

# BCAL Calorimetry meeting

September 5 2019

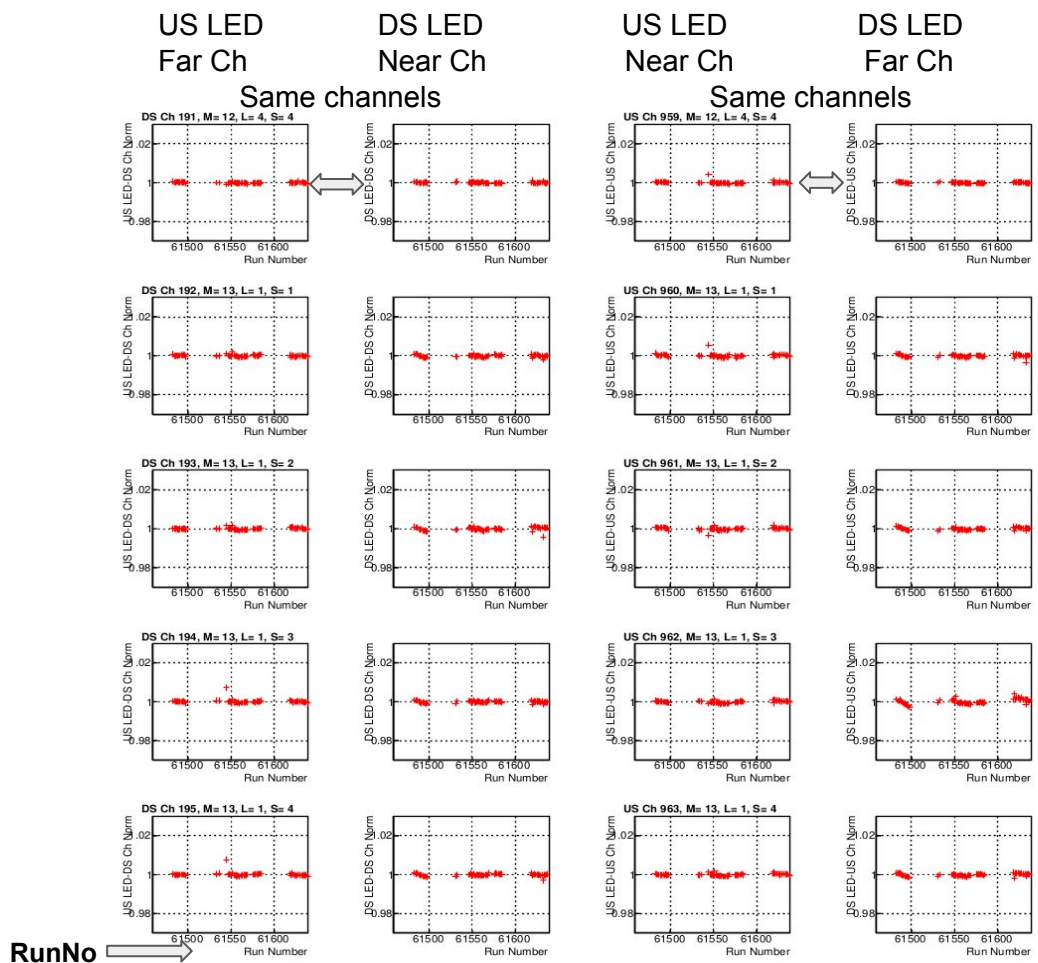
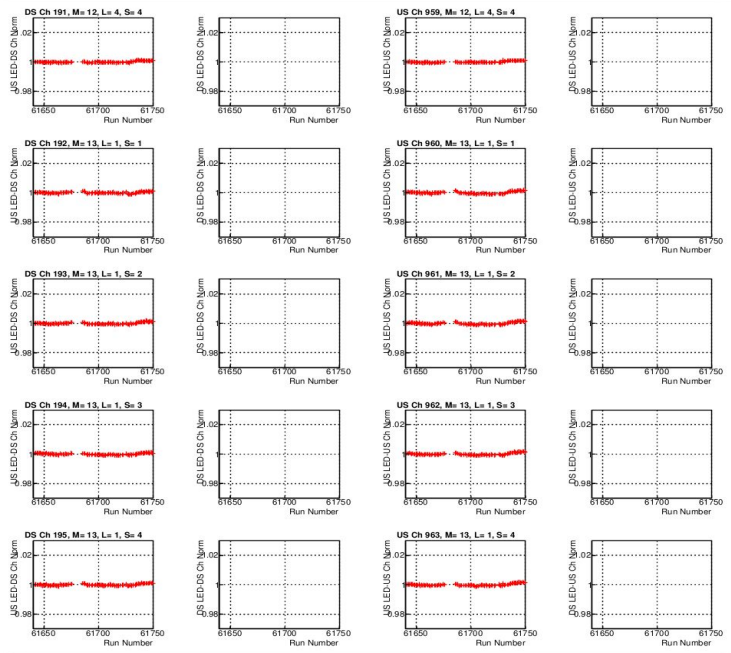
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## Introduction

