FONT Meeting

Friday 1st March 2019

Feedback paper

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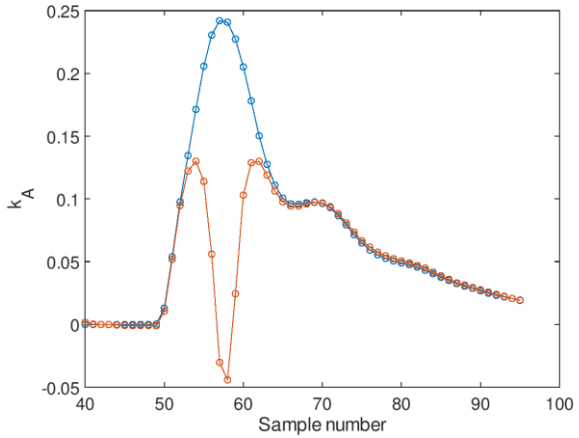
Alternative data: 181113_swing

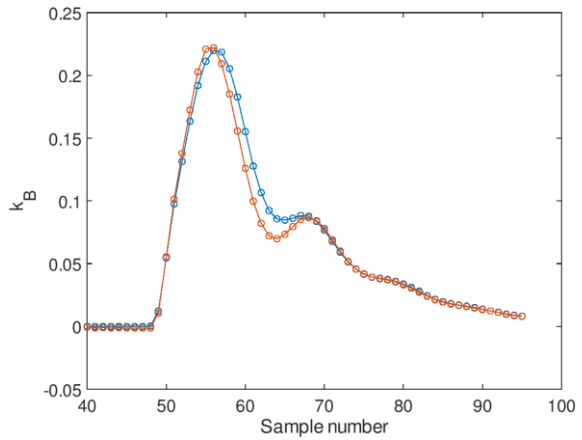
+ MFB1FF signals instead of P1
– No interleaving
– Mostly only one unsaturated BPM at IP

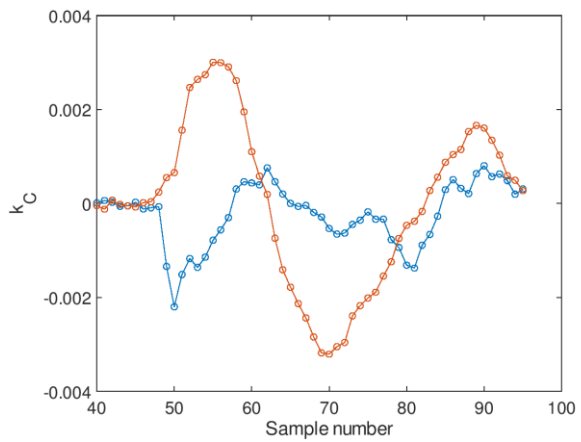
BPM saturation

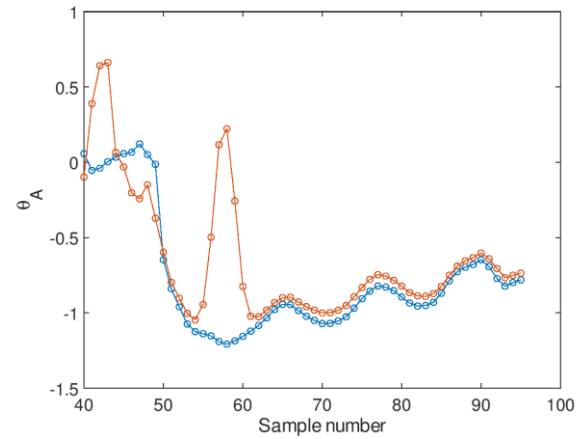
	IPA	IPB	IPC
fbRun1			
fbRun2			
fbRun3			
fbRun4			
fbRun5			
fbRun6			
fbRun7			
fbRun8			
fbRun9			
fbRun10			
fbRun11			
fbRun12			
fbRun13			
fbRun14			

