RHIC Status

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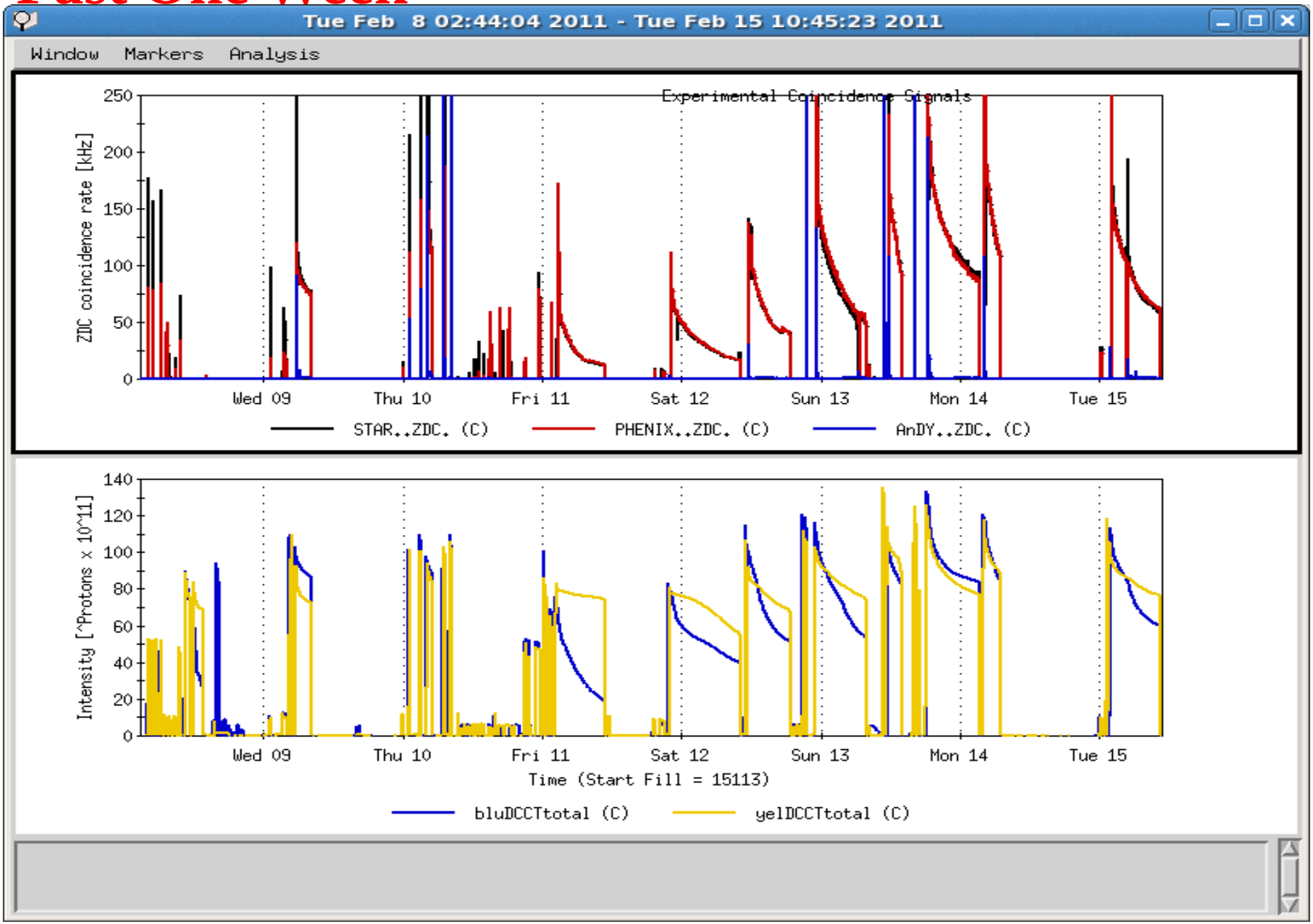
RHIC Time Meeting
02/15/2011

BROOKHAVEN
NATIONAL LABORATORY

Past One Week



Status

Feb. 7 AGS RF station water leak and warm snake P/S problem prevented any beam development.

Feb. 8 Found the source of blue emittance growth: blue abort kicker module B. Large blue emittance growth was gone in overnight store.

Feb. 9 Access for five hours. The noise from blue abort kicker module B came back. Another fix effort for eight hours. Overnight store lost due to yellow abort kicker prefire. A few ramps lost in no-rotator ramp.

