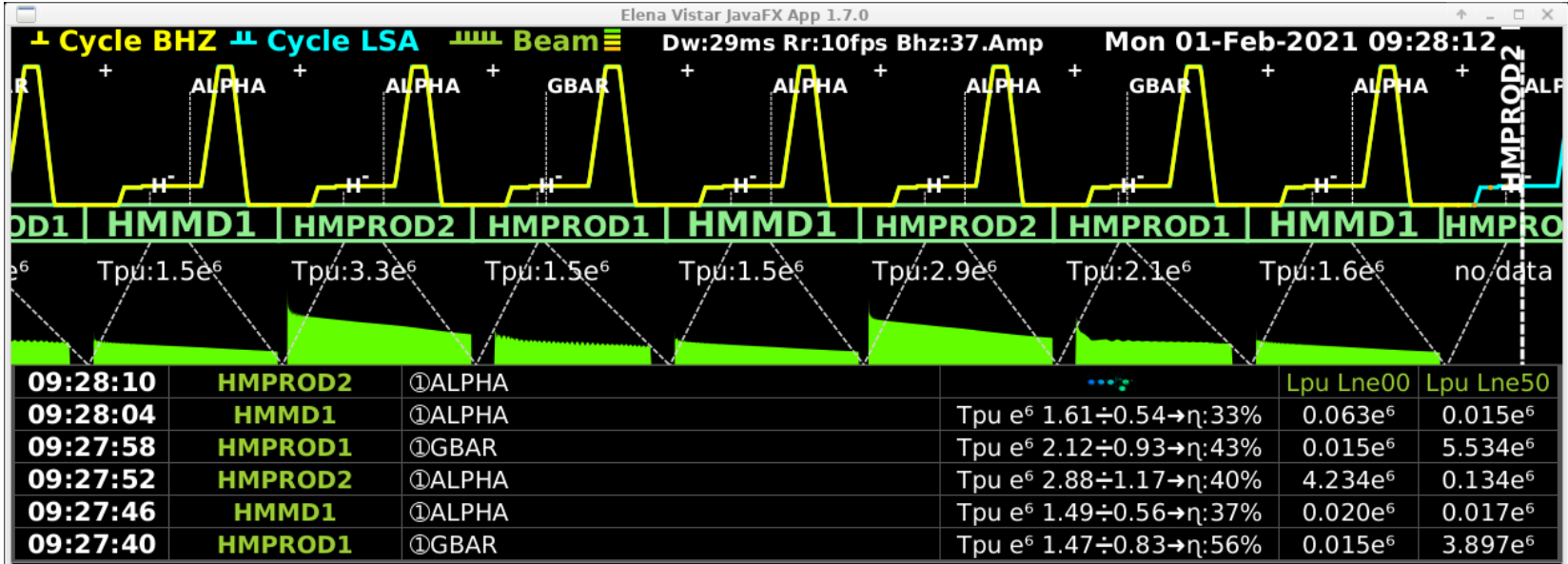


Beam Commissioning Status



W04: from 25/01/2021 to 29/01/2021

D. Gamba for the ELENA team



- Main results
- Issues
- What is next

■ Ion Source:

- **Verified calibration** of **Pearson** current transformer for **beam intensity** estimation
- **Further investigation** on **source issues** (intra-pulse instability, long-term orbit drift). **Very likely we will need to live with present performance** at least until the end of transfer line commissioning. Major hardware intervention might be required to improve the situation.

■ Ring:

- Improvements on BPM acquisition system and FESA class
 - (Probably) **found bad connection** affecting calibration of one pickup orbit reading
- Further attempt to keep the **e-cooler magnetic system on for all beams partially successful**
 - presently **only** the e-cooler **toroids** and **Kyoto-style correctors** are kept on