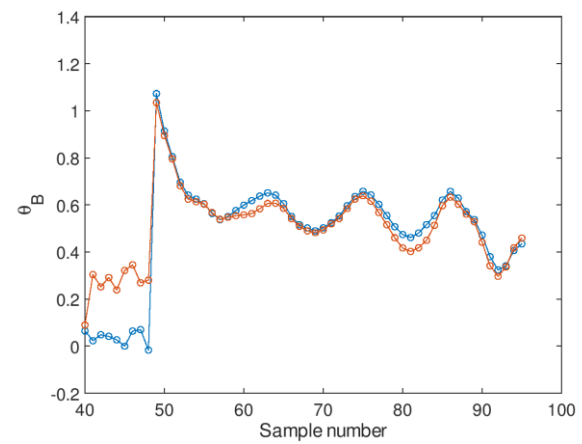
AQD0FFyScan1: k, θ

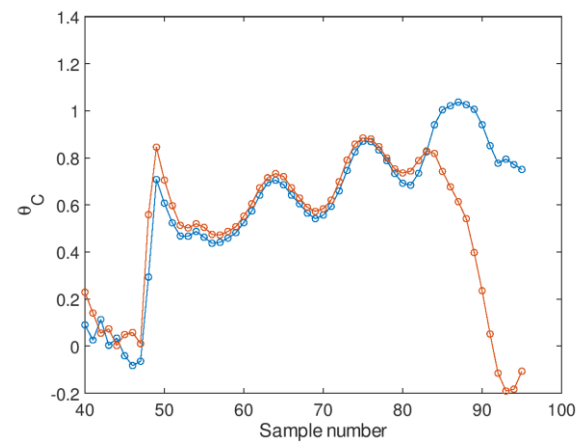




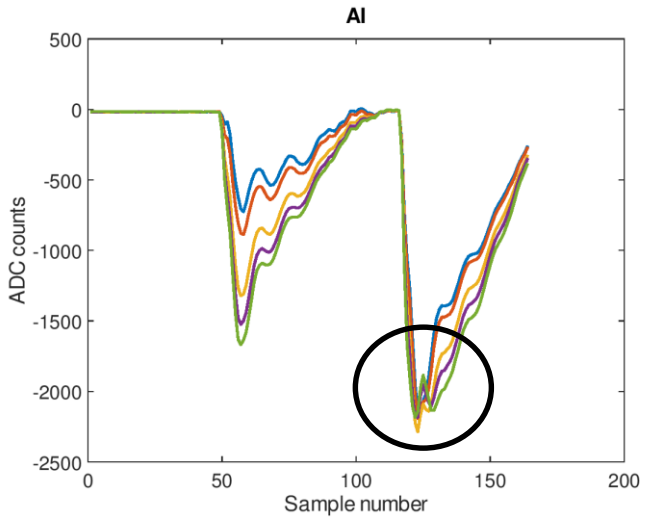


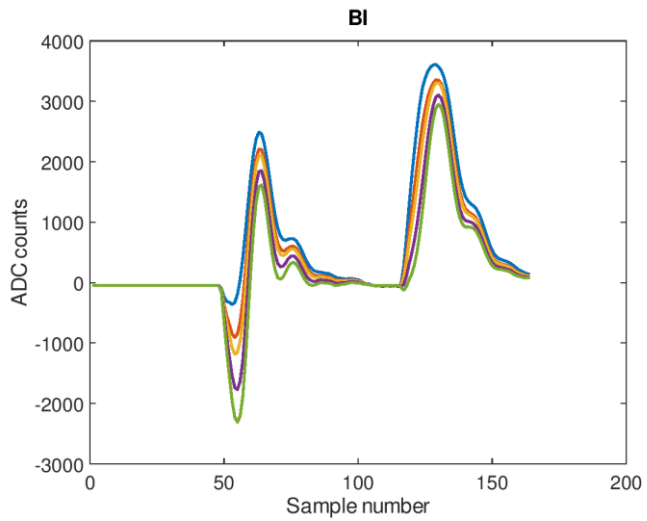


