LHCb LNF Group Meeting

01/10/25

Pasquale

Funds 2026

Sigla Loc.	Capitolo	Riunione	Note Alla Richiesta	Rich.	Rich. SJ	Assegn.	Assegn. SJ	Assegn. Dot.	Assegn. Ant.	Assegn. Ant. Dot.	Commento Alla Assegnazione
LNF	MISS	Assegnazioni	1 MU per lavori YETS 2025-26 su SMOG2	4.0	0.0	0.0					
		Assegnazioni	3 MU per lavori YETS 2025-26 su Muon System e turni piquet MUON	11.0	0.0	5.5					
		Assegnazioni	MUON@U2: turni presso la DLC machine al CERN, training di tecnici per operarare la DLC: 12 settimane, 1kE/settimana	12.0	0.0	5.5					
		Assegnazioni	MUON@U2: Contatti per Trasferimento Tecnologico con ditta ELTOS per costruzione rivelatori	3.0	0.0	0.0					
		Assegnazioni	MUON@U2: Test beam alta rate al PSI: 14 gg (si richiede contributo per soli tecnici) + trasporto 2 autistix3gg x2 (a/r)	8.5	0.0	8.5					
		Assegnazioni	RD_FLAVOUR, PICOCAL@U2: 1 settimana 1 tecnico per test beam al cern	1.0	0.0	0.0					
		Assegnazioni	Responsabilita': P.Ciambrone: Electronic Coordinator for U2 (L2b) 0.5 mu + E.De Lucia: Simulation Project, WP4 convener (L2a); Muon@U2 TB data analysis coord (L2b) 1 mu + P.De Simone: Muon software convener (L2b) 0.5 mu + P.Di Nezza: SMOG Project Leader (L1) 4 mu + G.Lanfranchi: convener Long-Lived Particles LPCC-CERN (L2b) 0.5 mu + M.Palutan: Institute Board Chair (L2b) 0.5 mu + M.Poli Lener Muon@U2 detector coordinator (L2b) 0.5 mu + M.Santimaria: Deputy Muon system (L1) 4 mu + B.Sciascia: P	61.0	0.0	0.0					
		Assegnazioni	Metabolismo MI	17.0	0.0	73.0					Metabolismo meno SF e FI
		Assegnazioni	Metabolismo ME per meeting di collaborazione e turni di presa dati per 16.90 FTE	125.0	0.0	0.0					
		Totale MISS		**242.5**	**0.0**	**92.5**	**0.0**	**0.0**	**0.0**	**0.0**	
	CON	Assegnazioni	SMOG2, consumo gas e manutenzione Gas Fill System (GFS) presa dati 2026	4.0	0.0	0.0					
		Assegnazioni	RD_FLAVOUR: MUON@U2 (DRD1-WP1): Produzione del Proto0 4 gas-gaps	50.0	0.0	0.0					
		Assegnazioni	RD_FLAVOUR: MUON@U2 (DRD1-WP1): Studi sui PCB (U2-R&D - DRD1)	10.0	0.0	0.0					
		Assegnazioni	RD_FLAVOUR: PICOCAL@U2: n. 2 produzione custom fibre scintillanti	12.0	0.0	0.0					
		Assegnazioni	Metabolismo Consumo	25.5	0.0	20.0					
		Totale CON		**101.5**	**0.0**	**20.0**	**0.0**	**0.0**	**0.0**	**0.0**	
	SPSERVIZI	Assegnazioni	MOF-B MUON	86.0	0.0	86.0					
		Totale SPSERVIZI		**86.0**	**0.0**	**86.0**	**0.0**	**0.0**	**0.0**	**0.0**	
Totale LNF				**430.0**	**0.0**	**198.5**	**0.0**	**0.0**	**0.0**	**0.0**	

All requested funds for consumables received 0. Some funds have been reallocated under other chapters, please check your own requests.

