FONT Meeting
Thursday 14th March 2019

Tracking to MFB1FF

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jitRun1

- Subtract mean measured position of first bunch from measured position of both bunches i.e.

$$Y_2' = y_2' - \langle y_2' \rangle = 0$$

$$Y_2'' = y_2'' - \langle y_2' \rangle = \Delta y_2 \quad \text{(bunch offset)}$$
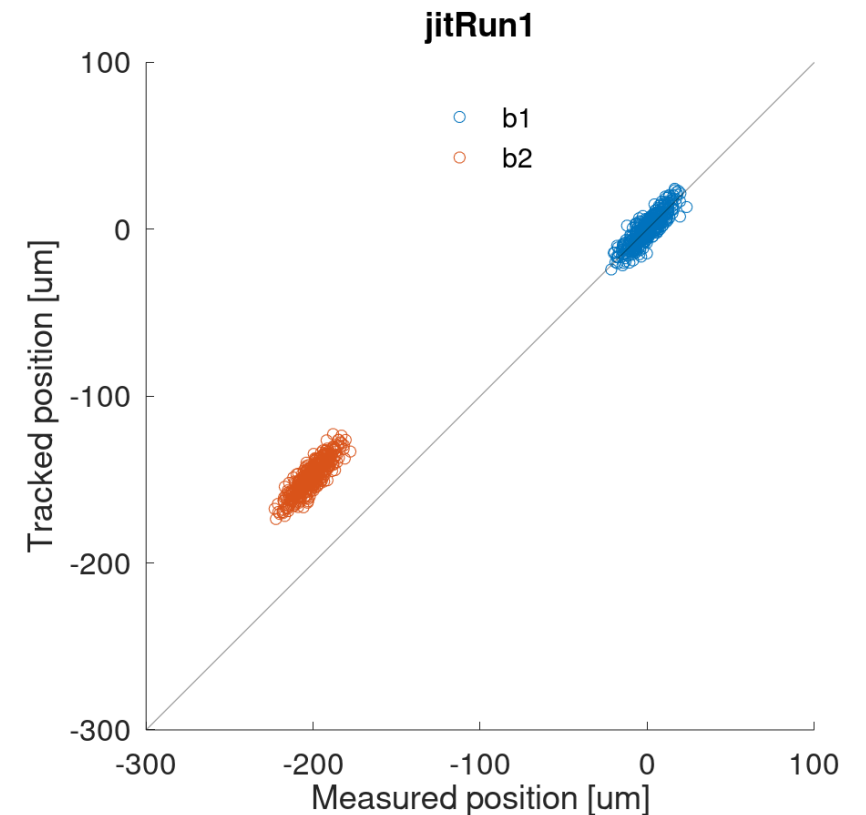
- Propagate mean-subtracted positions to MFB1FF

$$\Upsilon_{FB} = -15.45 \times Y_2 + 11.49 \times Y_3$$

using transfer matrices generated from `set18nov13_1700`

- Results for **jitRun1** (no kick):

