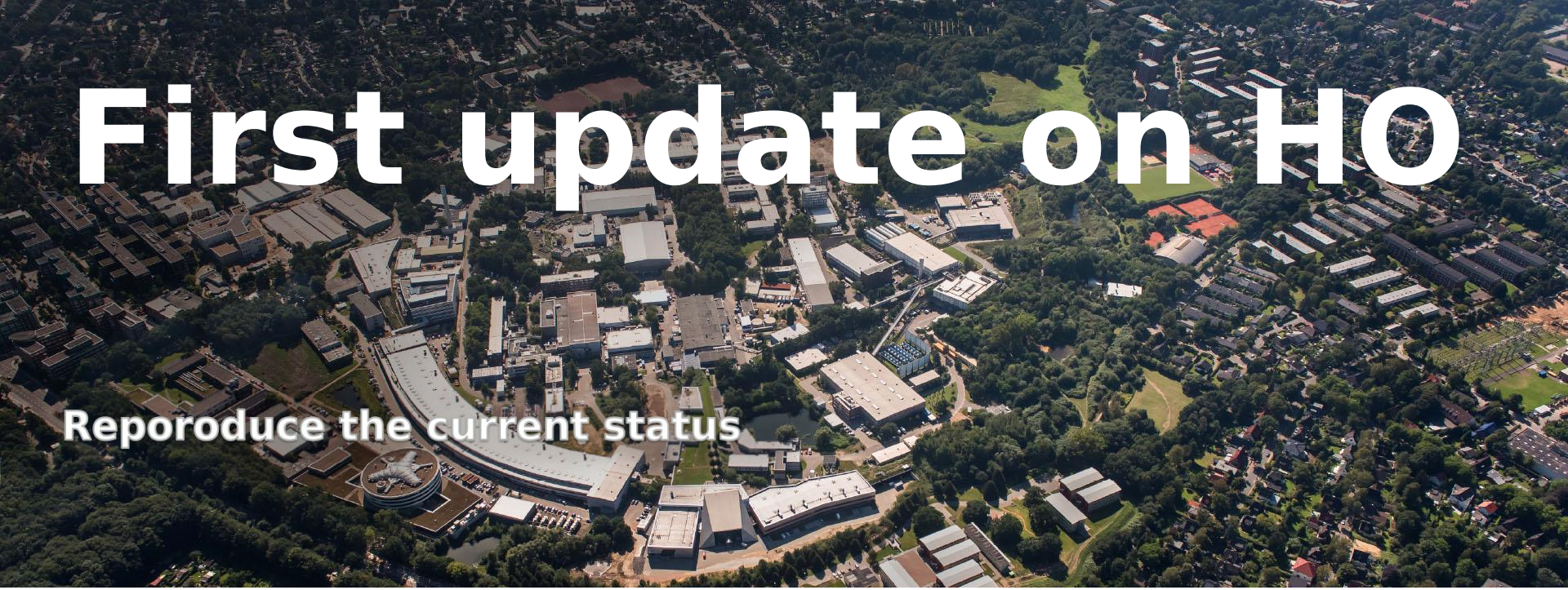


First update on HO

Reporoduce the current status

Ashraf Mohamed
Hamburg, 9 Aug. 2017

HELMHOLTZ ASSOCIATION

DESY

First push at DESY

Started regestration process at RWTH AACHEN

I've arrived to DESY at Jul5 2017

1- met with uTCA people at DESY

2- got an Access to the Vivado WS

3- Met with Alan discussing the TTC function and current problem with Clock cleaner module

4- need to setup a continuos discussions to explore what tasks needed

Meet with SUSY people

Had a discussion and conclusion

1- explored the signals they interst and dark matter directions with Dirk

2- concluded that i've to foucous on the the HO Work before the Next long shutdown

First Push at CERN

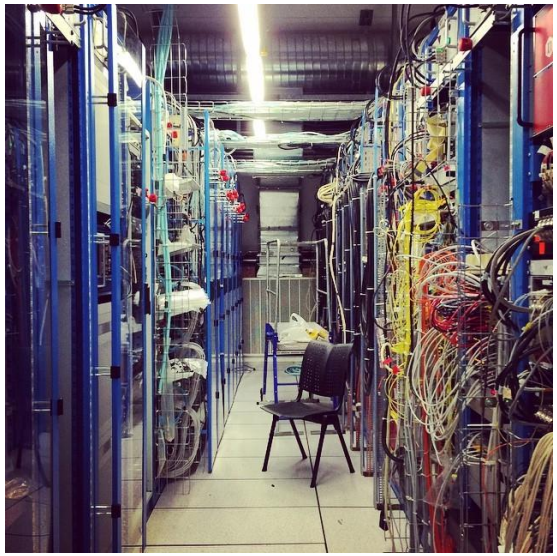
Mainly in a meetings with Dick and Ulf + went ot P5 underground

Met with Dick 3 times

Day one - we dicussed the chalnges for the project and the main tasks needed.

