

ATF Shift Plans

Rebecca, Talitha

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FONT Shift Plan November 2017

Test Functionality of IP feedback firmware (0.5 Shift)

Nominal Optics

- Test feedback performance in single loop/double loop mode.
- Troubleshoot any problems with the firmware and/or DAQ.
- Test adding constant kick to stabilise at a specified location.
- Test channel offset to remove noise floor in firmware.

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Single BPM IP feedback (1.5 Shift) – stabilise at IPB

Nominal Optics – with waist at IPB (QD0FF 137.4 A)

- Calibrate (X and Y) and perform jitter scan to measure correlation as function of sample number.
(Try to improve correlation, may require moving off waist.)
- Single loop FB – Different integration sample windows (e.g {1,3,6,9,12} samples).
 - (Recalculation of calibration constant, kicker scan {-1000:250:1000} and adjust removal of noise floor at each integration window.)
- +/- 20% range gain scan with single sample and at integration window with minimum jitter.

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Two BPM IP feedback (1.5 Shift) – stabilise at IPB

High Beta Optics

- Calibrate (X and Y) perform jitter scan to measure correlation as function of sample number.
- Waist scan to put waist on IPB.
- Dual loop FB – Different integration sample windows (e.g {1,5,9,13} samples).
 - (Recalculation of calibration constant, kicker scan and adjust removal of noise floor at each integration window.)
- +/- 10% range gain scan with single sample and at integration window with minimum jitter.
 - (More difficult in dual loop as finding minimum in 2D.)
- Resolution measurement to determine resolution limit to feedback performance.

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Random Jitter Scan (1 Shift) – stabilise at IPB

Nominal or High Beta Optics

- Perform single loop and/or dual loop FB.
- Scans at various sample integration windows, new kicker scan required at each new integration window.