

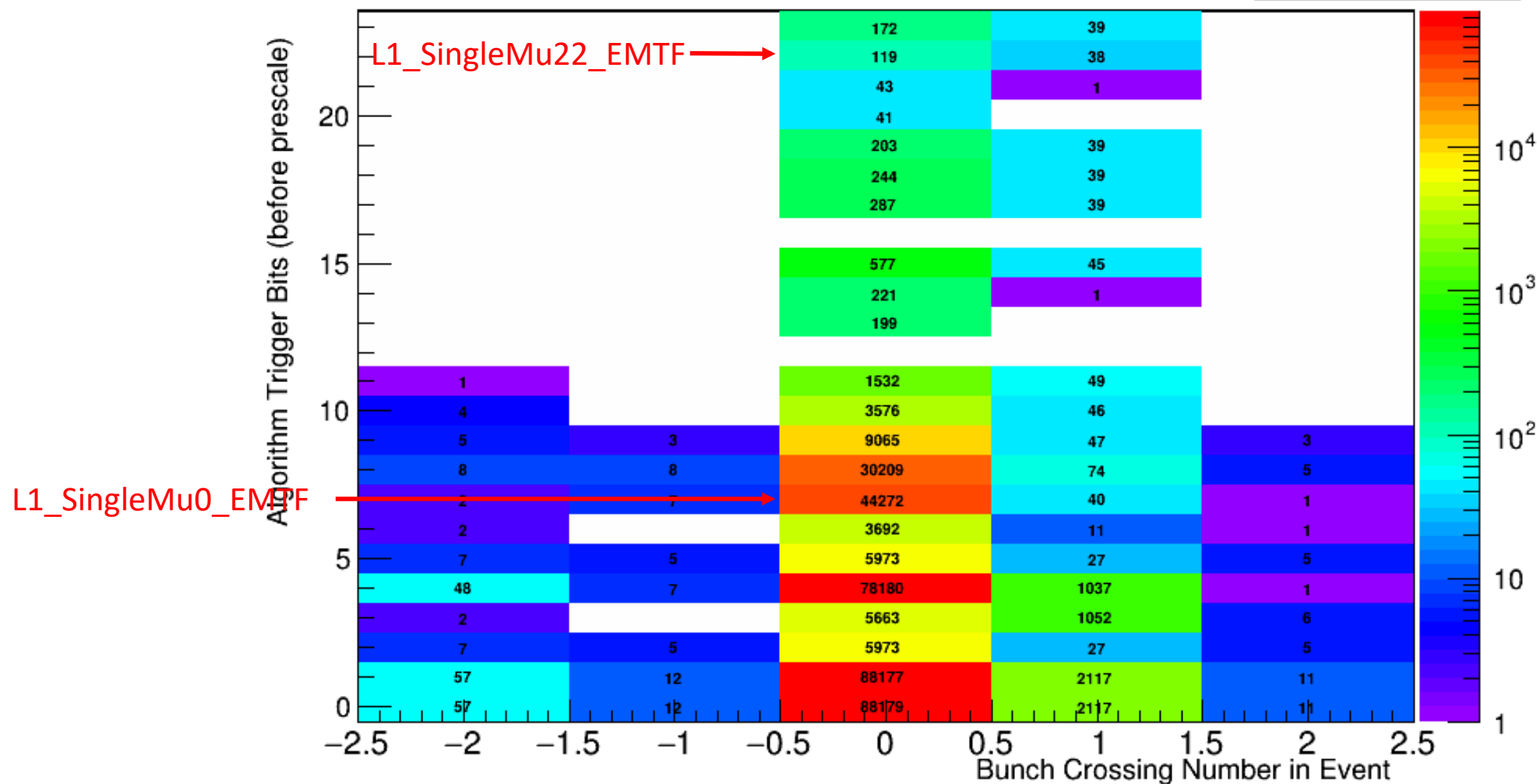
Tracks in Run 314650

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EMTF Working Meeting

uGT: Algorithm Trigger Bits (before prescale) vs. BX Number in Event

algoBits_before_prescale_bx_inEvt
Entries 3.375564e+07



Summary

- Basics

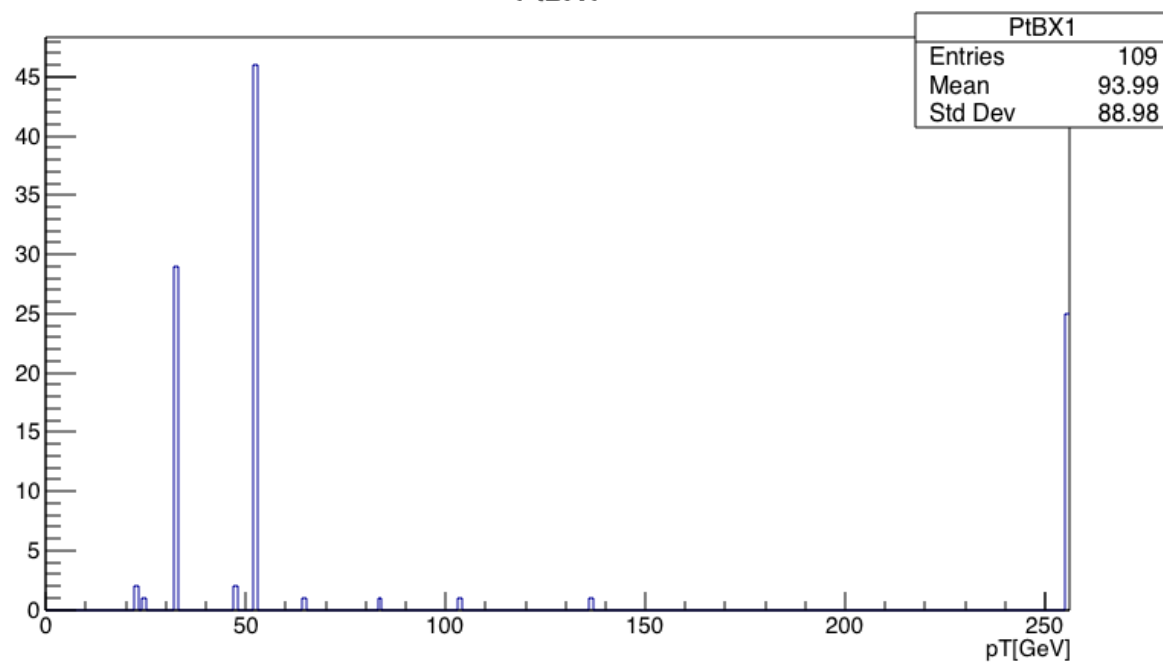
- Processed ^[1] all events ($\sim 1.55\text{M}$) from this run (314650)
 - $\text{BX} = 0$ and $p_T > 22 \text{ GeV}$: 771 unpacked tracks
 - $\text{BX} = 1$ and $p_T > 22 \text{ GeV}$: 109 unpacked tracks
 - $\text{BX} = -3$ and $p_T > 22\text{GeV}$: 1 unpacked track
 - See file [\[2\]](#) in backup, won't show here

- Results

- All post-fired ($\text{BX}=1$) tracks are built in EMTF +2 sector [\[3\]](#)
- Populated @ mode: 11(station 1,3,4), 3(station 3,4)
- Populated @ RPC mode: 11, 3
- Populated @ p_T : 32, 52, 256 GeV
- Populated @ η : 2.08, 2.25
- Populated @ ϕ : 70-72, 120, 130-140
- Not just timing: also populated @ $\text{BX}=0$ for $p_T > 22 \text{ GeV}$ tracks

