



AD-ELENA status



Machine performances



	Vistar AD/EI	ENA				↑ _ □ X
D-ELENA Anti-proton production Vistar		₩ 20°C		15 Apr 2024 W16		5 19:11:0 8
	AD	19:09:26	19:07:28	19:05:31	19:03:33	19:01:35
	PR.BCT	2034	2022	2020	2022	2014 <i>E¹⁰</i>
	BCT9012	1855	1855	1847	1856	1852 <i>E¹⁰</i>
	BCT9053	1718	1699	1716	1700	1722 <i>E¹⁰</i>
	3570 ↔	4.66	4.64	4.54	4.67	4.68 <i>E⁷</i>
	3570 →	4.47	4.45	4.35	4.47	4.48 <i>E⁷</i>
	2000 ↦	4.47	4.45	4.35	4.47	4.48 <i>E⁷</i>
Cycle Length 110.4s	2000 →	4.46	4.44	4.34	4.46	4.47 E ⁷
Cycle Length 110.4sMeV/c Repet. Time 117.6s	300 ↦	4.54	4.52	4.43	4.55	4.55 <i>E⁷</i>
	300 →	4.44	4.44	4.33	4.44	4.46 <i>E⁷</i>
	100 →	4.35	4.32	4.22	4.34	4.34 <i>E⁷</i>
	1 00 →	4.27	4.26	4.16	4.24	4.28 <i>E⁷</i>
	- Transm.	91.56	91.62	91.58	90.79	91.48 %
	BCT7049	4.47	4.43	4.30	4.47	4.44 E ⁷
PBPRD2	ELENA	19:10:52	19:08:55	19:06:57	19:05:00	19:03:02
STEP BASE BALLSA BASE BALLSA BASE BALLSA BASE BALLSA BASE BALLSA BASE BALLSA BASE BALLSA BASE BALLSA	Injection	46.81	46.64	45.47	46.59	47.07 E ⁶
	Ejection	43.16	41.16	39.37	36.52	43.08 E ⁶
	Transm.	92.2	88.3	86.6	78.4	91.5%
	LNE00	9.77	9.44	8.99	8.36	9.81 E ⁶
	LNE50	10.00	9.62	9.14	8.45	10.02 E ⁶
Waiting for AD cycle		——Comment	s: (12 A)	or 2024 -	13:13:47)-	
	A C R: 7 6	688 o	or 766	89		
	-					

Note: pbars USER for this year is PBPRD2



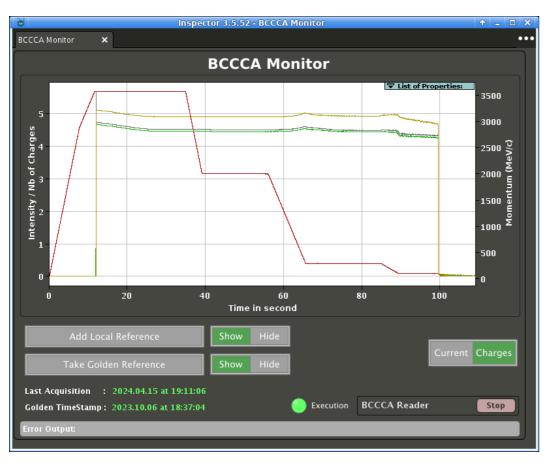


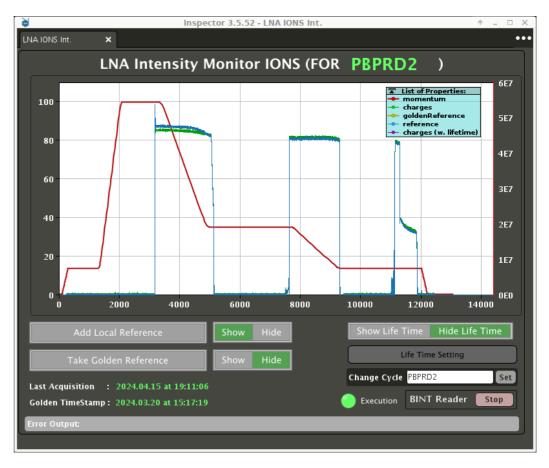
> Deceleration efficiency:

- > 90% in AD after sublimation
- 85-90% in ELENA (pbars) similar to last year but fluctuating

Intensities:

- 4.5e7 injected in AD with 1.7e13 protons on target: missing ~5% compared to last year
- ~4e7 injected in ELENA (without SEM grids IN), up to 9e6 pbars per bunch extracted from ELENA





