



BE-ABP-CEI
Coherent Effects and
Impedance

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Coherent Effects and Impedances section (CEI) – general information

Giovanni Rumolo

CEI Section Meeting, 12/09/2024

Scientific secretary: David Amorim

<https://indico.cern.ch/event/1379739/>



New arrivals

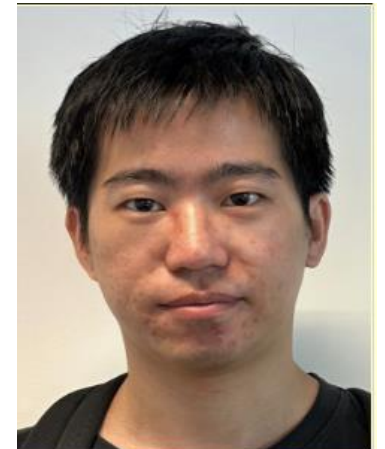
- Simon Fanica (Sietse) Buijsman

- Doctoral student (EPFL) supervised by Gianni on “Xsuite modeling of beam-based measurement and correction in lepton storage rings” – focus on developing realistic simulation models of lepton machines using the Xsuite package to test different measurement techniques (e.g., beam kicks, AC dipole excitation, RF frequency changes, quadrupole modulation) and investigate correction methods.



- Jintao Li

- Associate from Institute of High Energy Physics (IHEP, Beijing), currently PhD student under the supervision of Dr. Na Wang, has joined CEI section for 1 year to work with Carlo on “Development of an Advanced Simulation Model for LHC Target Dump Injection Segmented (TDIS) to Analyse Beam Coupling Impedance Effects” – focus on including in modeling fine details that could be damaged by impedance heating



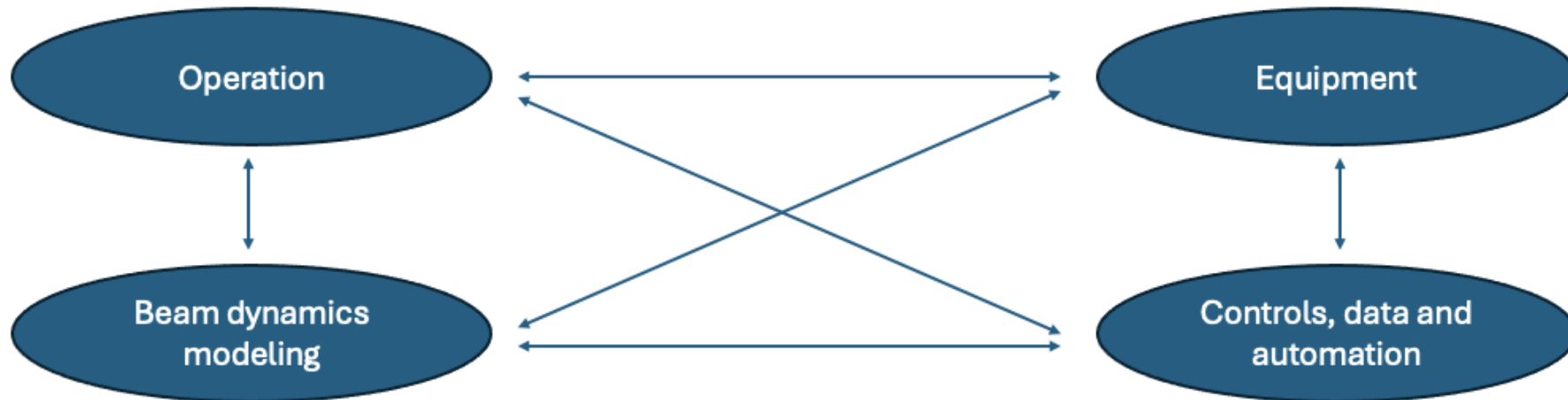
New arrivals

- Malte Raschke Nielsen
 - Trainee supervised by Elena and Carlo on “A genetic algorithm for wake calculation of narrow-band resonators ” – aim of the project is to study different genetic algorithms to extrapolate a slowly decaying wake potential in order to have a correct impedance without having to simulate very long and fully decayed wakes. The algorithm could then be implemented into our in-house EM solver Wakis
- Welcome back Peter Kicsiny!
 - Fellow supervised by Xavier Buffat too continue his work on beam-beam modeling and studies for FCC-ee – focus on improving existing models and quantify the interplay of beam-beam forces with lattice imperfections to determine tuning and corrections methods