Feb. 10 Develop ramp pp11v7(separate energy ramp and last beta squeeze). Provide overnight store with the blue noise presence.

Feb. 11 Spent the day to located the source of the blue dump kicker. And it is fixed. Provide 109x109 store overnight.

Feb. 12 Provide 109x109 stores.

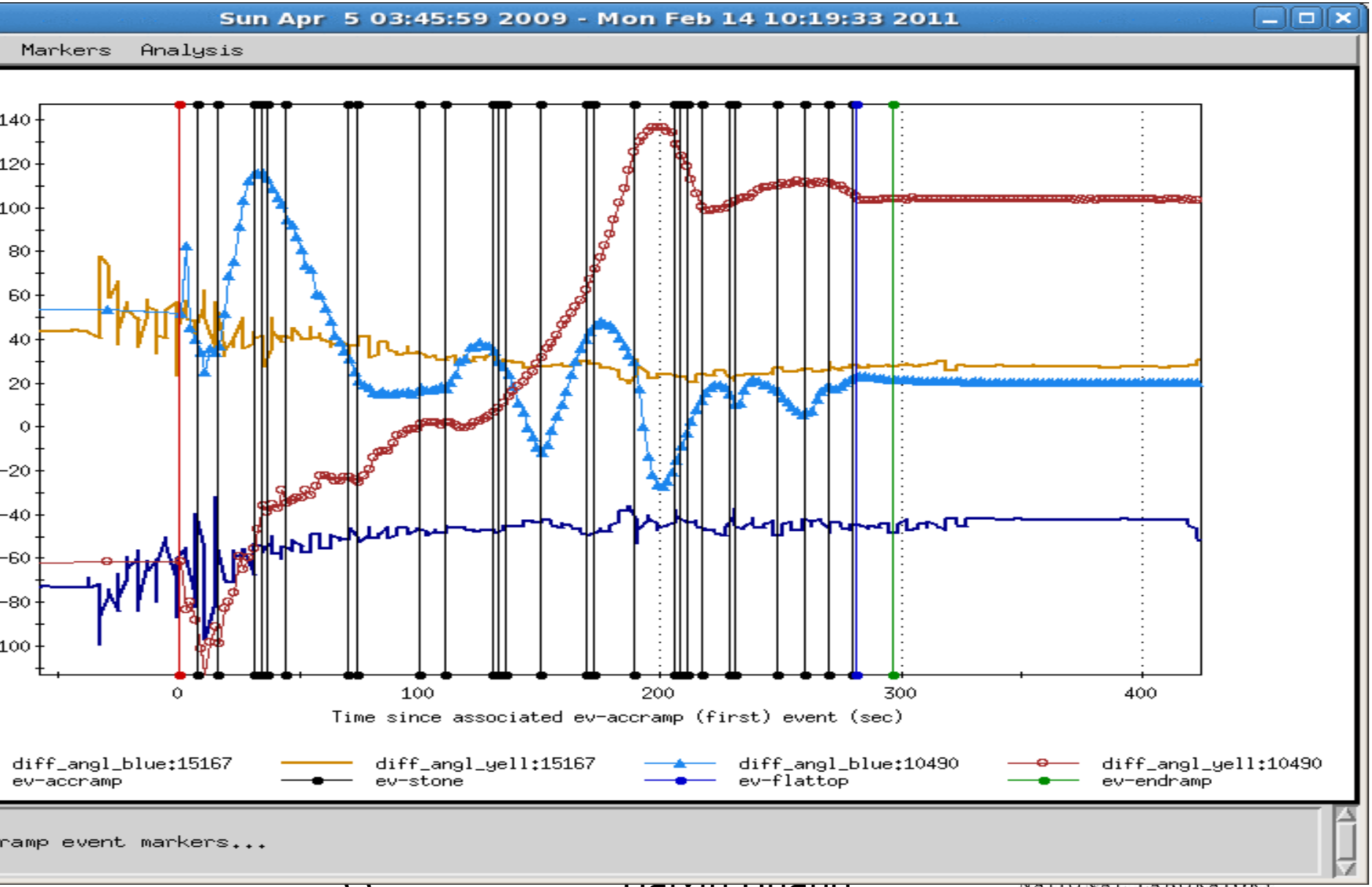
Feb. 13 Provide 109x109 stores.

Feb. 14 Cryo lost power. Move maintenance day to today. Provide store overnight.