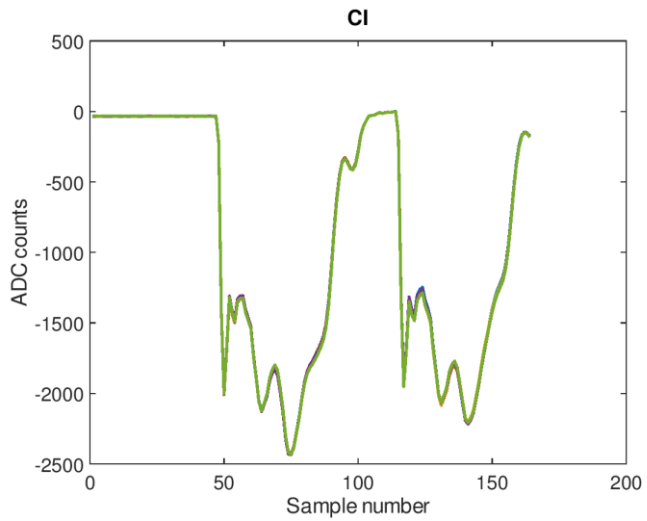


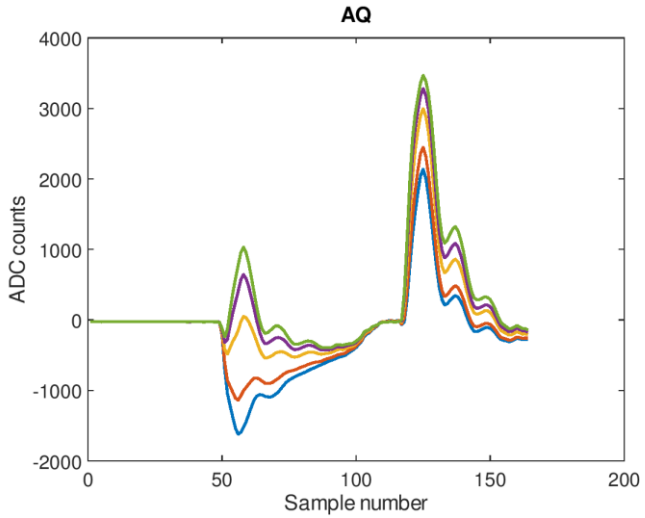


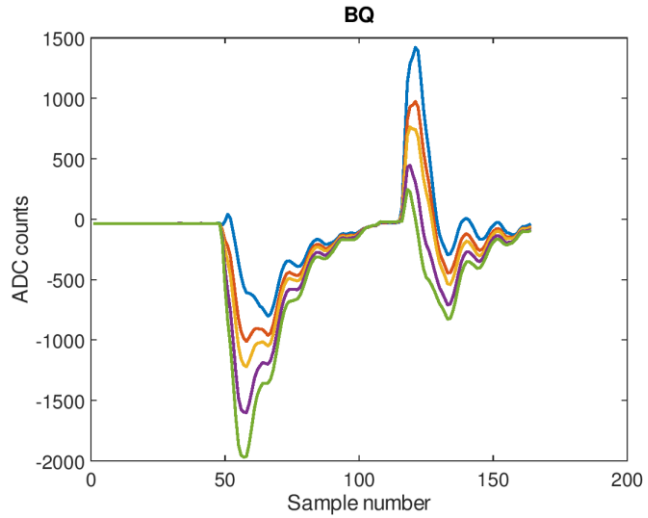
AQD0FFyScan1: waveforms

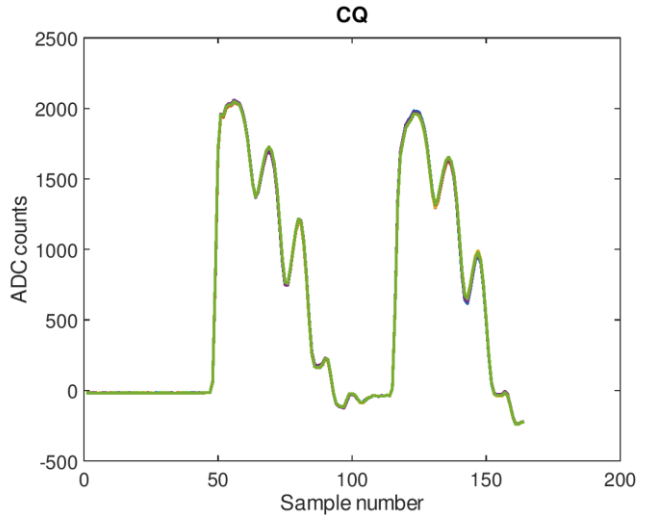








