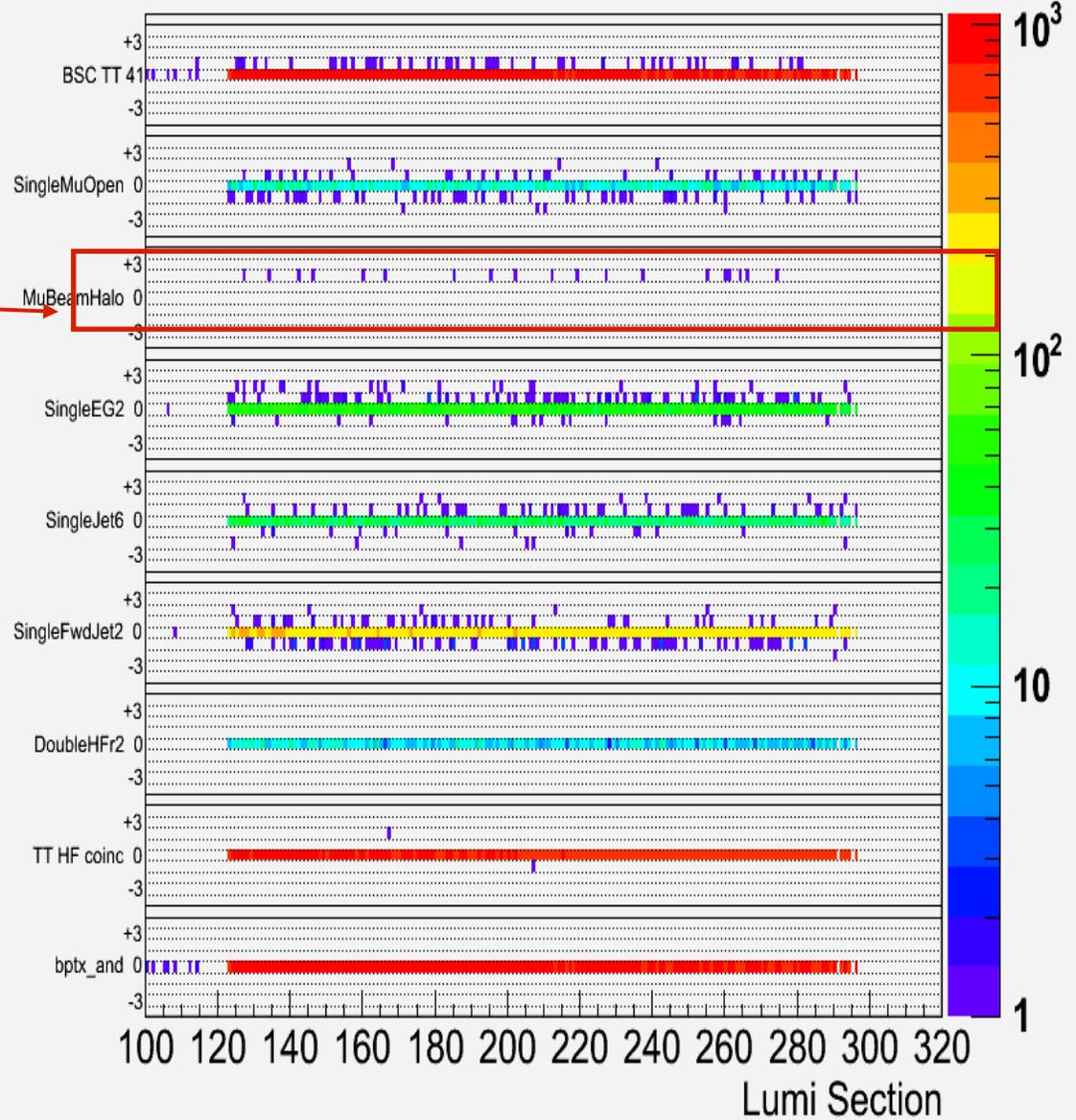# CSCTF Status

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- Collision Muons Candidates Triggered As Halo
- Timing
- Double Triggering
- Spare Status
- Conclusion

