






HO Unpacker Update

Bad marker data tracking

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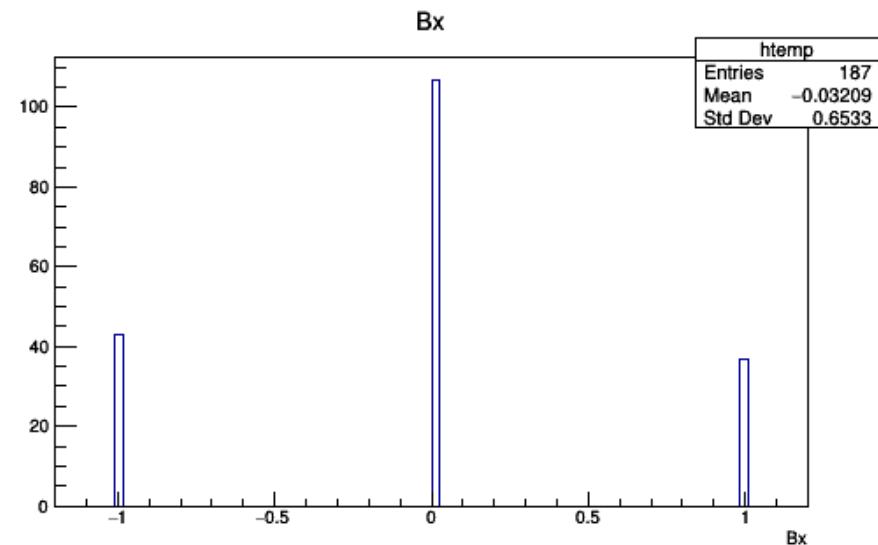
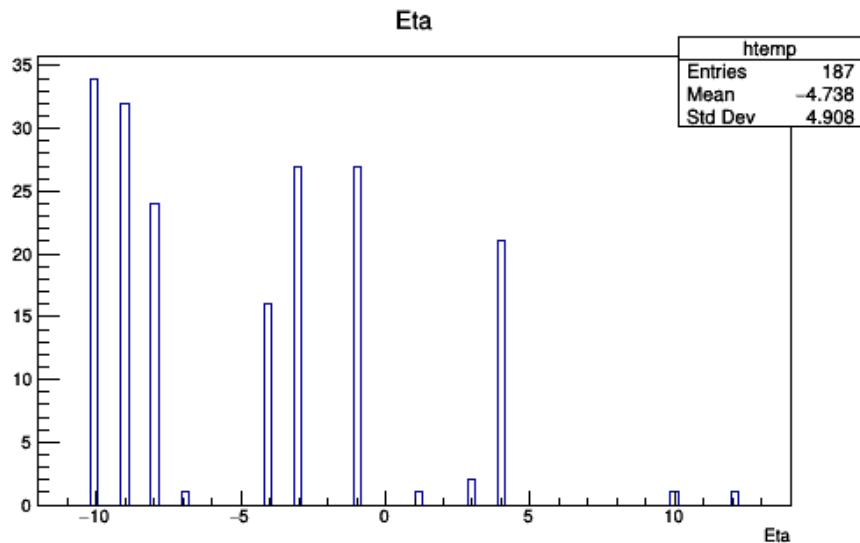
Mentioned in previous meeting

What now ?

-  1- Understanding the code.
- 2- Adding the Electronic Emap to the Data Base.
- 3- Modify the Unpacker to read from the Data Base.
-  4- highest priority better understand the source of the HO TwinMux TP which lack the valid bit.
- 5- Pooja did a good job in cleaning up the corrupted TPs which lacked the valid flag.
-  6- question remains what causes the invalid TP data?.
-  7- How many good HO TPs are being thrown away because they are invalid at the TwinMux (is it random or selective) ?!
-  8- start to see what needed to Go with BMTF

