BI MD during block 3

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- MD overview/motivation
- Plan proposal

MD overview

SYSTEM	AIM
BPM	- Deploy new BPM firmware - Compare the synchronous orbit with asynchronous one - investigate the beams crosstalk in the strip lines
BCT (systems 'A')	- DC BCT vs FBCT studies - FBCT response vs bunch intensity
SCHOTTKY	- Response to different beam conditions - Response vs offset w.r.t. beam orbit (bumps)
AGM	- Response after switching off RF (450 GeV)
WS	- Response to PM gain / filters - Test algorithms for background subtraction (particularly B1)
BSRT	- Absolute magnification during closed orbit bumps - Focusing studies - Calibration vs WS, particularly B1 at 3.5 TeV
BGI	- Signal/noise vs intensity vs gas pressure
BLM	- calibrate the direct dump BLMs located downstream of the TCDQs and TCSGs in IP6
CHROMATICITY	- Monitor emittance blow-up at 450 GeV while changing Q'

Preliminary MD Plan

Period 1 – 1h30m – 450 GeV Inject and Dump (on Collimator in IP6)
BLM calibration
Intensity: single bunch , 0.5-2e10p
Emittance: any
Buckets: any
Inject and dump

Period 2 - 1h - 450 GeV:
Scraping for BCT studies (as for MD2, this time for systems A)
Intensity: 4 high intensity (>=2e11) bunches
Emittance: any
Buckets: same as MD 2
2 beams at the same time
check WS , BSRT, BGI

Period 3 - 1h30m (?) - 450 GeV:
BPM studies
Intensity: 1 nominal bunch per beam
Emittance: any
Buckets: tbd
Scan RF phase of B1/B2 bunches across the BPM location

Period 4 - 30min - 450 GeV
Switch off RF and observe AGAP filling
Intensity: 5 nominal bunches
Emittance: any
Buckets: pattern with at least 1 gap = 3us
need SBF, then mask RF interlock before switching off RF (TBC)

Period 5 - 1h - 450 GeV
CO Bumps POSSIBLY: INVESTIGATE IF POSSIBLE TO DO 1 BEAM IN PARALLEL TO OTHER PERIODS)
Intensity: at least 1 nominal bunch (possibly few bunches with variable emittance for Schottky?)
Emittance: tbd (likely at least 1 fat + 1 small bunch)
Buckets: any
bumps: 2 min per step, 10 steps per bump sequence
H / V separately, B1 and B2 at same time

Period 6 - 30m - em. Blow-up by changing chromaticity – 450 GeV TeV
Intensity: 1 nominal bunch
Emittance: any (or small?)
Buckets: any

Period 7 - all remaining time - 3.5 TeV
WS-BSRT B1 comparison + CO Bumps + Schottky b-to-b response
Intensity: >=12 bunches 1e11 (single bunch injections)
Emittance: Half bunches with < 1um + half with > 3um
Buckets: at least one 3us gap between 2 bunches

BUMPS during MD1 and MD2