

# Single-beam instability MD

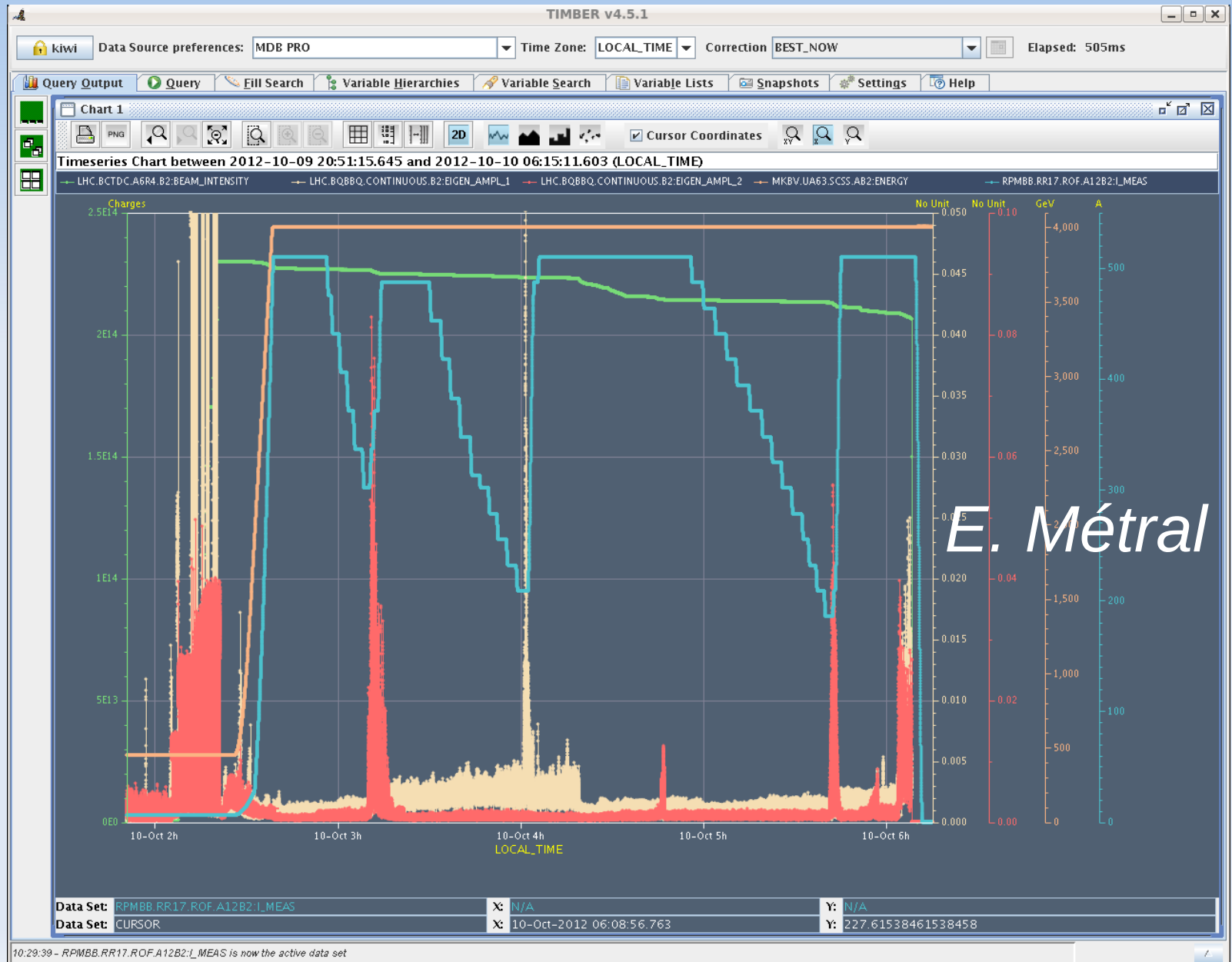
N. Mounet, E. Métral, A. Burov, X. Buffat, B. Salvant, G. Papotti

- B2, 1374 bunches,  $2.3 \cdot 10^{14}$  total intensity, emit.  $\sim 1.6-1.7$  mm.mrad (at injection). **Positive** (new) octupole polarity.
- Fill 3145:
  - flat top, ADT 100 turns in x & 200 turns in y. Instability thresholds:
    - $Q'_x=9, Q'_y=4 \rightarrow 300$  A (vertical instab.),
    - $Q'_x=15, Q'_y=15 \rightarrow 208$  A (horizontal),
  - squeeze, ADT 50 turns in x & 100 turns in y. Instability thresholds:
    - $Q'_x=12, Q'_y=4 \rightarrow > 510$  A (vertical),
    - $Q'_x=12, Q'_y=15 \rightarrow 185$  A (horizontal and vertical),
    - negative chromaticities, ADT 50 turns in both planes  $\rightarrow$  always unstable at **510 A**.
- Fill 3146, flat top, ADT 100 turns x & y,  $Q'_x=13, Q'_y=15 \rightarrow$  threshold at **34 A** (6 times less than previous fill with  $\sim$  same conditions !)

