: 152775
  Number of pulses with beam: 135360
  Fraction of up pulses was: 88.60%

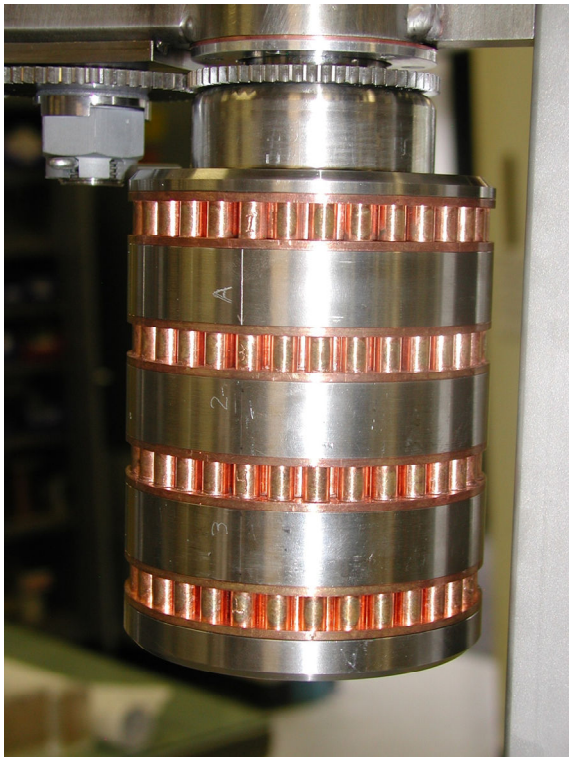
The uptime's effect on the stacking numbers
Corrected time stacking: 93.71 Hr
Possible average stacking rate: 17.15 E10/Hr

Recycler Transfers
Pbars sent to the Recycler: 1787.06 E10
Number of transfers : 114
Number of transfer sets: 28
Average Number of transfer per set: 4.07
Time taken to shoot: 06.02 Hr
Time per set of transfers: 12.91 min
Transfer efficiency: 91.87%

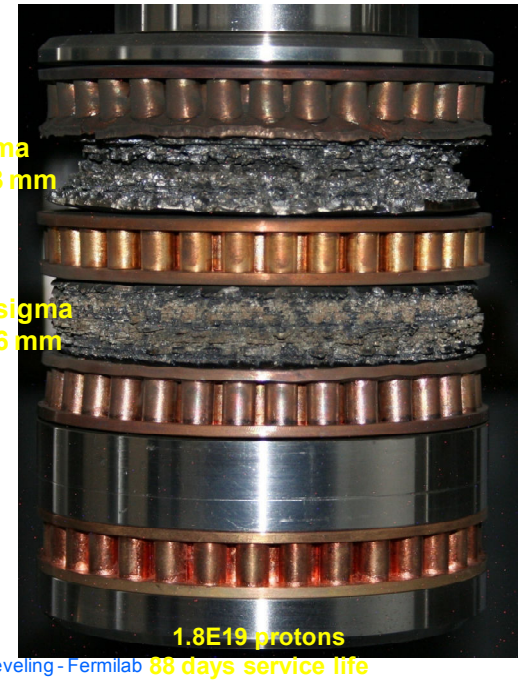
Other Info
Average POT : 7.48 E12
Average production: 15.88 pbars/E6 protons

- Since stacking faster. To get to high stack rates, have to push the stacktail hard, emittances get larger. So for now, we will stack to 40mA and shoot, instead of stacking to 50mA and shoot. Eventually, will be doing things different.
- Stacktail VSA.
  - Had a bad VSA mode loaded. (arrowgif)
  - VSA tried to center 4-8 arrays to parameter. Was selected wrong on P142. The next stacking cycle was messed up.
  - P142 edited. States that we don't normally use is now marked out of service (could still do from a parameter page).
- Damper
  - Dave Peterson has been working on the damper.
  - Tweeked the notches.
  - Working on restoring broadband functionality to the horizontal dampers.
- Damper settings
  - When went from 30dB to 12dB on the gains, the blowups went away.
  - When tried increasing vertical again, saw hints of instabilities.
  - Need more data.
- Coupling.
  - Moved SQ607 load.
  - Now two planes are orthogonal, and need less current to decouple
- Lens
  - Conductivity monitor problem.
  - Both meters had flakey behaior. Put new meters in. The new meter for return conductivity is spiking low and then shooting up again, causing ps to trip off. Changed trip point to 0 to stop trips.
- Preview of the new target design.
  - Currently
    - Air flow through top and radially makes turns at each cooling disk and air exits out the side

- 

- 
- Damage on Target 8
  - Contact area between disks….disks pulling away from cooling disks.
  - Also problems with surface oxidation of disks.
  - Differnece in appearance between disks
  - Top disk -
  - Middle disk -

- Middle disk -



A. Leveling - Fermilab

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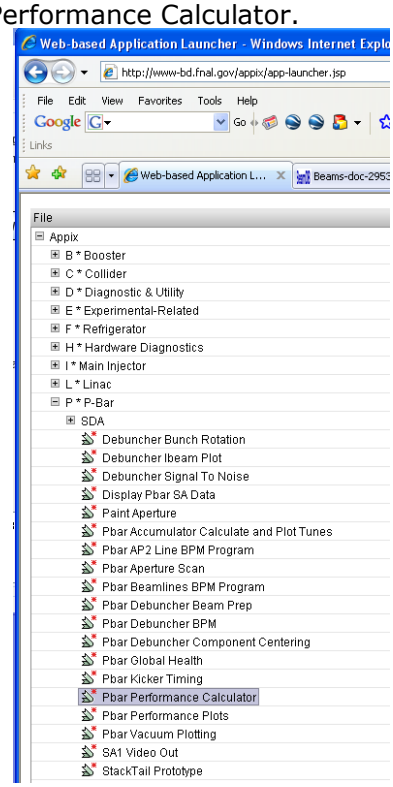
- We are currently on the third disk.