Arising matters

- JAP Workshop 2024
 - Will take place 10-12 December at Royal Plaza in Montreux
 - Organisation progressing well and hopefully first draft of speakers for all sessions will be ready by the end of this week



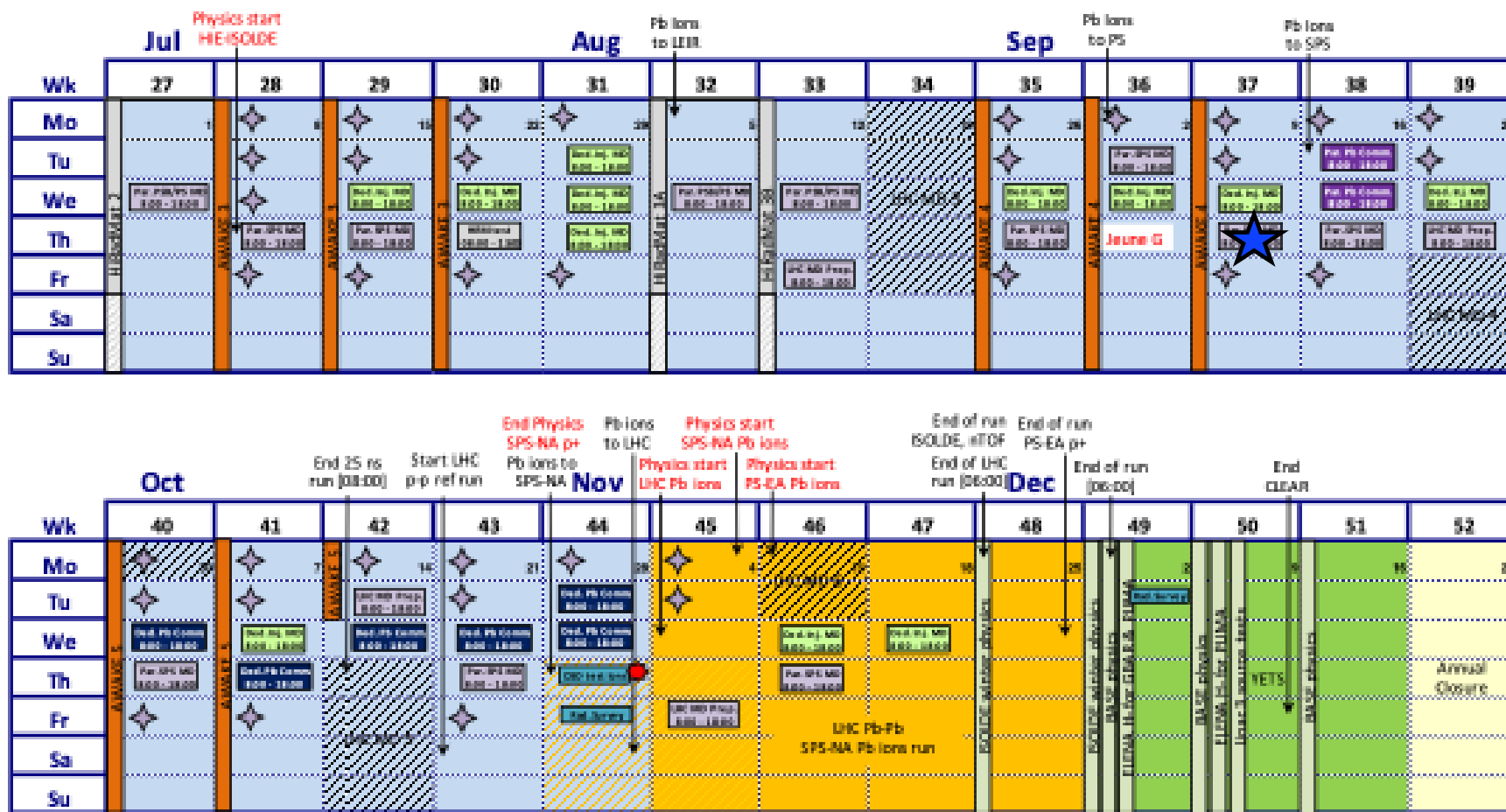


Arising matters

- JAP Workshop 2024
 - Will take place 10-12 December at Royal Plaza in Montreux
 - Organisation progressing well and hopefully first draft of speakers for all sessions will be ready by the end of this week