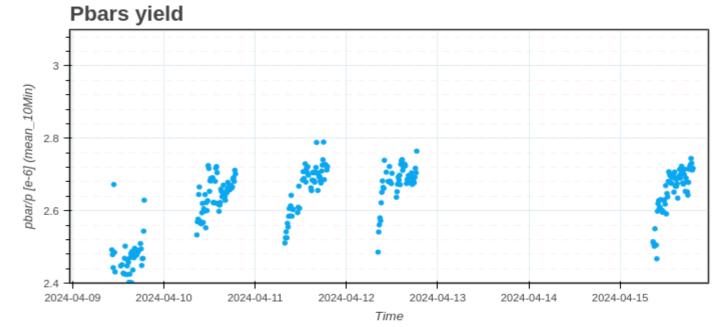


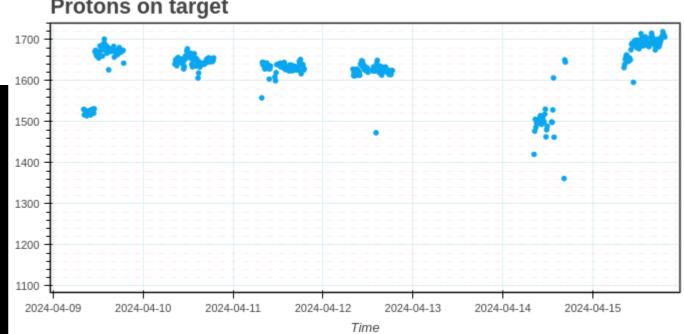
Reproducibility



- Pbar yield need couple of hours to stabilize when start cycling
- Intensity on target changing along the week
- AD to ELENA transmission fluctuating:
 - ELENA deceleration efficiency between 80 and 90%

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ADE -						Lo	ogBook HELP			
AD-ELENA Anti-prot	on production Vis	star	<u>₩</u> 9°C		16 Apr 2024 W16		6 11:54:1 8			
		AD	11:52:38	11:50:28	11:48:19	11:46:09	11:43:59			
		PR.BCT	2052	2043	2047	2039	2052 E ¹⁰			
	BCT9012	1881	1874	1869	1877	1865 E10				
	BCT9053	1705	1709	1691	1702	1706 E ¹⁰				
	3570 ↔	4.50	4.55	4.46	4.57	4.48 E ⁷				
	3570 →	4.33	4.39	4.29	4.42	4.33 E ⁷				
	2000 ↔	4.33	4.39	4.30	4.43	4.33 E ⁷				
Cycle Length 110 4a		2000 →	4.32	4.38	4.28	4.42	4.32 E ⁷			
Cycle Length 110.4s Repet. Time 129.6s	MeV/	°300 ↔		4.47	4.37	4.50	4.42 E ⁷			
				4.35	4.25	4.40	4.31 E ⁷			
		100 ↦	4.20	4.25	4.15	4.28	4.21 E ⁷			
		100 →	4.13	4.13	4.06	4.19	4.11 E ⁷			
		 Transm. 	91.88	90.83	90.89	91.67	91.77 %			
		BCT7049	4.33	4.30	4.18	4.37	4.31 E ⁷			
PBPRD2		ELENA	11:54:04	11:51:55	11:49:45	11:47:36	11:45:26			
I DI NDZ		 Injection 	37.08	37.12	36.28	37.49	36.74 E ⁶			
PUNA PUNA PUNA PUNA PUNA PUNA	Ejection	31.28	33.84	33.72	28.88	33.03 E ⁶				
	Transm.	84.4	91.2	92.9	77.0	89.9%				
	LNE00	5.26	5.62	5.71	4.87	5.45 E ⁶				
		LNE50	0.00	7.08	7.13	6.15	7.01 E ⁶			
Waiting for AD cycle			Comment	s: (12 A)	or 2024 -	13:13:47)				
ACR: 76688 or 76689										