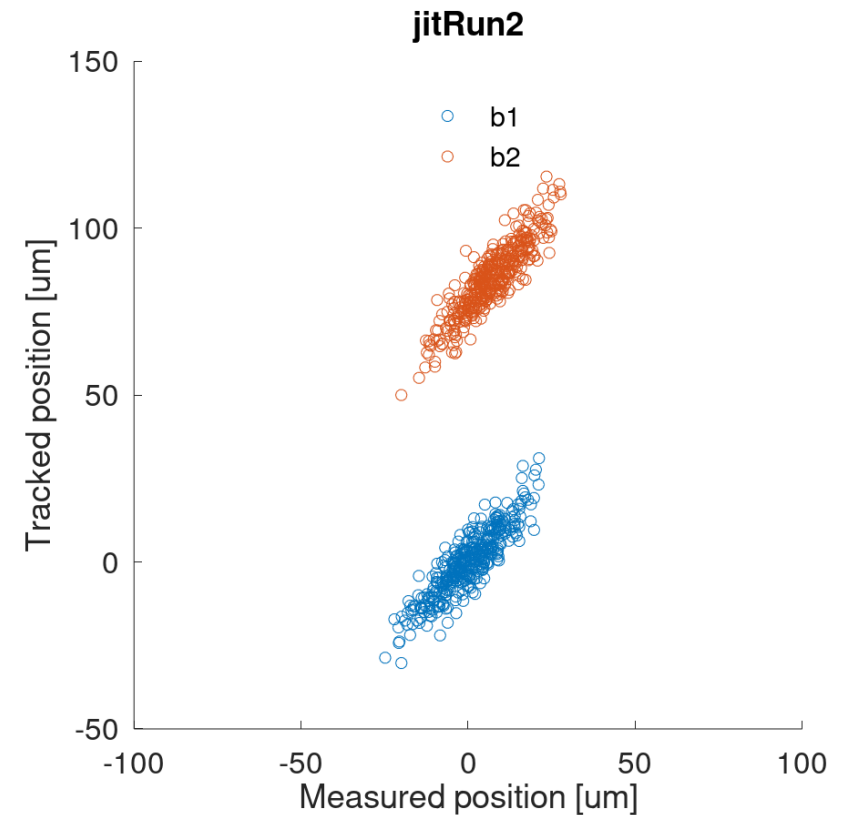|	Δy	$\Delta \theta$
P2	-5.2	-9.4
P3	-19.9	9.6
MFB1FF	-201.2	-148.5

Tracked bunch offset at MFB1FF = -148.5 µm

jitRun1

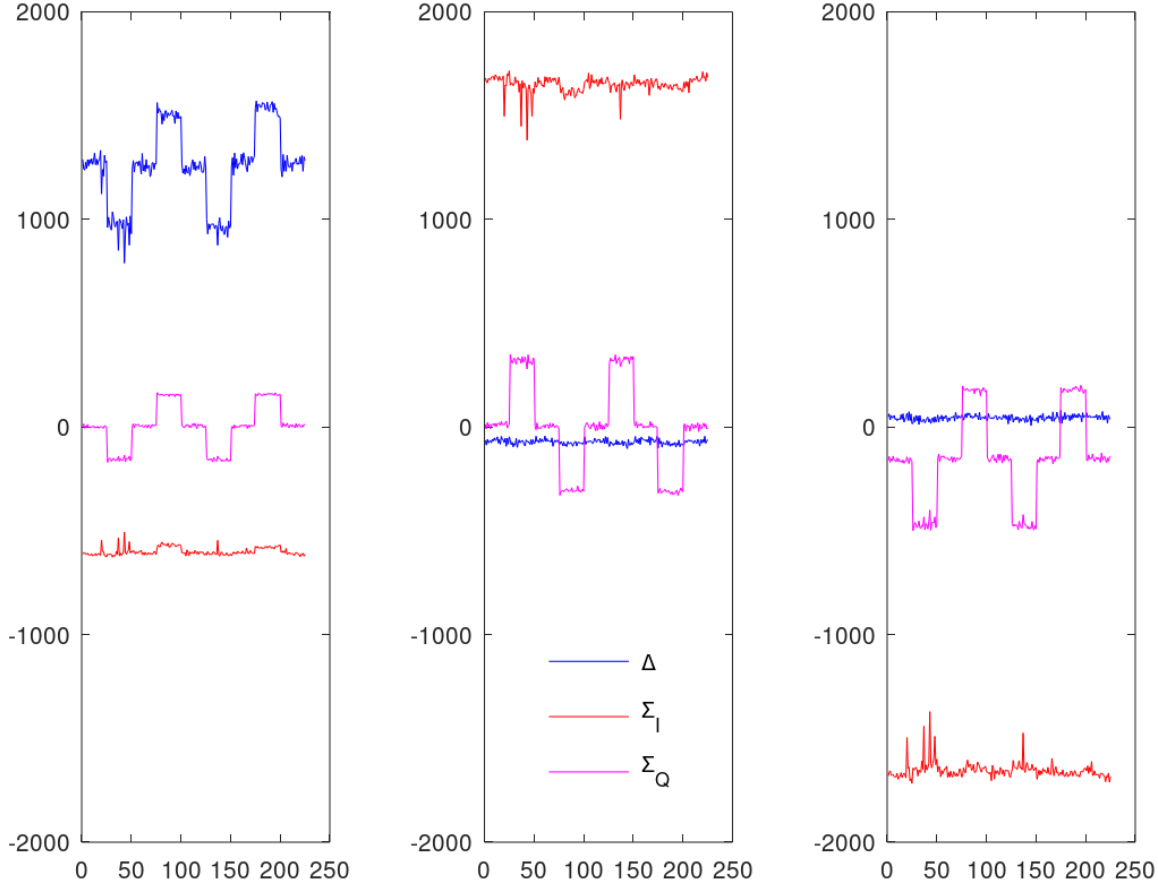# jitRun2

- Results for **jitRun2** (k2_b1_offset = 925):

