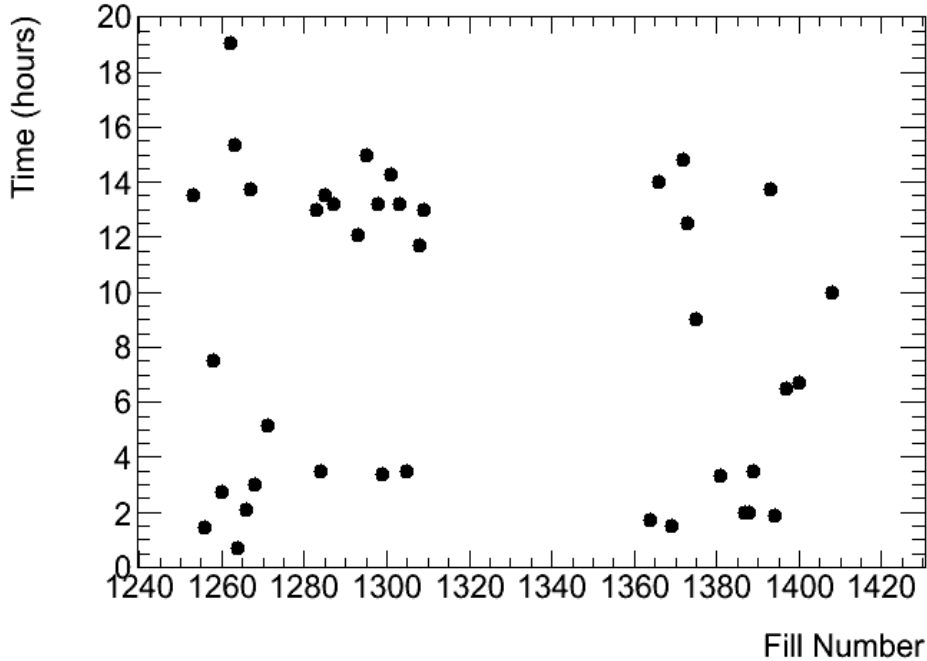


SEARCH FOR “UFO”s

E. Nebot for the BLM team

SEARCH FOR “UFO”s



Scan in logging database for UFO-like events. All fills with stable beams from 31/07 until 12/10 included in the analysis.

