

AD and ELENA beam commissioning status

- Optimized transmission in AD cycle:
 - E-cooling optimization on 100 MeV/c plateau:
 - adjusting e-beam/pbars relative position/ field lag compensation
 - Adjusting e-cathode voltage ramp shape
 - Orbit correction at 2 GeV/c

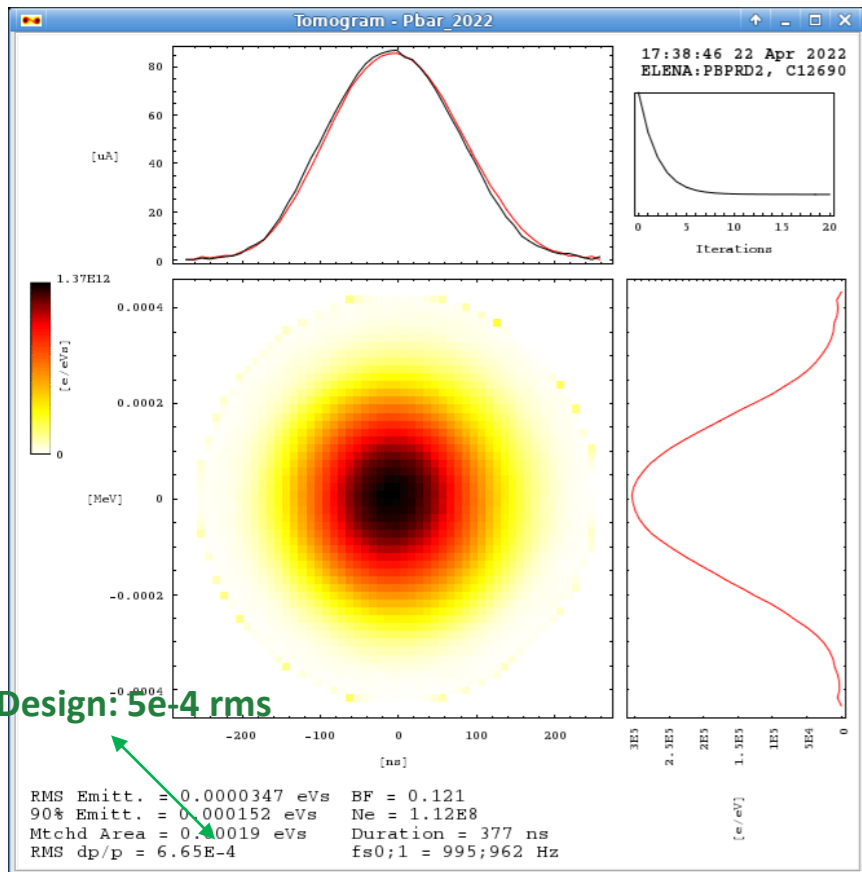
- AD-ELENA injection oscillation correction:

- Test of 3rd deceleration on harmonics 3 in AD:
 - To investigate possibility to shorten the ramp

- Optimization of injected intensity:
 - Up to 3.3×10^7 injected, but unstable over the day
 - Dependence on PS conditions?
 - New optics in FTA + optimization dogleg/septum/kicker

