

Mini UFO in CMS ?

12.10.2010 – 22:09:13

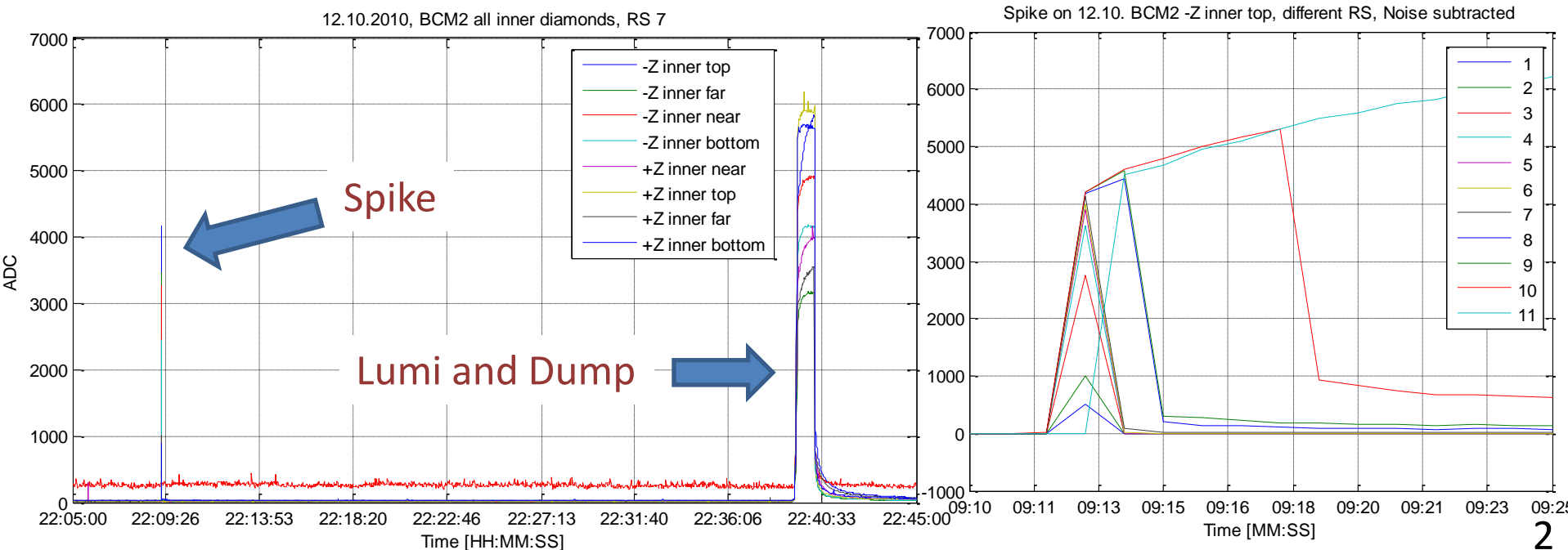
Moritz Guthoff

On behalf of CMS

MPP Meeting 12.11.2010

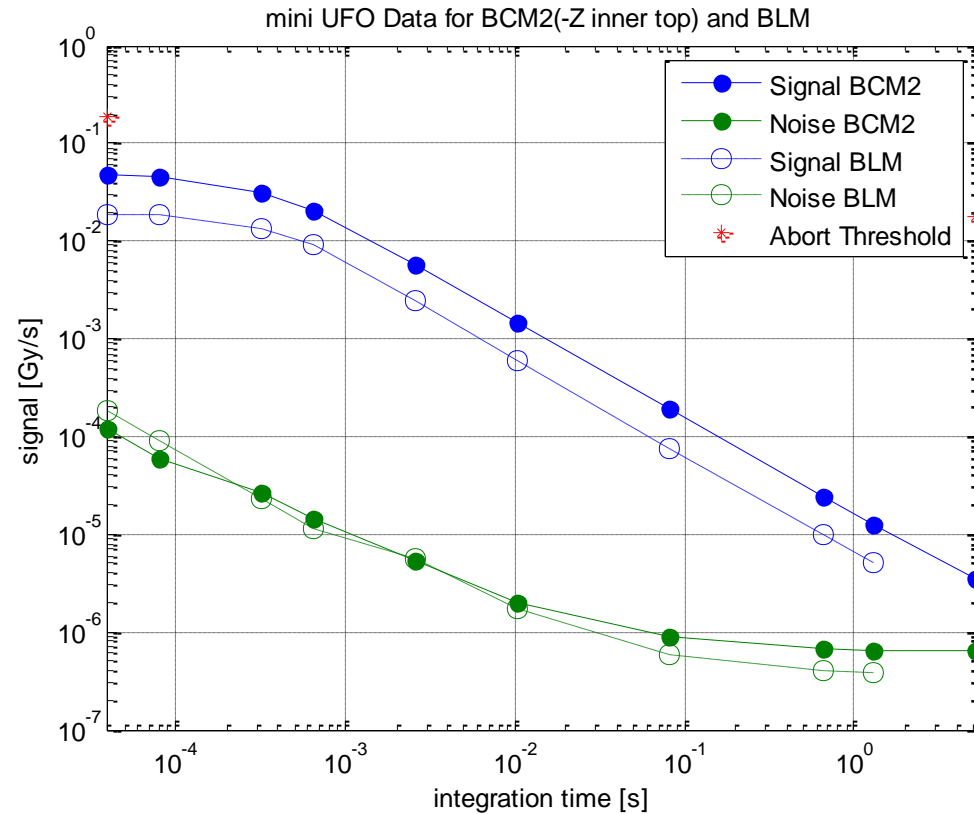
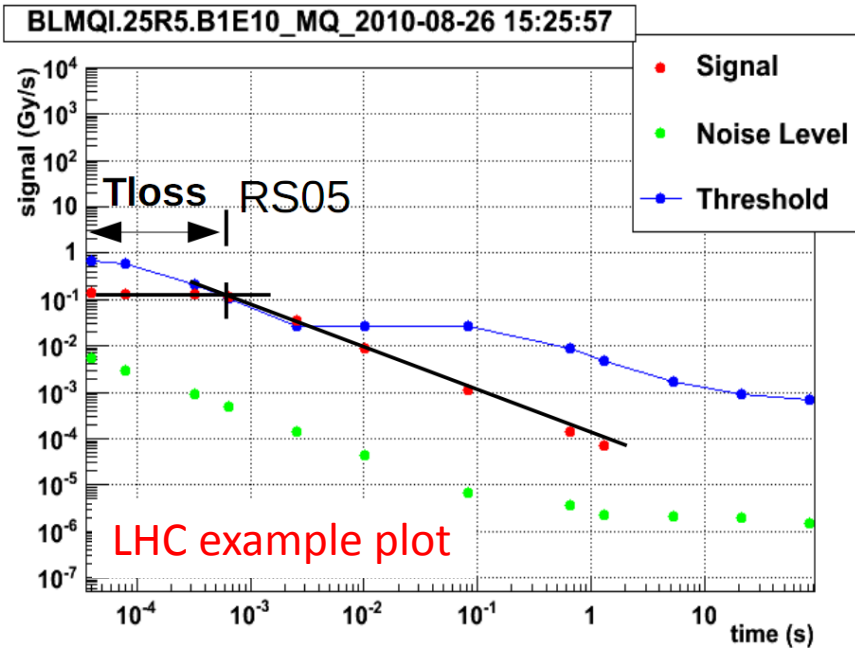
Spike during Squeeze (Fill 1410) seen in all CMS Beamline Detectors

- BCM2(-Z inner top) was at $\sim 25\%$ of abort.
- No post mortem data since no abort happened.
- Fill got dumped shortly after beginning of collisions by BLM near point 7(unrelated).