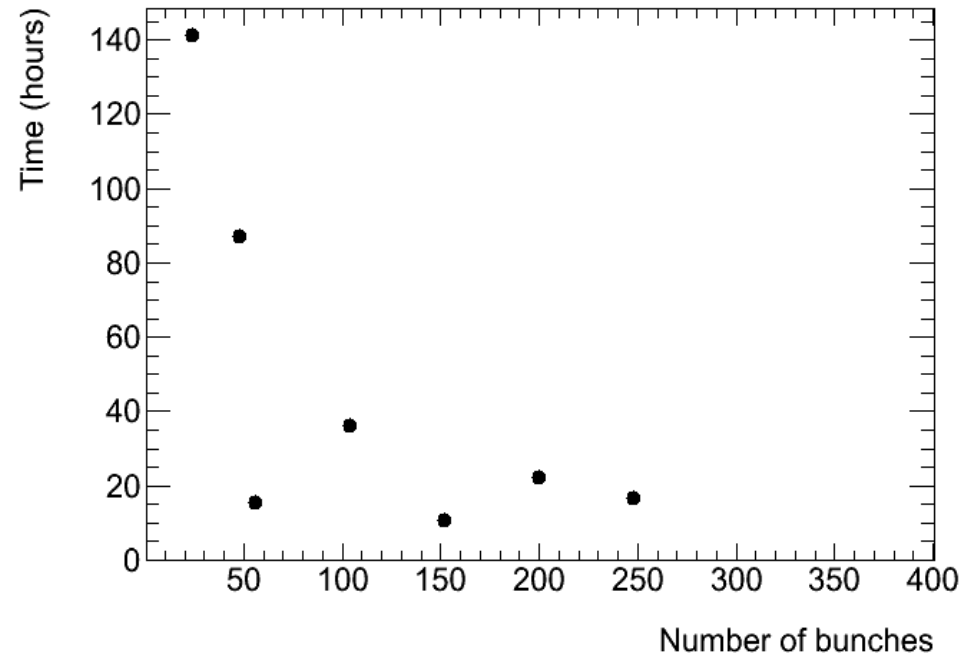
~330 hours of stable beam

Beam Dumps:
included

- ✓ 24 B => 3
- ✓ 48 B => 2
- ✓ 56 B => 1
- ✓ 152 B => 2

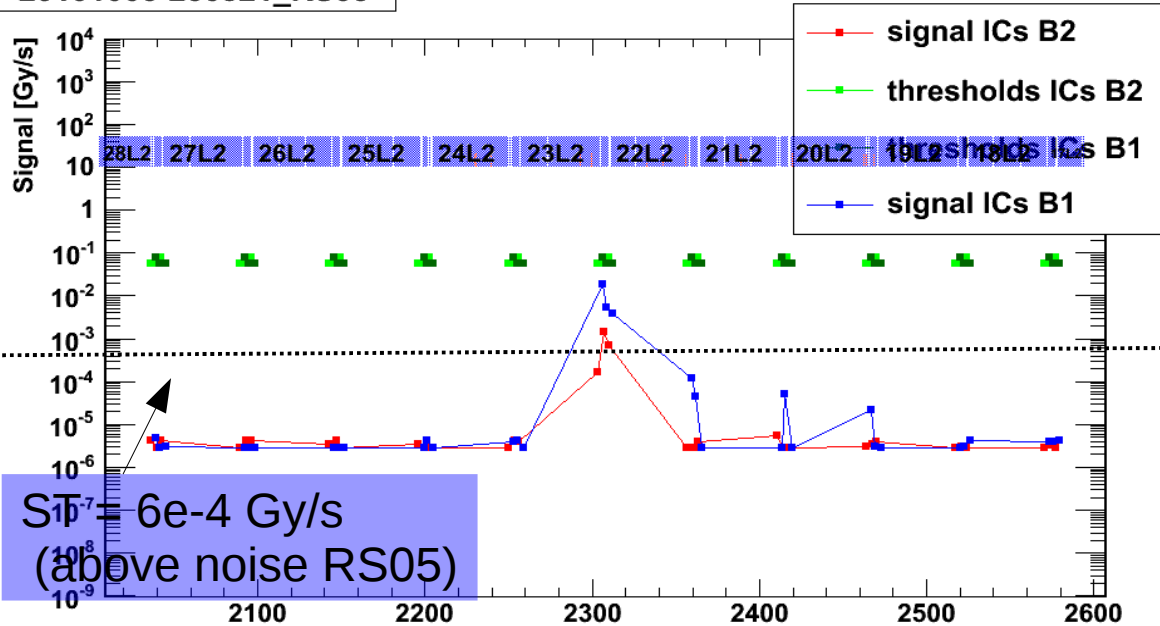
Not included

- ✓ 2 dumps in previous fills
- ✓ 2 dumps not during stable beams
- ✓ 1 dumps in fills after 12/10