- The objective is continuously monitoring the relative gain of BCAL channels with the help of LED pulsers.
- The LEDs are pulsed in both UpStream and Downstream modes with a bias of 6.25 V at 10 Hz
- Currently two monitoring options- Online expert monitoring (daily basis for fall 2019)  
Offline expert monitoring (post Run period)
- The skimmed files ( five files per run) are processed and we run it through the BCAL\_LED plugin producing root files as output. A reference file over all runs is created by merging the root files and calculating channel average value.
- The root files corresponding to particular runnumber are further analysed with help of scripts developed which generates various plots
- The plots include Channel vs Runnumber (over various runnumber), quadrant occupancy and trigger occupancy (both for particular runnumber), channel variance vs runnumber(Upstream and Downstream channels), diagnostic plots

# Channel vs runnumber plot (spring 2019)

- Excluded problematic runs which had very low statistics and the ones that had either US LED or DS LED only.
- 64 Runs are taken that have good statistics and both US LED, DS LED pulsed.

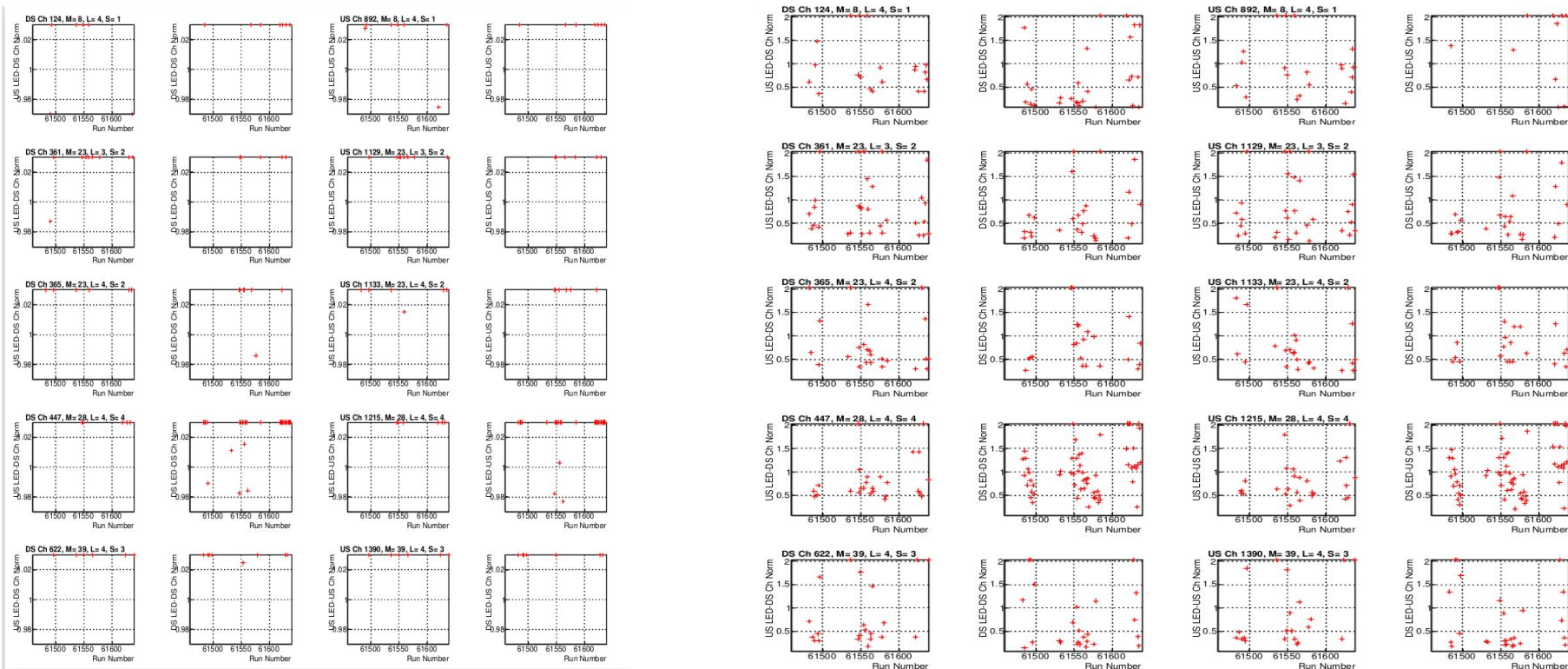


Only US LED pulsed (90 Runs)

Y axis ranges from 0.97 to 1.03

## Channels with problems(2019 spring Run Period)

- For 64 runs
- 10 channels showing large variation from average value
- Ch No 124, 892, 361, 1129, 365, 1133, 447, 1215, 622, 1390



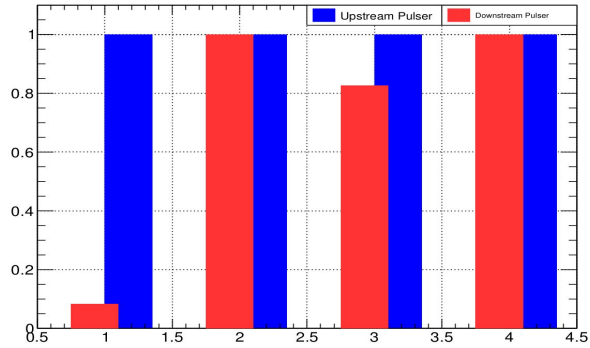
y axis from 0.97 to 1.03

y axis from 0.07 to 2.03

## Few other plots

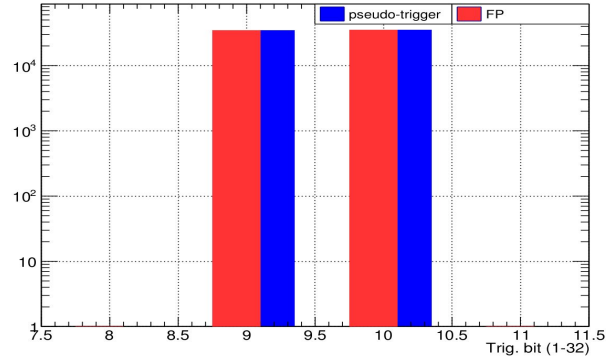
RunNo 61490

Quadrant Occupancy - BCAL LED



X axis - quadrants

BCAL LED - FP vs 1200 hits trigger



FP trigger bit 9 & 10 for US and DS LEDs

## Future work

- Further analysis of other Runs is going on
- The two mode pulsing is providing good statistics

# Backup slide