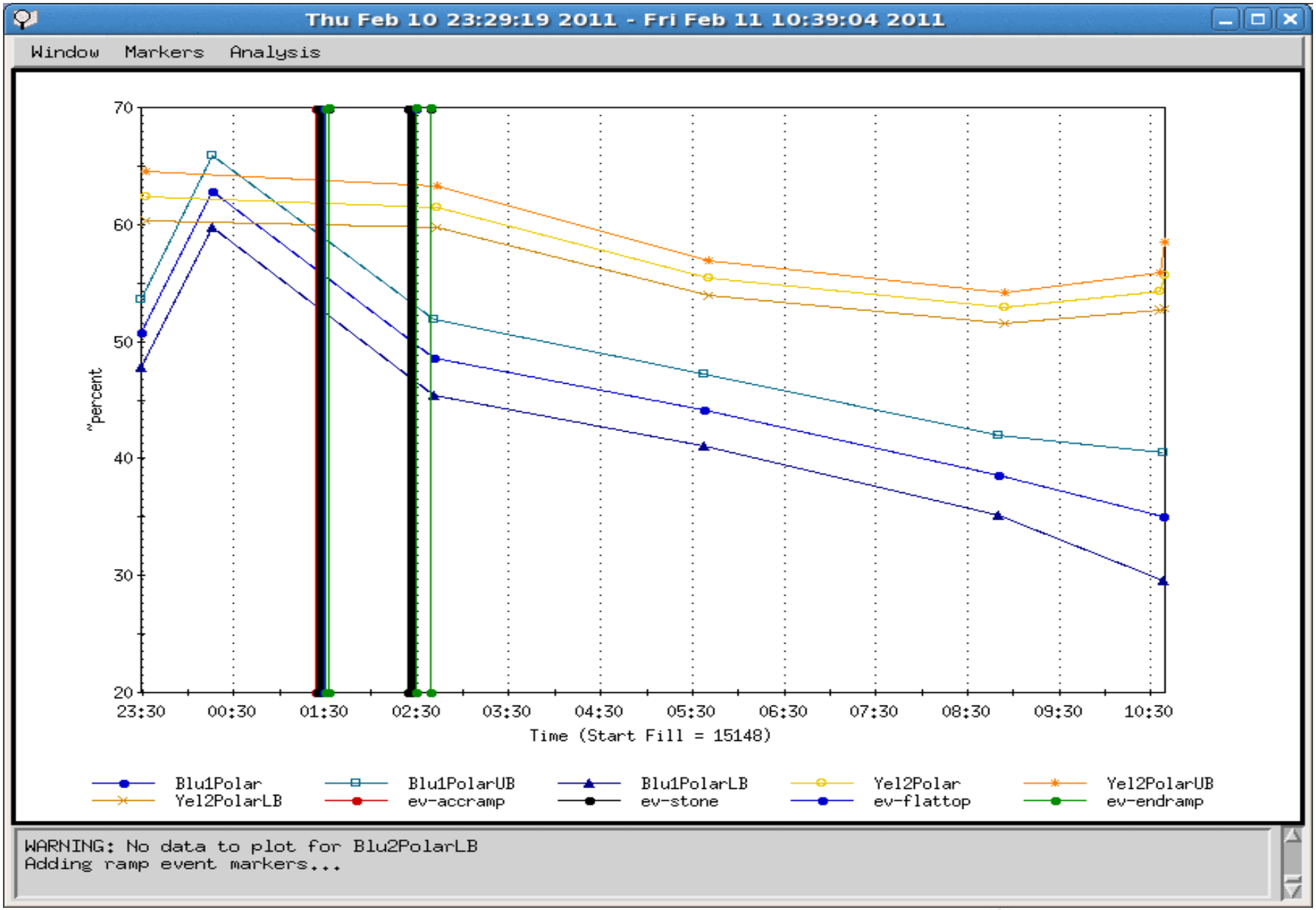
Status

- The rms and mean orbits (<0.1mm) are much better than run9 (0.3-0.5mm) thanks to orbit feedback.
- The snake angle difference is also small. But there is still a swing when separation bumps are removed.
- Vertical tune is closer to 2/3 this year: .675 vs. .68, which make it harder to push chromaticity.
- As the results, we reached similar bunch intensity as run9 with lower tune on the ramp. Polarization at store is higher.
- Bunch intensity is at the level similar to run9.