	Δy	Δθ
P2	3.5	5.8
P3	12.1	-5.9
MFB1FF	7.0	18.0

Tracked bunch offset
at MFB1FF =
84.8 μm

Phase calibration

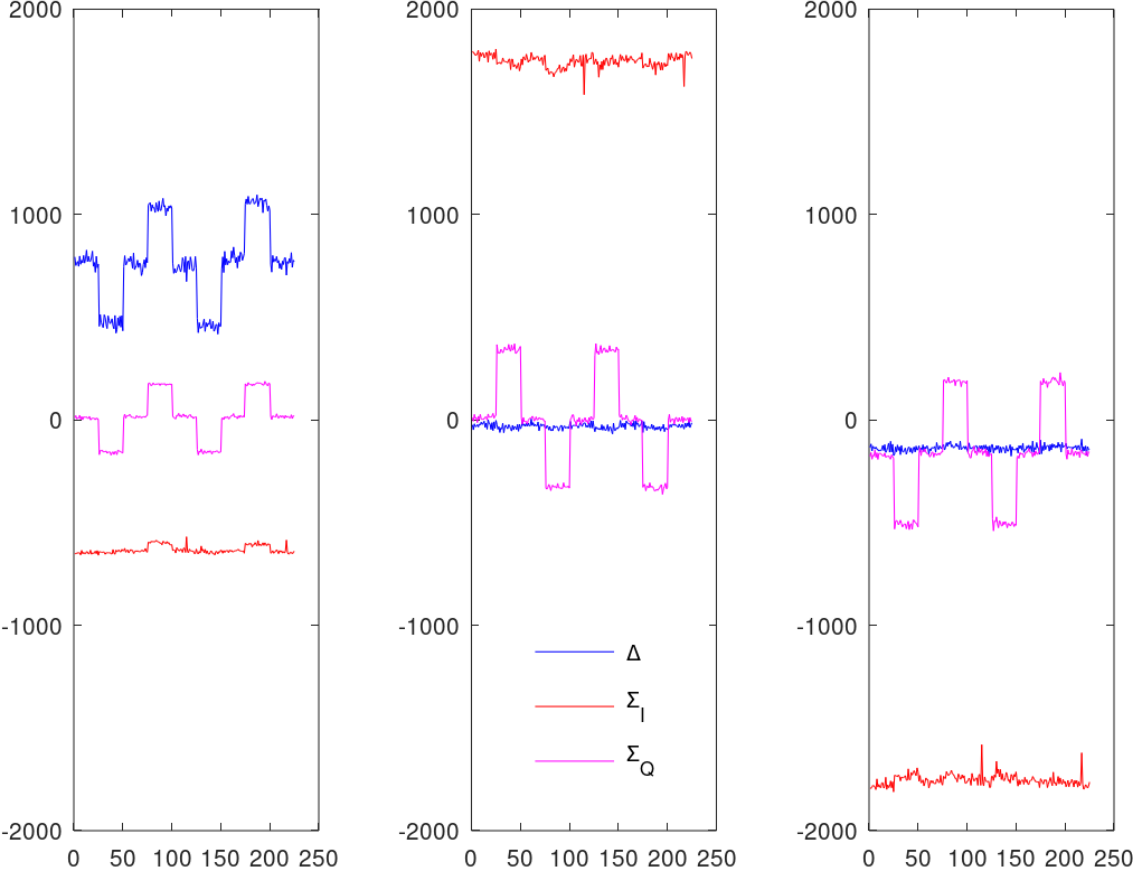Bunch 1

MFB1FF P2 P3
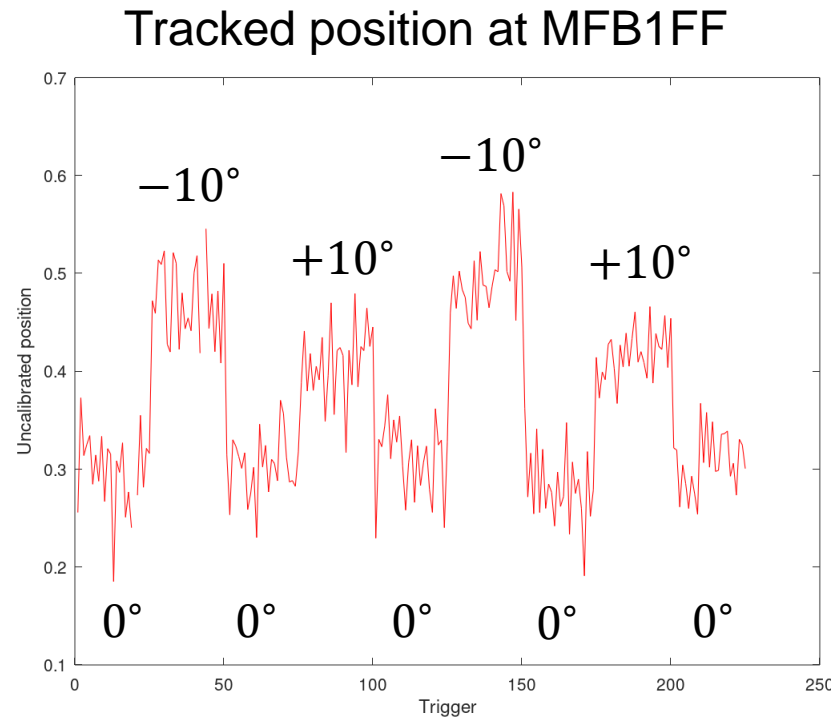