Recent update on HO trigger

HO Trigger Weekly Meeting

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DESY

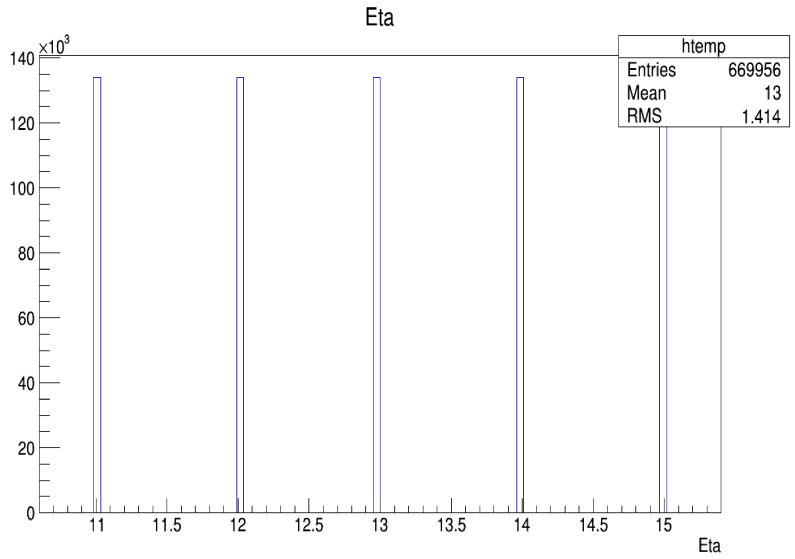
Commissioning

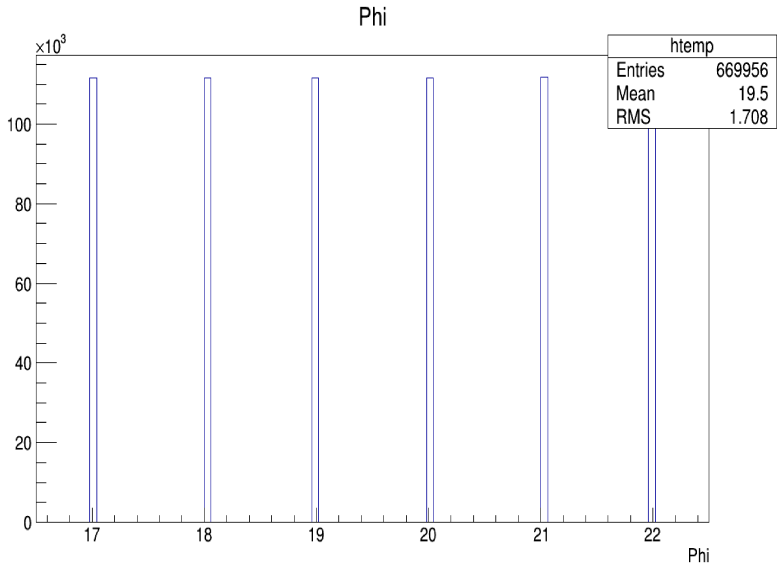
- Since last commissiong phase of oSLBs links, small bugs were fixed too
- There are still some corrections needed to be implemented in configuration of TwinMUX to read BX time right
- HCAL TPs has issue in arriving in the right BX, there has been long discussion on this, so far nothing concrete concluded
  - Plan to give talk in this HCAL Trigger meeting to proceed with it
- We requested Boston for:
  - Spears oSLBs, should receive some
  - Writeup the oSLB firmware document
- May 29: Karol confirmed few runs taken with HO aligned with TwinMUX
  - Run: 295463, 295446, 295449
  - Andrea Triossi confirmed that the readout delay was significantly off versus the expected good value,
  - Conclusion: unpacker won't see good hits but something.

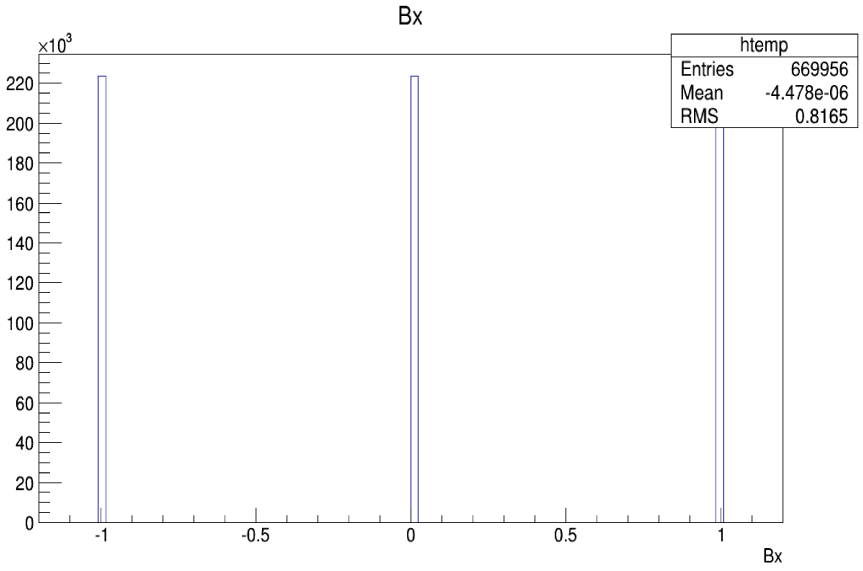
TwinMUX HO Unpacker

- Setup the unpacker from CMSSW_808 to CMSSW_900
  - Many changes took place from 808 → 900
- Analyzed following dataset with unpacker:
  - Run: Run2017A (run no:295463)
  - Dataset: /ZeroBias
  - Unpack only YB2/S04

