Do we see coherent activity during the ramp?

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Bunch Spread During Ramp

• Calculated using

\[ \Delta Q^{RMS}_x = 3.2 \epsilon_{RMS,x} \frac{J_{OCT}}{E^2} \]

• verified method by comparing to an example from Nicolo for \( \text{emit}_x = 3.5\mu m \)
Bunch Spread During Ramp

- For 2016 with $\text{emit}_x = 1.5\text{um}$, the spread was calculated again for fill 5282.
- Due to smaller emittance, higher energy and high current at injection, bunch spread is always decreasing along ramp.
- Note for 1A at injection, $\sim 225\text{A}$ at FT is needed to maintain spread.
Fill 5264

- Acquisitions made with ADTObsBox during ramp.
- Will show emittances before and after ramp, and the results of any interesting acquisitions from the ADTObsBox.
B1 - Injection

Fill 5264: B1, started on Tue, 30 Aug 2016 23:43:22
B2 - Injection

Fill 5264: B2, started on Tue, 30 Aug 2016 23:43:22
B2 - Injection

Fill 5264: B2, started on Tue, 30 Aug 2016 23:43:22
B2 - Injection

ADTObsBox Data for B2 Obs64k buffer, Fill: Obs64k, Time: 003522
ADTObsBox Data
B2, Time: 003522, Bunch 552

Vertical Trace, Unfiltered

Counts

Vertical Trace, Filtered with Qmin=0.1 and Qmax=0.4

Counts

Vertical Frequency Spectrum

Amp. [A.U.]
Fill 5264

- Instabilities at injection, but no apparent blowup or activity during the ramp.
- No coherent activity observed at all during the ramp.
Fill 5281

- Acquisitions made with ADTObsBox for another full cycle.
- Absolutely no activity in any of the acquisitions during the ramp.
- Emittances before and after the ramp show no hint of any blowup.
B1 - Injection

Fill 5281: B1, started on Tue, 06 Sep 2016 10:52:43

[Graphs showing intensity and energy over time, and horizontal and vertical emittance over 25 ns slots]
B1 – Flat Top

Fill 5281: B1, started on Tue, 06 Sep 2016 10:52:43

Graphs showing intensity, energy, horizontal and vertical emittance over time and 25 ns slot intervals.
Fill 5282

- Acquisitions made with ADTObsBox for another full cycle
B1 – Injection

Fill 5282: B1, started on Tue, 06 Sep 2016 14:38:33
B1 – Flat Top

Fill 5282: B1, started on Tue, 06 Sep 2016 14:38:33

[Graphs showing data and plots related to B1 fill 5282]
B2 – Flat Top

Fill 5282: B2, started on Tue, 06 Sep 2016 14:38:33
Summary

• Have not seen any evidence of either blowup or coherent activity during the ramp.