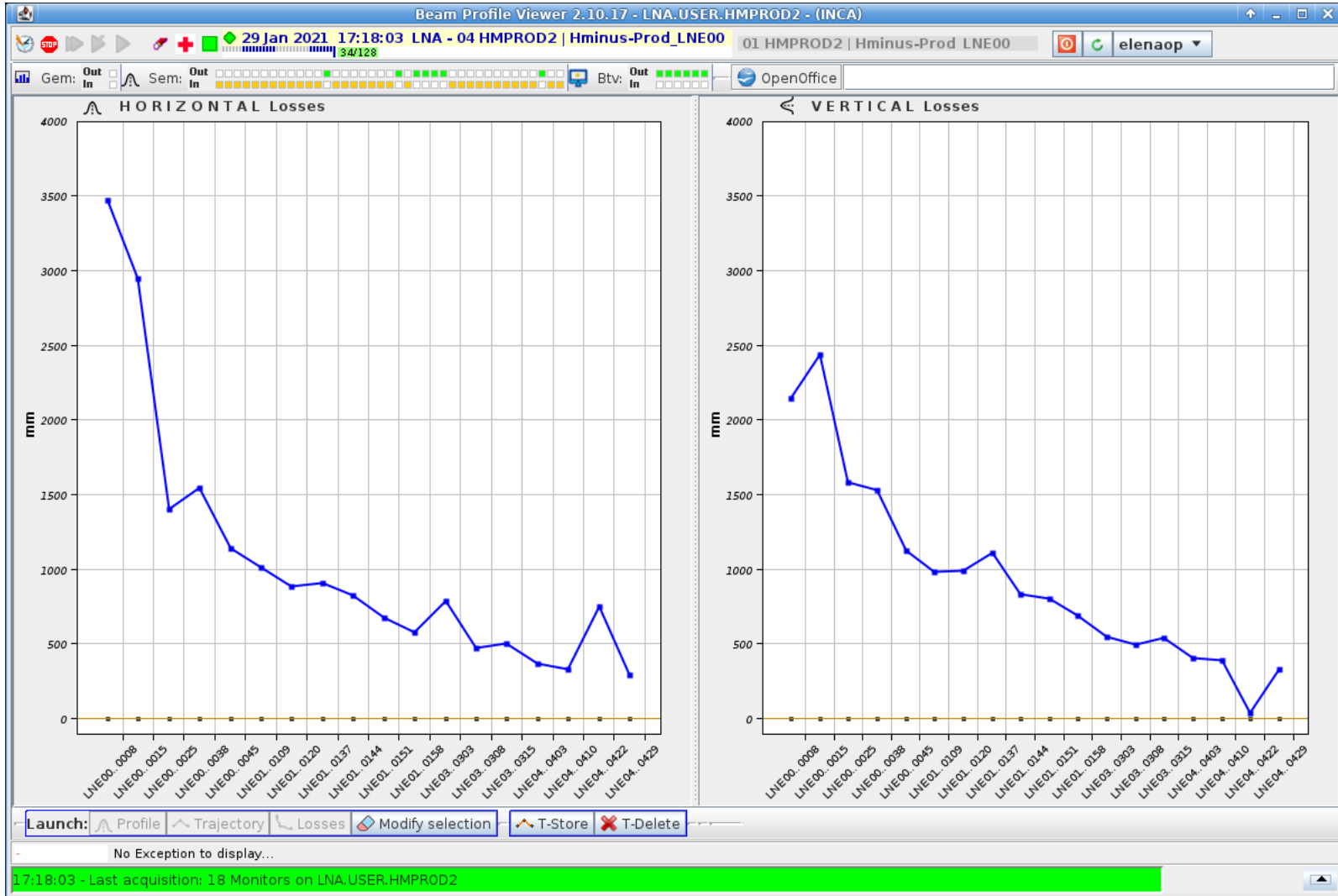
■ Electron cooling:

- Setup and verification of **electron beam orbit measurement** using standard BPM acquisition system.

■ Transfer lines:

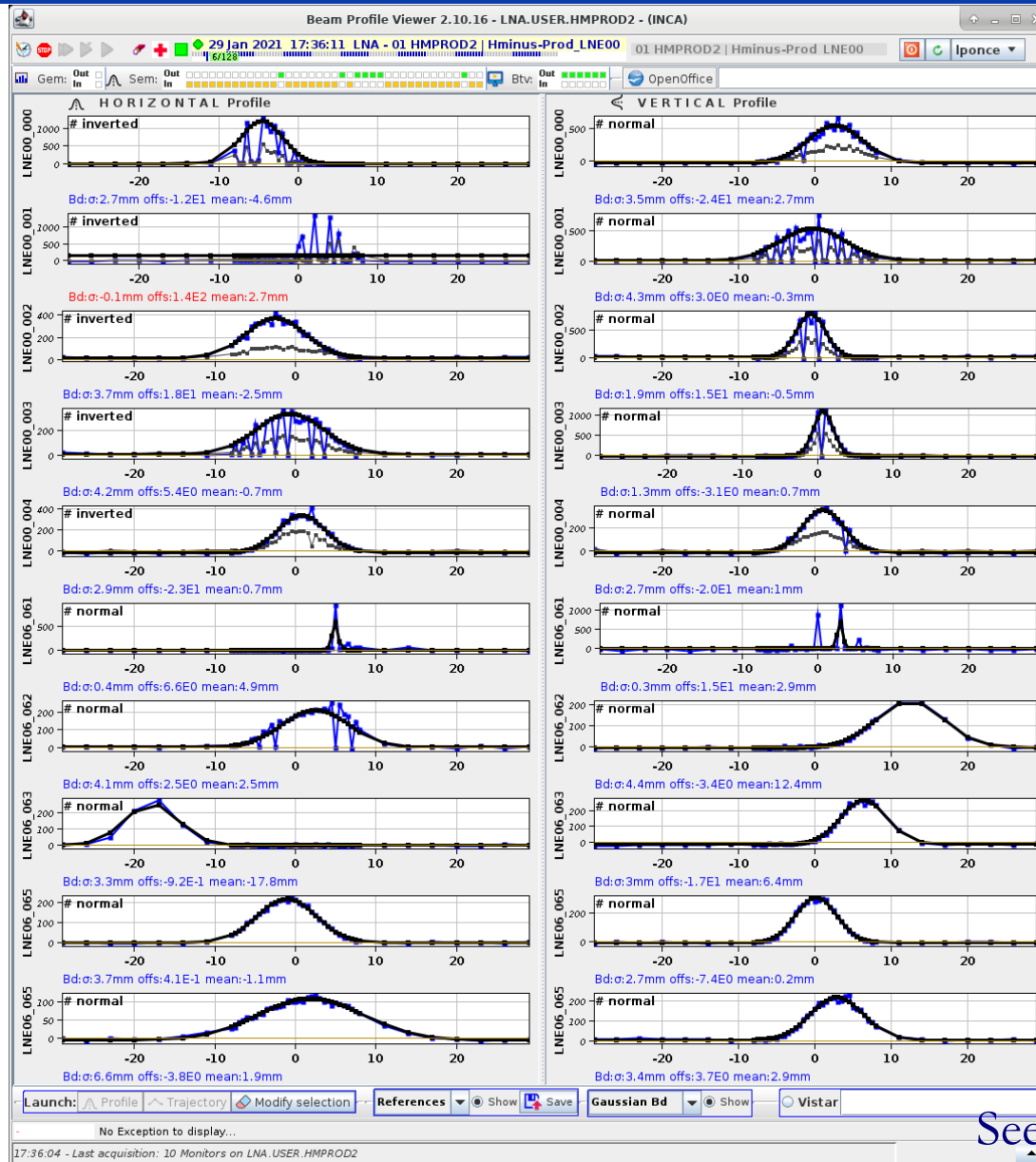
- First beam toward **ASACUSA**
- **New iSeg power supplies** for ion switch installed
 - After a few initial trips (conditioning?) the power supplies seems to hold the pulsing scheme
- Re-Setup of **longitudinal pickup** timing which were not re-set after timing upgrade this year
 - Still working on absolute calibration accuracy
- Several **scan for SEM qualification** by ABT
 - Detailed “mask” reference (i.e. bad wires scan)
- Estimation of **beam losses due to SEM in** the beam: **~10% loss per SEM** (H+V)