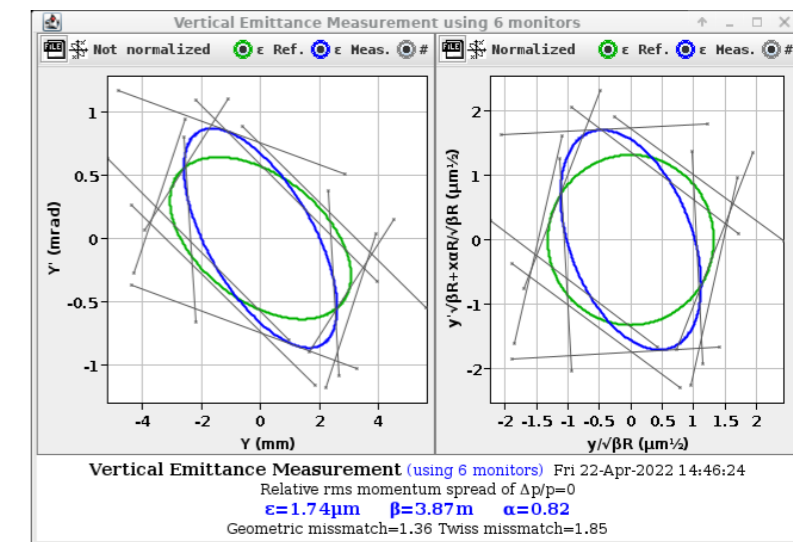
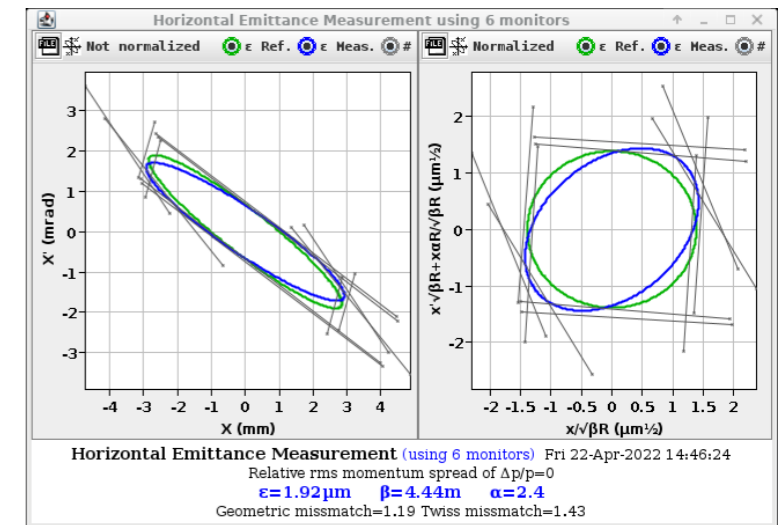
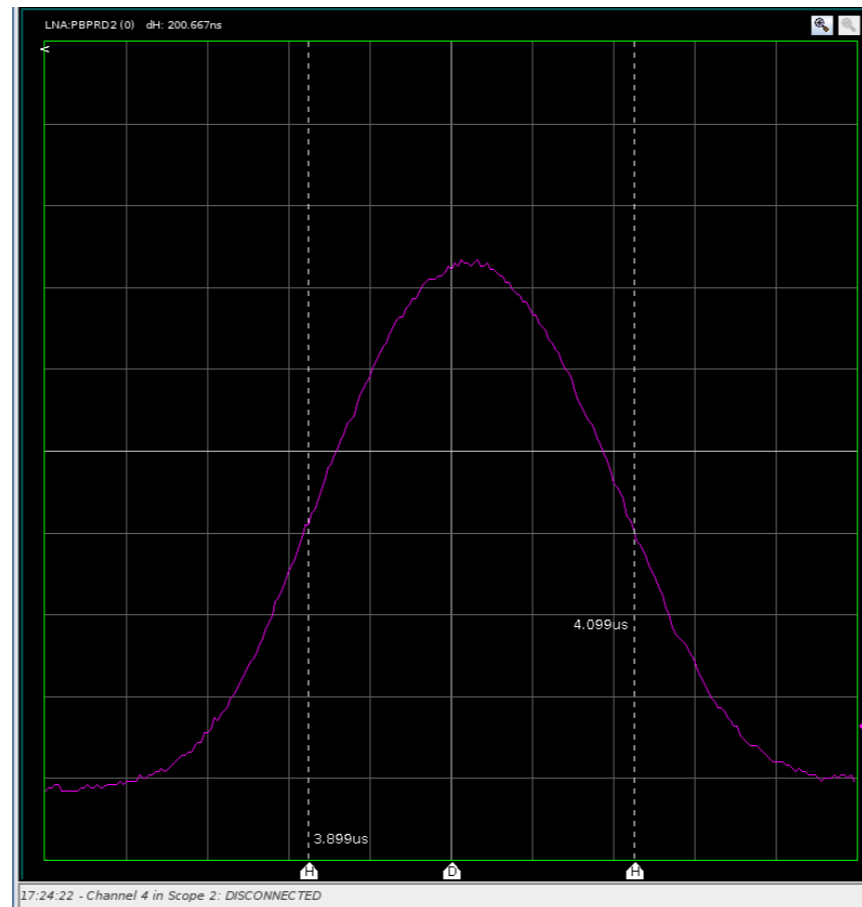
- Steering of ALPHA line:
 - First pbars taken by ALPHA