TwinMUX HO Unpacker

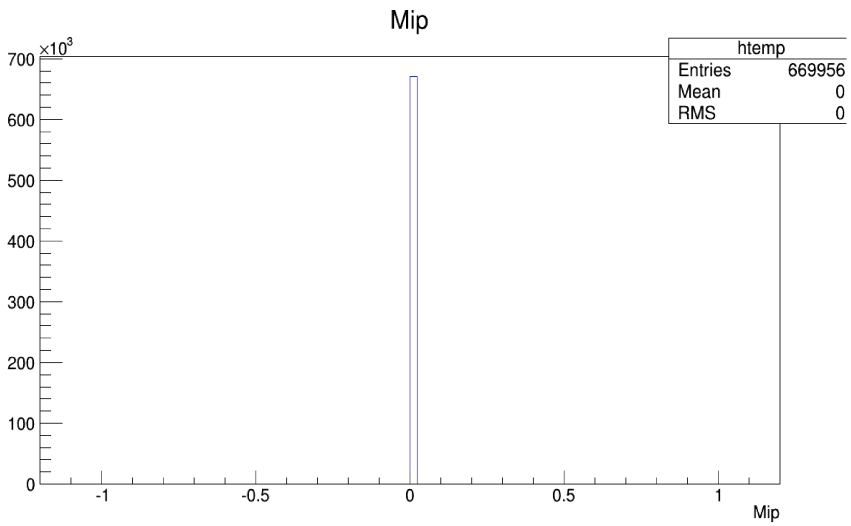


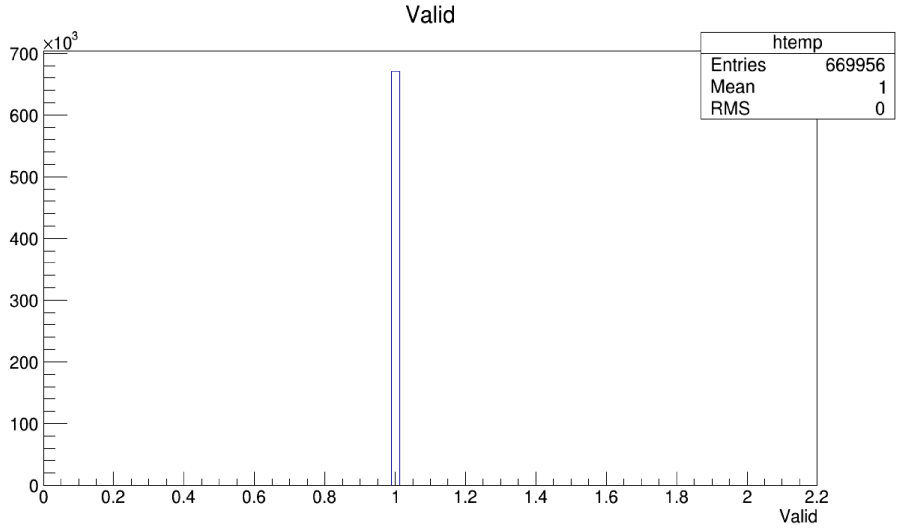




- Eta, phi & BX distribution as expected

TwinMUX HO Unpacker





- As readout delay was off, good hits were not expected, might explain the distribution of mip.
- Also, as MIP is always 0, valid is always set to 1.
  - Analyzing more into it..

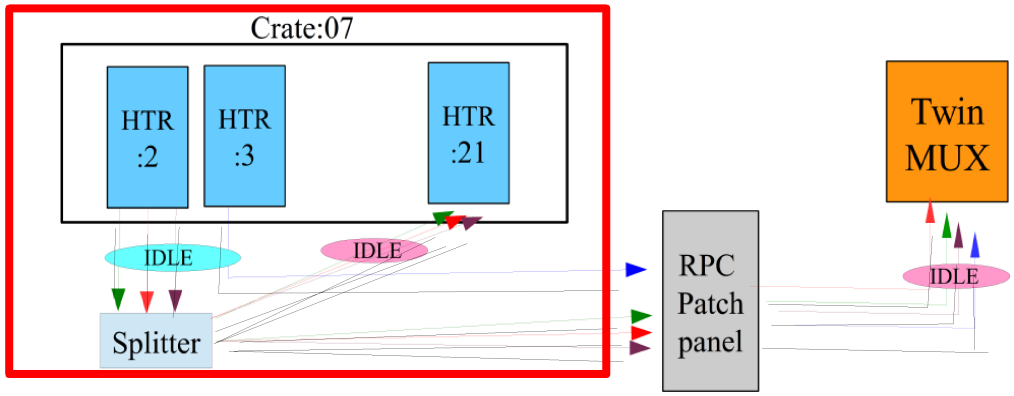
Emulator

- Update from Soham..

Backup

Commisiong

- Recent Update:
  - Followed from modified htr.cc with debugging feature by Drew, we did tests with the splitted signals on HCAL side on May 5 [1]
    - Summary: Everything looks OK and oSLB datra was perfectly synchronized over the 3 fibers from oSLB in slot:2



  - Conveyed to Karol to report his finding from TwinMUX side
    - Yesterday, he replied that 80% links are locked right and reported few issues

> Sorry for responding so lately, but I was busy last days with the CPPF commissioning.
>
> I just checked the HO RX in the TWinMux, when both the TwinmUx and HCAL where in global. It looks much better now:
> - About 80% of links lock and align with very similar alignment delay (3-4BX, for the BCN0 delay of 3478BX). The links lock by themselves after I reset the receiver, so I guess you send commas(idles) periodically? How frequent it is (I could not catch the commas with the spy memories, so I guess not very frequent)?
> - On many above links I can see a repeating pattern of data:

[1] http://cmsonline.cern.ch/cms-elog/980139