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This result were presented by Jim Brooke at 7 TeV Jamboree (8.04.2010):
http://indico.cern.ch/getFile.py/access?contribId=2&sessionId=0&resId=0&materialId=slides&confId=90386
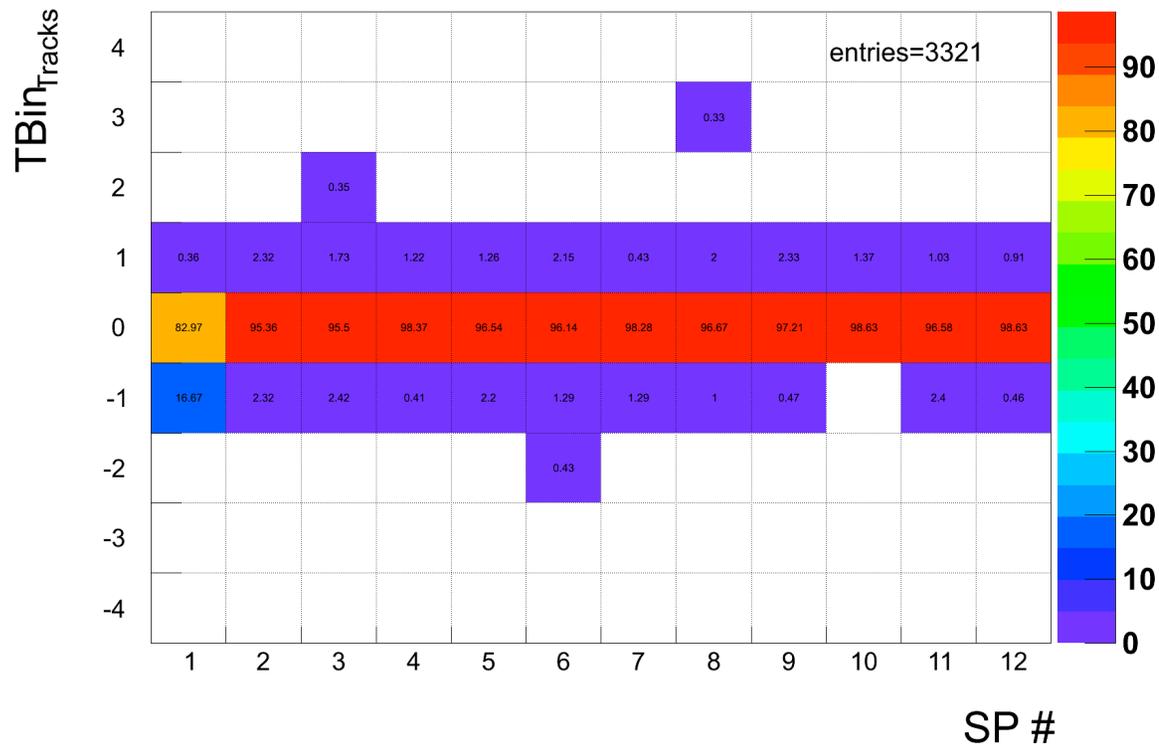
Collision Muons Candidates Triggered As Halo

Δ η (ME1 → ME2 extrapolation)

Halo (ME1-ME2)

Coinc (ME1-ME2)