- the HO needed to be fully Emulated -> Soham started and i must follow and push

- the HO Unpacker testing -> Pooja did great job in that and i must have at least the current setup and see what is missing



Day Two + Day Three

We went to P5 underground at the HO HTRs and fixed the two problematic fibers dick reported in

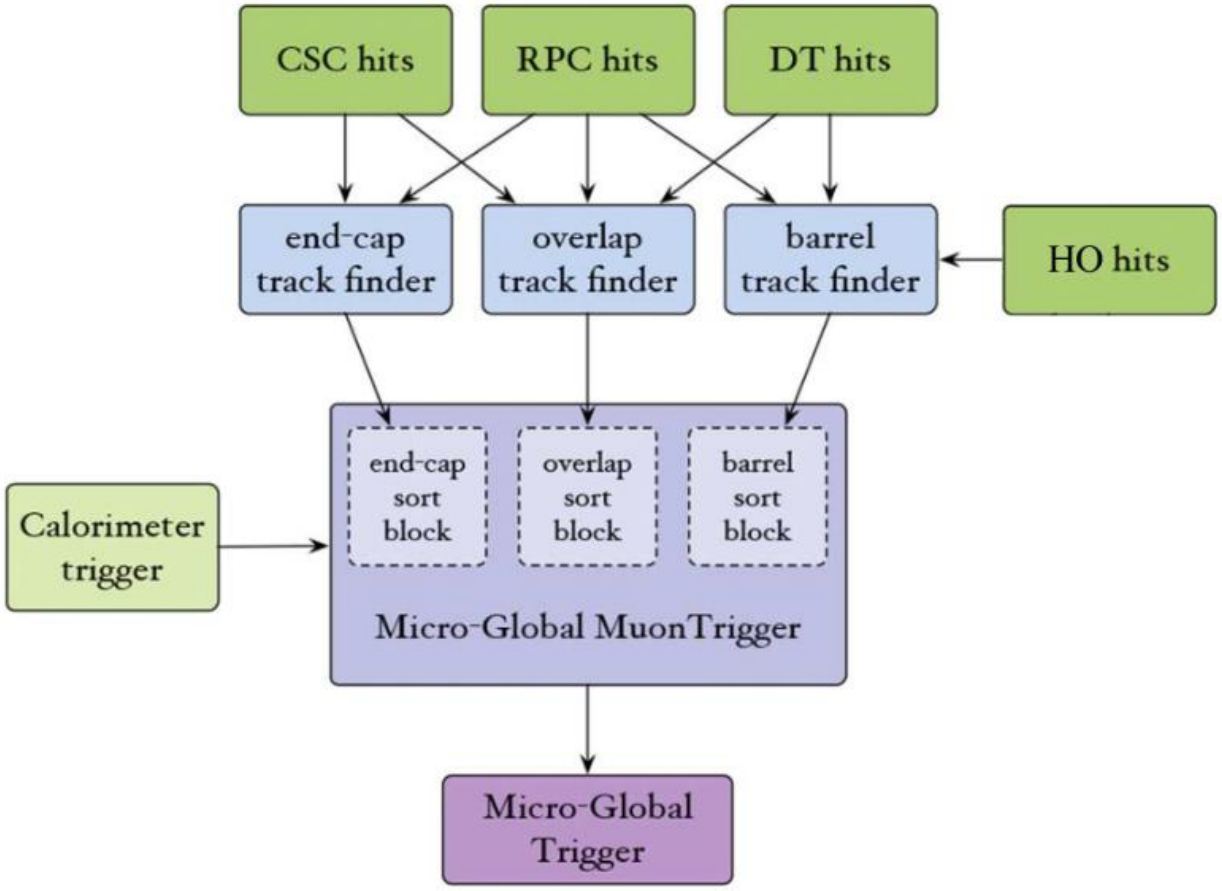
http://cmsonline.cern.ch/cms-elog/1000137

Then we moved to 904 and had a disussion about the idel word problem in the HO

i've got an access to the proper machines for HO and Dick teached me HTR.exe + how to submit and read the _cfg for confugrations.