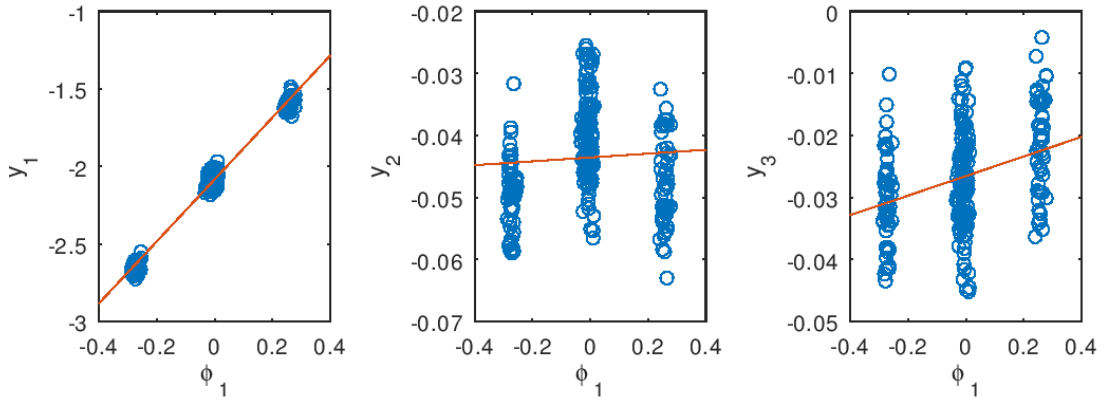




MFB1FF calibration

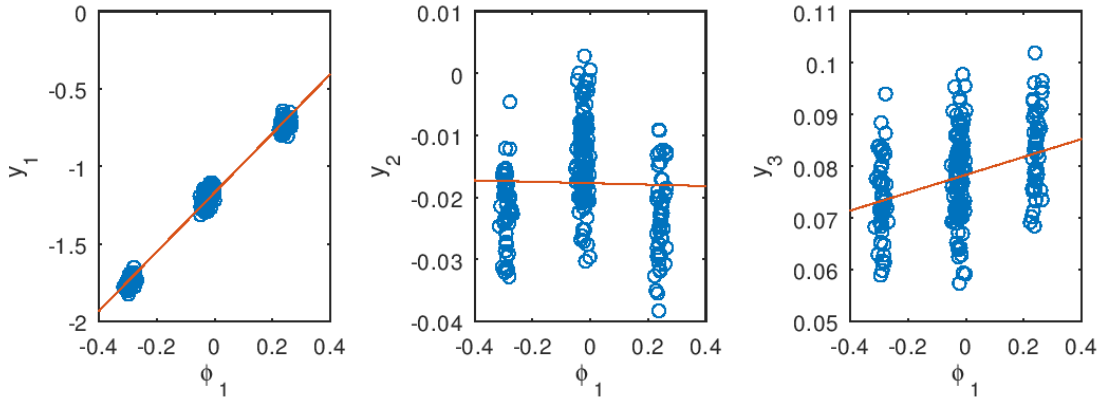
MFB1FF requires offline compensation

Phase dependence
~ 2 (Δ/Σ) per (Σ/Σ_Q)
equivalent to 40 μm/deg.