- AD cycle:
 - Deceleration efficiency >90%
 - $\sim 3.3e7$ injected and $\sim 3e7$ extracted (same as end of 2021, lower than 2018)
- ELENA cycle:
 - Deceleration efficiency > 80 %
 - $\sim 8e6$ pbars per bunch at extraction
 - Same transverse emittances as last year
 - Slightly higher dp/p



was $4.7e-4$ rms last year

Was 130 ns last year



ADE Fixdisplay 23-Apr-2022 17:41:32

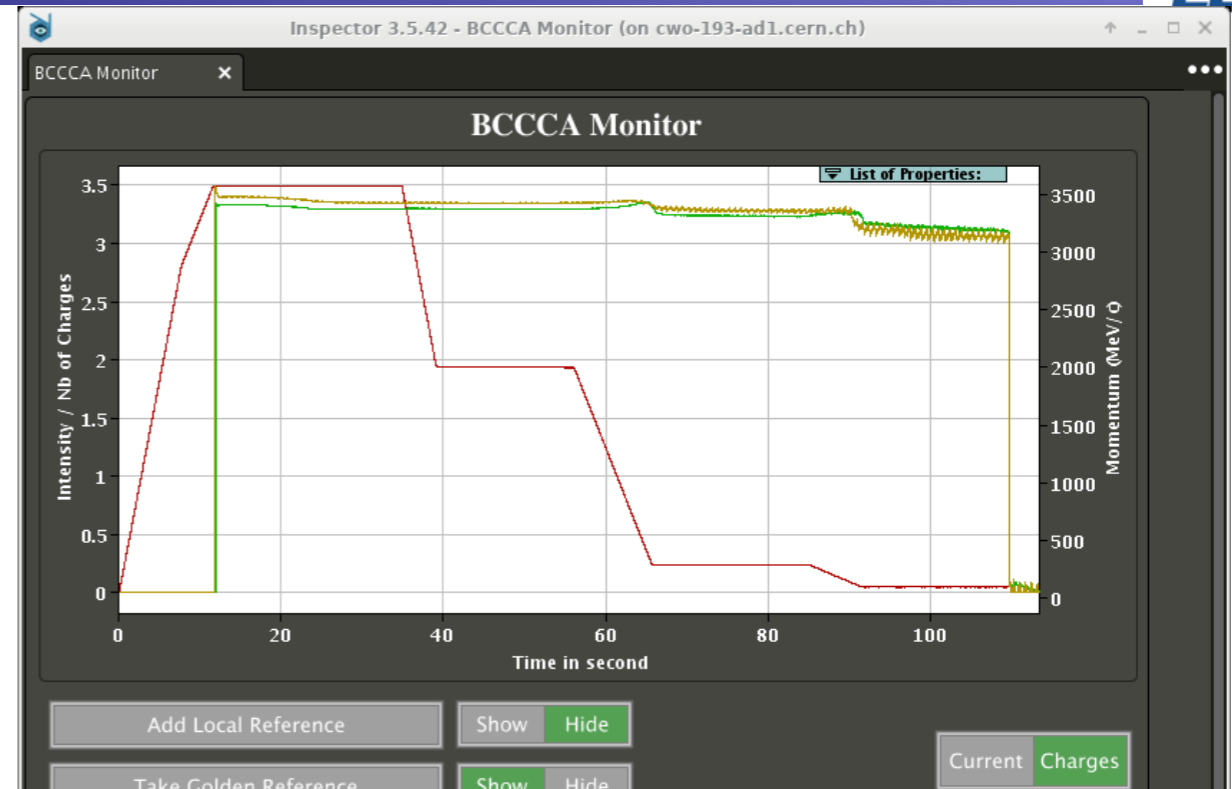
Mode	PBARPROD
No. of Inj.	
No. of Ej.	
AD Cycle Length	114.0 s
Repetition Rate	1.2 s