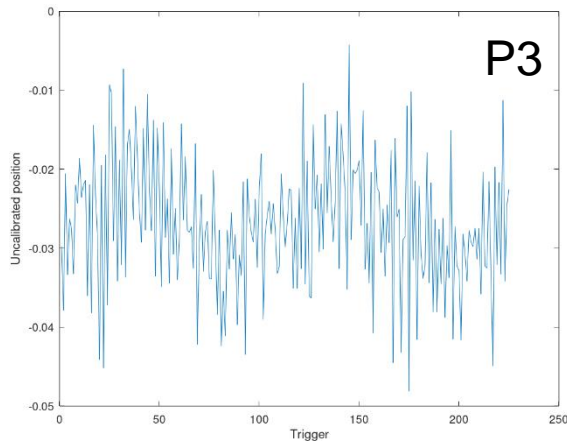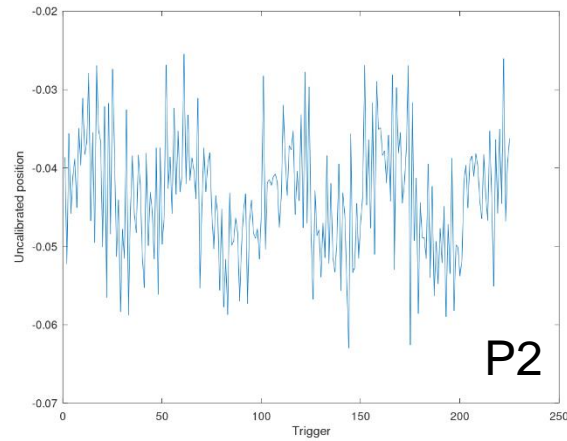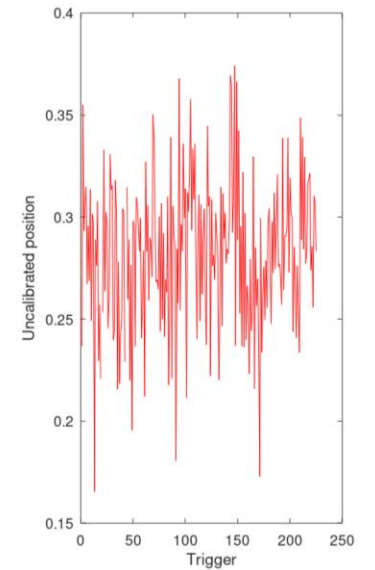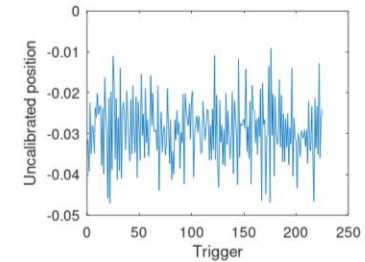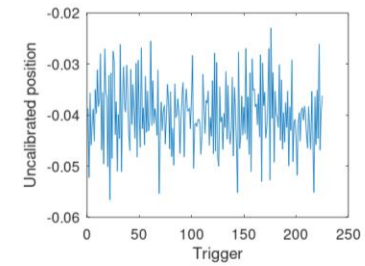
Bunch 2