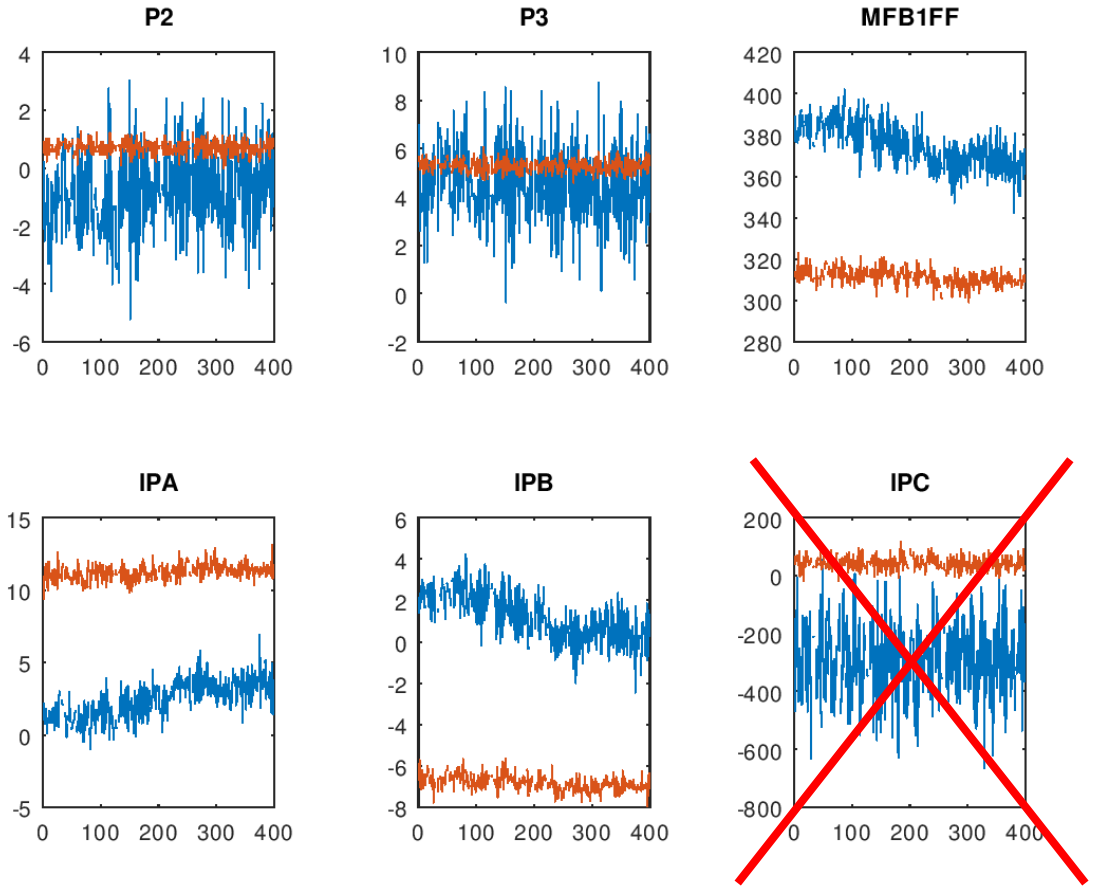


P2/P3 phase dependence mostly removed by stripline phase shifters

Calibration using ZV1FF gives calibration constants
b1: -0.00489
b2: -0.00494
(consistent with P2/P3)

