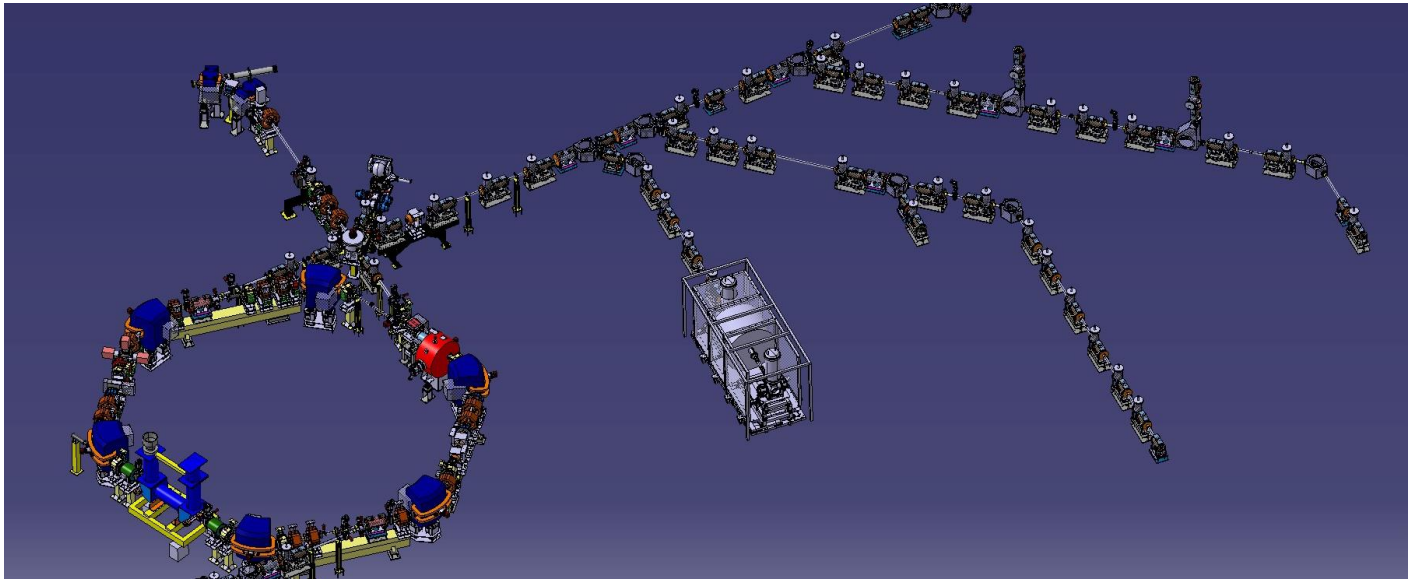
Extended ELENA Commissioning Committee Meeting – Introduction

