Revised ATF Shift Plans

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FONT Shift Plans Nov/Dec 2017

1 shift – Test operation of firmware, calibrate the IP kicker
Nominal Optics

1 shift – Perform 1-BPM feedback
Nominal Optics

1 shift – Perform 2-BPM IP feedback
Nominal Optics

1.5 shift – Perform 2-BPM IP feedback
High Beta Optics

(The next slide shows a further break down of the tasks to be completed in nominal optics and high beta optics)

Tasks for Nominal Optics

Three first shifts are nominal optics shifts, these are the tasks to split between the three shifts. Colour coding denotes groups of tasks which cannot be split between shifts.

1. Troubleshoot any problems with the firmware and/or DAQ.
2. Test adding constant kick to stabilise at a specified location.
3. Test channel offset to remove noise floor in firmware.
4. Perform kicker scans, determine effect of kicker droop – if small approx. as linear.
5. Gain scans to optimise gain setting.
6. Single loop feedback across different integration windows.
7. Scan across ratio of gain pairs to optimise.
8. Optimise magnitude of gain pair. (Iterate between steps 8 and 9 as required).
9. Two BPM feedback across different integration windows.
10. Charge scan – effect of charge dependence of static erratic and how integrating over static erratic may improve feedback.
11. Random jitter scan. Possibility to adjust position and angle jitter independently.