current cuts

run 130445 VS run 132440
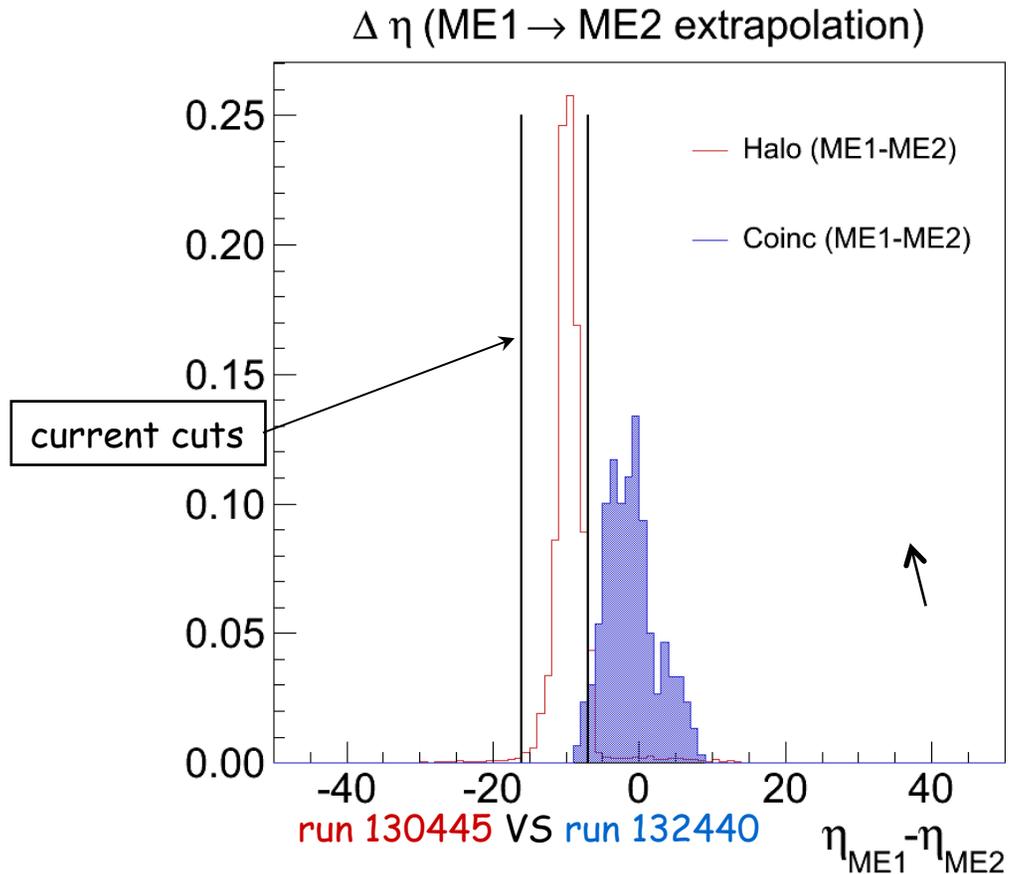
$\eta_{ME1} - \eta_{ME2}$

- Halo extrapolation cuts are currently wide open to increase acceptance → useful for alignment and preliminary timing studies
- Some collision muons pass these cuts in ME1→ME2 extrapolation
- The halo is currently delayed 2 BXs, so these triggers are reported 2 BX later
- It is happening in < 1% of the cases (the fraction is actually small)
- Can be further improved by changing the cuts

Timing

Joao required that the single subsystem to go into the trigger they have to have < 1% prefiring.

$TBin_{Tracks}$ Vs SP run=132440

entries=3321

$TBin_{Tracks}$ \ SP #	1	2	3	4	5	6	7	8	9	10	11	12
4												
3								0.33				
2			0.35									
1	0.36	2.32	1.73	1.22	1.26	2.15	0.43	2	2.33	1.37	1.03	0.91
0	82.97	95.36	95.5	98.37	96.54	96.14	98.28	96.67	97.21	98.63	96.58	98.63
-1	16.67	2.32	2.42	0.41	2.2	1.29	1.29	1	0.47		2.4	0.46
-2						0.43						
-3												
-4												

- All the SPs but SP1 have already a good timing: only ~2% prefiring
- SP1 is not good instead: too many entries in tbin=-1 ~16%

All this problem should disappear once the timing scan is finished and the new timing value for each crate are loaded

Double Triggering

- It effects only muon candidates which travel through the 4 stations

- The muon candidates get triggered as ME1-ME2-ME3-ME4 and ME1→ME4 extrapolations

- Currently it is happening for 40% of these candidates, which corresponds to 0.2% of the current total CSCTF triggers

- We still have very few muons crossing the 4 stations

- It is a problem which CSCTF wants to be proactive about

- It can be a nasty problem for the future data taking

- Short term plan: tune the selection parameters.
  Quick and still clean solution

- Medium term plan: firmware update to better handle the ghost cancellation

Spare Status

• SP boards: 4 spares in 904 (we have 12 working in P5, so this corresponds to 33% of the crate) + 2 spares in UF

• MS: 2 spares in 904 (1 mounted in P5)

• CCB: several (6 to 10) in 904 (one mounted in P5)

•TF DDU: 2 in 904 (one mounted in P5)

Most of the spares are in 904 and all the CSCTF experts have access to them

Conclusion

- Waiting for timing scan at P5 to see improvement for all SP

- plan for the short term:
    - to modify the extrapolation cuts to reduce
      the fake beam halo rate
    - improve the ghost cancellation performances
  Hence we need to create new keys and deliver them at P5

- spare status is presented