Travel funds: –14% compared to the funds assigned in 2025 - FTE_{2026}: 17.6 (wrt 16.8 in 2025)

Current situation of travel funds: it is possible to satisfy all requests received so far

Please do not wait until the last moment to open your mission request

General considerations on the LHCb financing in 2026

Positive feedback received from the referees and from CSN1 with respect to the Upgrade-II

Although there is not yet an official decision from INGN, funds have been assigned for the R&D, in particular for the Enhancement Upgrade (LS3)

The INFN executive board is evaluating our internal scoping document.
It would be desirable to have an official decision asap, but we do not expect anything explicit before spring 2026

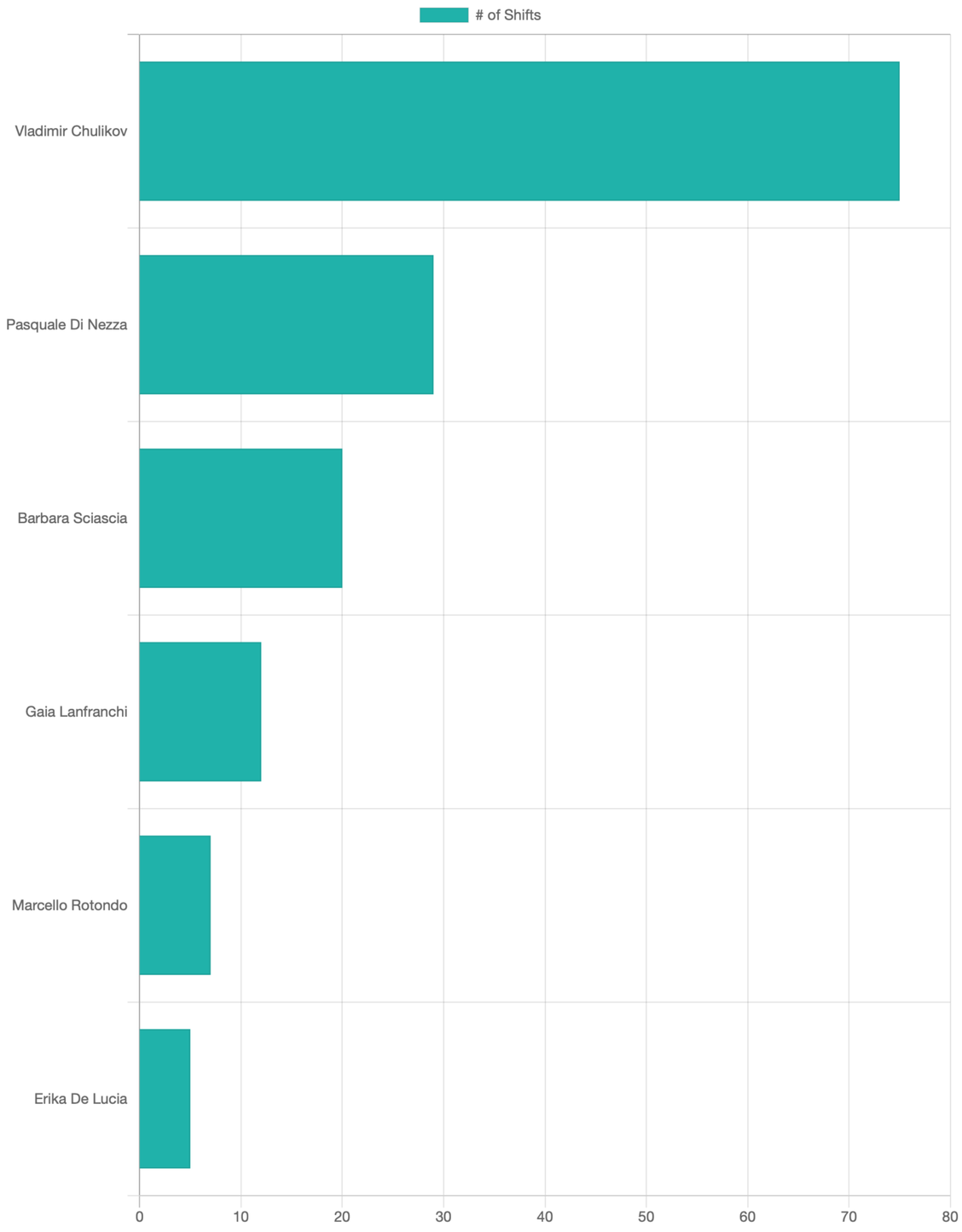
More details and discussion during the LHCb Italia meeting 6-8/10 in Pisa
Let me know if you wish to attend