Protons on target

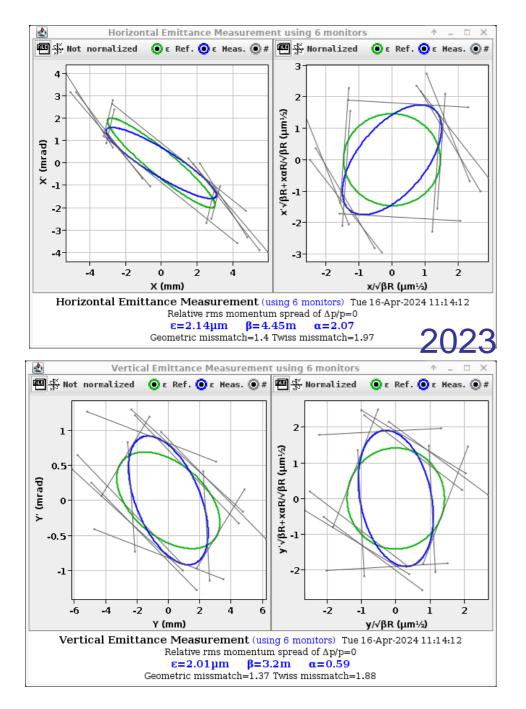


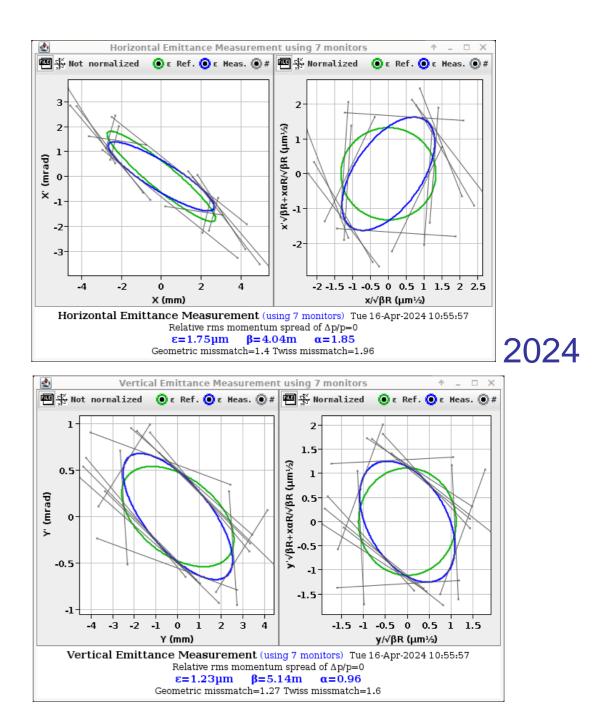
Machine performances



>Emittances:

- 1.8/1.3 um in H/V, closer to nominal than last year (new working point in ELENA)
- Same longitudinal as last year







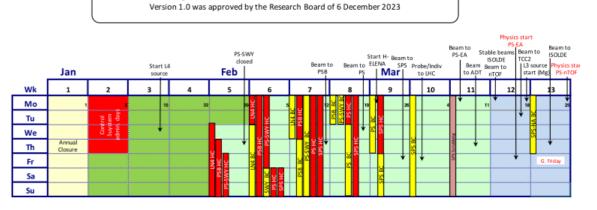
Longer term plan



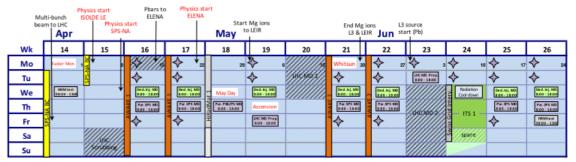
ver. 2.0

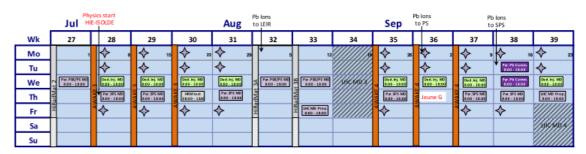
Start of physics 22/04:

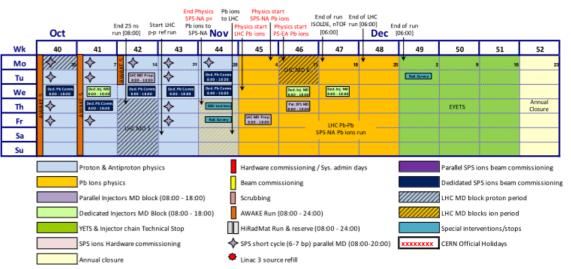
- We may need a but oftime during working hours to check your line trajectory
- > 2024 injectors schedule revisited (to be approved at the IEFC this week):
 - physics run till 2nd of December
 - 3 days TS week 24: restart of physics on Friday evening!!!
- >We will still request Wednesday for Machine Development
- > Operation of the Hminus source during working hours in parallell of Pbars cycle



Injector Accelerator Schedule 2024











Finalize beam commissioning in AD and ELENA with pbars Continue MDs on Hminus cycle

> Optimization of AD injection line to recover the missing few % intensity:

Cannot be done with pulsing only during working hours

Note: no pbars send if beam permit is not signed!