CPS	BCT9012	BCT9053	3.5 GeV/c S	3.5 GeV/c E	2 GeV/c S
1459.8	1416.7072	1329.2263	3.33E7 100%	3.30E7 99%	3.30E7 99%
2 GeV/c E	300 MeV/c S	300 MeV/c E	100 MeV/c S	100 MeV/c E	BCT7049
3.30E7 99%	3.31E7 99%	3.23E7 97%	3.18E7 95%	3.09E7 93%	3.23E7

PBAR for ELENA

Comments (21-Apr-2022 19:23:01)
ACR: 76688

No Message



Elena Vistar JavaFX App 1.9.10 Sat 23-Apr-2022 17:48:26

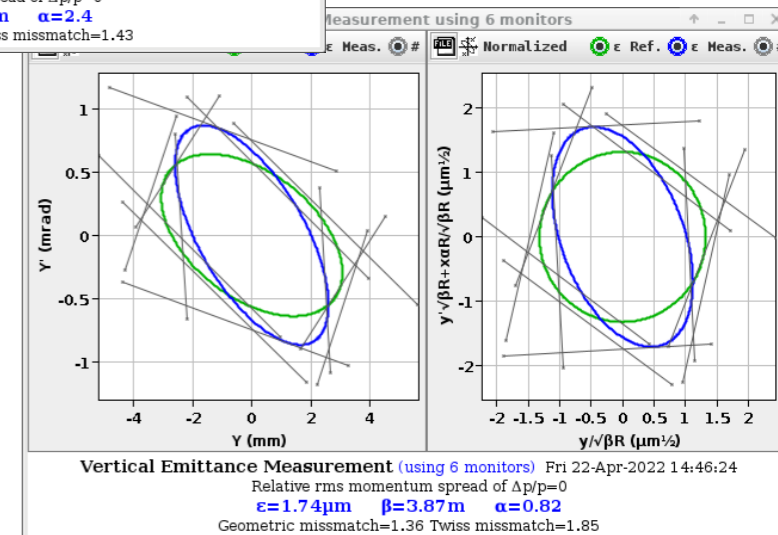
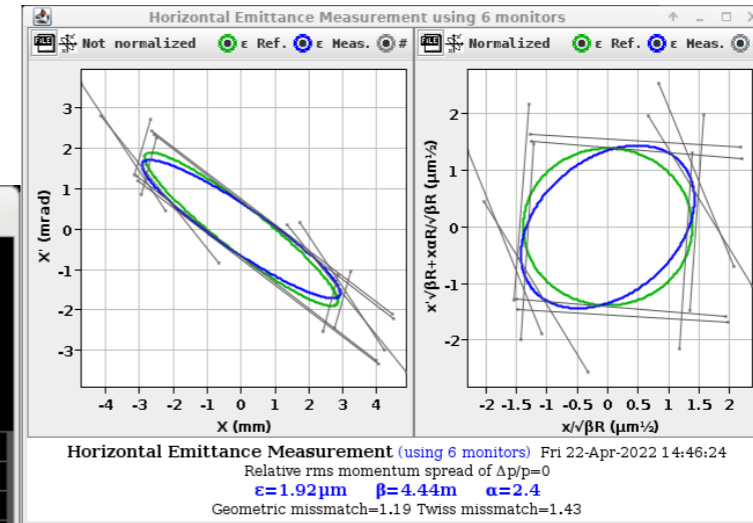
↑ Cycle BHZ ↓ Cycle LSA ↑ Beam

