

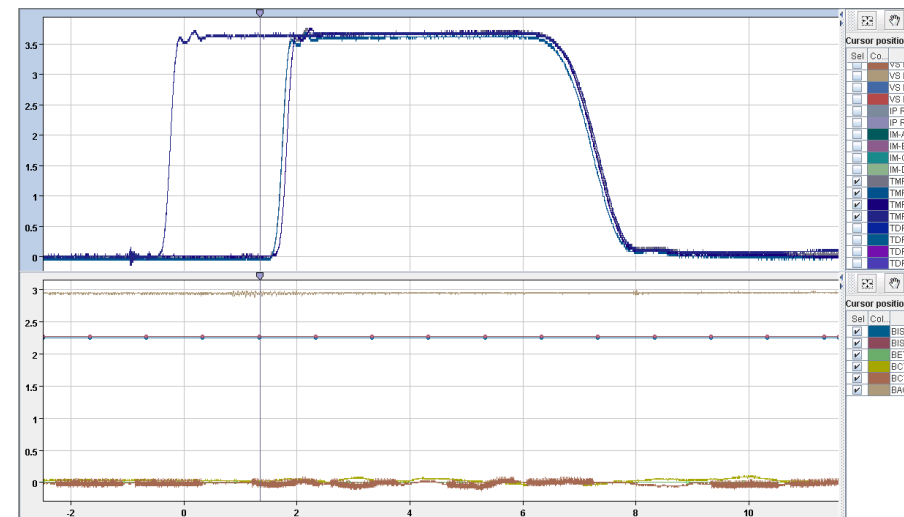
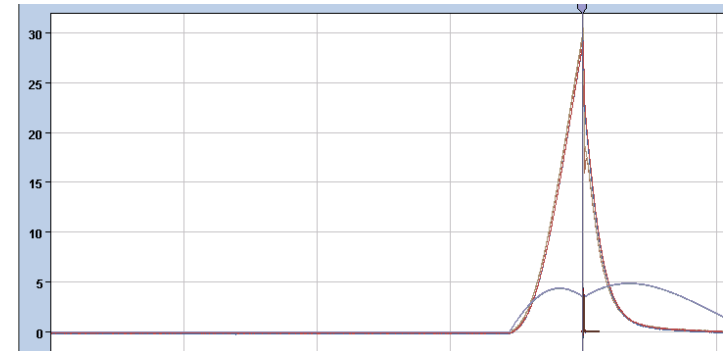
MKI ERRATIC 02/09/16