Timing

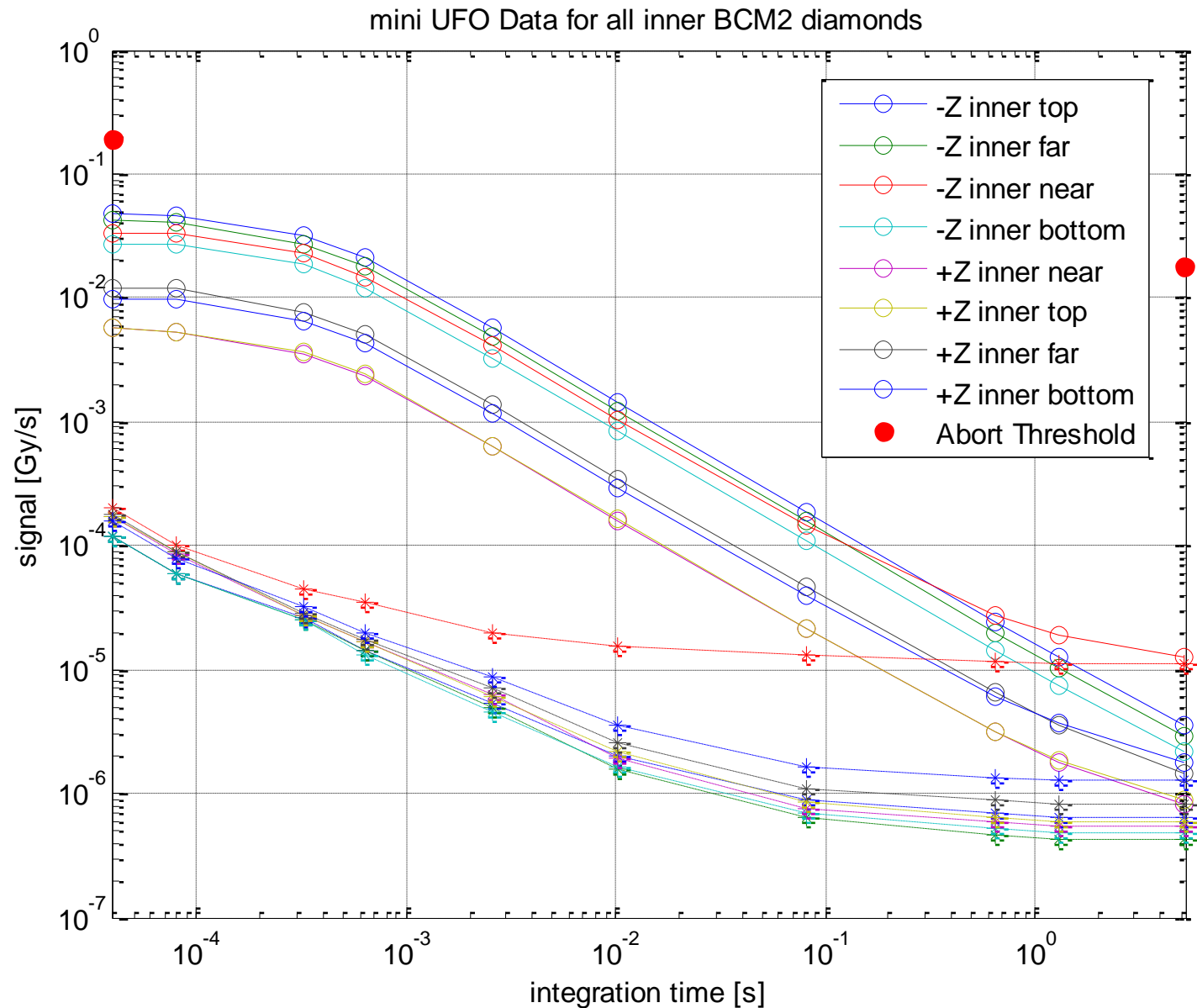
- Event also seen in a BLM detector close to CMS (TANC, right side of IP5, Beam 1).
- Duration of $\sim 300\mu\text{s}$