SEARCH FOR "UFO"s

20101005-230321_RS05

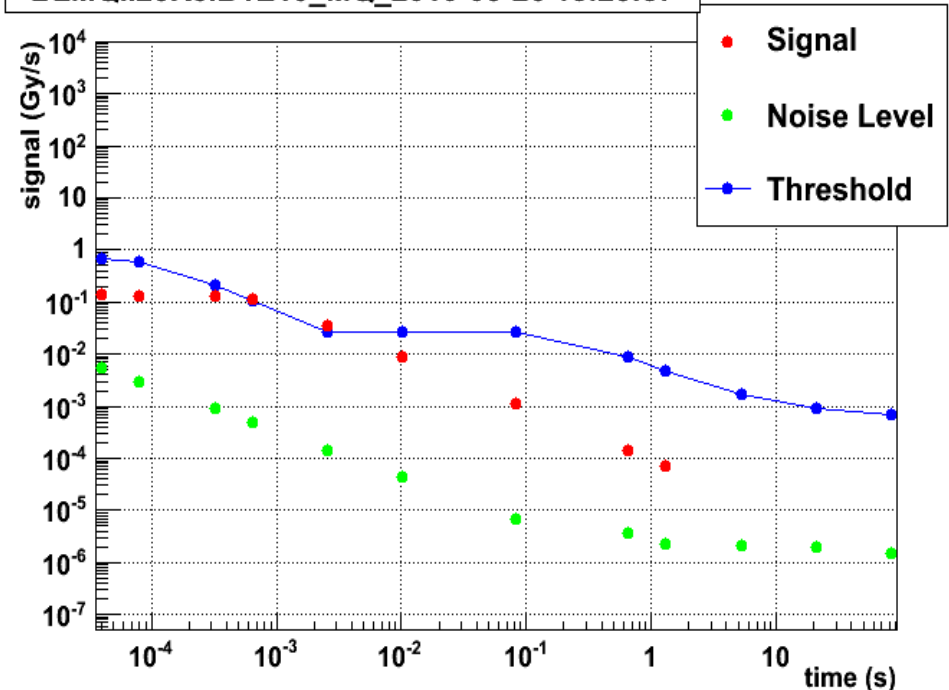


Analysis based on RS05:

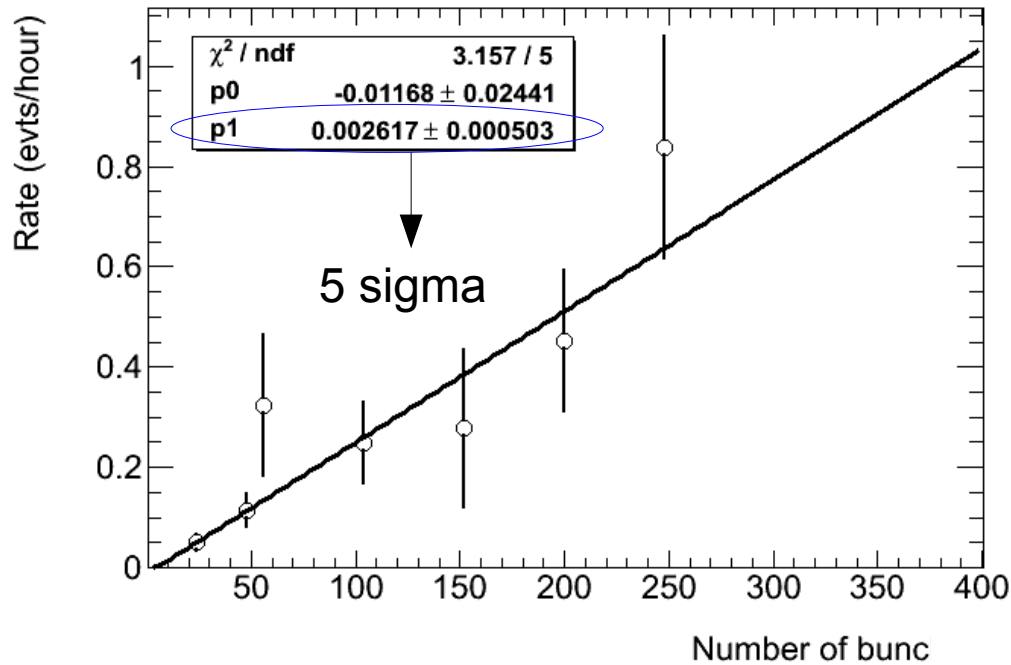
- 3 Blms within 40 m and signal higher than ST (above noise)
- Signal in TCPs > ST