 - I will chair Session 0 (Setting the scene) and Gianni will chair Session 4 (Beam dynamics modelling <--> Controls, data and automation)



2024 injectors schedule v2.1

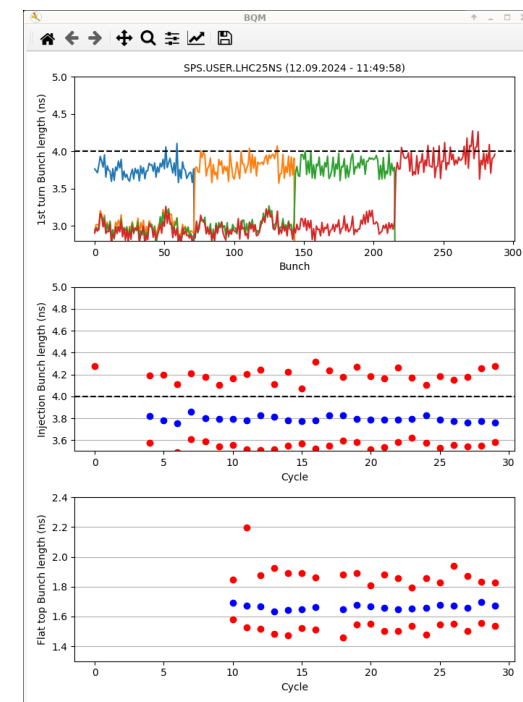
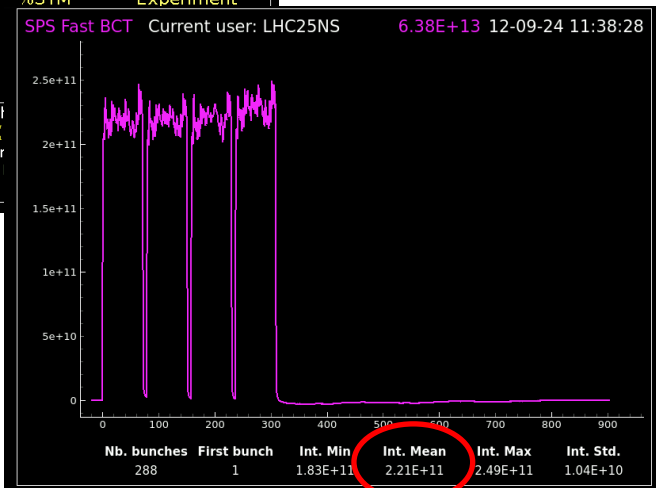
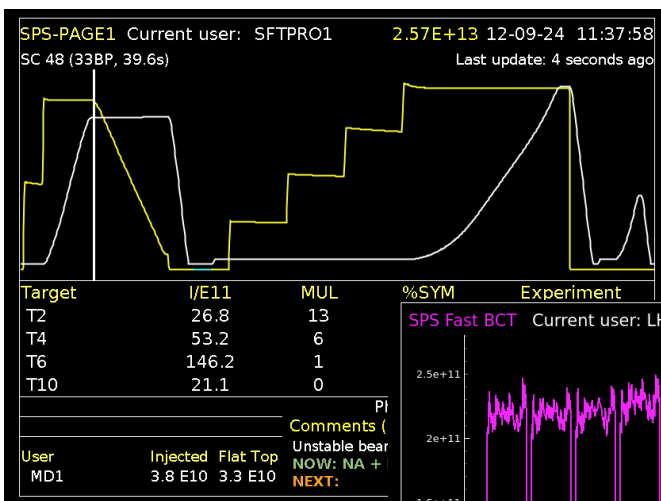


- Last AWAKE week before days of dedicated ion commissioning next week
- High intensity MD ongoing in the SPS today, resumed after lifting the temporary intensity limit in the injectors



From SPS MD ...