M.J. Barnes, W. Bartmann, E. Carlier, A. Lechner

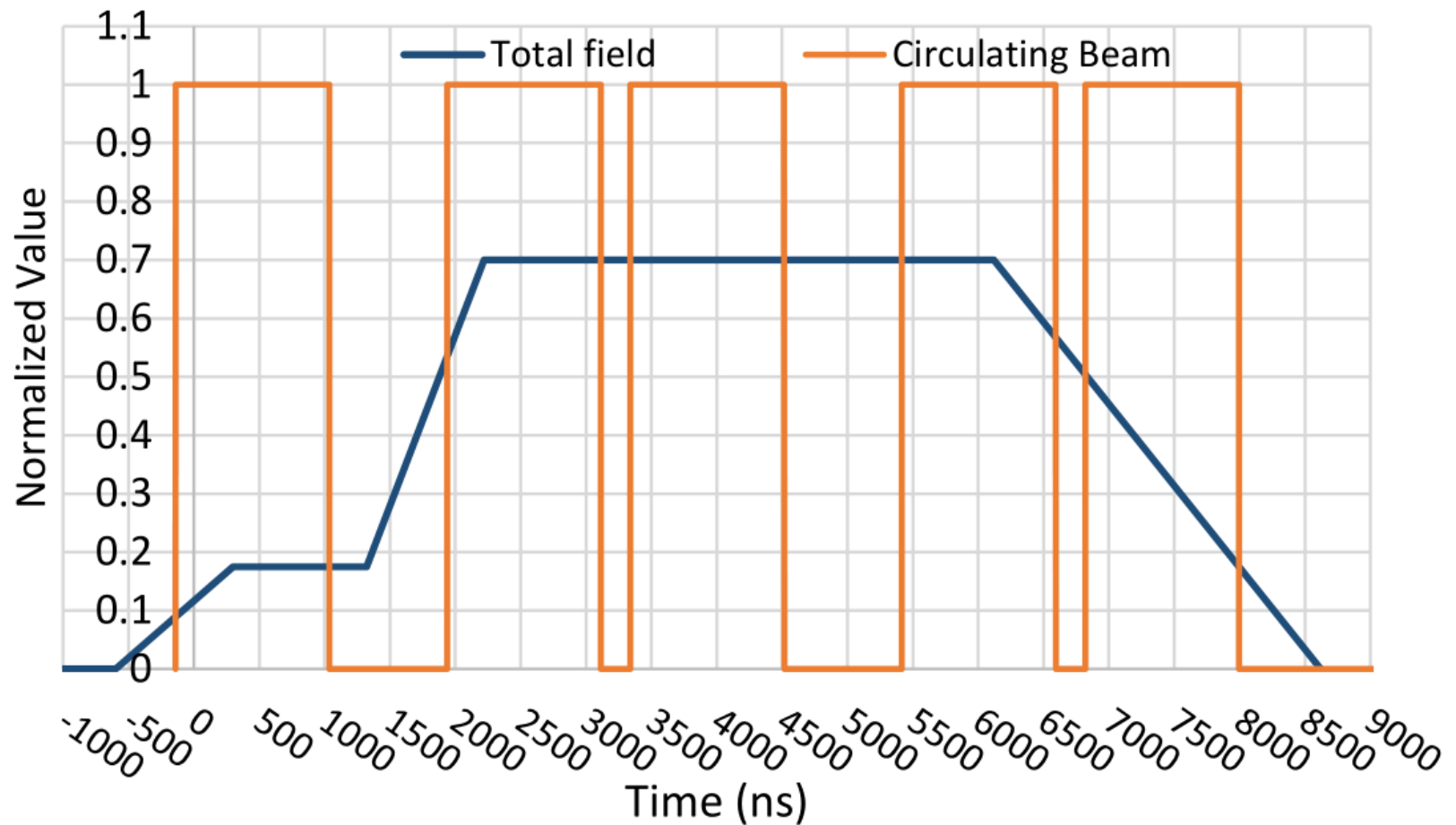
MPP, 16th September, 2016

Erratic during physics filling

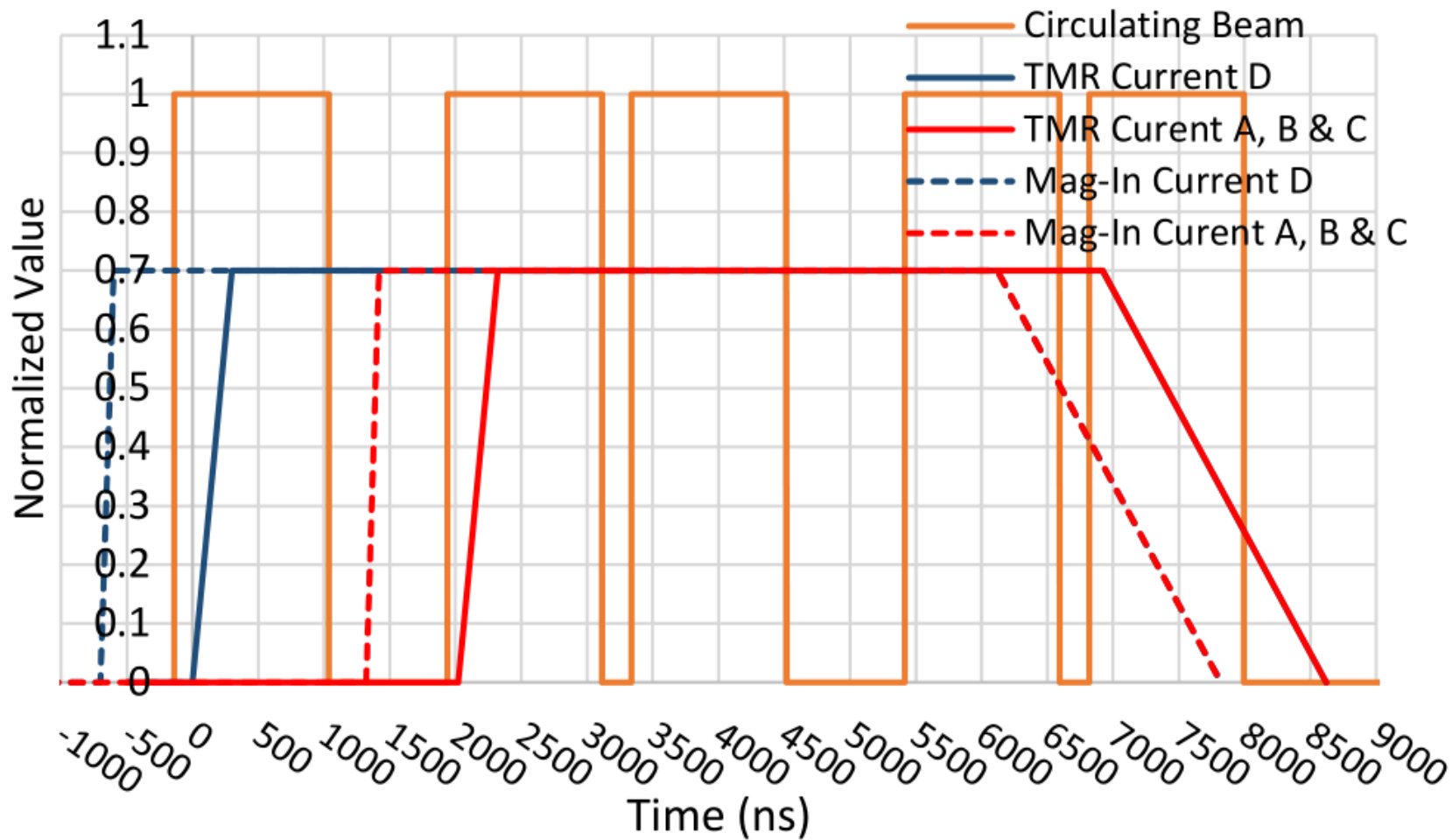
- 02/09/2016 at 04:44:36
- 876 circulating bunches
- Erratic on the main switch of MKI2D at 35 kV PFN voltage
- The other three main switches were turned on within 1.9 - 2 us
 - Current in magnet C rises 90 ns after current in A and B – no compensation for e.g. turn-on delay when retriggering
- Controls turned on the MKI2D dump switch (and also the other units) within ~2 us of MKI2D erratic
- 18% of nominal kick for about 2 us – half a batch of circulating beam grazing on lower TDI jaw;
- Then 3.5 batches with high TDI impact parameter (70% of MKI kick)
- A few bunches again grazing during the fall time
- Q2 at the onset of a quench; no quench of D1 and Q3
- Vacuum valves closed



