ECC 17/8/2017

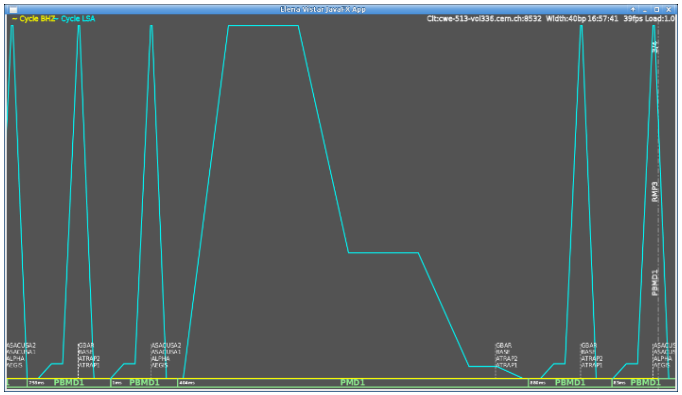
- Agenda:
- Recent beam progress — T.Eriksson
- Gbar area progress — F.Butin
- RF progress, issues & priorities — M. – E. Angoletta
- E-cooler & SEM news — L.Joergensen
- Beam profile measurements — P.Grandemange
- AOB

ELENA ring commissioning – Pbars from AD

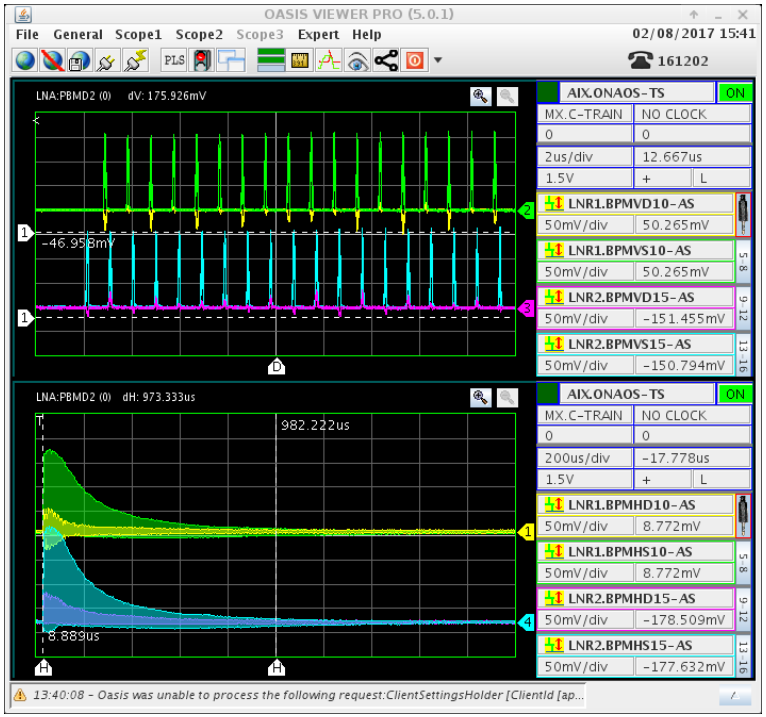
- Pbars transferred through beam line and seen on BTV118 23 June….with missing bpm:s, only the 2 BTV:s available.

3/8/2017:

- AD – ELENA cycle synchro and handshake debugged & operational
- RF/timing clocktrains installed & debugged
- After minimal correction of H/V trajectories in transfer line
- Small correction of ELENA main B field
- => **first Pbars circulating in ELENA!**



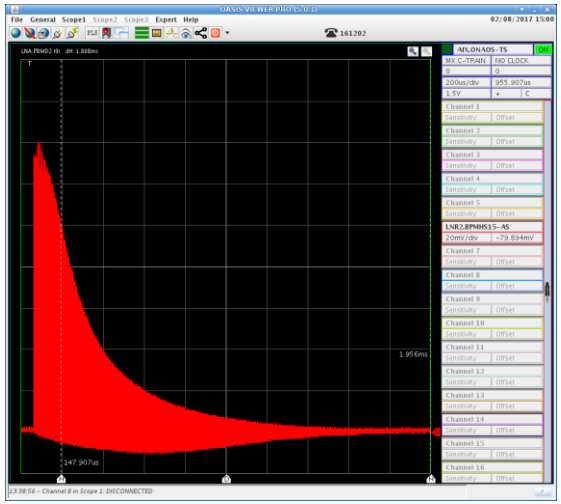
ELENA supercycle with Pbar and Ion cycles