Mentioned in previous meeting

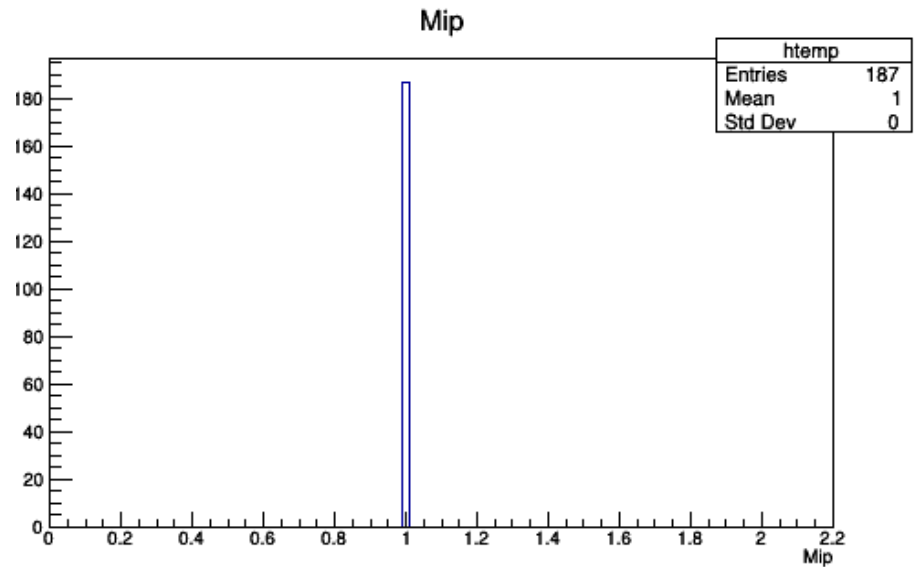
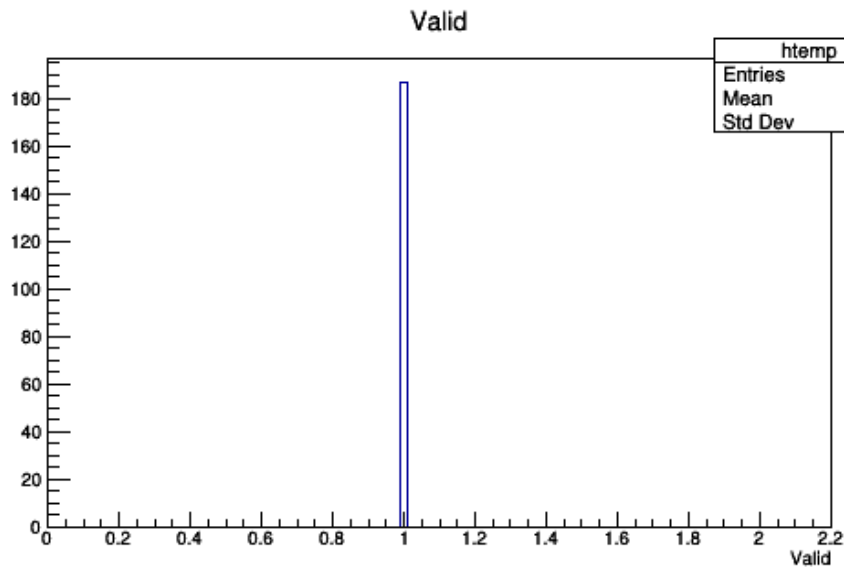
- ❖ What I did is simply look for only the event failed to pass the good data maker conditions to see how much it is and from where they come from.
- ❖ I reversed the good marker flag (i.e. I remove all the events with good marker in both links)
- ❖ This test done with events from SingleMuon2017C run no. = 299649 taken at 24 jul



187 Entries bad compared with 12668 good

Mentioned in previous meeting

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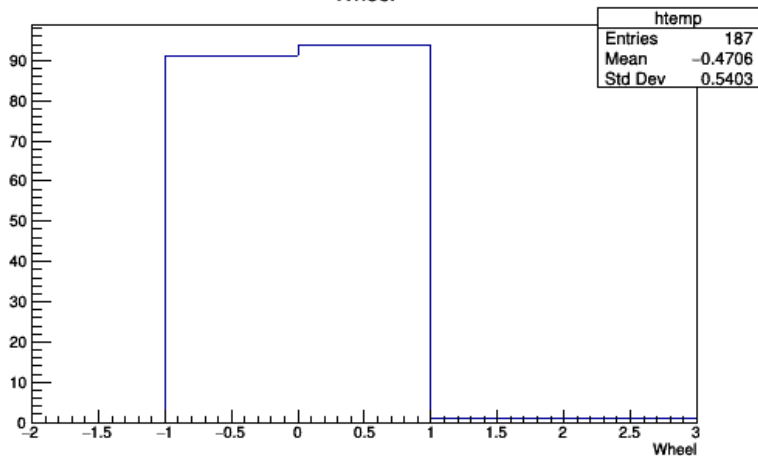