# Single-beam instability MD

N. Mounet, E. Métral, A. Burov, X. Buffat, B. Salvant, G. Papotti

Fill 3145

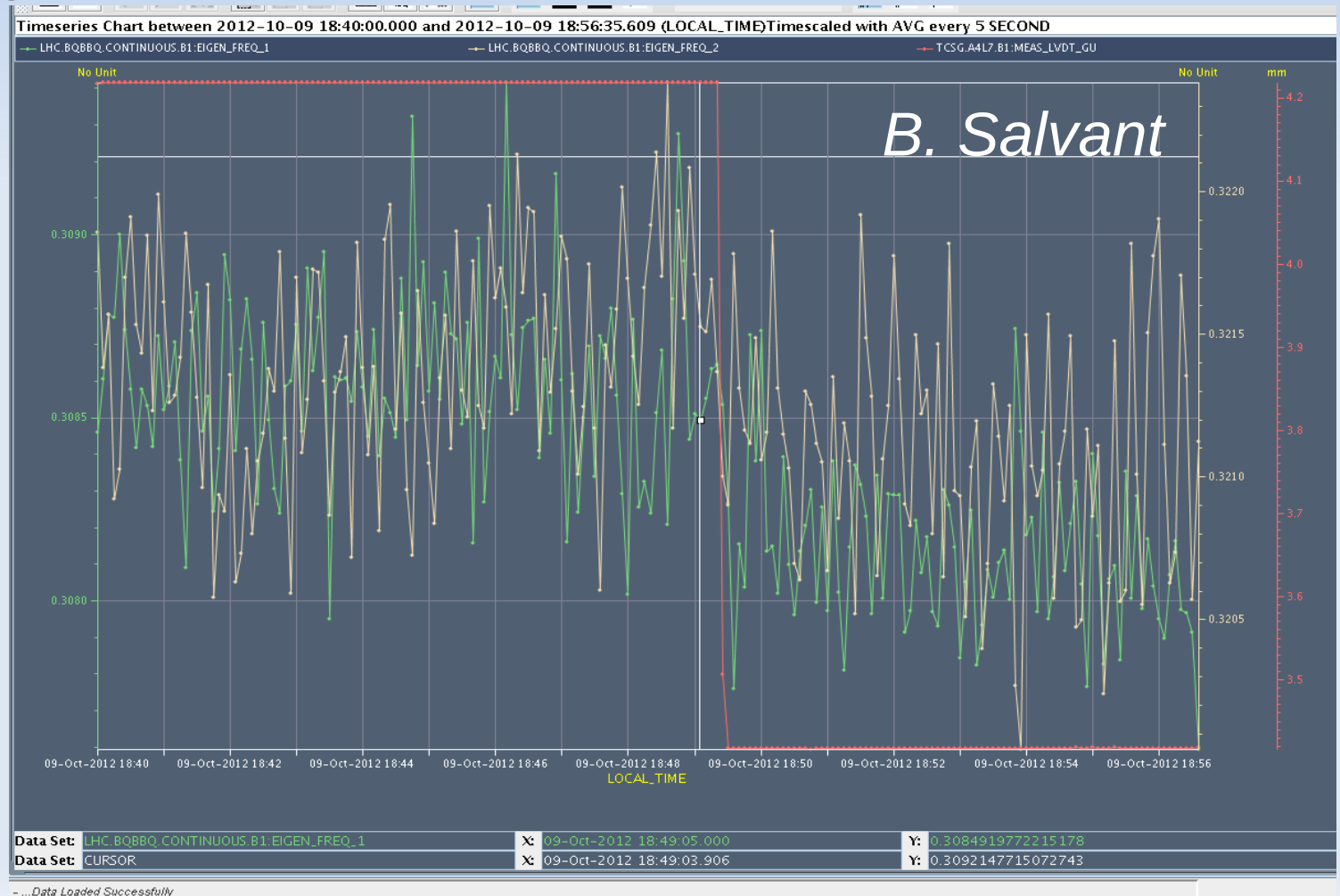


*E. Métral*

# Collimation MD

B. Salvachua, S. Redaelli & collimation team, B. Salvant, N. Mounet & impedance team

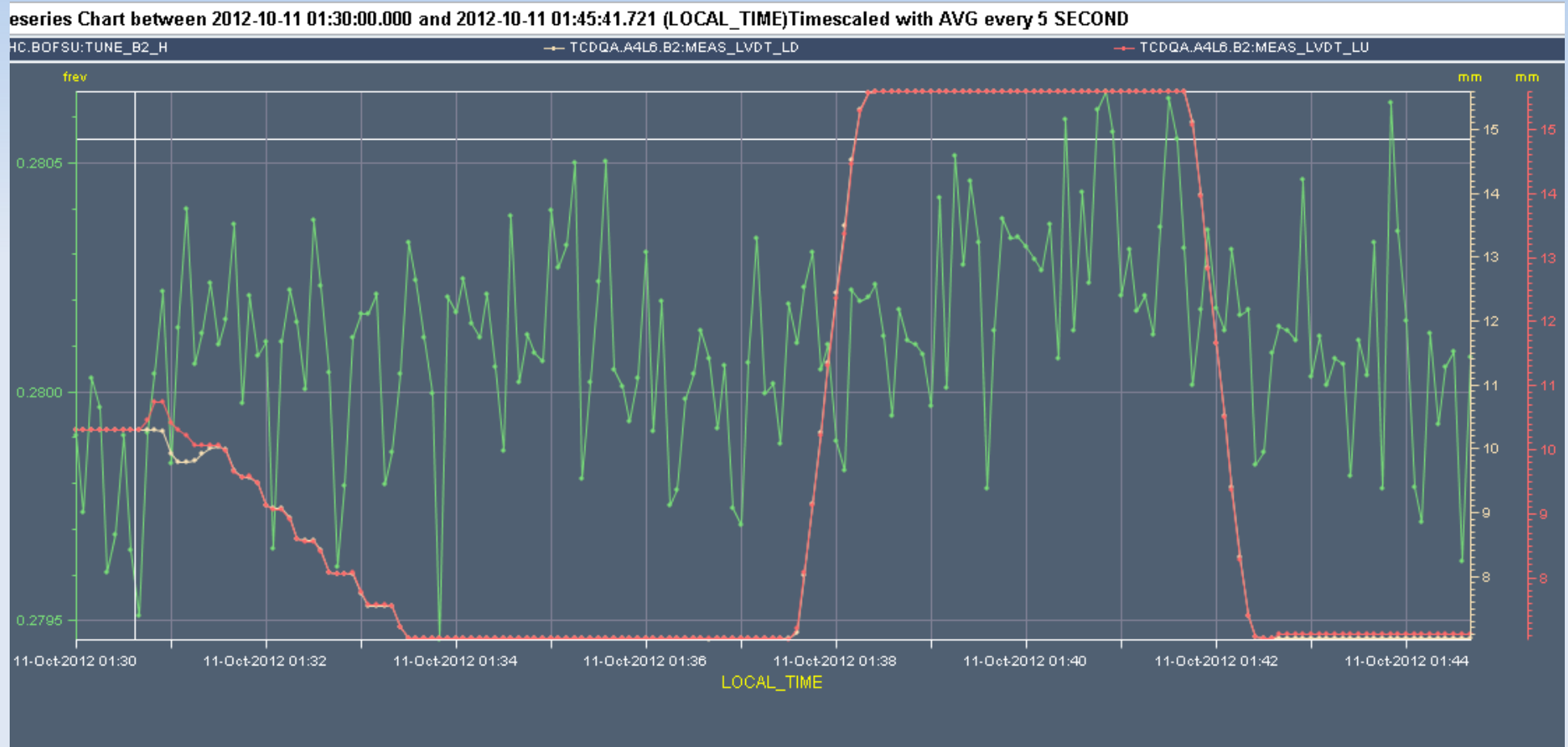
- Impedance dedicated measurement **not done** due to technical issues.
- Still, some **tune shift** observed during collimator alignment to nominal 7 TeV settings:



# TCDQ impedance MD

C. Bracco, W. Bartmann & injection team, N. Mounet & impedance team

- With single-bunch at injection, tune shift vs. TCDQ jaw movement:

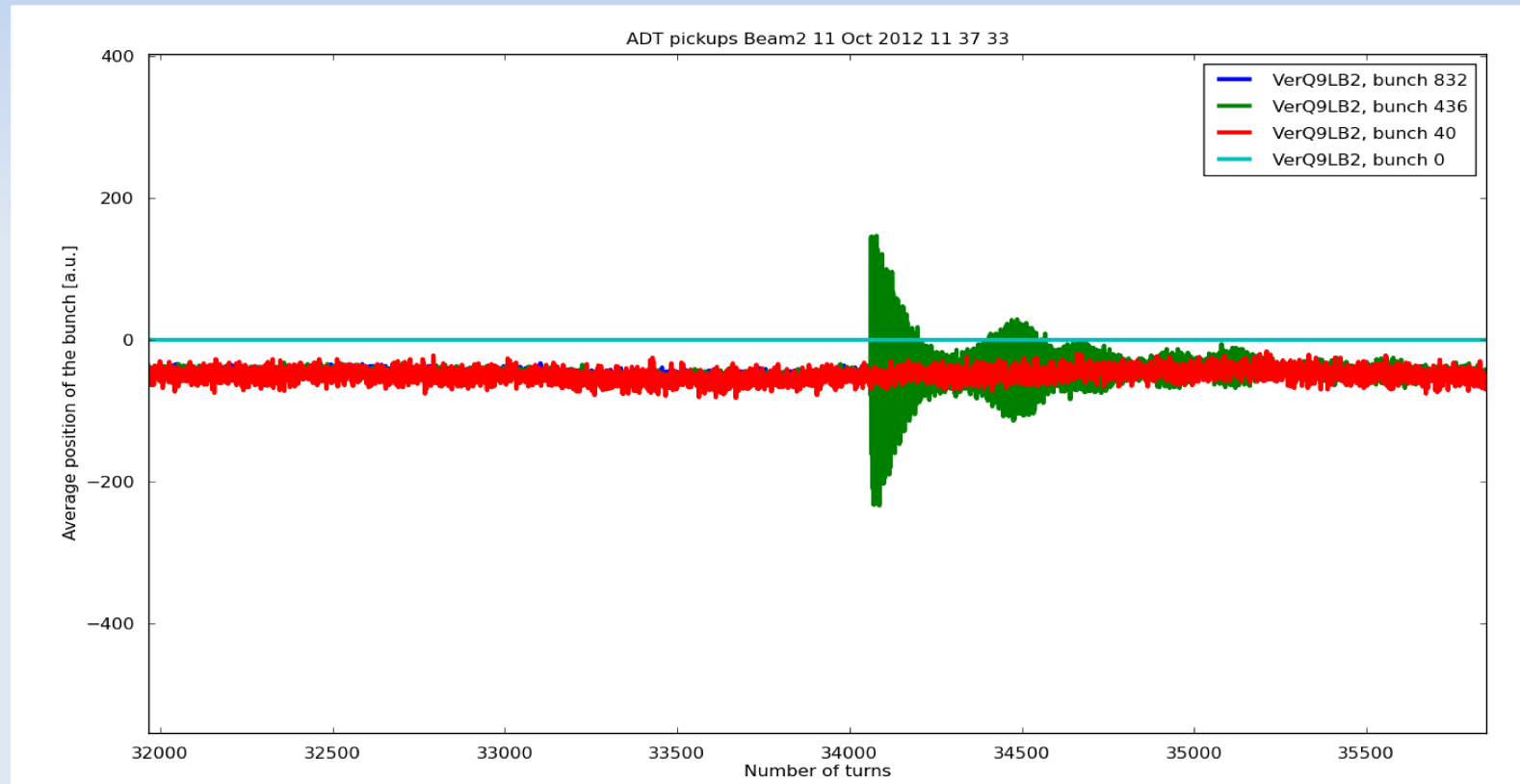


- As a bonus, **instability** (presumably headtail) seen, stabilized by damper.

# Longitudinal impedance MD

E. Chapochnikova, J. Muller & RF team, N. Mounet, N. Biancacci & impedance team

- 3 bunches of different intensities (between  $0.5 \cdot 10^{11}$  and  $2 \cdot 10^{11}$ ).
- Injection oscillations + kicks at flat top → ADT pickups data taken:



→ Idea is to get **tune of each bunch** so tune slope vs. intensity.

# Other MDs of interest for impedance and instabilities

- **Two-beam-impedance MD** (S. Fartoukh et al): due to technical problems, only cogging test done + chroma measurement vs. octupoles (during which a **single-bunch instability** occurred).
- **High beta\* MD** (H. Burkhardt et al): at flat top, **scraping** + **collimator moved** close to the beam + TOTEM **roman pots moved** in and out → potentially some tune shifts to be looked at.
- **Beta\* leveling MD** (beam-beam team): **instabilities** with 2 beams (see X. Buffat & beam-beam team slides).