Ⓜ PBPRD2 Ⓜ ALPHA 100 Ⓜ GBAR Ⓜ Z Ⓜ PBPRD2 Ⓜ ALPHA 100 Ⓜ GBAR Ⓜ Z

Inj:30.54⁶ Inj:30.63⁶

17:47:48	PBPRD2	①AEGIS ②ALPHA ③GBAR	P- e ⁶ 35.19÷26.28→η:74%	↑ 7.354e ⁶	↓ 7.161e ⁶
17:45:31	PBPRD2	①AEGIS ②ALPHA ③GBAR	P- e ⁶ 35.16÷26.50→η:75%	↑ 7.661e ⁶	↓ 7.242e ⁶
17:43:14	PBPRD2	①AEGIS ②ALPHA ③GBAR	P- e ⁶ 30.44÷25.46→η:83%	↑ 7.043e ⁶	↓ 7.341e ⁶
17:40:58	PBPRD2	①AEGIS ②ALPHA ③GBAR	P- e ⁶ 34.99÷27.48→η:78%	↑ 7.853e ⁶	↓ 7.341e ⁶
17:38:41	PBPRD2	①AEGIS ②ALPHA ③GBAR	P- e ⁶ 34.95÷29.45→η:84%	↑ 8.255e ⁶	↓ 7.704e ⁶
17:36:24	PBPRD2	①AEGIS ②ALPHA ③GBAR	P- e ⁶ 34.94÷30.02→η:85%	↑ 8.073e ⁶	↓ 8.271e ⁶
17:34:07	PBPRD2	①AEGIS ②ALPHA ③GBAR	P- e ⁶ 35.10÷30.19→η:85%	↑ 8.498e ⁶	↓ 8.211e ⁶
17:31:50	PBPRD2	①AEGIS ②ALPHA ③GBAR	P- e ⁶ 33.12÷28.28→η:85%	↑ 8.113e ⁶	↓ 7.783e ⁶
17:29:34	PBPRD2	①AEGIS ②ALPHA ③GBAR	P- e ⁶ 34.79÷27.72→η:79%	↑ 7.618e ⁶	↓ 8.128e ⁶
17:27:17	PBPRD2	①AEGIS ②ALPHA ③GBAR	P- e ⁶ 34.85÷30.10→η:86%	↑ 8.313e ⁶	↓ 8.415e ⁶
17:25:00	PBPRD2	①AEGIS ②ALPHA ③GBAR	P- e ⁶ 35.05÷26.20→η:74%	↑ 7.522e ⁶	↓ 7.265e ⁶
17:22:43	PBPRD2	①AEGIS ②ALPHA ③GBAR	P- e ⁶ 34.97÷26.44→η:75%	↑ 7.650e ⁶	↓ 7.319e ⁶
17:20:26	PBPRD2	①AEGIS ②ALPHA ③GBAR	P- e ⁶ 34.90÷29.27→η:83%	↑ 8.448e ⁶	↓ 7.689e ⁶
17:18:10	PBPRD2	①AEGIS ②ALPHA ③GBAR	P- e ⁶ 34.99÷30.16→η:86%	↑ 8.412e ⁶	↓ 8.554e ⁶
17:15:53	PBPRD2	①AEGIS ②ALPHA ③GBAR	P- e ⁶ 35.14÷29.25→η:83%	↑ 8.124e ⁶	↓ 7.954e ⁶

Kicker BTV15 BTV117 BTV118 Scrapers B E S T I A L - [] x1.0



- Recurrent trip of DR.BHZ:
 - Since 15/04, trip of the mains several times per day on IGBT com error
 - Same problem in 2014 for couple of days, disappeared by itself
 - 3 interventions of first lines, expert back from holidays today

- Controls problem on DR.EC-CDH (e-cooler corrector power supply):
 - Intervention of EPC controls expert to solve the communication issue

- Vertical movement observed in LNI:
 - Probably related to IPM MCPs
 - Can be corrected when MCPs ON



Week planning



Week coordinator:

Operators: Lars

	Main activities	Parallel activities
Monday	<ul style="list-style-type: none">• 10h: ASACUSA 2 steering• Afternoon:<ul style="list-style-type: none">- AD 3rd deceleration with h=3- ELENA WP	<ul style="list-style-type: none">• AD IPM ?
Tuesday	<ul style="list-style-type: none">• ELENA LLRF<ul style="list-style-type: none">- debunching/recapture- ejection synchro	
Wednesday	<ul style="list-style-type: none">• 2 GeV stochastic cooling/dedicated MD in PS	
Thursday	<ul style="list-style-type: none">• Physics start	
Friday	MD requests: <ul style="list-style-type: none">– AD 100 MeV/c orbit drift compensation– Reducing cycle length– Stochastic cooling BTF measurement @ 3.5 GeV ?	