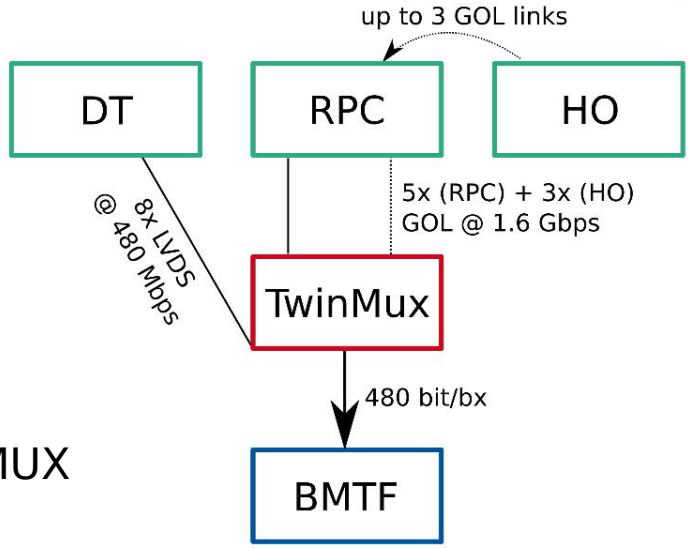
So what after 34 Days at DESY

The idea is to use the HO as a L1 Muon Trigger support



First task

Hand Over with Pooja



Unpacker Code is compiled and tested successfully

- the Code structure

a.) - unpacker which unpack the HO TPs in TwinMUX

- Analyzer to analyze the unpacker output

b.) - HCAL unpacker to unpack HO TPs in HCAL.

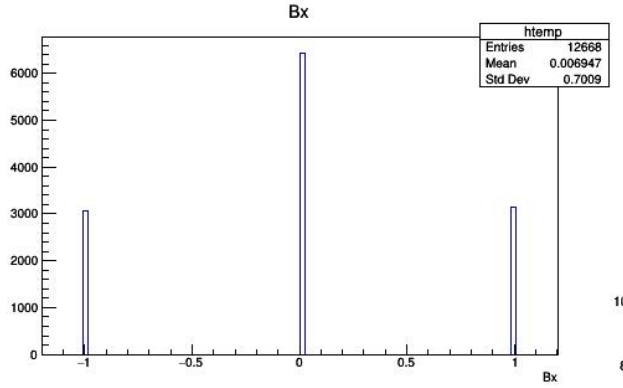
- Analyzer to analyze the The HCAL unpacker

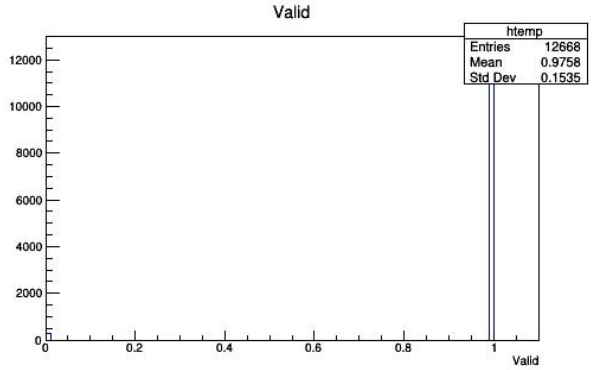
c.) - drawplot.C compare

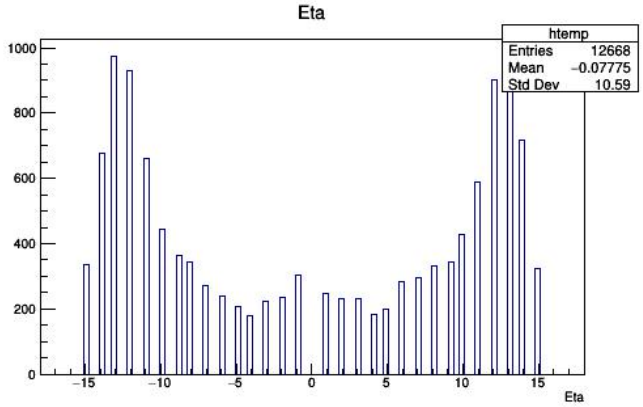
I run the code over events of SingleMuon2017C run no. = 299649