Tasks for high beta optics

1. Set up high beta optics.

2. Scan across ratio of gain pairs to optimise.

3. Optimise magnitude of gain pair. (Iterate between steps 8 and 9 as required).

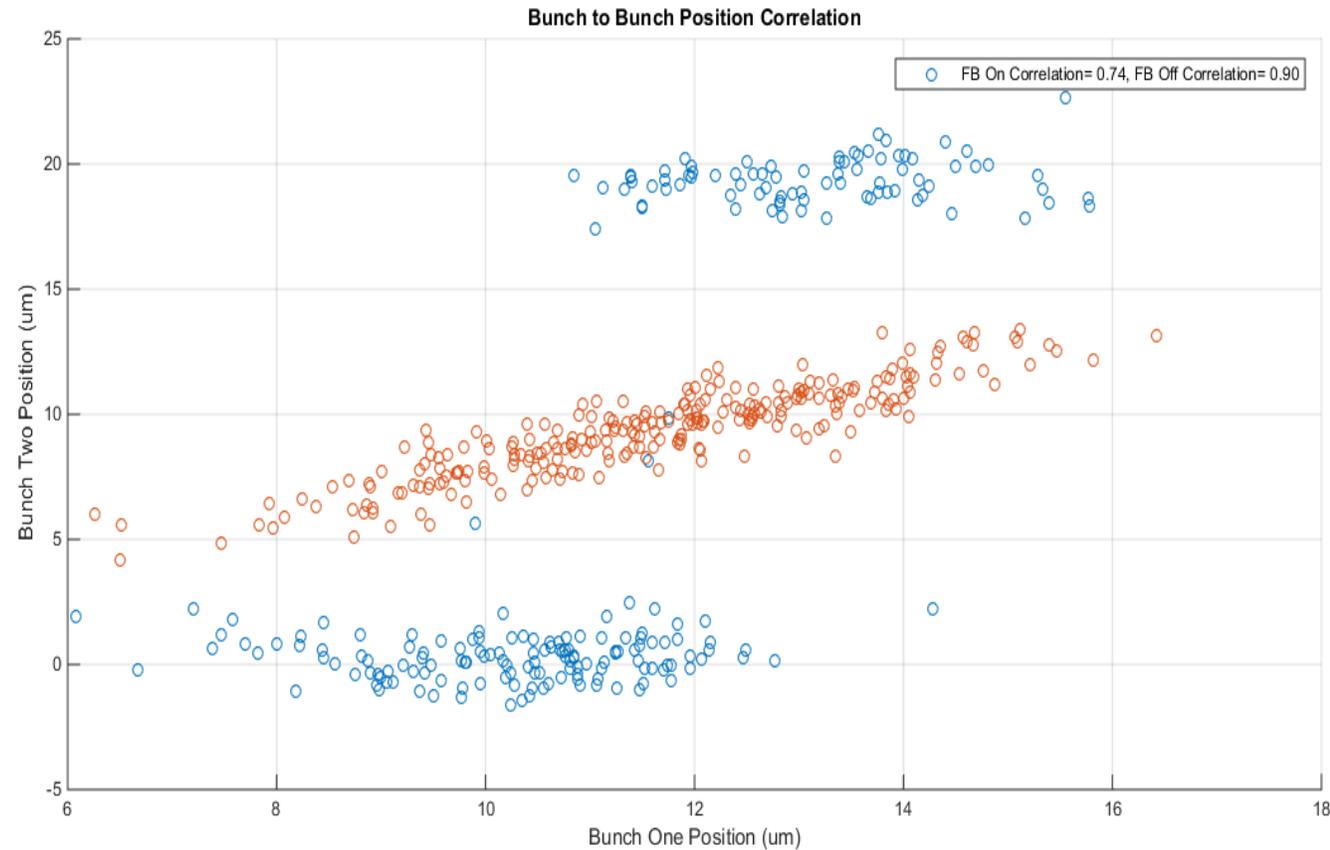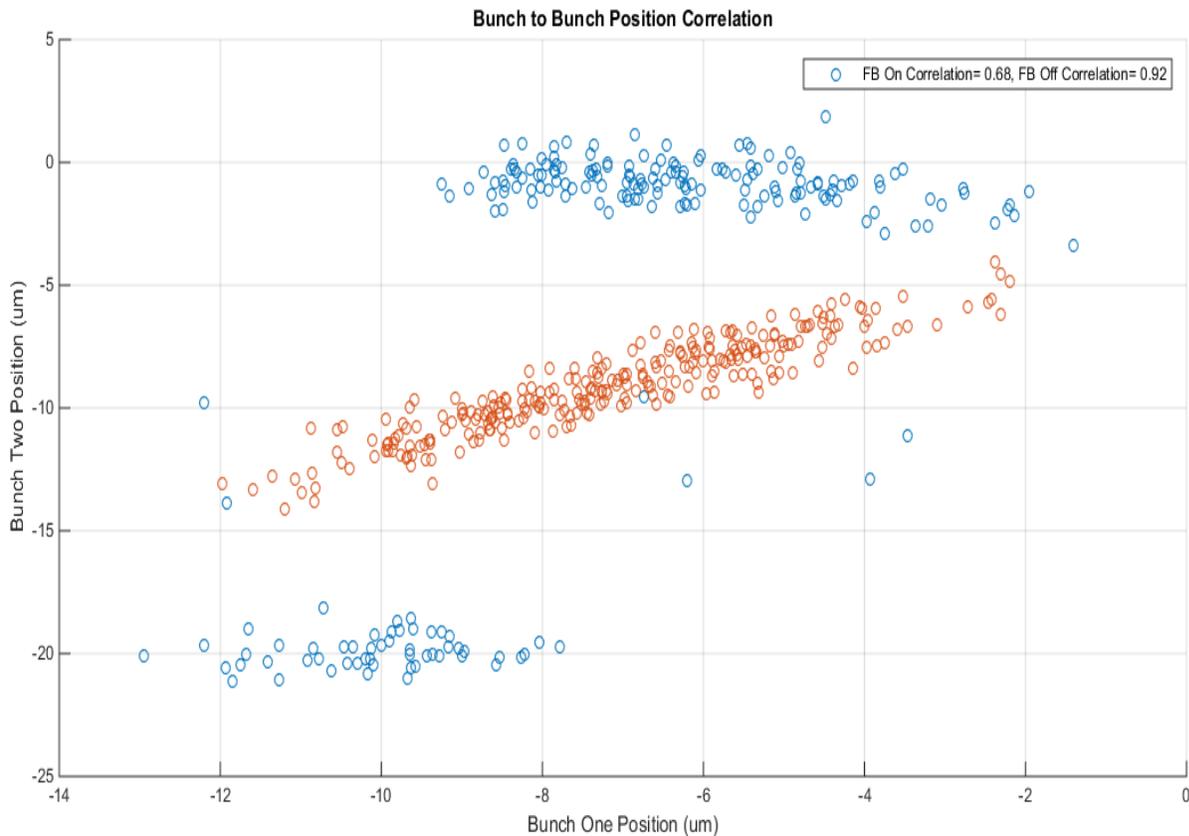4. Two BPM feedback across different integration windows.

Previous 2-BPM Feedback
Nominal Optics

2-BPM feedback – nominal optics

o FB on
o FB off

The feedback system was supposed to be stabilising the beam to the 0 um cluster, but the groups at +20 um and -20 um show kicks that should have saturated which are instead wrapped around.

2-BPM feedback – nominal optics

- Only 2-BPM feedback data set without large fraction of feedback values wrapping around (values which should have saturated).
- Error within feedback firmware resulting in error on kick value, leading to overcorrection.

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