"UFO" losses typically ~1ms. Duration of the losses estimated from the graphic RS vs time with a ~30% accuracy

BLMQI.25R5.B1E10_MQ_2010-08-26 15:25:57



INTENSITY DEPENDENCE



“UFO” Rate

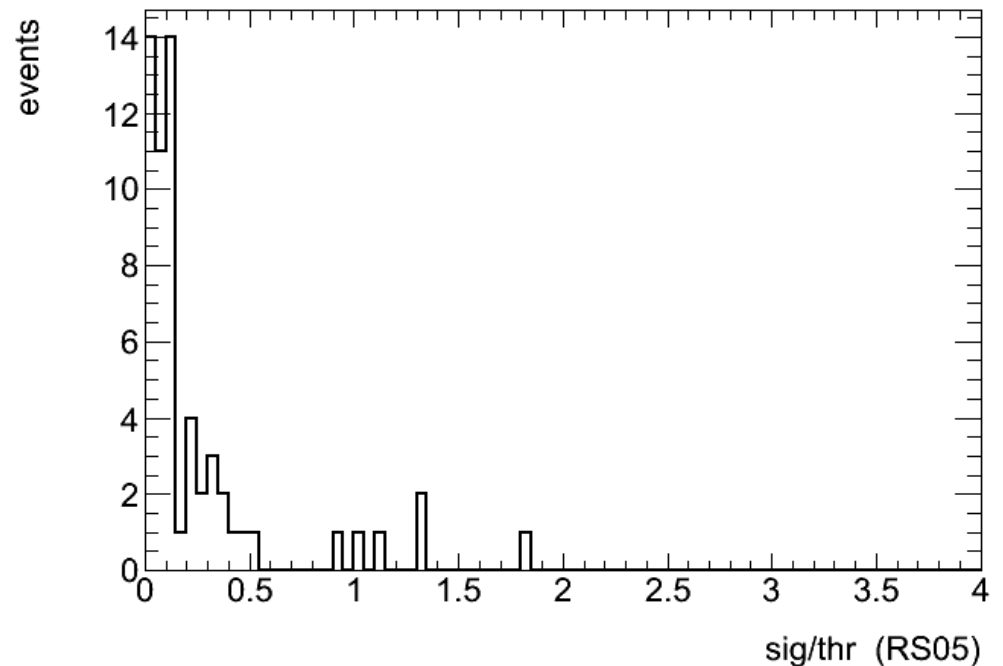
The UFO rate seems to increase linearly with intensity:

Extrapolating
2000 Bunches => ~ 5.2 evts/hour

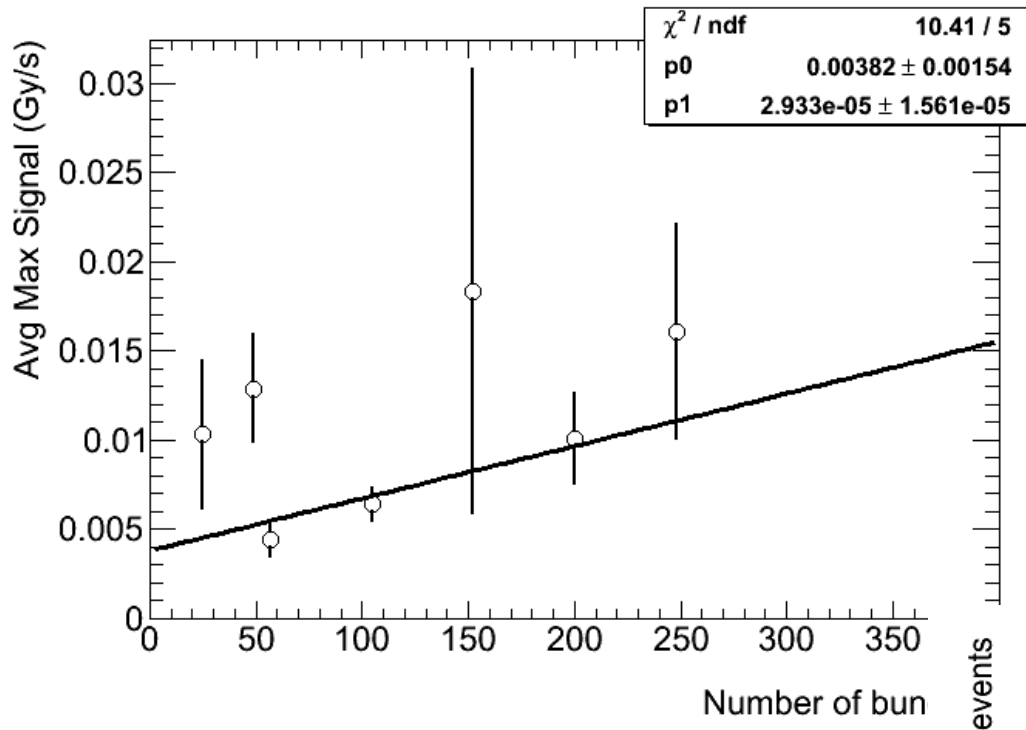
60% of the events used to produce this graphic were far from threshold (Signal/Threshold < 0.2)

Two more dumps without increase of thresholds

One more with signal ~90% of the old threshold



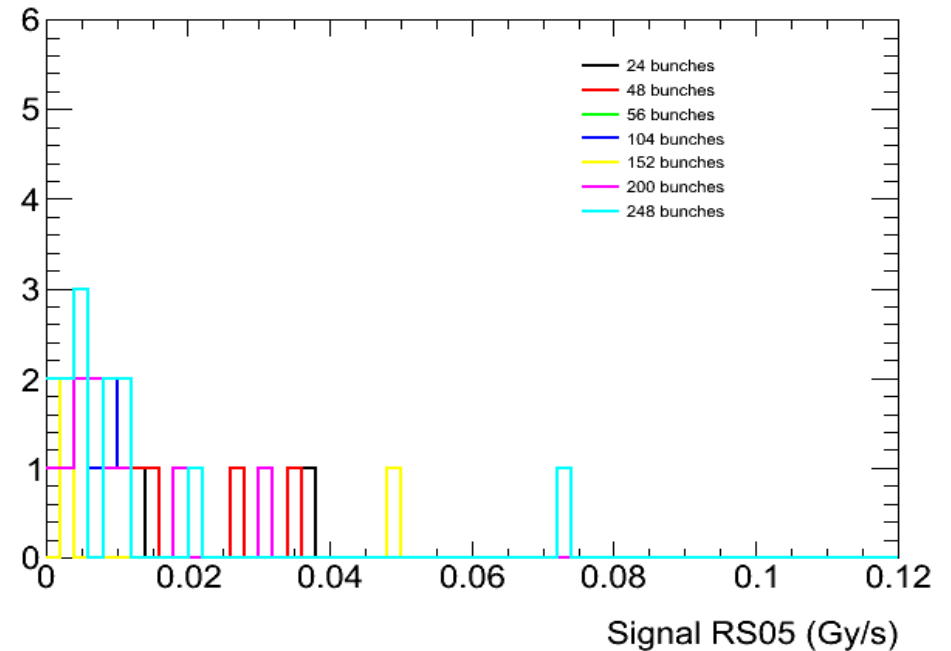
INTENSITY DEPENDENCE



Maximum signal in the BLMs also scales with intensity (?):