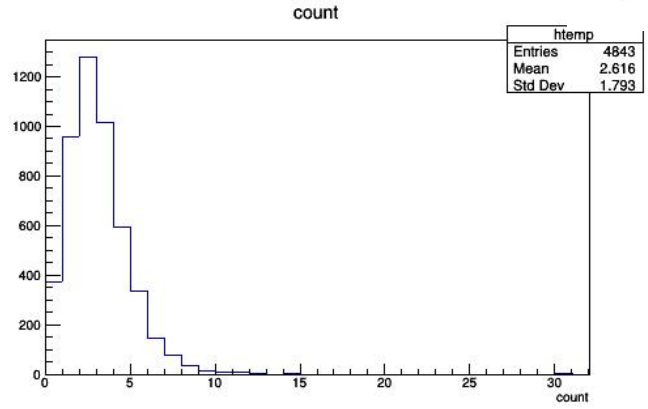
First task

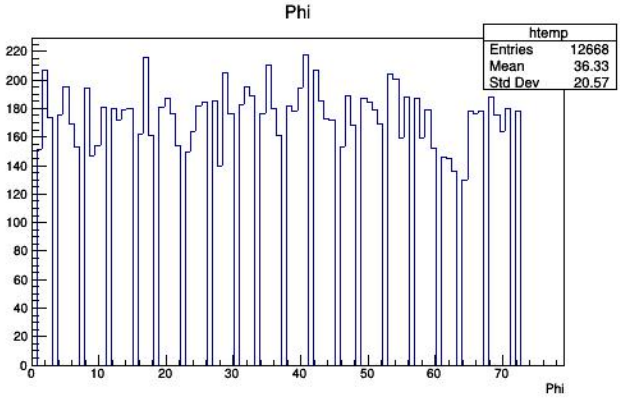
Hand Over with Pooja - HO TPs vs. HCal TPs
1- HO TPs from the TwinMux added valid bit test





