IR bumps measurements:
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Motivation

- Check application, needed for PP
- Measure IR nonlinearities for d-Au, with beta* 0.7 and compare with previous runs and different optics

Summary

Had ½ hour in blue, with BBQ “approximately” locked

(6x6 bunch ramp inherited from collimation work, was rebucketed so Yun could not work with it and BBQ was not optimal)

Tunes were separated by >0.01, coupling OK

Greg “ironed” orbits in the IR’s vertically, horizontally the angle bump is “by design” for d-Au

Summary, continued

Horizontal bumps (normal sextupole) did not work, apps glitch

(Sev is debugging→useful exercise as such for PP)

Did only **vertical bumps** then in **IR6** and **IR8** (skew sextupole) and compared with previous runs:

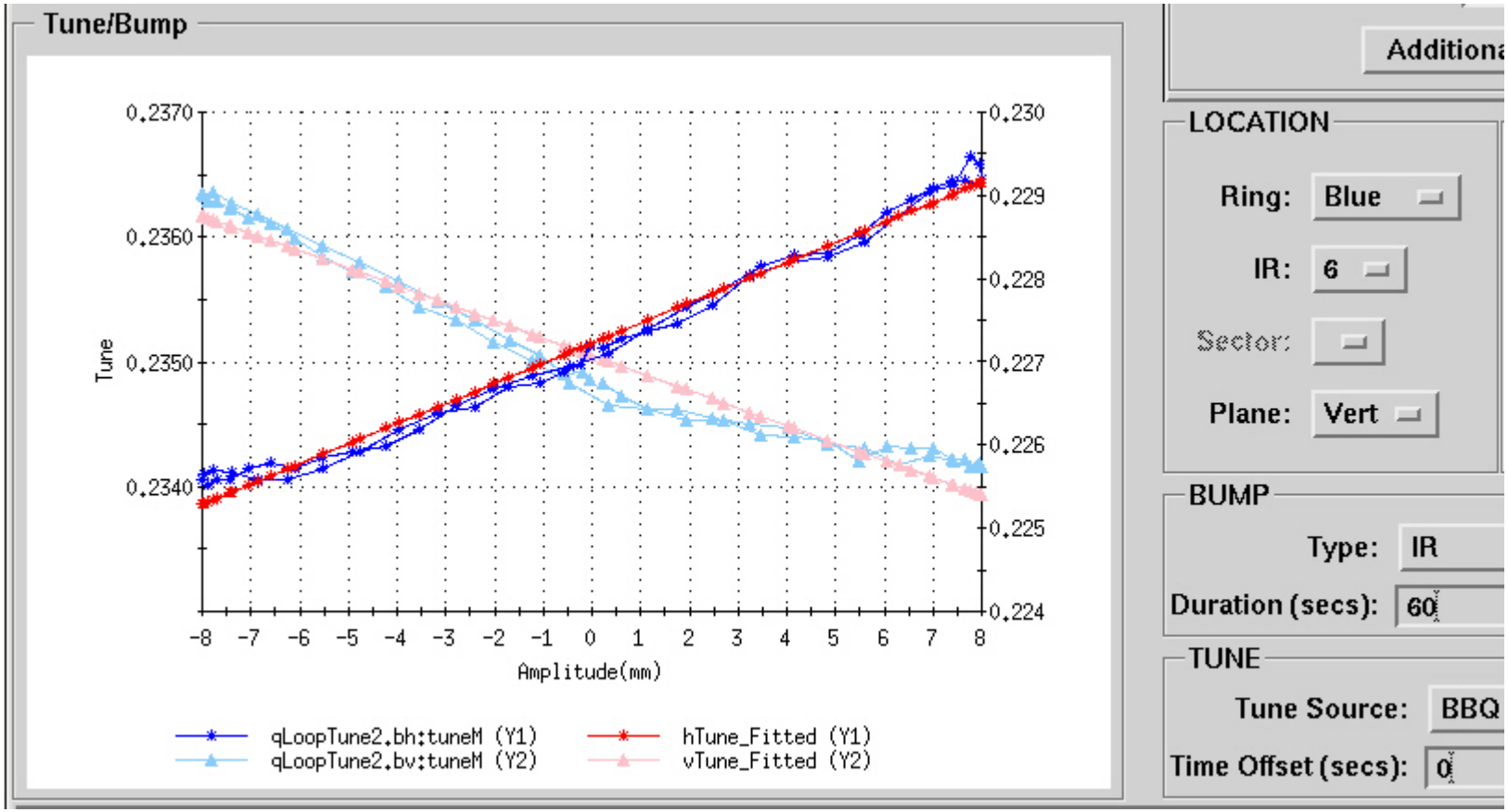
-Run6 (PP) full set of measurements and corrections (good starting point for PP Run-8 albeit on a different tune)

-Run-5 (Cu) and Run-4 (Au) had mostly horizontal bumps data so not that useful for comparison

Vertical IR bumps: tried 2m, 4mm, 6 mm and 8mm → limit (measurable beam decay→stop)

Vertical separation bumps in operations: 3mm

Results - 1



8mm vertical bump in IR6

Results - 2

Run-8 Vertical BLUE	8mm	IR6 IR8	DQx 0.0015 0.0007	Dqy 0.0015 *0.0005*
Run-6 Vertical BLUE	5mm	IR6 IR8	DQx 0.0014 0.001	DQy 0.00125 0.00115
Run-6 Vertical YELLOW	5mm	IR6 IR8	DQx 0.0017 0.0018	DQy 0.003 0.0024

Conclusions

- Data for d-Au 82 not inconsistent with run-6 (despite different optics and energy)
- It would be nice to get data with horizontal bumps in the can for d-Au
- Have a full set of corrector settings for PP from Run-6, as a starting point for Run-8.

  May be however necessary to lower the tunes to get the correction checked out if there is not enough tune space next to the integer (should be fine given the relative consistency of the tune shift data)