Upgrade-II general meeting in Paris @LLR 9-13/3/26

Shifts

LHC will continue the Run until December 6th

LNF shifts done and booked:
124 exceeding the minimum of 100 requested



Papers assigned to LNF for reviewing

LHCb-PAPER-2025-046, **Monica**, Measurement of the branching fractions and longitudinal polarisations of $B^0_{(s)}\to K^{*}(892)^{0}\overline{K}^{*}(892)^{0}$ decays

LHCb-PAPER-2025-039, **Marco S.**, Observation and investigation of the $T_{c\bar{c}1}(4430)^+$ structure in $B^+ \to \psi(2S) K^0_{\text{S}} \pi^+$ decays

LHCb-PAPER-2025-029, **Gaia**, A study of charm mixing and $C\!P$ violation with $D^{0} \to K^{\pm} \pi^{\mp} \pi^{\pm} \pi^{ \mp }$ decays

LHCb-PAPER-2025-010 **Erika**, Measurement of the Lund plane for light and beauty quark jets

NEW ⟶ Top quark production cross-section and charge asymmetry measurement at LHCb

Marcello	7
Barbara	4
Pasquale	4
Patrizia	4
Erika	3
Marco S	3
Gaia	2
Monica	2
Matteo P	1

Some news from the LHCb week in Beijing

- just exceeded 8 fb^{-1} of integrated luminosity, we are on track!

- reached 800 physics papers, 45 in 2025

- LS3 enhancements progressing well
- general positive outcome from the latest LHCC review about the UII
- October RRB with a first critical discussion on funding (critical?)

New associate Institutes:

- Institute of Physics and Technology (ITP) at Ulaanbaatar, Mongolia (UT forUpgrade II, spectroscopy, simulation)
- University of Engineering and Technology (UTEC) Lima, Peru (RTA (PID), ECAL for Upgrade II)
- Indiana University Bloomington, Indiana (US) (continue involvement in Event Model and reconstruction for HLT1 and HLT2 related to US detector projects (Magnet stations, ECAL))

Some news from the LHCb week in Beijing

NEXT PC Election

- September 2025: establishment of Search Committee by CB
- End October 2025: first list of candidates
- End December 2025: short list of candidates
- Before mid-February, 2026: collaboration-wide election
- CB meeting Feb 2026: ratification vote by the CB
- August 1, 2026: start of new PC mandate

The call is open for the following Physics Analysis WGs:

- B decays to Charmonia and Charmless b-hadron decays
- Charm Physics (Charm)
- Ions and Fixed target (IFT)
- QCD, Electroweak and Exotica (QEE)
- Rare decays (RD)
- Semileptonic B decays (SL)
- Amplitude Analysis
- Flavour Tagging [<— 2 conveners to be appointed]
- Luminosity
- Statistics

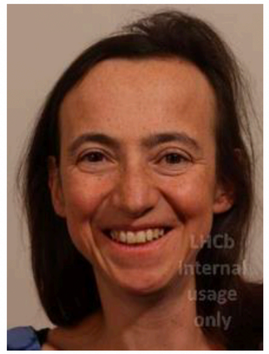
send nominations by Sunday 19 October

The description of paper classes not under EB-Review and their review process have been updated, not yet approved
https://lhcb.web.cern.ch/lhcb_page/collaboration/organization/editorial_board/related-paper-types.pdf