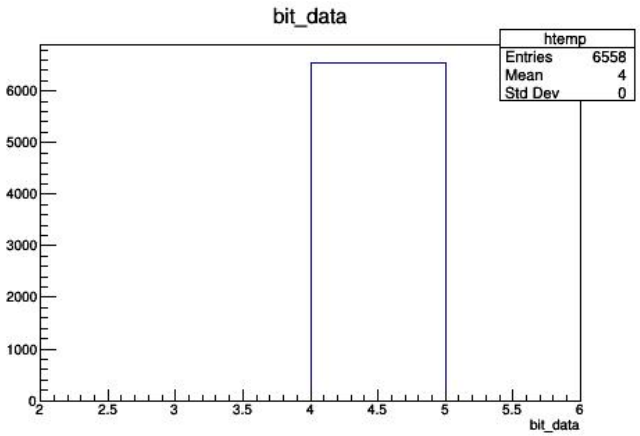


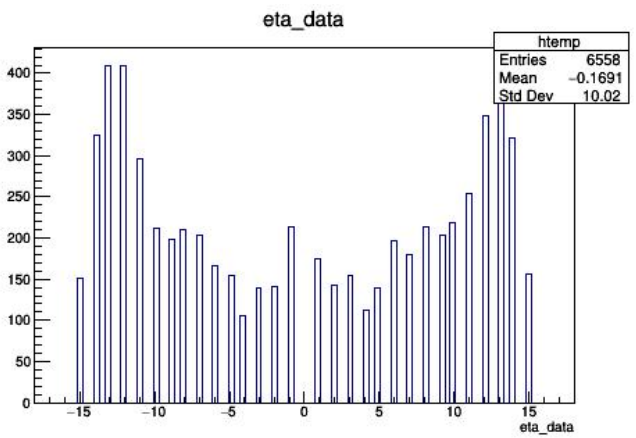


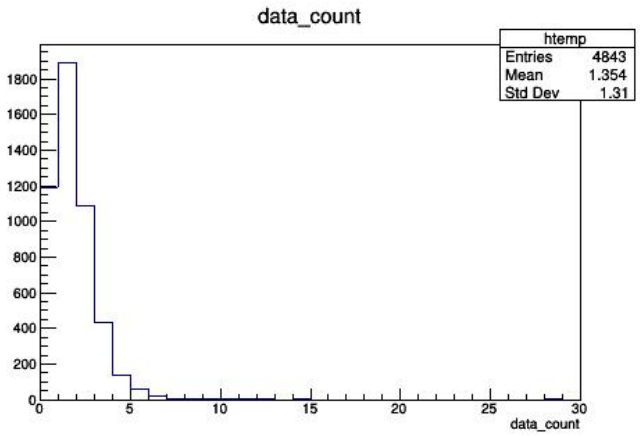


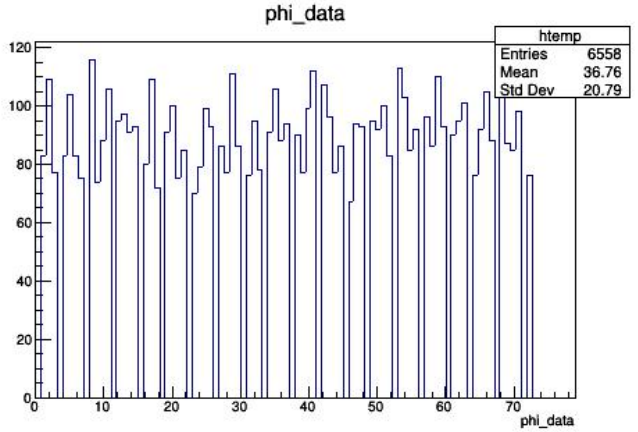
First task

Hand Over with Pooja - HO TPs vs. HCal TPs
1- HO from HCal