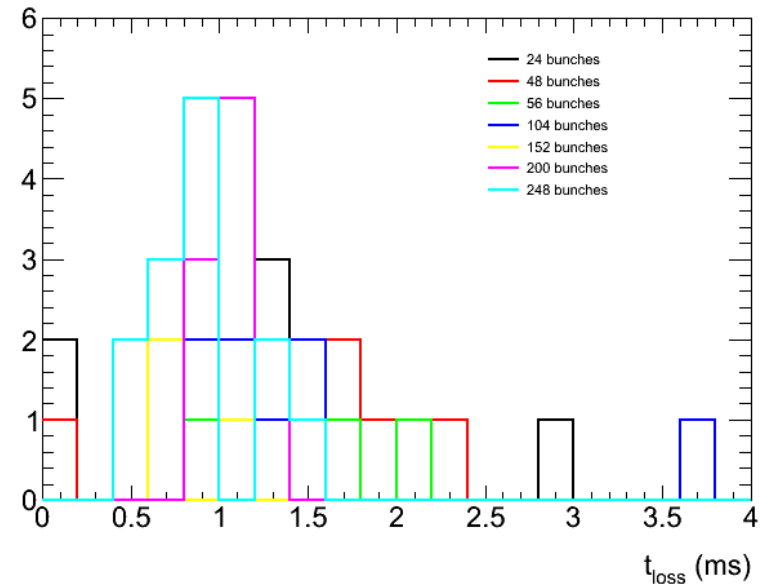
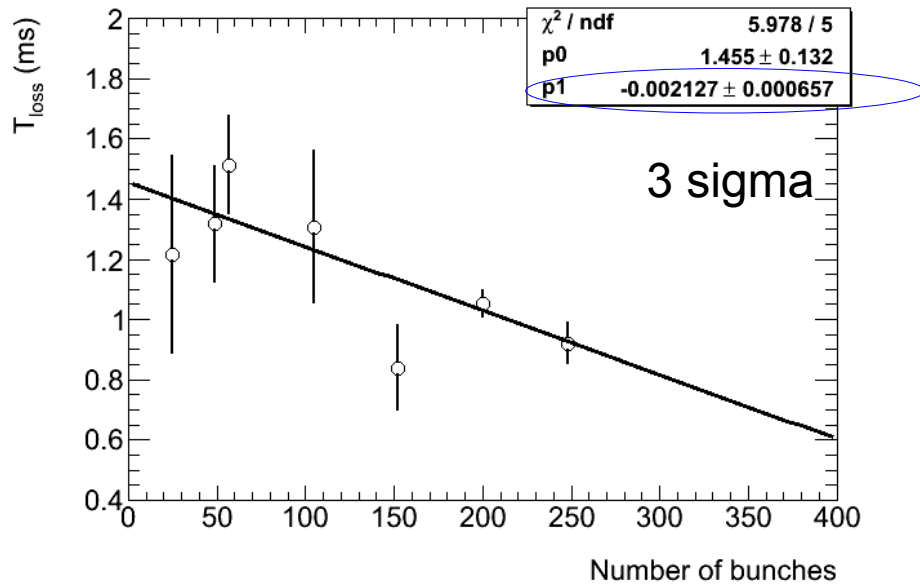
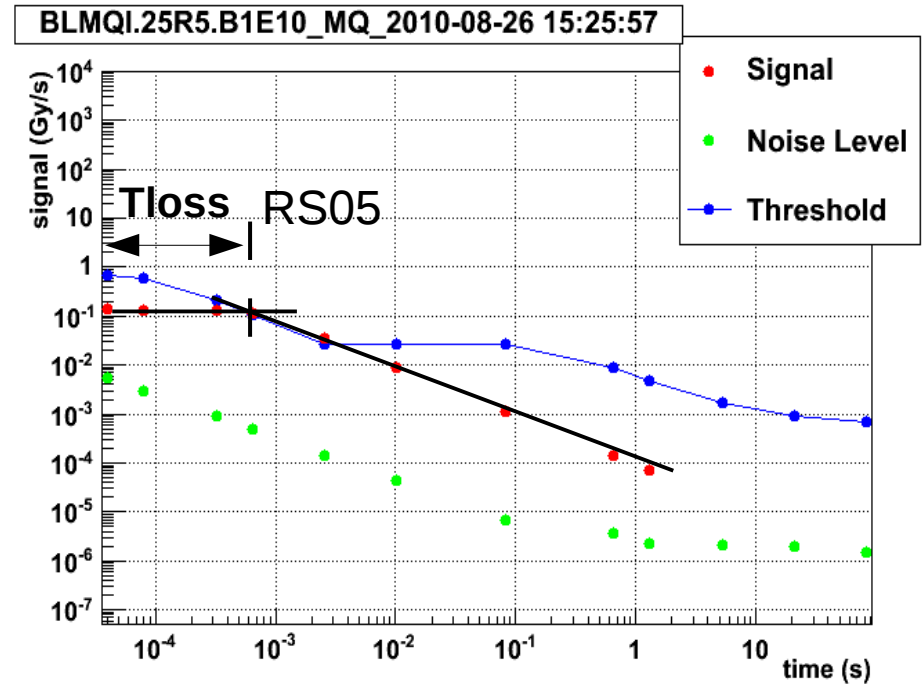