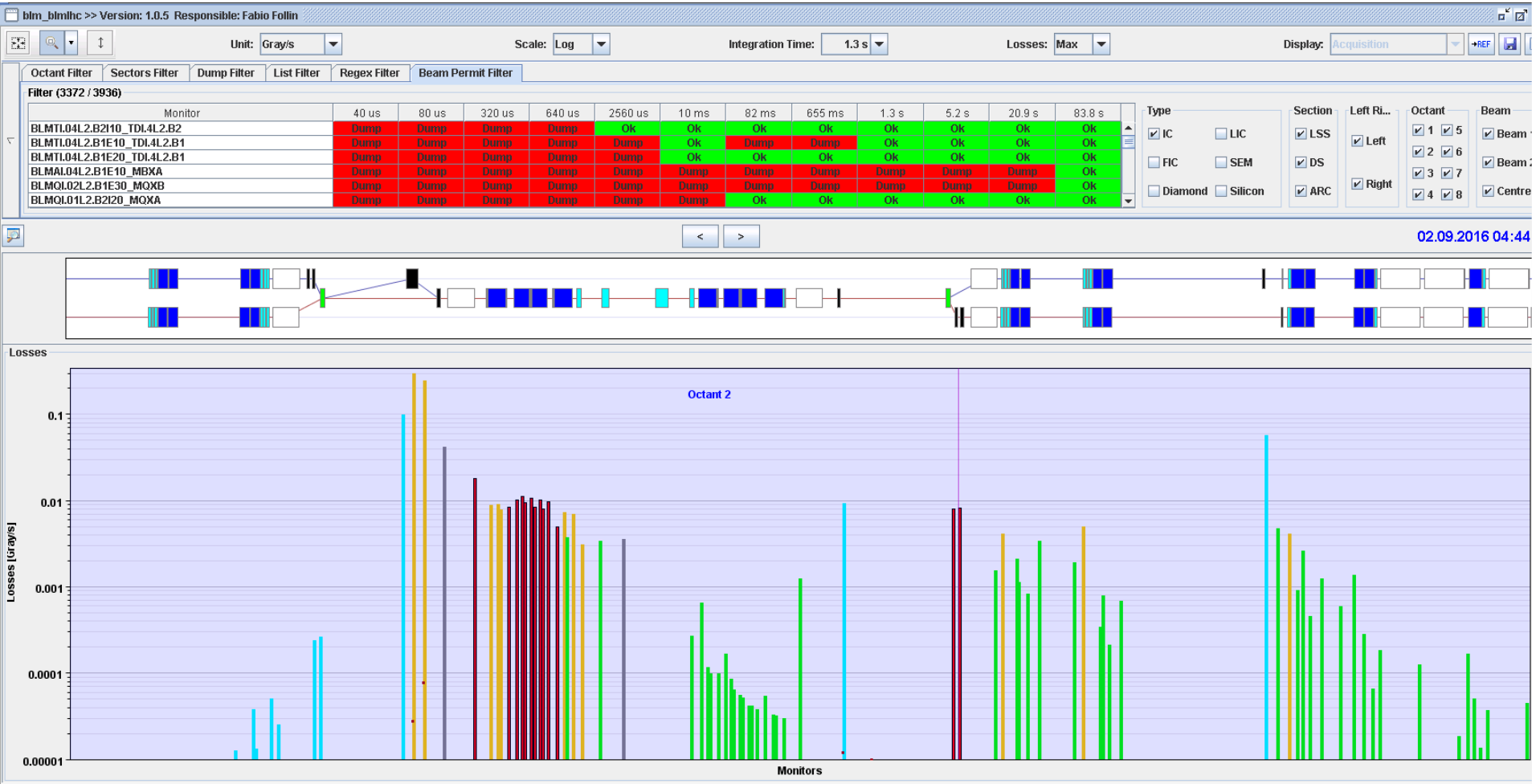
MKI field wrt beam



MKI currents wrt beam



Losses



Dump

Bunch count in BPMDs measures 666 instead of 876 → 210 bunches missing



Summary

- Erratic turn-on of main switch is a statistical expected event, nevertheless it occurred at a relatively low PFN voltage – no erratics since
- The other magnets where retriggered as foreseen
- Half a batch (1 batch equals 48 bunches) with grazing impact on the TDI, 3.5 batches with high TDI impact parameter
- 210 bunches are missing in the dump pattern (compares roughly to 4 batches a 48 bunches)
- Loss pattern seems to peak at Q2