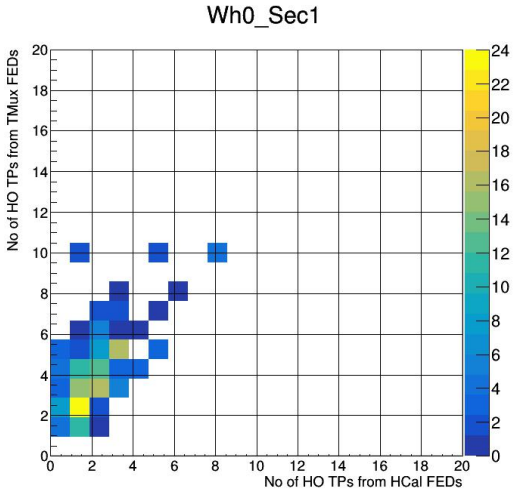


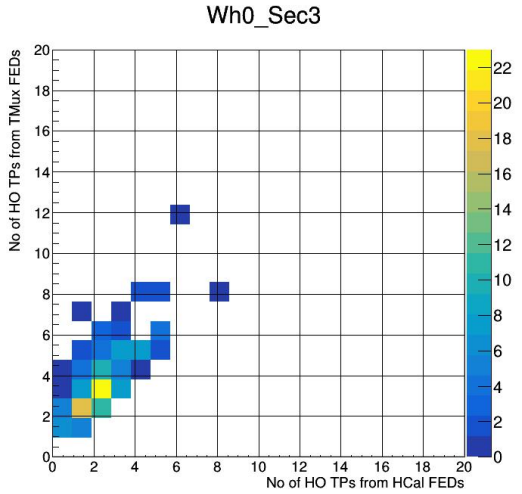


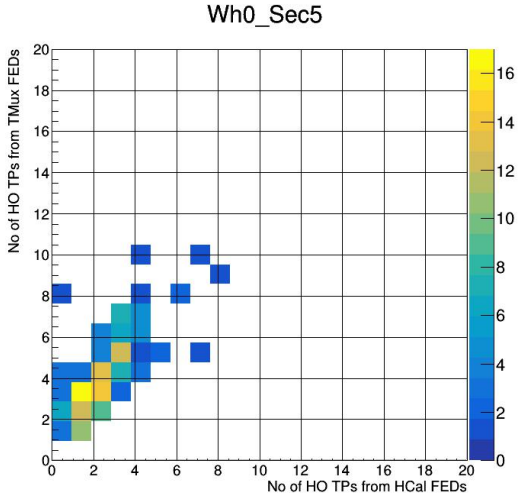


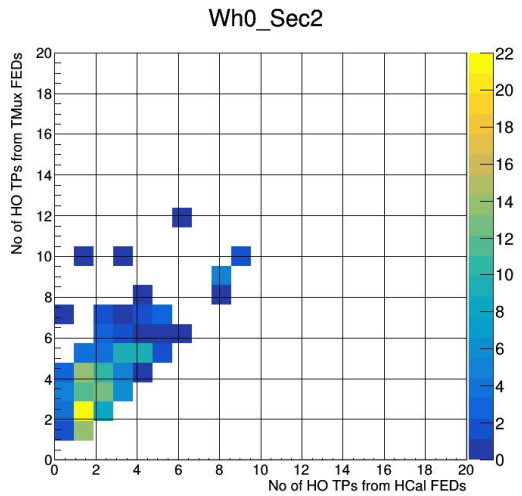
First task

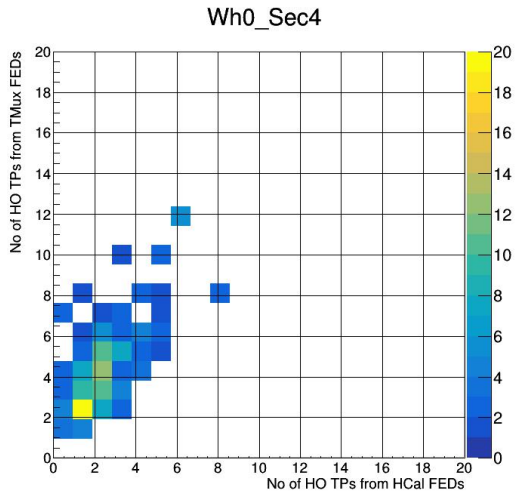
Hand Over with Pooja - HO TPs vs. HCal TPs