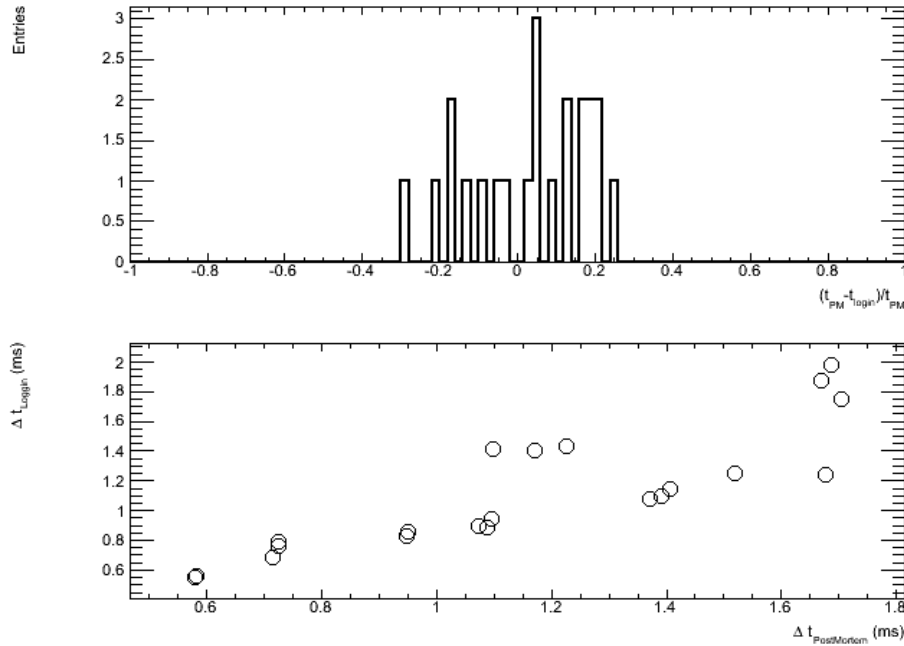
Extrapolating
 2000 Bunches => ~ 0.06 Gy/s