C. Carli

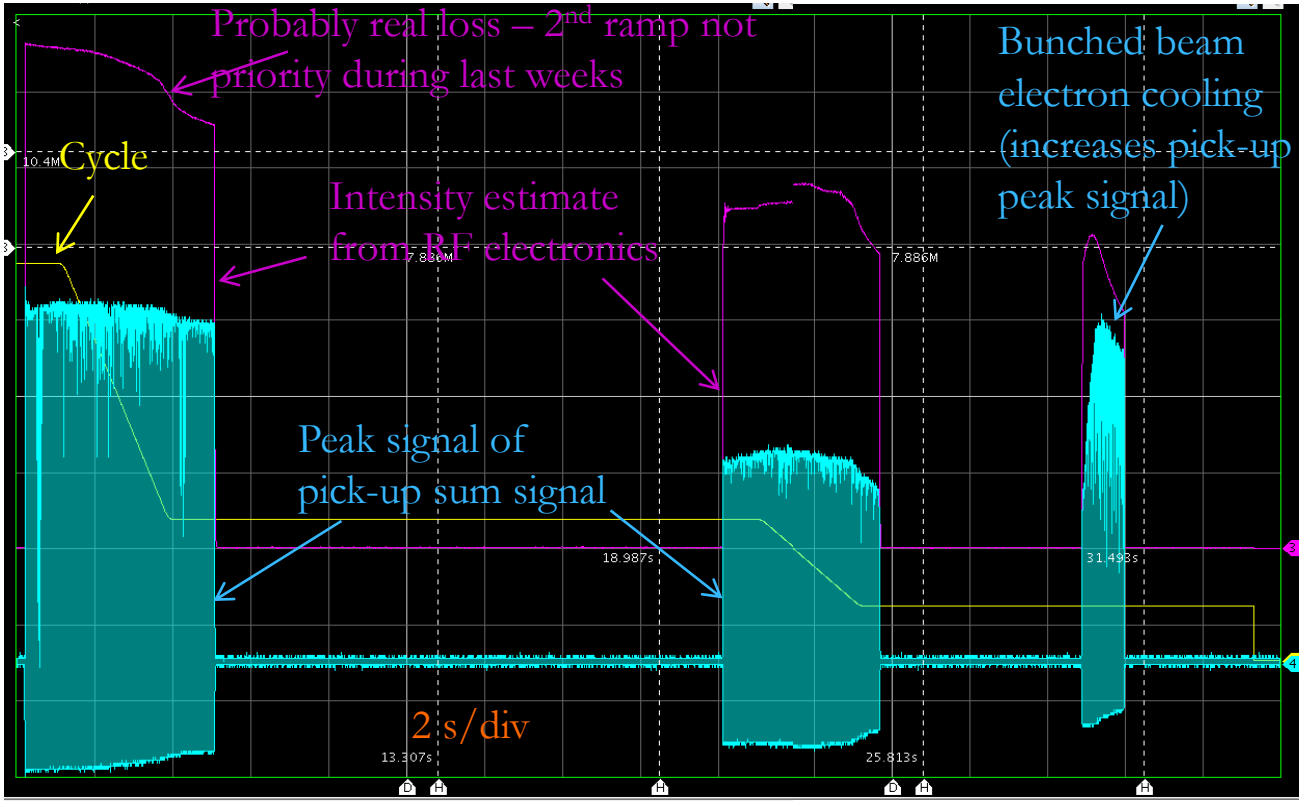
18th February 2020



- Some Highlights from 2018
- Some Highlights from 2019
- Aim of this extended ECC Meeting

Some Highlights from 2018

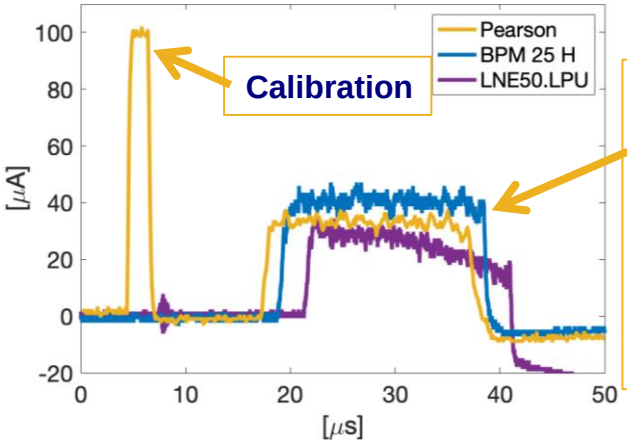
- Full machine cycle with cooling at intermediate plateau
  - Electron cooling at intermediate plateau (beam not bunched)
  - Electron cooling at 100 keV, first un-bunched followed by bunched beam cooling
  - Four bunches with intensity close to nominal intensity extracted



Whole ELENA cycle with beam (combining two acquisitions, 2nd with slightly higher intensity)

Some Highlights from 2019

- Year dedicated to preparations for commissioning of the transfer lines to experiments in 2020
- Installation of electro-static lines to "old" experimental area
- In addition (a selection of) tests on the generation of the beam and instrumentation required
  - Confidence in 2nd iteration this year of oil based isolation transformer
  - Investigations on fluctuations along beam pulse