Interesting that all of them are valid

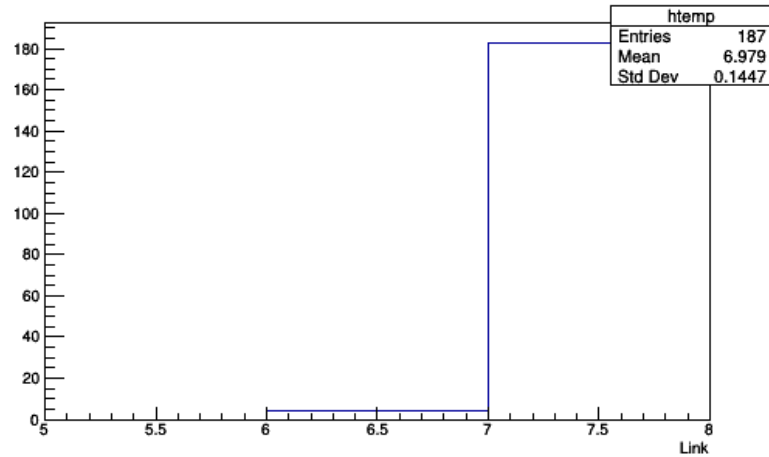
Mentioned in

- ❖ What I did is simply look at the conditions to see how
- ❖ I reversed the good (both links)
- ❖ This test done with e

Wheel



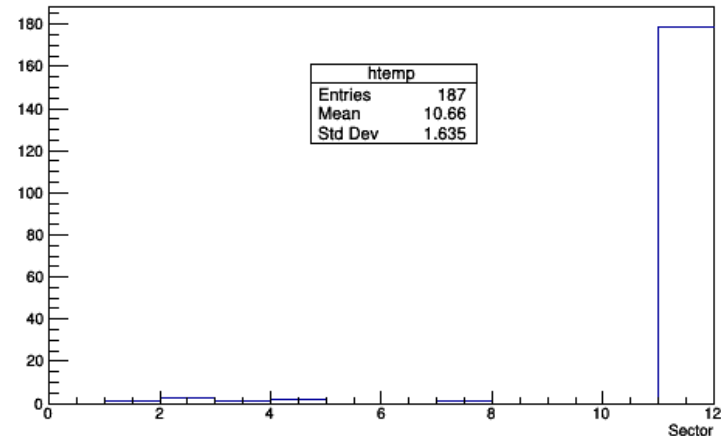
Link



data maker

good marker in

649 taken at 24 iul
Sector



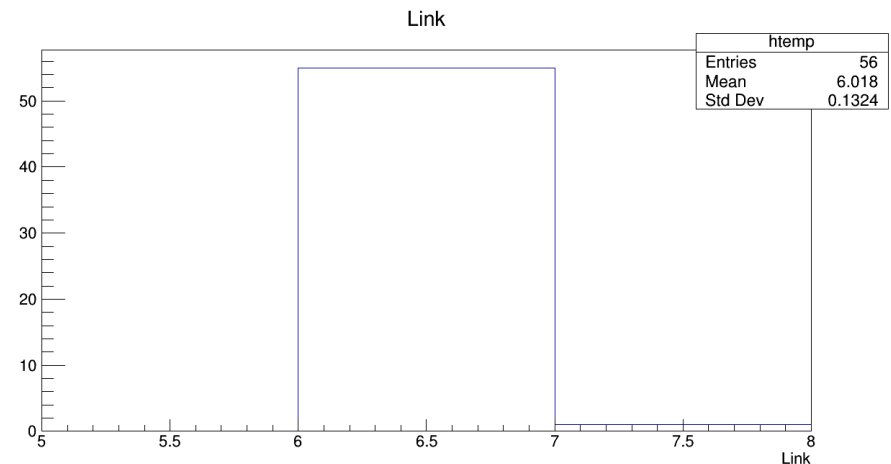
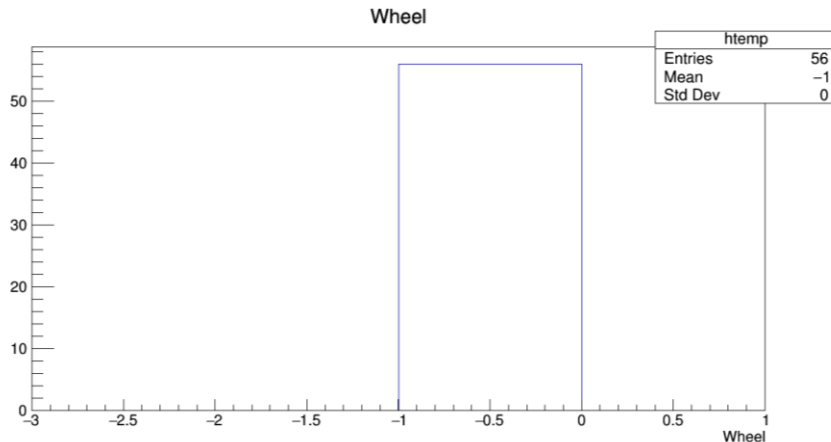
identified the positions on the HO side

