

E-lens related beam studies

E-lens Team

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a passion for discovery

 **Office of
Science**
U.S. DEPARTMENT OF ENERGY



2014 Au Run APEX highlight

- Transverse alignment
- Orbit and Tune
- BTF with last two bunches
- Emittance
- Instability Study

2015 PP Run APEX highlight

- BTF with e-p only
- BTF with e-p & one p-p (IP8) & e-p & two p-p (IP6 & IP8)
- BTF with e-p & two al-p (IP6 and IP8)
- Others

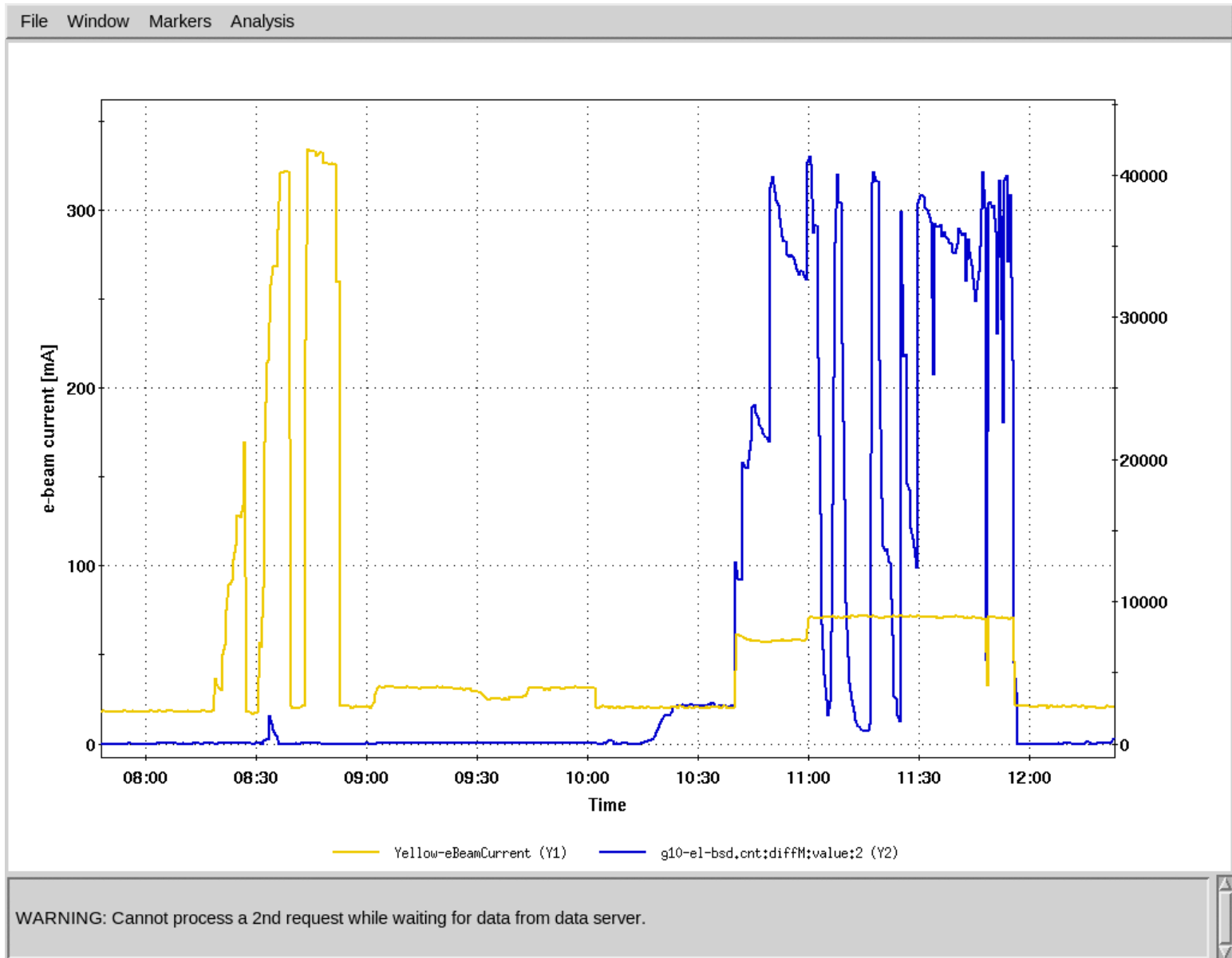
Outline

1. The helium temperature spikes are gone and we could ramp up superconducting magnet to 5T on Wednesday and hold it until today;
2. We had get 300mA DC e-beam to collector for the first time this year (time limited), starting from last year corrector setup;
3. E-beam was aligned to according to bpms: horizontal beam position seems align very well, but there was a cross angle between e-beam and ion beam, according to their bpm reading. It could be caused by bad bpm electronics (see next) or could be real;
4. We got 40kHz eBSD signal with 50 mA e-beam and 56 bunches ($1.0E9$, Ru). We moved Ru beam horizontal and vertical planes, but didn't align them very well: only found the maximum eBSD reading (attached file); the reason is listed as item 3 above;

Issues:

One event about cathode bias over current fault cause beam stop, recovered after a while, and reason is unknown; it happened last year, it was gone after gun solenoid was ON;

DC current and eBSD signal



Alignment

