

# Brief summary of UFO-induced BCM dumps in 2015 and 2016 (observations from the machine side)

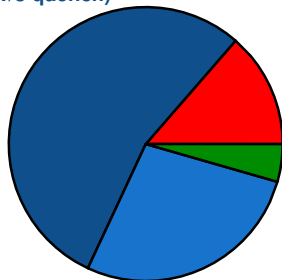
A. Lechner

49th BLMTWG Meeting  
Feb 28<sup>th</sup>, 2017

# UFO-induced dumps and quenches: 2015 vs 2016

2015 (22 events - 700h SB)

12 BLM dumps arc/DS  
(w/o quench)



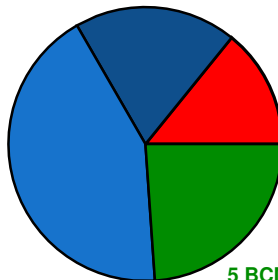
3 quenches  
arc/DS

1 BCM dump  
(ATLAS)

6 BLM dumps LSS  
(w/o quench)

2016 (21 events - 1800h SB)

4 BLM dumps arc/DS  
(w/o quench)



3 quenches  
arc/DS

5 BCM dumps  
(ATLAS, CMS,  
ALICE [trip],  
2x LHCb)

9 BLM dumps LSS  
(w/o quench)

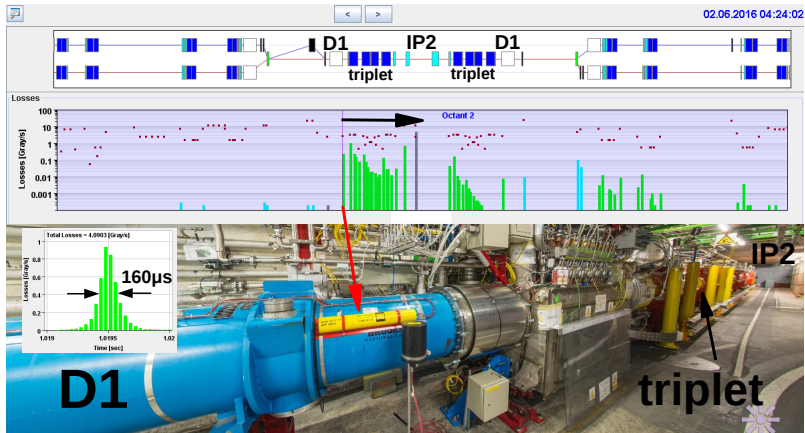
→ in 2016, one quarter of UFO-induced dumps were due to BCMs

# BCM dumps

Fill	Date (Time)	Beam mode	Dumped by	Energy	Beam
<b>2015</b>					
4456	05/10 (01h03)	FLATTOP	ATLAS BCM	6.5	B1
<b>2016</b>					
4979	02/06 (04h24)	STABLE (11h)	ALICE BCM	6.5	B1
5209	17/08 (00h29)	STABLE (1h)	CMS BCM	6.5	B2
5350	30/09 (02h34)	RAMP	ATLAS BCM	2.4	B2
5390	09/10 (07h26)	FLATTOP	LHCb BCM	6.5	B2
5418	16/10 (11h03)	STABLE (11h)	LHCb BCM	6.5	B2

# Dump Fill #4979 (2/6/2016) by ALICE

- Fast UFO in superconducting **D1 L2 (B1)**,  $\sim 63\text{-}67\text{ m}$  from IP
- Dump triggered by **ALICE BCM** (RS32 50 times above dump threshold)
- **Trips** in almost all **ALICE gaseous detectors**, also in **Silicon Pixel Detector**
- Max. sig/thr ratio on ring BLMs (triplet): **63%**



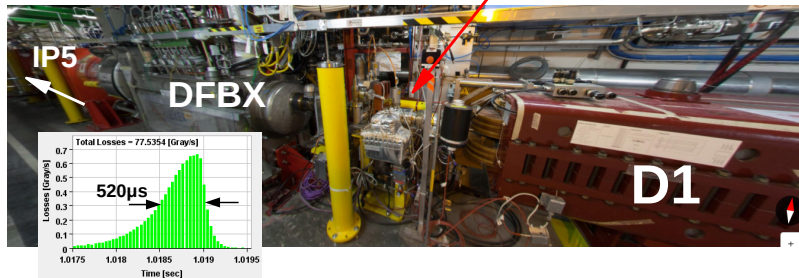
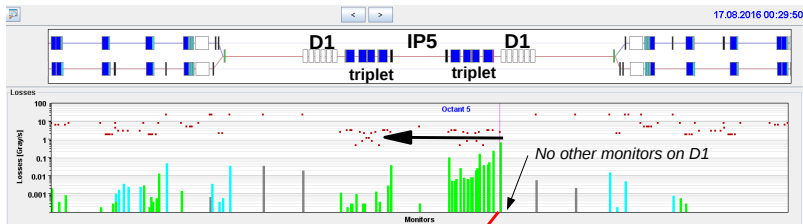
# Dump Fills #4456/#5350 (5/10/2015 & 30/09/2016) ATLAS

- Fast UFOs in/around **Q1 R1** (B2), very similar location in both cases (**20-28 m** from IP)
- Max. sig/thr ratio ring BLMs (triplet): **~0.4%** (5/10/15) and **~0.4%** (30/09/16, ramp)



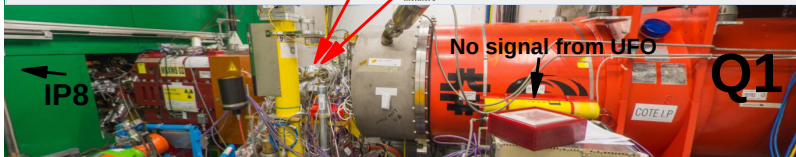
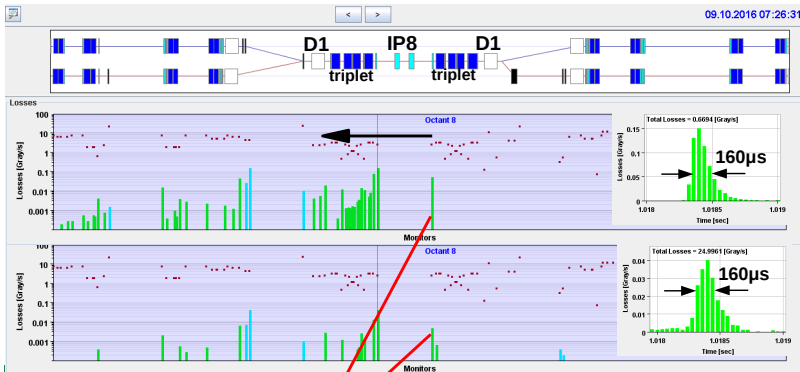
# Dump Fill #5209 (17/8/2016) CMS BCM

- Fast UFOs in/around warm **D1 R5 (B2)**, **>59 m** from IP (no better BLM resolution on D1)
- Max. sig/thr ratio ring BLMs (triplet): **~93%**



# Dump Fills #5390/#5418 (9/10 & 16/10/2016) by LHCb

- Fast UFOs in/around of **Q1 R8** (B2), very similar location in both cases (**20-24 m** from IP)
- Max. sig/thr ratio ring BLMs (triplet): **~8%** (9/10) and **~3%** (16/10) (latter 3× smaller)



- BLMs showed very small signals during some of the BCM dumps
- Any margin to avoid similar UFO-induced BCM dumps in the future?  
(in other words: when do UFOs start to be harmful?)