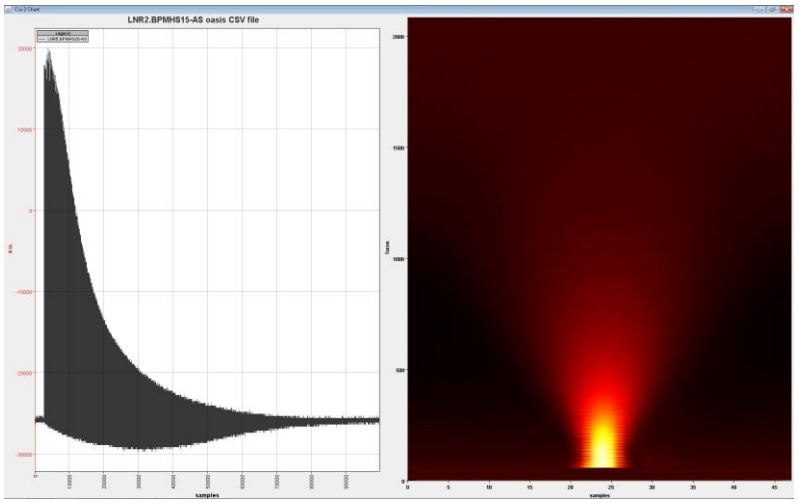


First few turns observed on bpm:s

Envelope over 2 ms

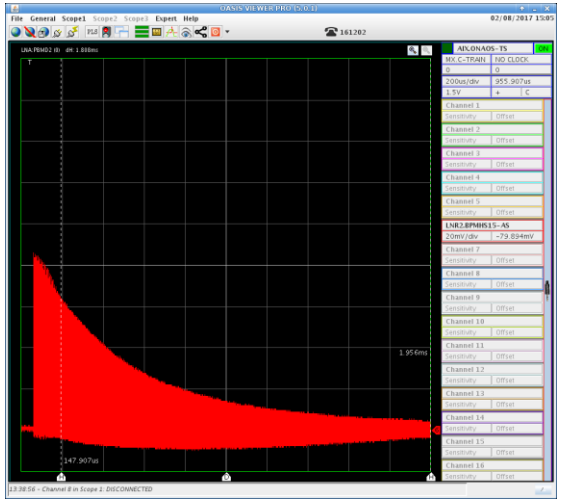
Cirulating Pbars

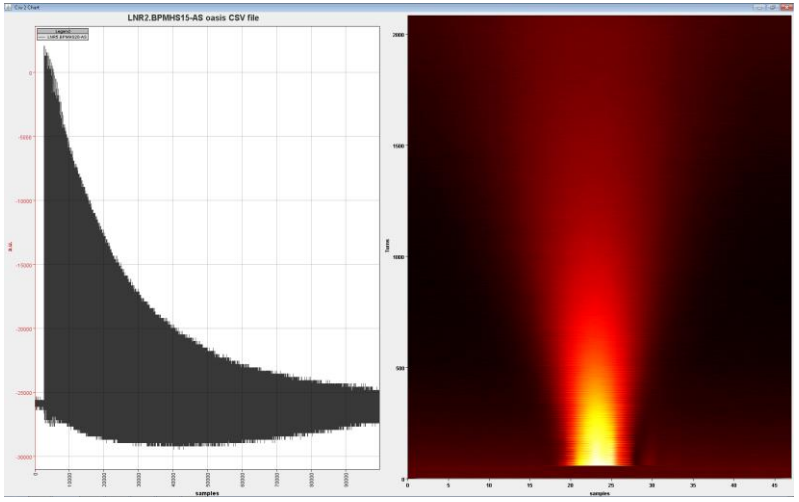




H bpm signal during first 2 ms

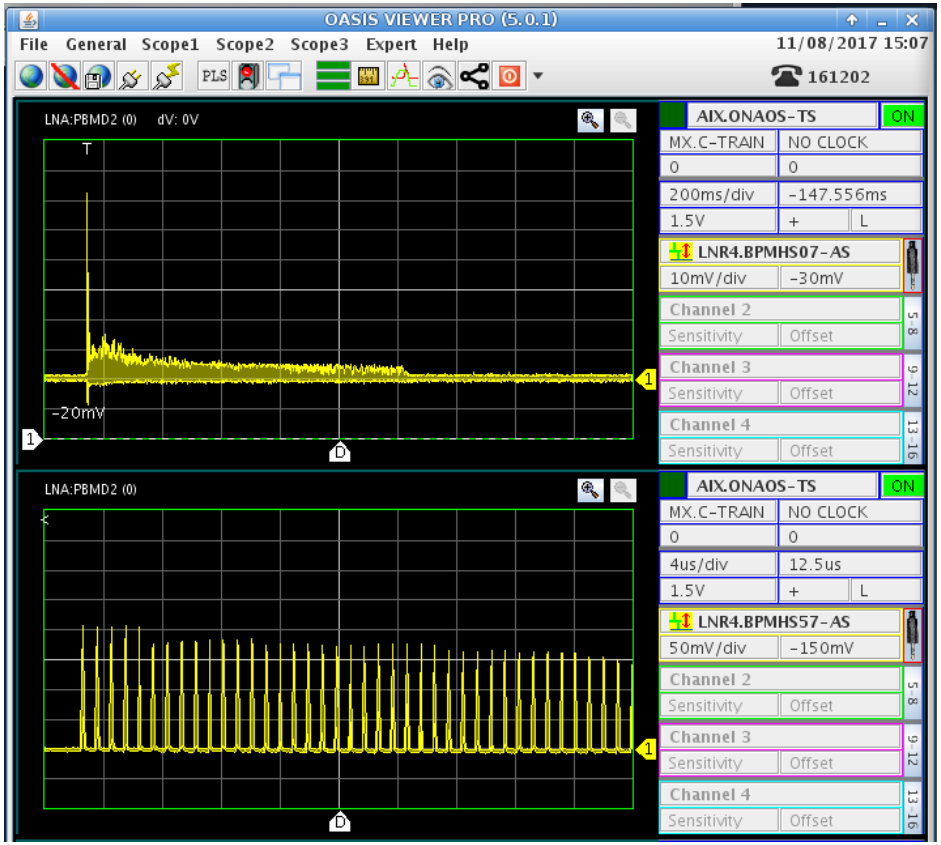
With bunch rotation in AD, bunch length ~ 120ns





No bunch rotation in AD, bunch length ~ 200ns & smaller dp/p.

Cirulating Pbars



11/8/2017

Now with RF:

Beam survival until end of the 5.3 MeV plateau observed.

Injection at random phase => occasional bunch-to-bucket transfer

ELENA Beam Commissioning – next steps

- **Consolidation of injection line and injection into ring**
  - Improved reproducibility of injection – efficiency should be increased (H-)
  - Further studies to understand and empirically improve line and injection
- **First 85 keV beam (H^- and/or protons) for GBAR**
  - Requires profile monitors – 2 out of 3 installed. No readout electronics yet…
  - Setting up of RF synchro for Gbar H- ejection
- **Pbar xfer from AD**
  - Set-up RF synchro etc.
- **Acceleration (deceleration)**
  - Setting up of LL RF
  - LPU signal quality vs. phase/radial loops
- **Setting up of antiproton cycle**
  - Requires electron cooler to be available and installed
- **Commissioning of instrumentation and understanding machine at low energy**
  - Orbit system – consolidate orbit correction and orbit response studies
  - Tomoscope – observe bunching (& independent intensity estimate)
  - Tune measurement and correction (first test of pick-up indicated good performance)