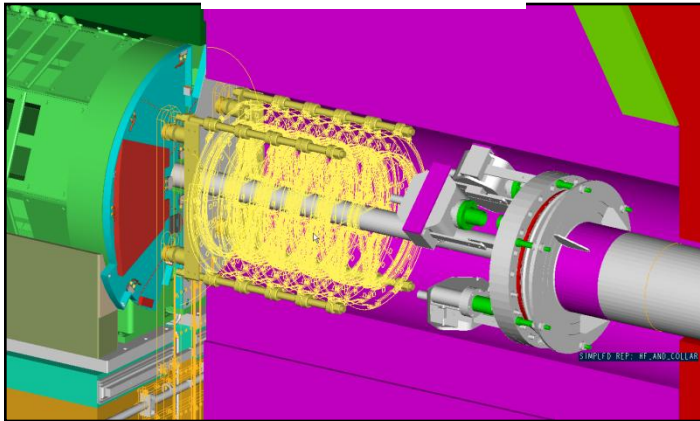
E. Nebot: Update on the UFO analysis
MPP meeting 22.10.2010

CMS BCM2 is like a LHC Beam Loss Monitor: Same readout, correlation BLM/Diamonds done in testbeams.
-> data is comparable

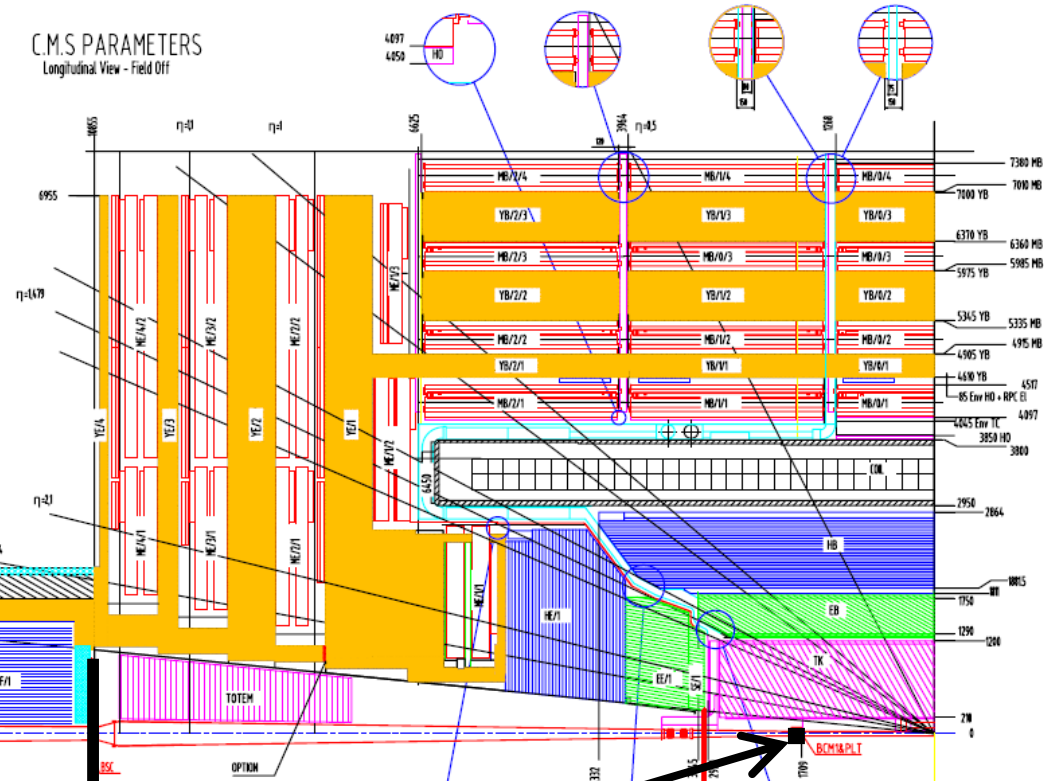
For all inner Diamonds



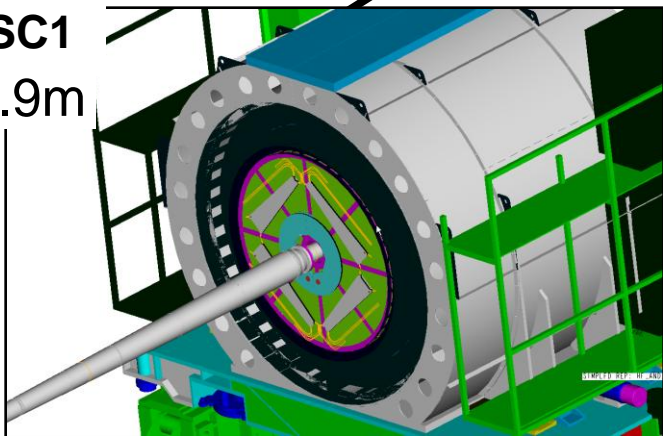
BCM2+BSC2 14.4m



C.M.S. PARAMETERS
Longitudinal View - Field Off

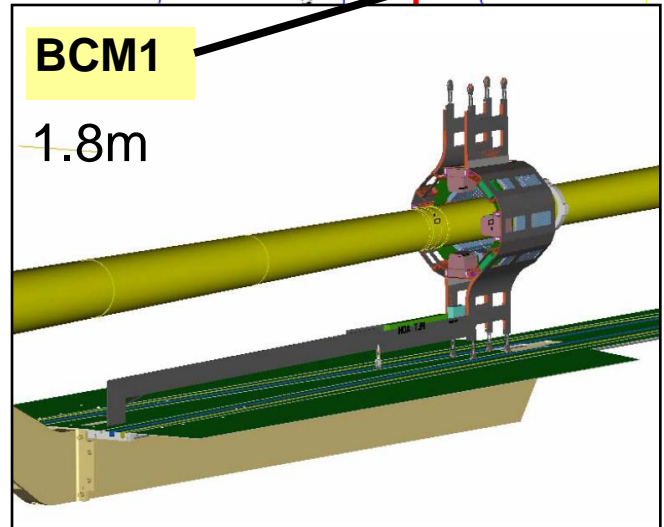