Looking at the mapping to find the corresponding frontend position and asked Dick to check with me from (HTR + TwinMux) side

- > S2F07_CR13_HTR17_Slot-t RPC_YB-1_S12_Fib6_HO_CR13_HTR17_Slot-t
- > S2F07_CR13_HTR18_Slot-b RPC_YB-1_S12_Fib7_HO_CR13_HTR18_Slot-b
- > S2F07_CR13_HTR16_Slot-m RPC_YB0_S12_Fib6_HO_CR13_HTR16_Slot-m
- > S2F07_CR13_HTR17_Slot-m RPC_YB0_S12_Fib7_HO_CR13_HTR17_Slot-m
- > S2F07_CR13_HTR15_Slot-b RPC_YB+1_S12_Fib7_HO_CR13_HTR15_Slot-b
- > S2F07_CR13_HTR16_Slot-t RPC_YB+1_S12_Fib6_HO_CR13_HTR16_Slot-t

From HTR and TwinMux

- ❖ We found that this issue is due to the miss-configuration of oSLB mentioned in <http://cmsonline.cern.ch/cms-elog/1000137> and fixed in: <http://cmsonline.cern.ch/cms-elog/1000345> as well as the bad oSLB which was fixed in: <http://cmsonline.cern.ch/cms-elog/994990>.
- ❖ I tried newer Run no. 300817 taken at 09 Aug 2017 and I founded that the bad marker data reduced to be only $\ll 1\%$ all of them are in link 6 sector 4 wheel -1.
- ❖ I think the problem was fixed for new runs.
- ❖ see no invalid data in 119 out of 120 links.



HO status on SWATCH

- ❖ <http://l1ts-twinmux.cms:3333/urn:xdaq-application:lid=13/#!/Control%20Panels/SWATCH%20Monitoring>
- ❖ HO status now is good for the first time on SWATCH and all what we need now is to use the information we have.

YB0_S2 ✓											Monitoring: Enabled
Port ID	Status	Monitoring	Masked	Parity_Down_Rate	Parity_Integration_Time	word_done	delay_done	Parity_Up_Rate	crcErrors	isAligned	isLocked
DT01	Good	Enabled	False	● 0	● 2.03772	● 255	● 255	● 0	● 0	● true	● true
DT02	Good	Enabled	False	● 0	● 2.03772	● 255	● 255	● 0	● 0	● true	● true
DT03	Good	Enabled	False	● 0	● 2.03766	● 255	● 255	● 0	● 0	● true	● true
DT04	Good	Enabled	False	● 0	● 2.03763	● 255	● 255	● 0	● 0	● true	● true
RPC00	Good	Non critical	False	● 1	● 0	● 0	● 0	● 0	● true	● true	
RPC01	Good	Non critical	False	● 1	● 0	● 0	● 0	● 0	● true	● true	
RPC02	Good	Non critical	False	● 1	● 0	● 0	● 1	● 0	● true	● true	
RPC03	Good	Non critical	False	● 1	● 0	● 0	● 0	● 0	● true	● true	
RPC04	Good	Non critical	False	● 1	● 0	● 0	● 0	● 0	● true	● true	
HO0	Good	Non critical	False	● 0	● 0	● 0	● 0	⚠ 25422	● true	● true	
HO1	Good	Non critical	False	● 0	● 0	● 0	● 0	⚠ 25309	● true	● true	

YB0_S3 ✓											Monitoring: Enabled
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Now

- ❖ Dick asked me to run over ~100K event to have a clear vision about this issue.
- ❖ I added some branches to the unpacker to save the events filed to pass the Good data marker on both links to keep track on them.
- ❖ I am running on 100K event now using the most recent runs.
- ❖ Will distribute the results once it's done.
- ❖ For BMTF Soham sent me the L1Muon package to see how they implement the LUT.
- ❖ They have a very rare documentation about how it works
- ❖ I am looking on it now I got some incomplete information for that.
- ❖ Dick exchanging some emails with muon people about who we will support the DTTPs.
- ❖ It seems that we have to do the job by ourselves.

Danke!