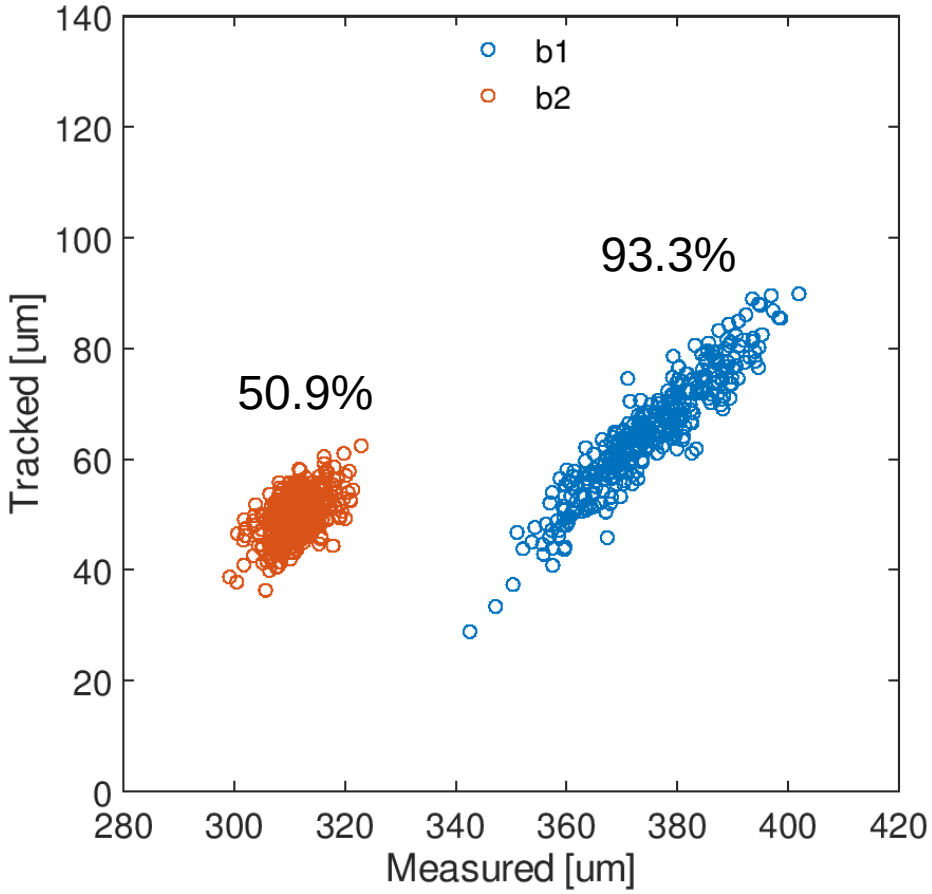


fbRun1



	b1	b2	
P2	1.414	0.237	6.0
P3	1.606	0.256	6.3
MFB1FF	10.36	3.91	2.7
IPA	1.303	0.533	2.4
IPB	1.141	0.376	3.0
IPC	127.0	22.9	

fbRun1: tracking to MFB1FF



	b1	b2	
Measured	10.36	3.91	2.65
Tracked	10.19	4.04	2.52

Reduced correlation for feedback on data
- Saturation at MFB1FF?
- P2/P3 data resolution limited?