Beam losses due to SEM



See [logbook 29/01/21](#)

First beam toward ASACUSA



See logbook 29/01/21

- **Extraction frequency discussion:**
 - For 100 keV one expects 143.95 kHz instead of 144 kHz presently programmed.
 - **Decided to keep 144 kHz** for the time being as more practical for extraction timing setup. Final adjustment of the extraction frequency/energy to be discussed with experiments
 - (E-cooling + OP + RF + ABP teams present)
- **Incorporation rules** for “special” orbit correction (e.g. orbit in the e-cooler) are still problematic wrt hardware(?)/software(?) limits – to be investigated
- **RF Cavity FESA class** was not operational
 - Possible to see the status only via dedicated PLC code
 - It should be fixed this week
- **Ring tune meter FESA class** not fully operational
 - Investigation ongoing on [BIBBQ-139](#)
- **BPM FESA class** still not final
 - still investigating some data-processing issues
 - Schottky measurement steel to be debugged
- **Beam stoppers control** now operational
 - **Most beam stoppers consigned “in” as not yet integrated in safety chain**

(Some) Open Questions



- **Injection** optics/orbit matching
 - Test settings of injection **transfer line quads** based on old quadscan
 - **Injection oscillation application** to be rechecked after recent BPM FESA class improvements
- Optimization of **accelerating cycle**
 - Long term plan to **prepare** for a **decelerating cycle**
- Continue Understanding **ring optics**
 - Coupling, chromaticity, hysteresis effects, effect of e-cooler magnetic system
- Tests with **e-cooler**
 - **H⁻ lifetime**, **Schottky** signal
- Optimization of **LNEs** optics/steering
 - Effect of **experiments magnetic fields...** (Aegis will be able to start magnetic system only ~August. Other users?)

Tentative Program for This Week



Week coordinator: Laurette

Operators: See [op-webtools](#)

	Main activities
Monday	<ul style="list-style-type: none">• Restart beam
	<ul style="list-style-type: none">• ABT Studies (SEM bad wires verification)
Tuesday	<ul style="list-style-type: none">• Machine in access (probably the whole day):<ul style="list-style-type: none">• Finalization Survey network for PUMA (ELENA side) (C. Vendeuvre)• Check connection of first SEM in LNE06 ~1h• Elements Tracing for PUMA (A. Kolehmainen)• Installation of compressed air line in ALPHA• Completion of valve assembly on LNE02 + pumping (A. Sinturel)• Re-arrange shielding blocks of PUMA windows• Installation of current divider on LNE50 (to start with)
Wednesday	<ul style="list-style-type: none">• Ring MD (e-cooler magnetic studies provided BBQ operational)
	<ul style="list-style-type: none">• ABT Studies (ASACUSA optics)
Thursday	<ul style="list-style-type: none">• Ring MD
	<ul style="list-style-type: none">• ABT Studies
Friday	<ul style="list-style-type: none">• Ring MD
	<ul style="list-style-type: none">• ABT Studies

+ continue **development** of **software** and **tools** for machine control/optimization

+ beam to users (**GBAR?** **ALPHA?**) – **no request so far**

Thanks to all people involved!