MFB1FF P2 P3

Δ
Σ_I
Σ_Q

Phase calibration

- Phase compensation not applied to P2 and P3 in the analysis before tracking to MFB1FF

P2

P3

Tracked position at MFB1FF
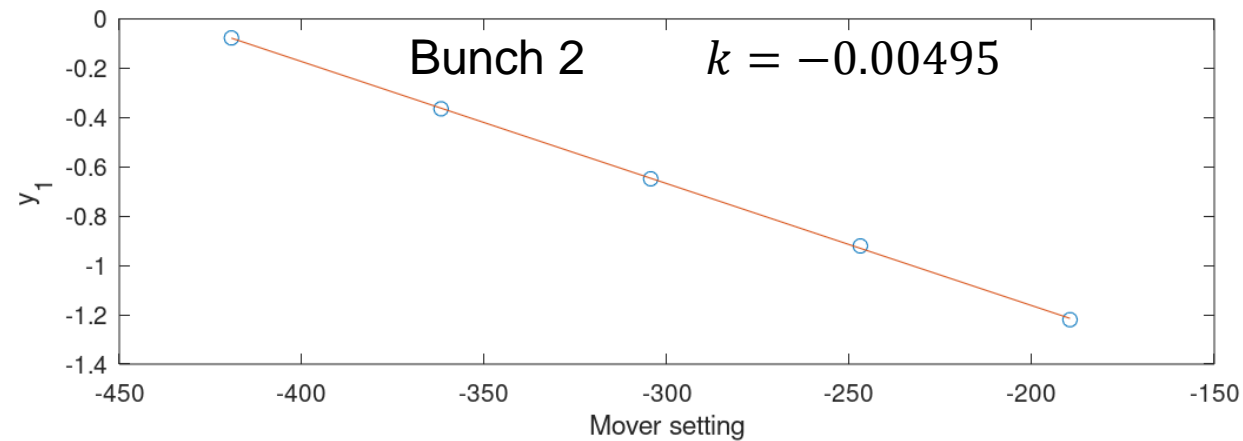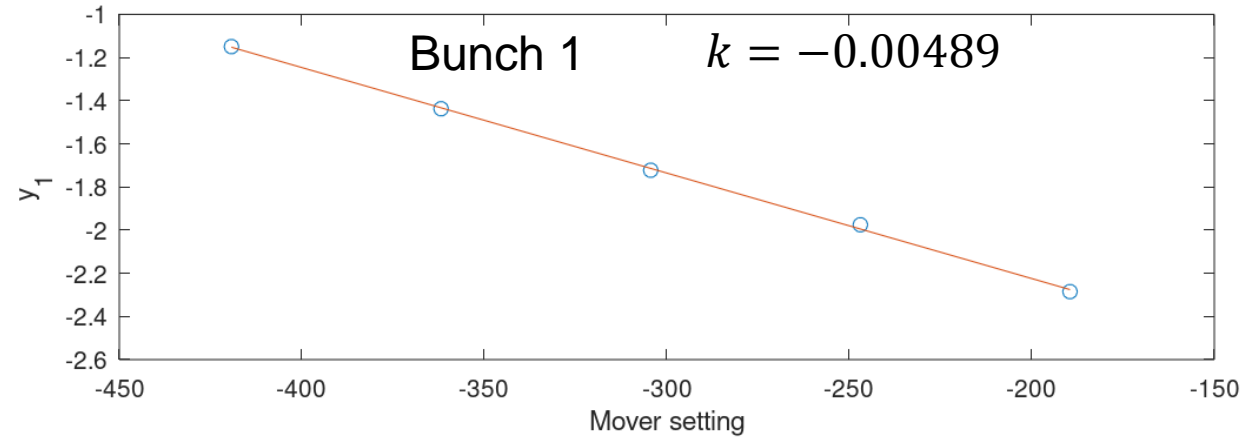
$-10°$ $-10°$