Physics Coordination presented the updated analysis and review procedure
The procedure has been presented several times at PPG meetings and in the Tuesday meeting
It aims at speeding up review processes
Not yet approved: like to the document

Some news from the LHCb week in Beijing

Interviews with the 4 remaining SP candidates


Paula Collins


Tim Gershon


Franz Muheim


Patrick Robbe

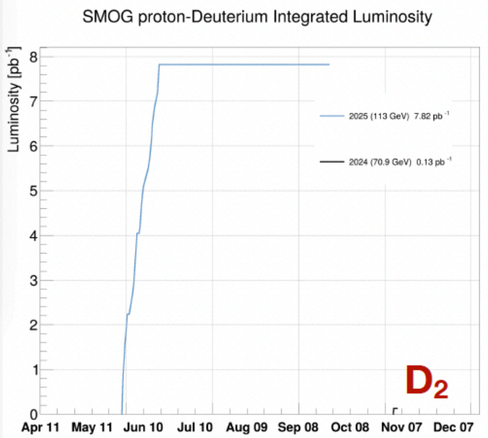
Paula: Manifesto, CV
Tim: Manifesto, CV
Franz: Manifesto, CV
Patrick: Manifesto+CV

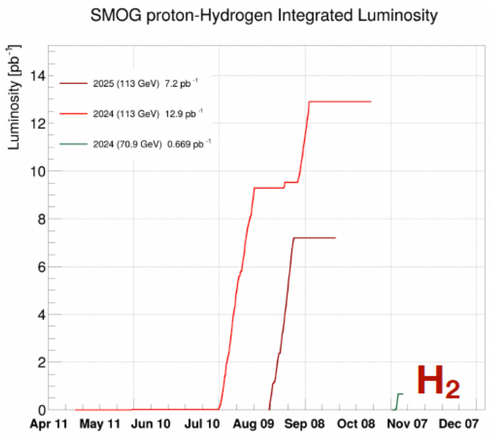
21.10.2025 collaboration-wide interview in the Tuesday meeting

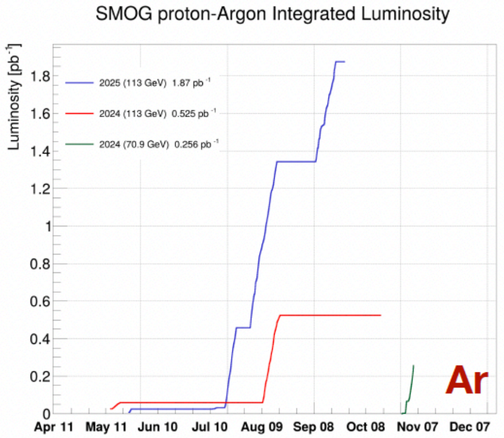
- The SC will collect questions from the Collaboration
- The interview will be a mixture of preselected questions based on the input from the collaboration and spontaneous questions from the audience
- Election at the December CB
- 1 July 2026, start of the mandate of the new SP

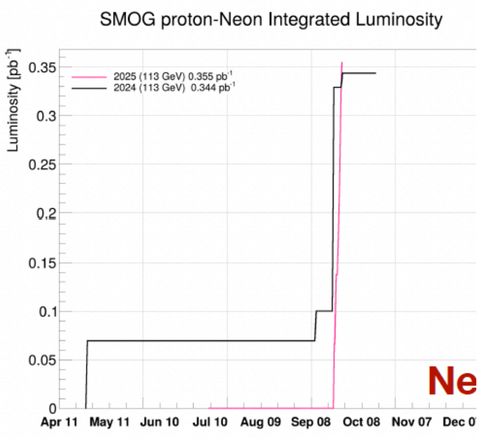
We will comment how/who to vote in our group meeting in November