- 2.2e11 p/b accelerated to 450 GeV!
- Good bunch length and almost LIU brightness!





2024 LHC schedule v2.0

	Jul				Aug				Sep				Oct
Wk	27	28	29	30	31	32	33	34	35	36	37	38	39
Mo	1	8	15	22	29	5	12	19	26	2	9	16	23
Tu													
We								MD 3					
Th									Jeune G.		★		
Fr													
Sa													MD 4
Su													

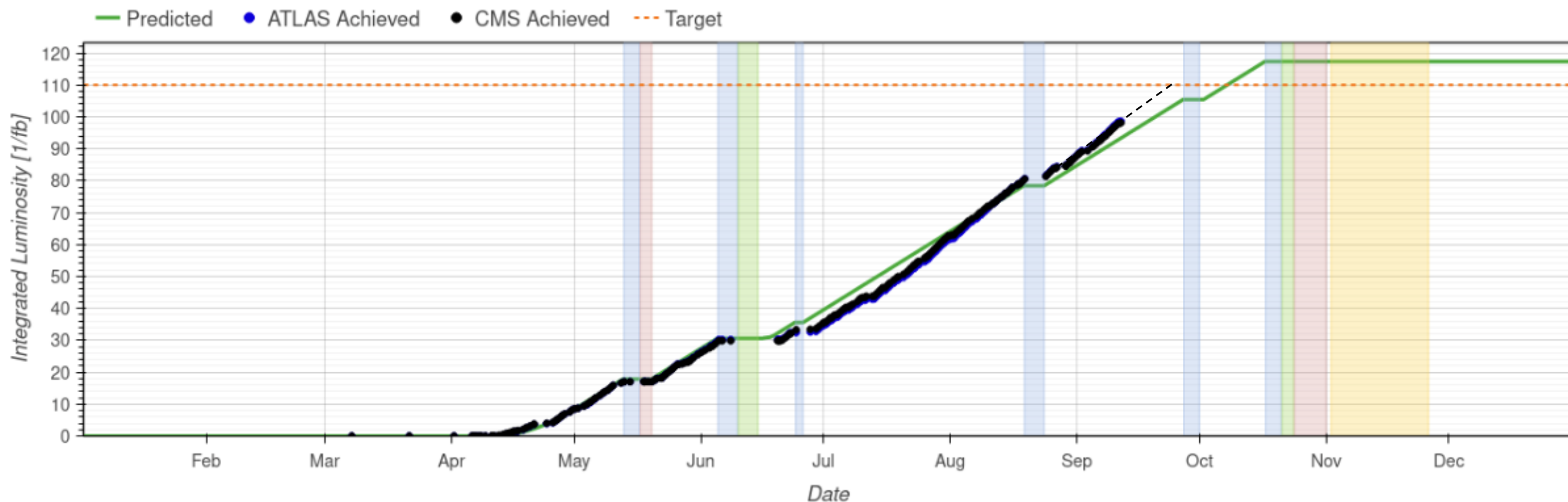
- LHC again in the middle of a period of physics production
- Basically last month of proton run (including MD4) before MD5+TS2+pp ref. run+ion run

	Nov							Dec					
Wk	40	41	42	43	44	45	46	47	48	49	50	51	52
Mo	30	7	14	21	28	4	11	18	25	2	9	16	23
Tu				TS2	p-p ref run		MD 6						
We													Xmas
Th				p-p ref setup	★		Pb-Pb Ion run			YETS			Annual Closure
Fr			MD 5		Cryo reconfig.								
Sa					Pb Ion setting up								
Su													