$+10°$ $+10°$

0°   0°   0°   0°   0°

Non-linear response to phase →
use 2nd order fit for P2, P3

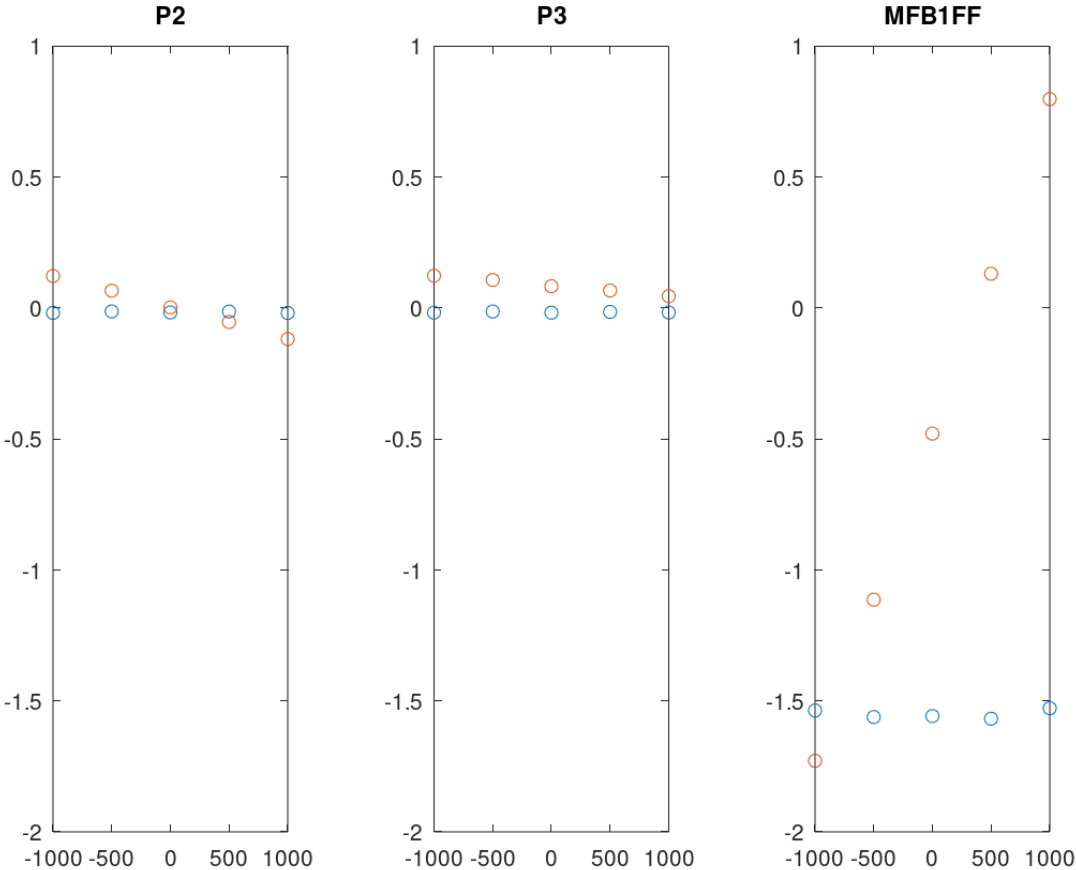But makes no difference for a jitter run

ZV1FF calibration

Using phase compensation $y = \frac{\Delta}{\Sigma_I} - p_\phi \frac{\Sigma_Q}{\Sigma_I}$ where $p_\phi = 1.998$ (b1) or 1.909 (b2)

Bunch 1 $k = -0.00489$

Bunch 2 $k = -0.00495$

Kicker calibrations