- New design
  - Inconel 600 cylinder
  - Cu cooling
    - Copper pipe shoeel
    - 6 to 12 mm Cu balls - for increased cooling area.
    - H2 broade construction
  - Air flow goes through the Cu balls.

- Pbar Performance Calculator.



- Launches application

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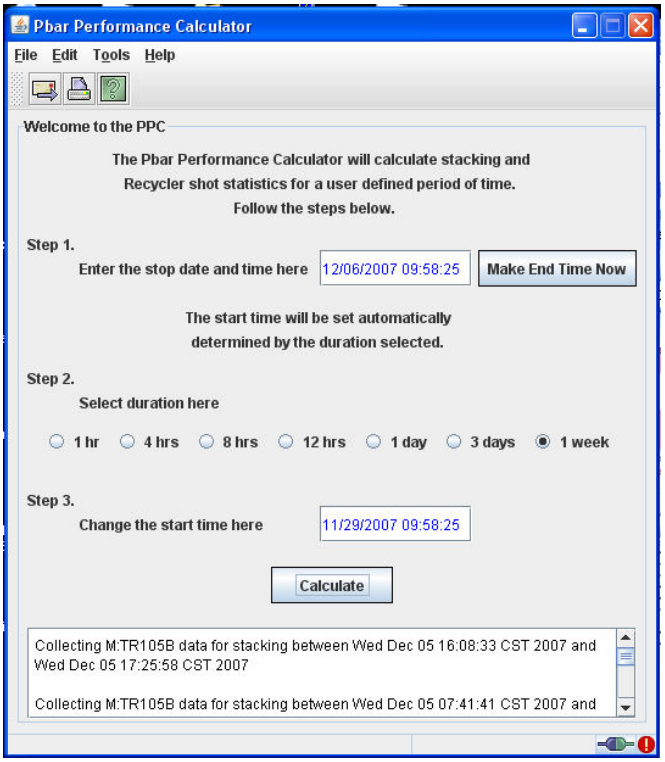
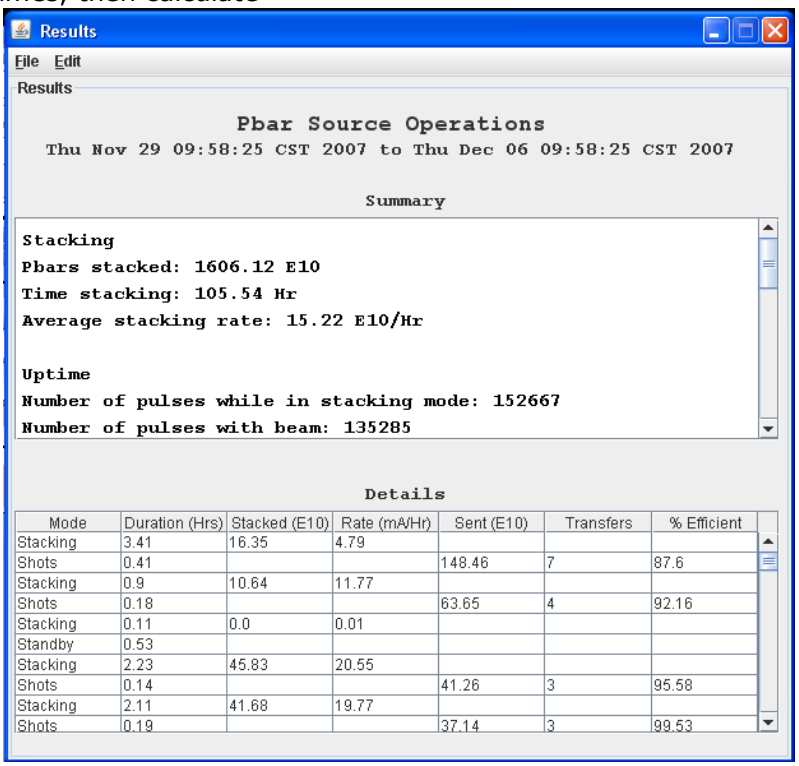
  - 

- Enter times, then calculate
  - 

Mode	Duration (Hrs)	Stacked (E10)	Rate (mA/Hr)	Sent (E10)	Transfers	% Efficient
Stacking	3.41	16.35	4.79			
Shots	0.41			148.46	7	87.6
Stacking	0.9	10.64	11.77			
Shots	0.18			63.65	4	92.16
Stacking	0.11	0.0	0.01			
Standby	0.53					
Stacking	2.23	45.83	20.55			
Shots	0.14			41.26	3	95.58
Stacking	2.11	41.68	19.77			
Shots	0.19			37.14	3	99.53

- Top half is stacking
  - The top three numbers is what is traditionally reported to operations.
- Bottom half is transfers
- Hover your cursor over any of the fields in the transfers section to get more information.

information.

Details

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From Thu Nov 29 09:58:59 to Thu Nov 29 13:23:48