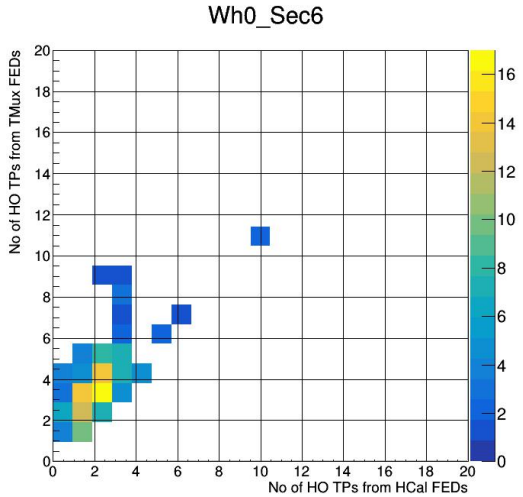






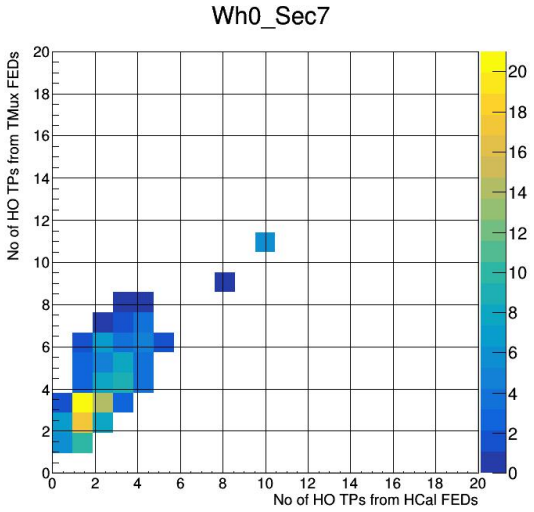


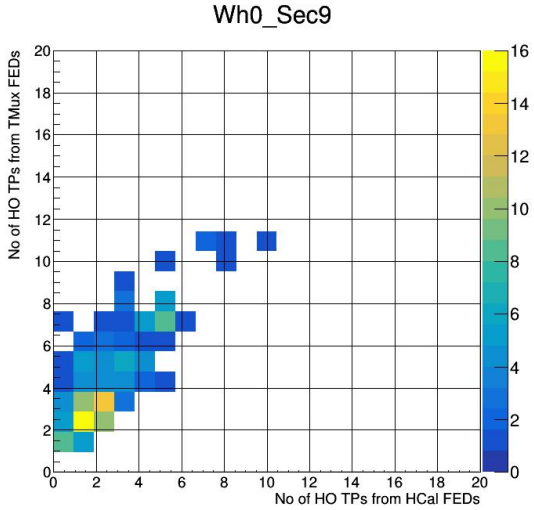


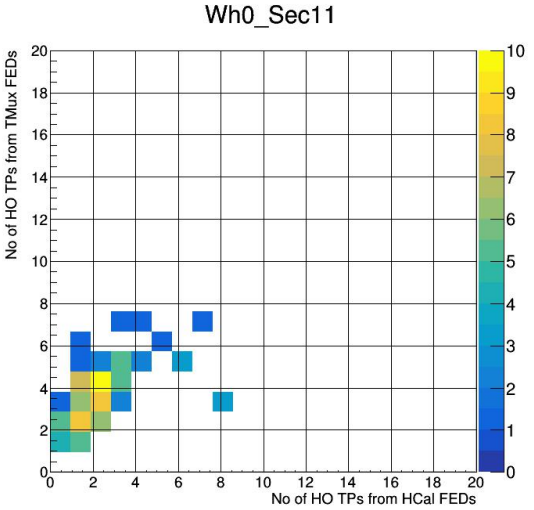


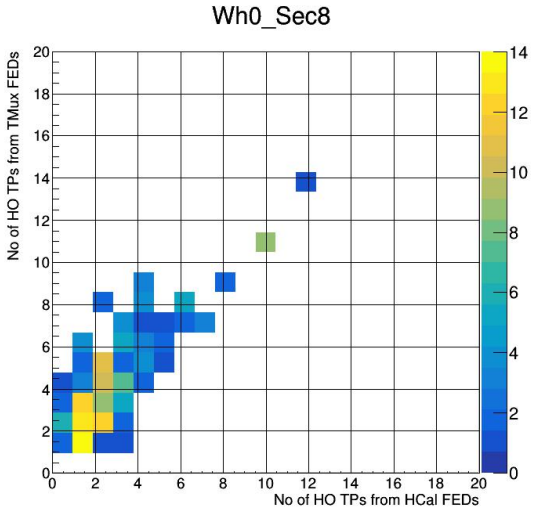
First task

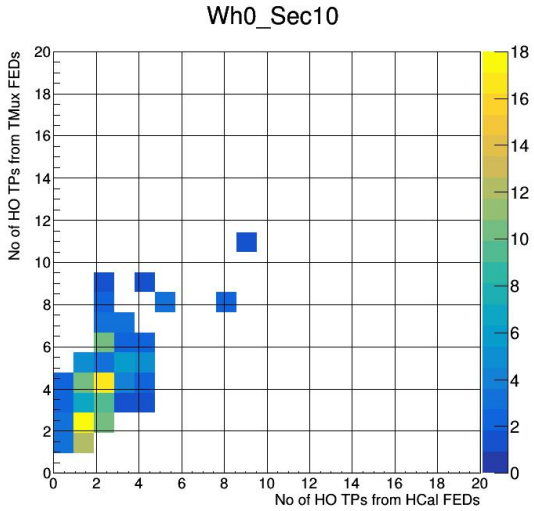
Hand Over with Pooja - HO TPs vs. HCal TPs

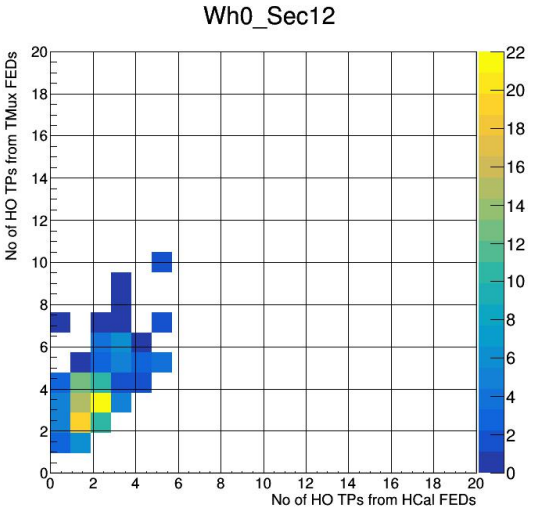












What now ?

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

Danke!

HELMHOLTZ ASSOCIATION

DESY