Thresholds for cold magnets in RS05 are in the range 0.02-0.08 Gy/s

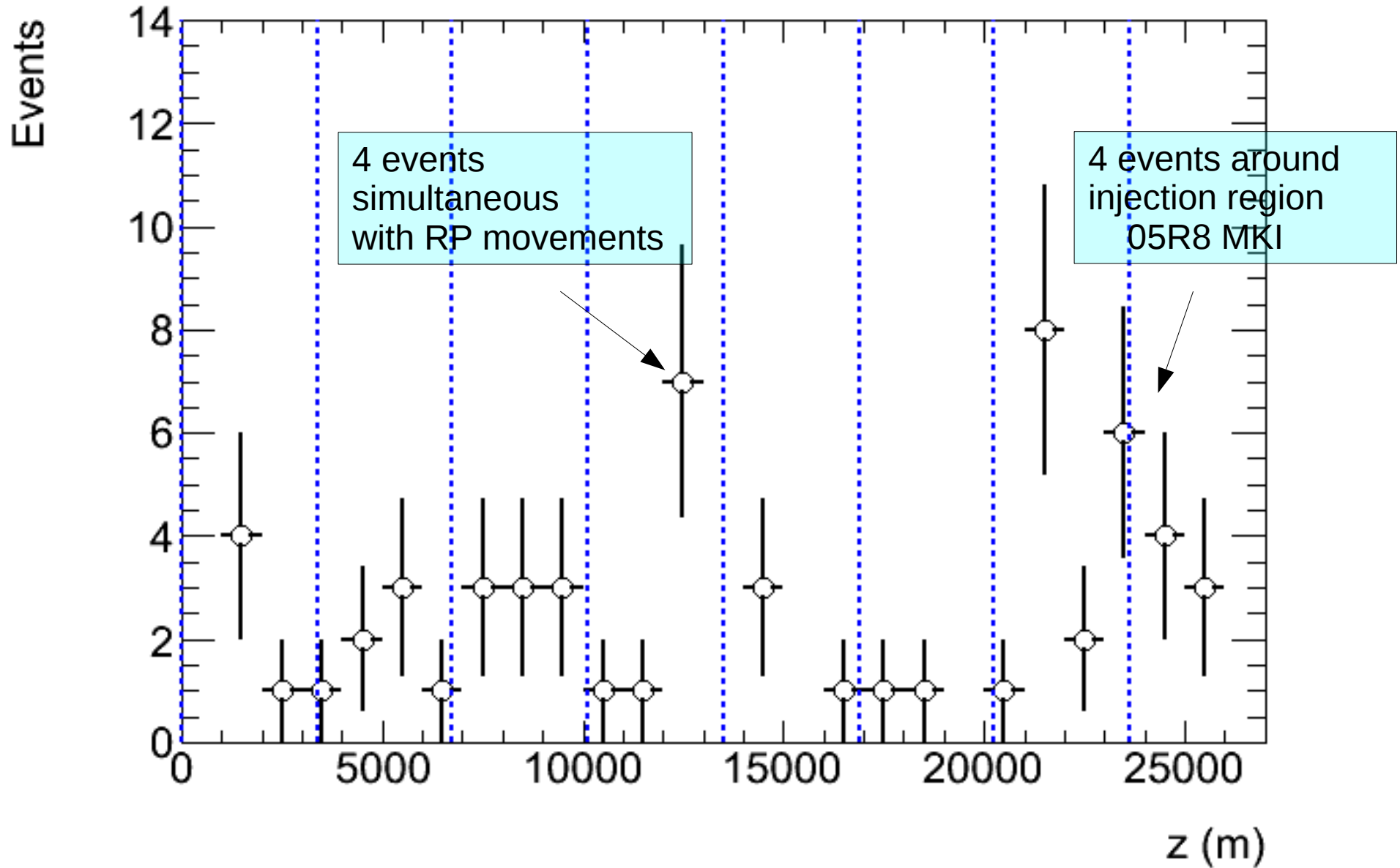


LOSS DURATION

Loss duration determination from loggin



LOSS LOCATION AND DURATION



CONCLUSIONS

After ~330 hours of stable beam:

- The “UFO”-like even rate clearly increases with intensity. Not very many of these events were close to dump the beam.
- The BLM signals increase with intensity (?)
- The duration of the losses decrease with intensity (?)

A few locations accumulate a good fraction of the events:

- Roman Pot IP5.
- Around injection region IP8 (?)