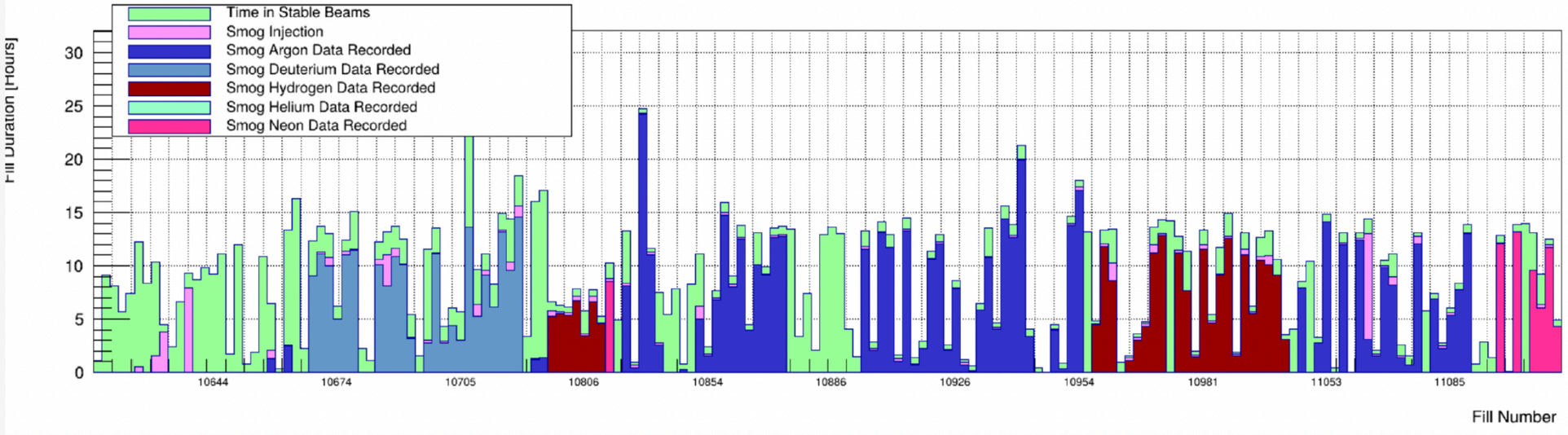
Current status, proton beams fixed target