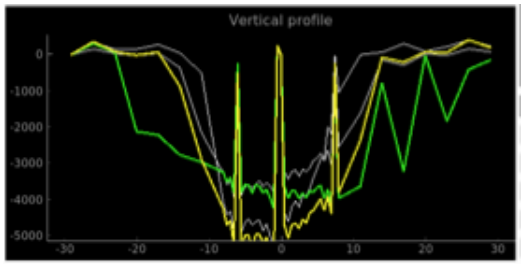


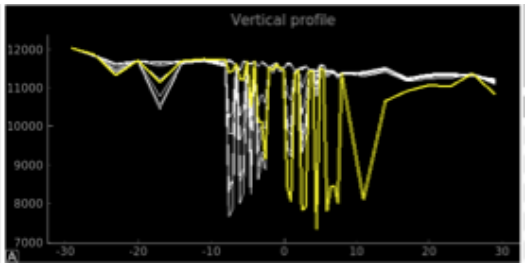
Beam on several monitors at different locations

Source setting optimized to reduce fluctuations

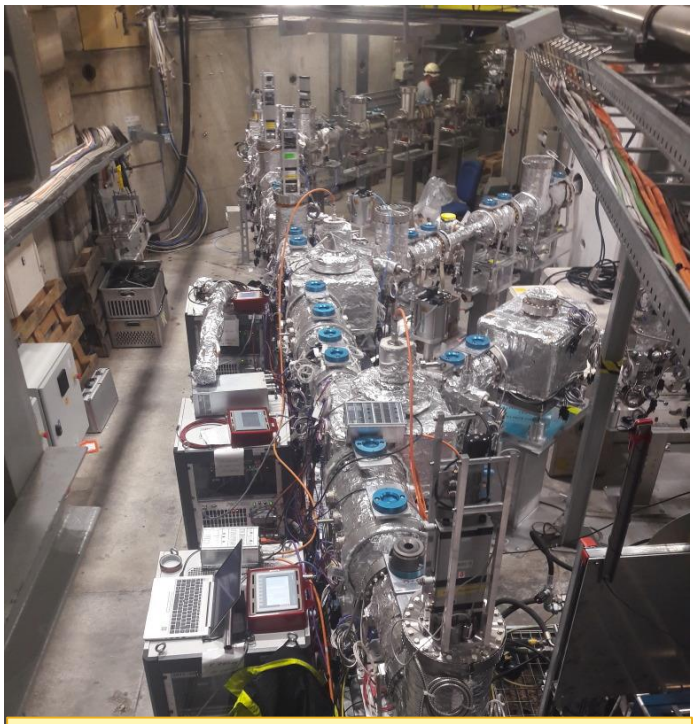
(only ~0.5 us long slice useful for injection)

- Profile monitors: A lot of work and progress, but still a lot of work ahead for a robust and reliable solution





Good and not (yet, due to missing channel) good test acquisitions



Almost completed installation lines
- **Some lines not visible**
- **Some profile monitors missing and bake-outs in 2020**

Aim of this extended ECC Meeting

- Recap of aims for 2020
  - Completion of installation of transfer lines (cabling, profile monitors, cabling, bake-outs ..)
  - Commissioning of the transfer lines with H^- ions from local source
  - Possibly - lower priority - other tests with ELENA ring (optics, acceleration/deceleration, losses, cooling with protons ….)

- Aim of this meeting
  - Review situation and findings up to 2019
  - Plan for transfer line commissioning in 2020 and possibly beyond (1st run in 2021)
  - Make sure nothing is forgotten and that everything needed (hardware, tools, resources) will be available.
  - In particular
    - Do we have a reliable source? (fallback scenario as pulsing or lower energy needed?)
    - Status of profile monitors (prerequisite to complete installation and for commissioning)
    - Progress and planning of transfer line installations (completion by June realistic)
    - Scenarios for preparations and tests between April and June (availability of access and RF systems)
    - Transfer line commissioning (tools, procedures …)
    - Status and plans for some systems (vacuum system, RF, electron cooler …)
    - Timings, application programs …