MD9552: Beam stability and incoherent effects with trains at injection

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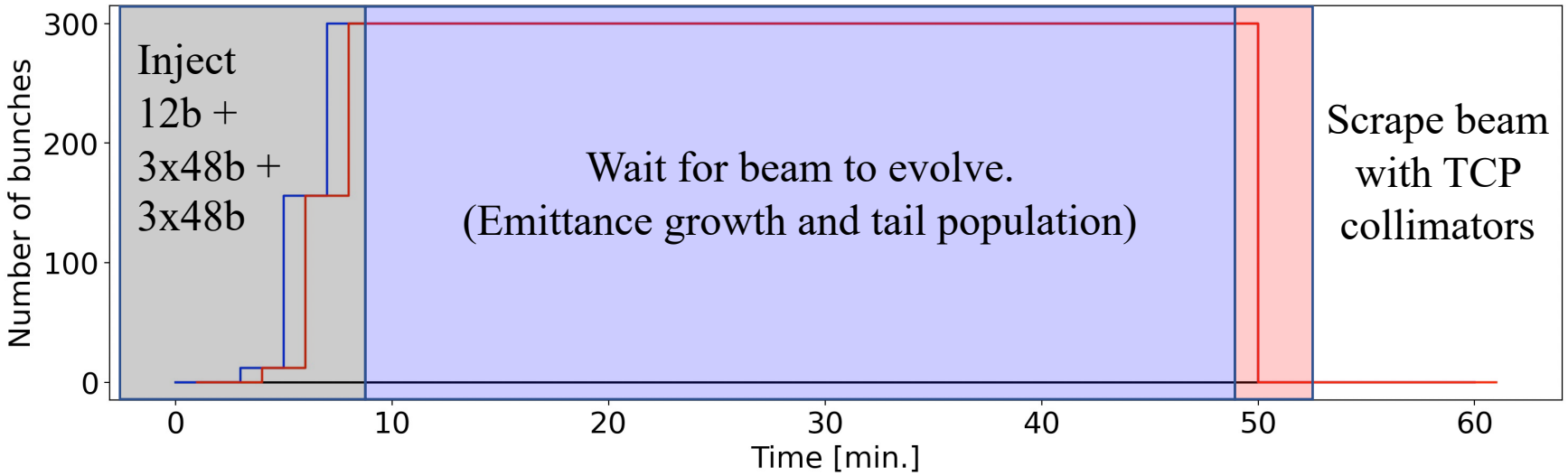
Example fill

Example fill during the **incoherent effect** measurements (bunch intensity = 1.4e11 p/b):



Phase knob should be set to 0 or 1 for the full duration of the "waiting period".

Possible scenarios:

1. Start each fill with a different hypercycle (switch between fills)
   a) nominal proton, phase knob = 1
   b) p-p reference run, phase knob = 0
2. Trim phase knob before injection
3. Trim phase knob after injection

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1. Start each fill with a different hypercycle (switch between fills)
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   b) p-p reference run, phase knob = 0
2. Trim phase knob before injection
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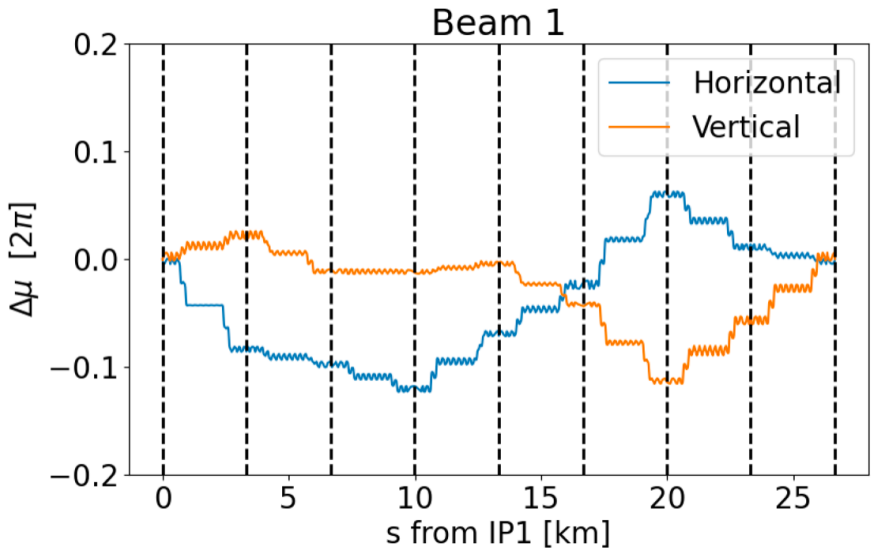
- Scenarios 1 and 2 require at least **injection validation**.
- In scenarios 2 and 3 a **power converter interlock** on the MQT trim quadrupoles prevents trimming of phase knob.