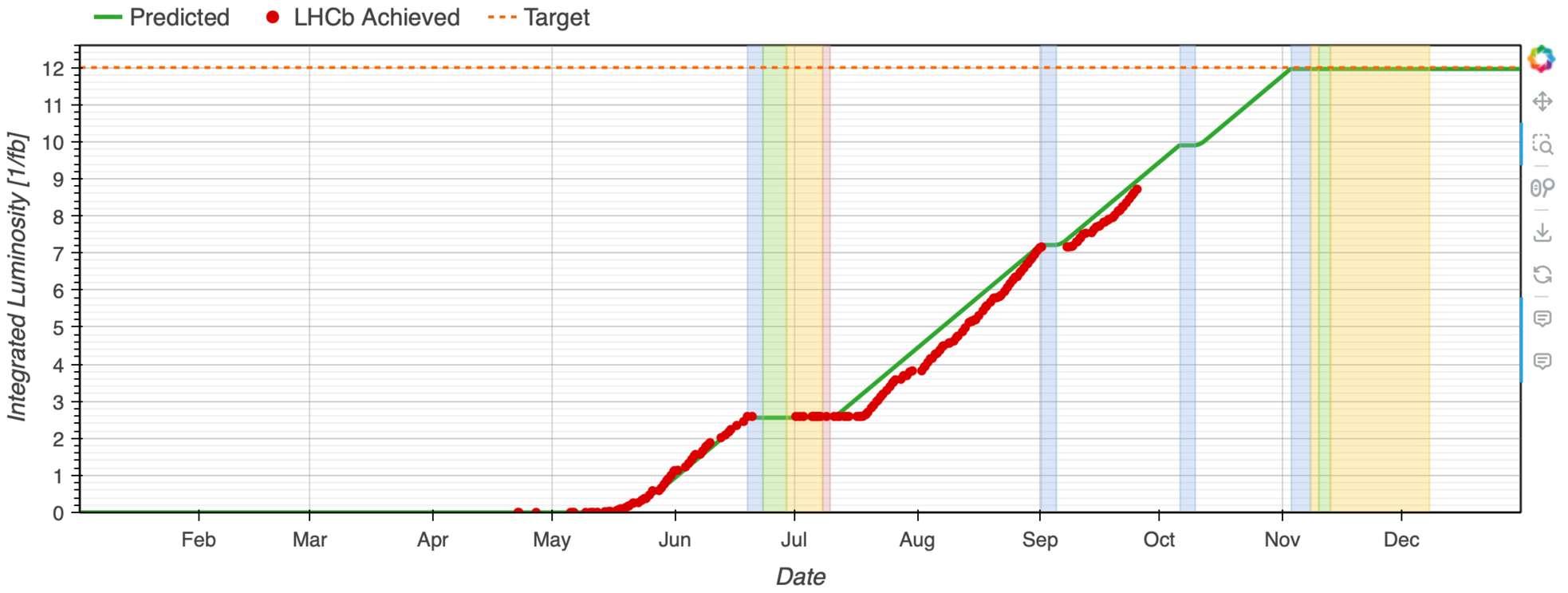








LHC performance



LHCb spectrometer with exceptional performance:

-91.2% efficiency over the full year
-Fills with global efficiency > 97% regularly achieved

LHC sensitivity

Started the shift during stable beams.

Around 1am I dumped the beam for refill for physics.. and it clearly was a bad idea..

Injection was OK, minor steering in B1 and good injections.
Around 02:10 I started observing weird orbit oscillations on the H planes of both beams.

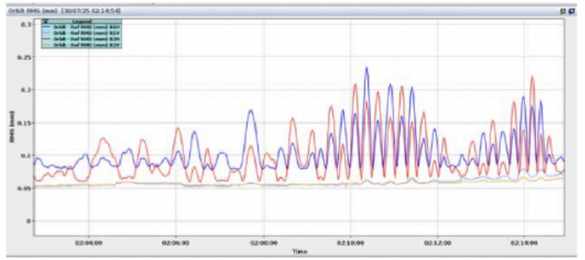
Initially I thought of ground movement but it soon started to bee to regular and too large in amplitude (max 0.15mm peak).
The oscillations were clearly compatible with RF modulation (used to measure chroma).
No sign of modulation from the orbit feedback FESA class and no clear sign of misbehavior on the RF side as well.

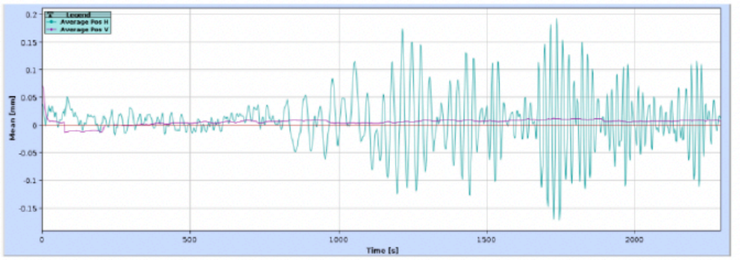
Once injection was finished I started preparing for the ramp to observe a bit better the situation with a steady state.
The oscillations continued and were clearly visible on orbit RMS even with FB ON.
I tried to increase the gain of radial loop just to observe and it managed to almost counteract them but not fully.