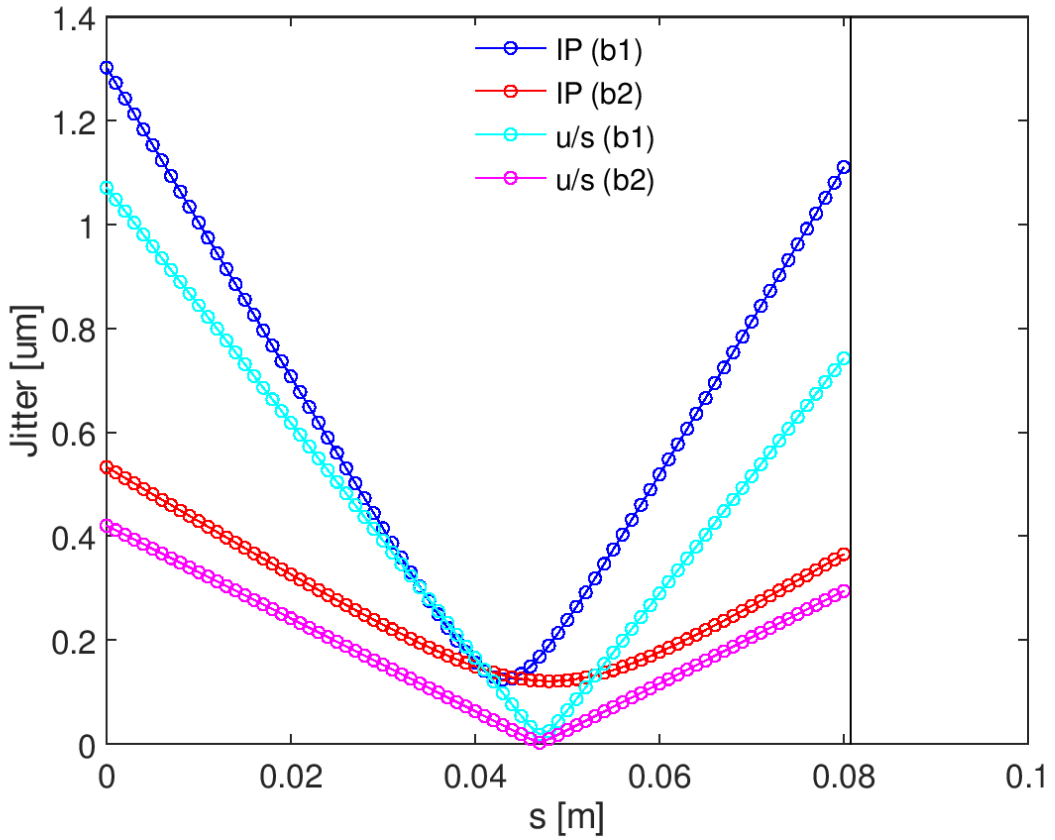
Twiki
QD0FF: 137.4 A
QF1FF: 123.789 A

Tracking to IP

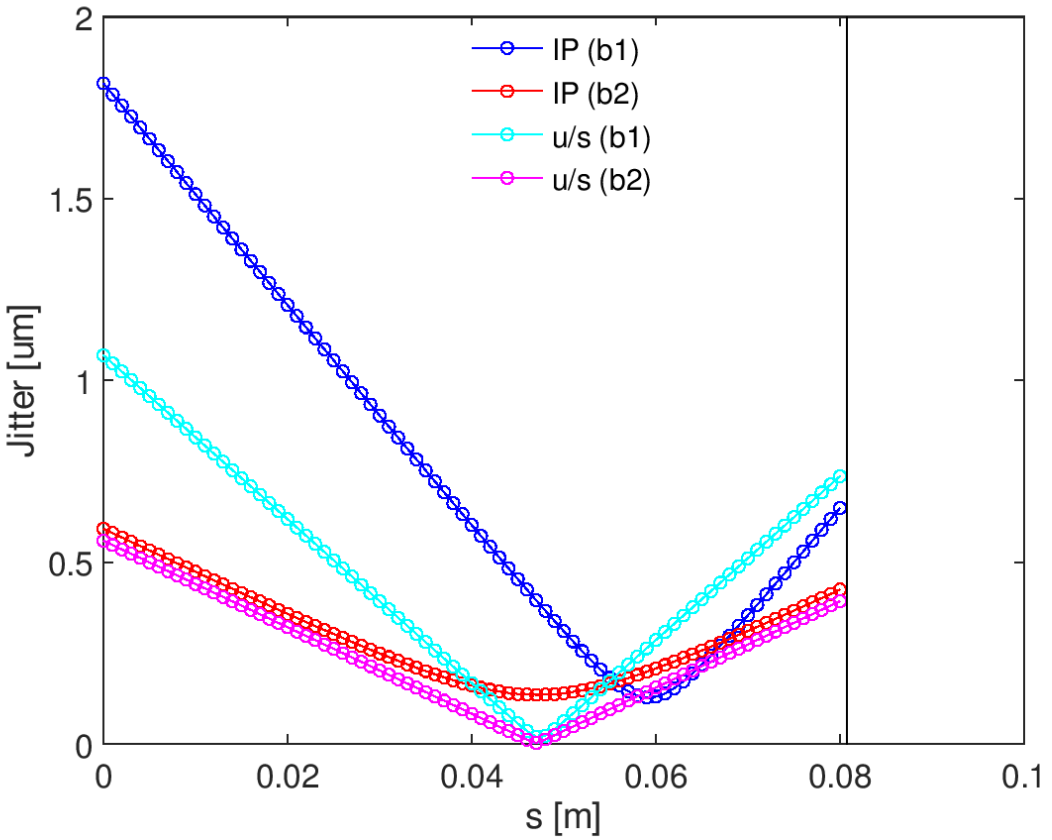
Twiki
QD0FF: 140 A
QF1FF: 123.789 A

QD0FF current set to 138.87 A in setfile to
match waist location of bunch 2 data (fbRun14)

fbRun1



fbRun14



Conclusion

- Data from shift on 13 Nov has good MFB1FF data that appears to agree well with the result of tracking
- …but no interleaving

- Tracking to IP seems significantly more challenging
  - Different location of waist inferred for bunch 1 and bunch 2
  - Waist location does not agree with tracked beam when using “correct” current
  - …but better agreement than data from 7 Nov