Before the new TDIS issue appeared, we assumed both “nominal proton” and “p-p reference run” cycles would have been fully validated.

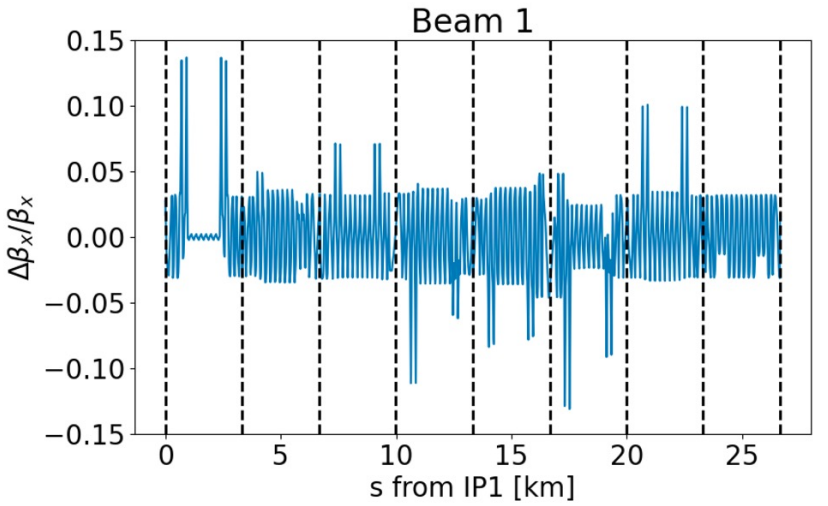
Backup slides

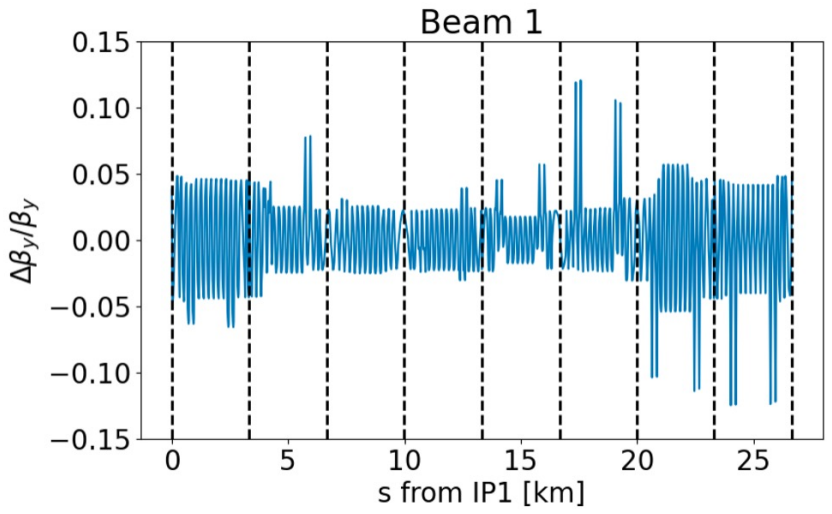
Effect of phase knob

Phase difference



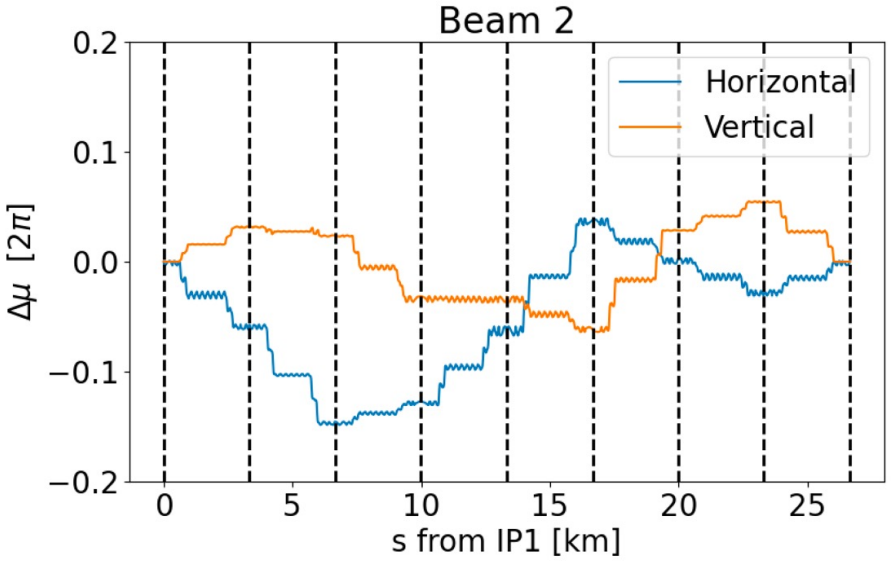
Beta-Beating





Effect of phase knob

Phase difference



Beta-Beating