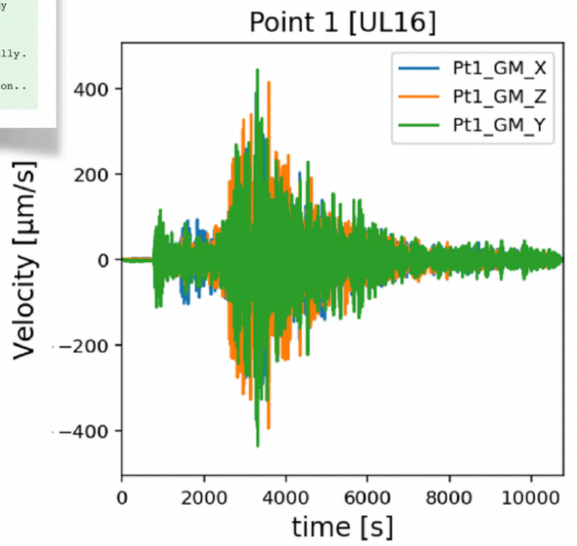
After spending a bit of time at injection anyway I dumped because I didn't want to risk to ramp in this situation.. even if we survived the ramp, the beams would have not behaved well at the interaction points..

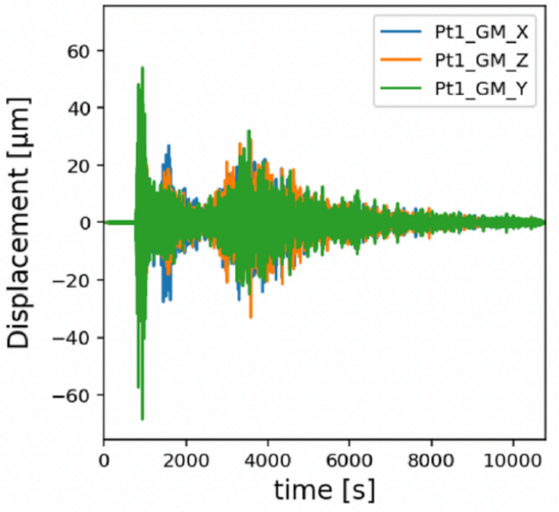
Fill #10888

- On 29 July, 23:24:52 (UTC), a **Mw 8.8 earthquake** struck off the eastern coast of the Kamchatka Peninsula in the Russian Far East
  - The most powerful earthquake recorded worldwide since the 2011
- Around 40 min later **orbit oscillations** up to 250 um were observed for approximately 25 min
- **Milder oscillations** continued for ~3 hours









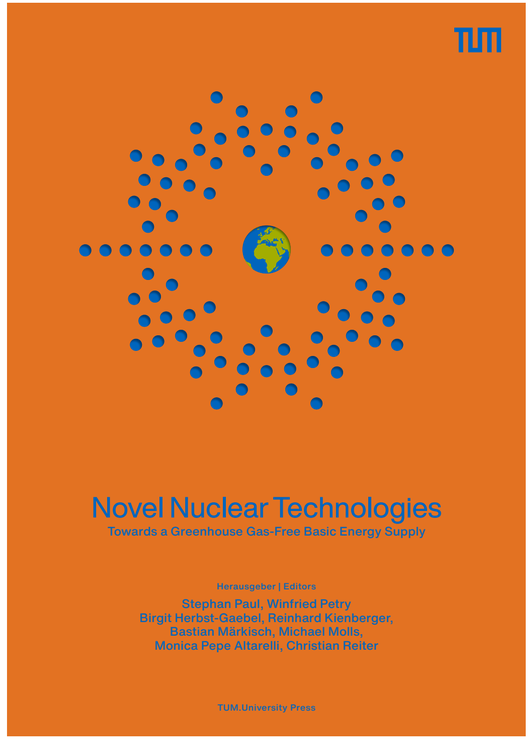
Other news

Monica is one of the main authors of the book

Novel Nuclear Technologies

Towards a Greenhouse Gas-Free Basic Energy Supply

(download)



We have a new PhD student: Barbara Pereira (Portugal)
Uni. Ferrara but based/associated at LNF

Still problems in using the PRIN funds for a postdoc position

We were asked to organize the “PSTP2026 - Workshop on Polarized Sources, Targets, and Polarimetry” at LNF (~100 participants), at the end we were approved for 2028

Proposed date for the next meeting: Tuesday November 18, 11.00

https://cern.zoom.us/j/5111798303?pwd=R3NHTmJzSkNIREw2TEtqeVZRZXNSdz09