LHC lumi

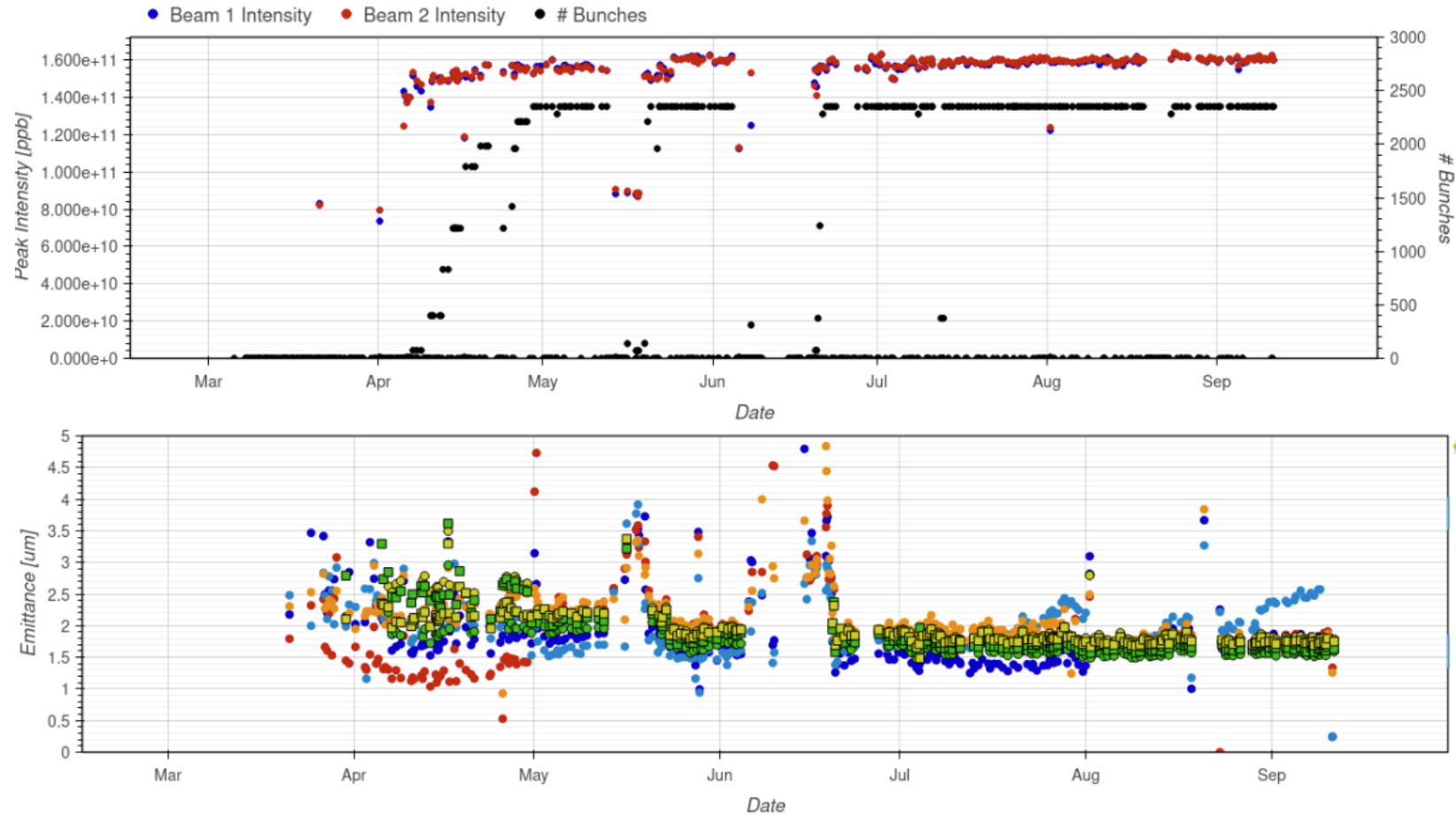
- Going quite smoothly, well ahead of schedule, target seems to be in reach already before MD4 (actually in about a week time) if we keep up the speed





LHC beam parameters

- We have been running with unchanged beam parameters (BCMS)





LHC beam parameters

- We have been running with unchanged beam parameters (BCMS)
- Observing a slow conditioning in all sectors, with S78 now below 160 W/hc