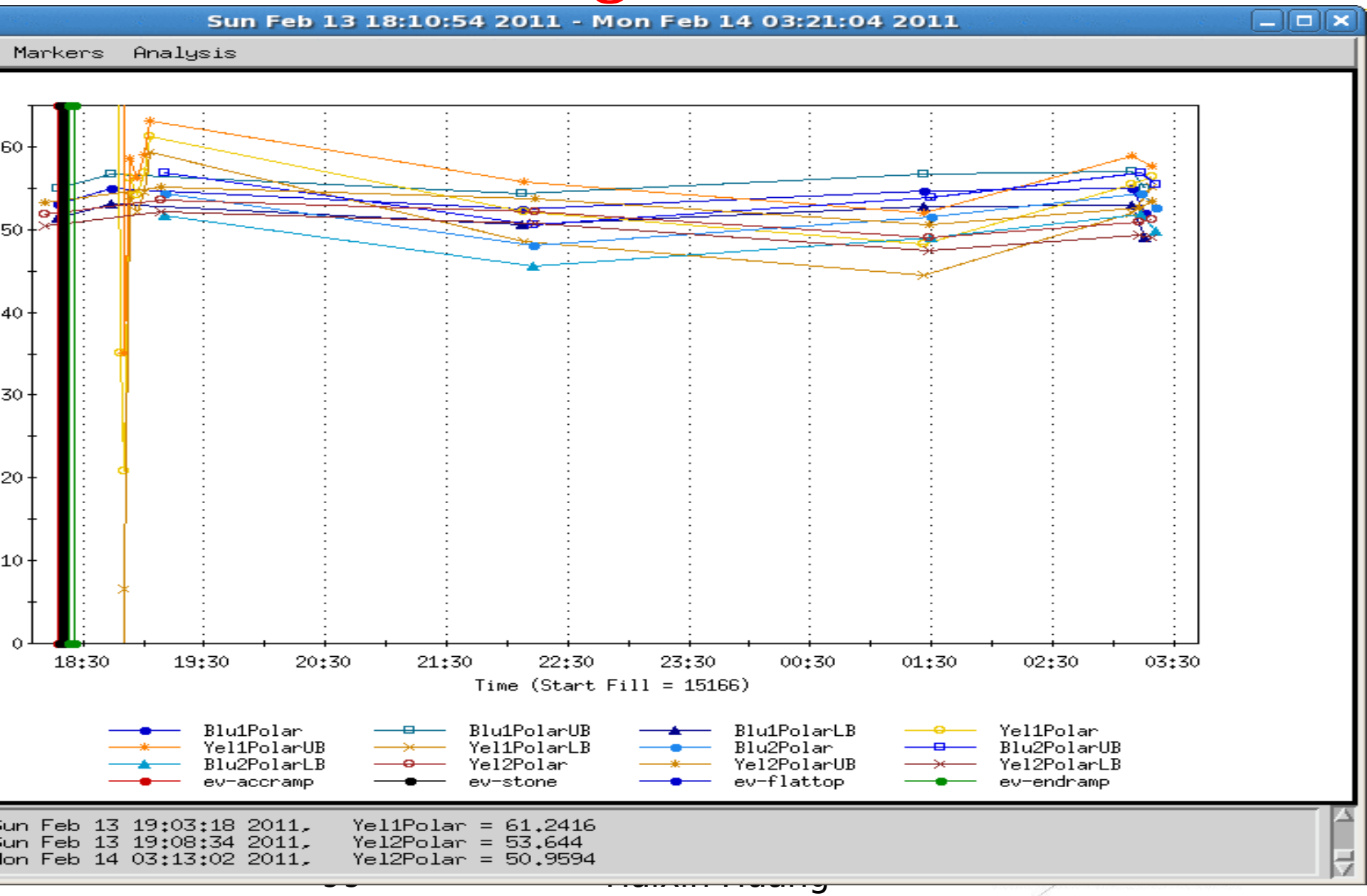
Snake Angle Difference: run11 vs. run9



Polarization Through Store with Qx~0.7 in Blue



Polarization Through Recent Store



Unfinished Business

- No room for large chromaticity when Qy is at 0.675. Using octupoles on the ramp. We will continue to push bunch intensity.
- Need snake current scan to set spin tune close to 0.5. This will be done over many stores.
- Watch AGS polarization/intensity before RHIC fill. Add jump quads for RHIC fill.
- Watch tunes at store. Need to be away from 0.7 to maintain polarization.
- 9MHz cavity for physics run. Ready for high intensity and bunch number test.
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