BSC1 10.9m

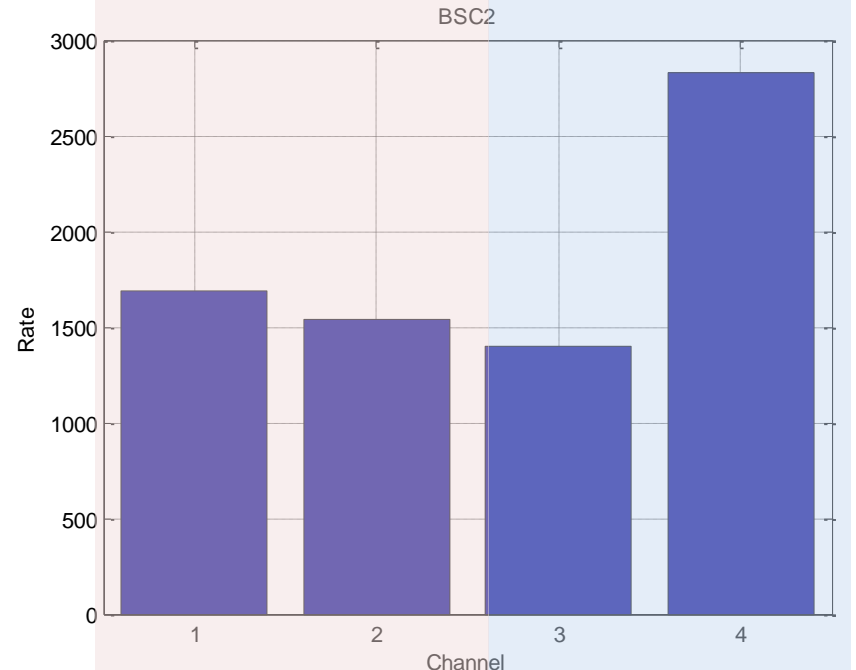
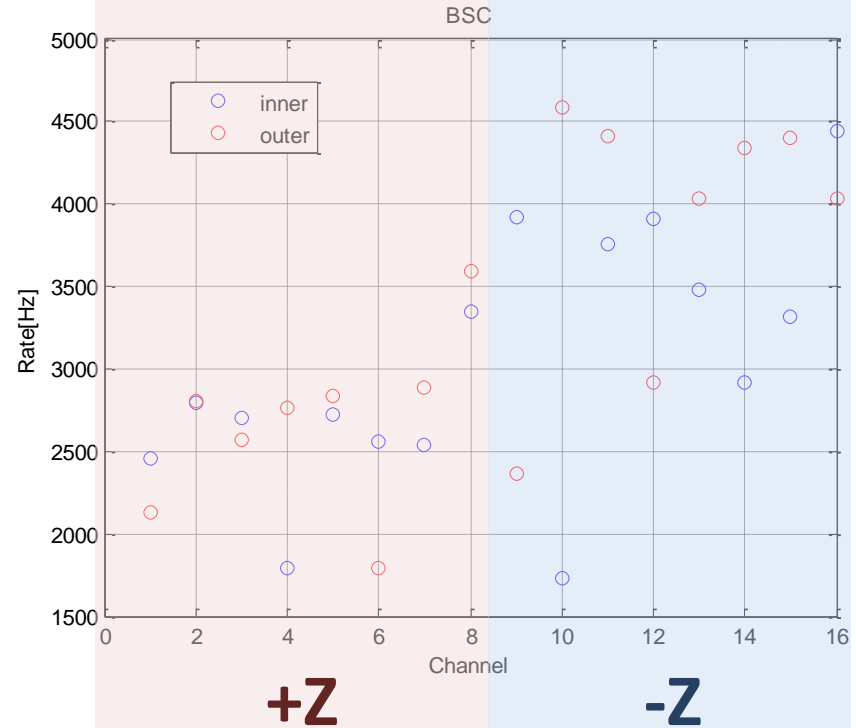
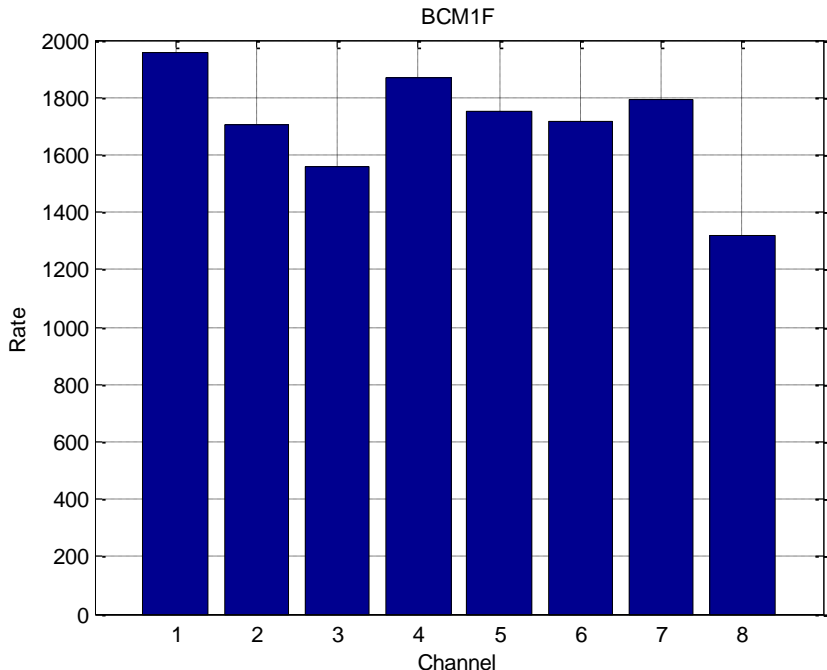


BCM1

1.8m



- Spike in the other detectors, background subtracted.
- Higher signals on minus side.
- Consistent with an event in beam 1, as expected from simulations.



Timing calculation

- Time calculated by assuming a square pulse.
- RS 1 gives the charge/40 μ s and a high RS the total charge deposited during the event.
- This is not an exact value, but the timing is consistent through all detectors.

Inner Diamonds	Duration [μ s]
-Z top	325
-Z far	305
-Z near (noisy)	368
-Z bottom	336
+Z near	313
+Z top	315
+Z far	313
+Z bottom	337
BLM	330

Conclusion & Outlook

- First miniUFO seen in CMS Beam Condition Monitors.
- Search for more miniUFOs in the Data and compare with BLM data.