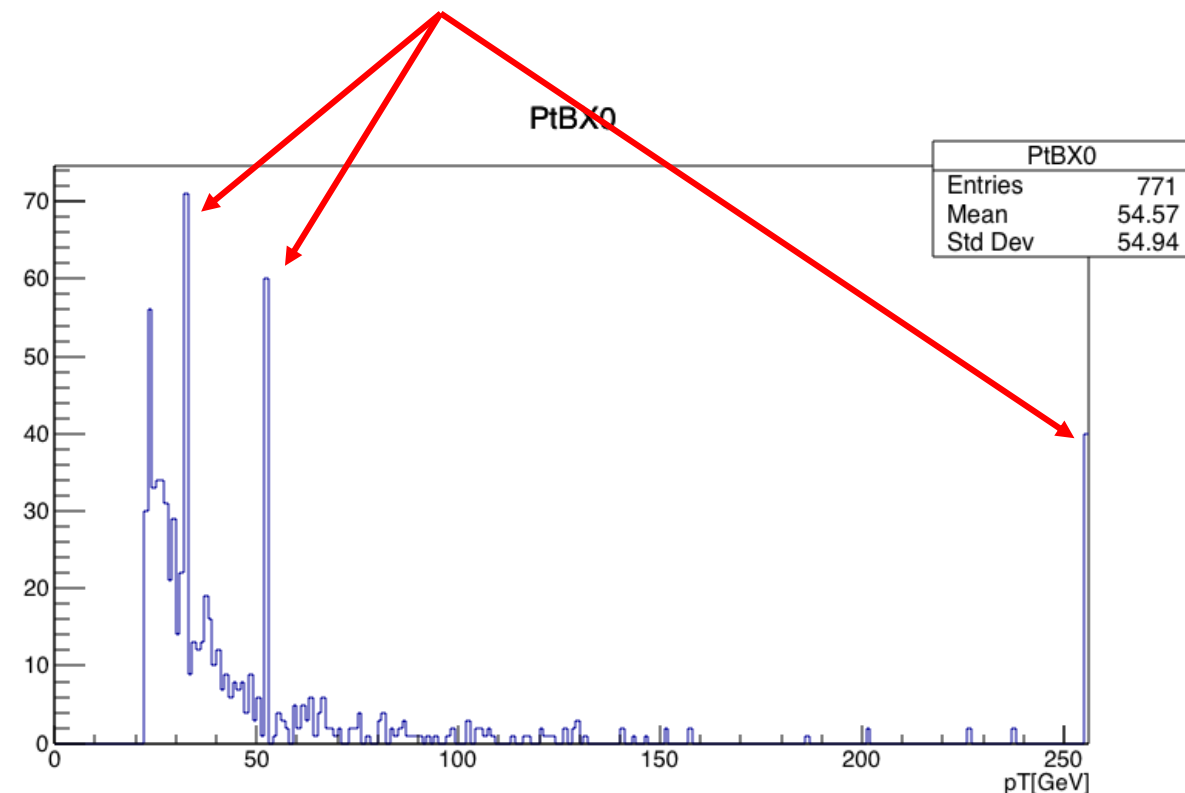
p_T

PtBX1



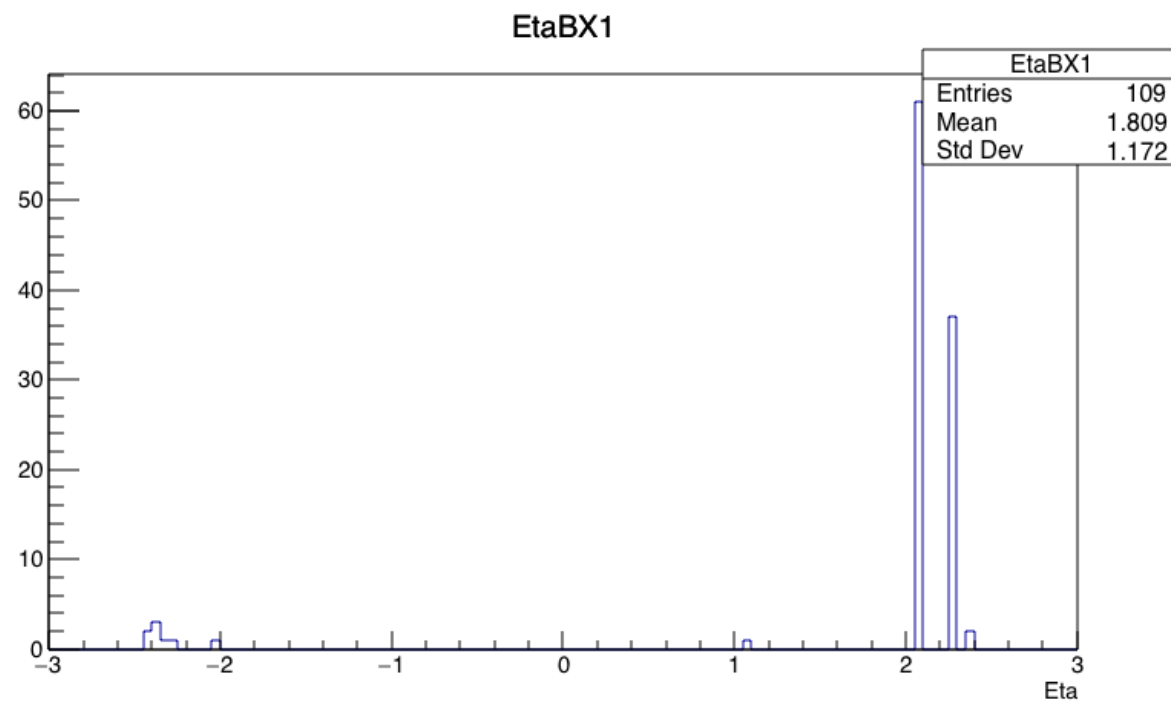
BX=1 ($p_T > 22$ GeV)

PtBX0

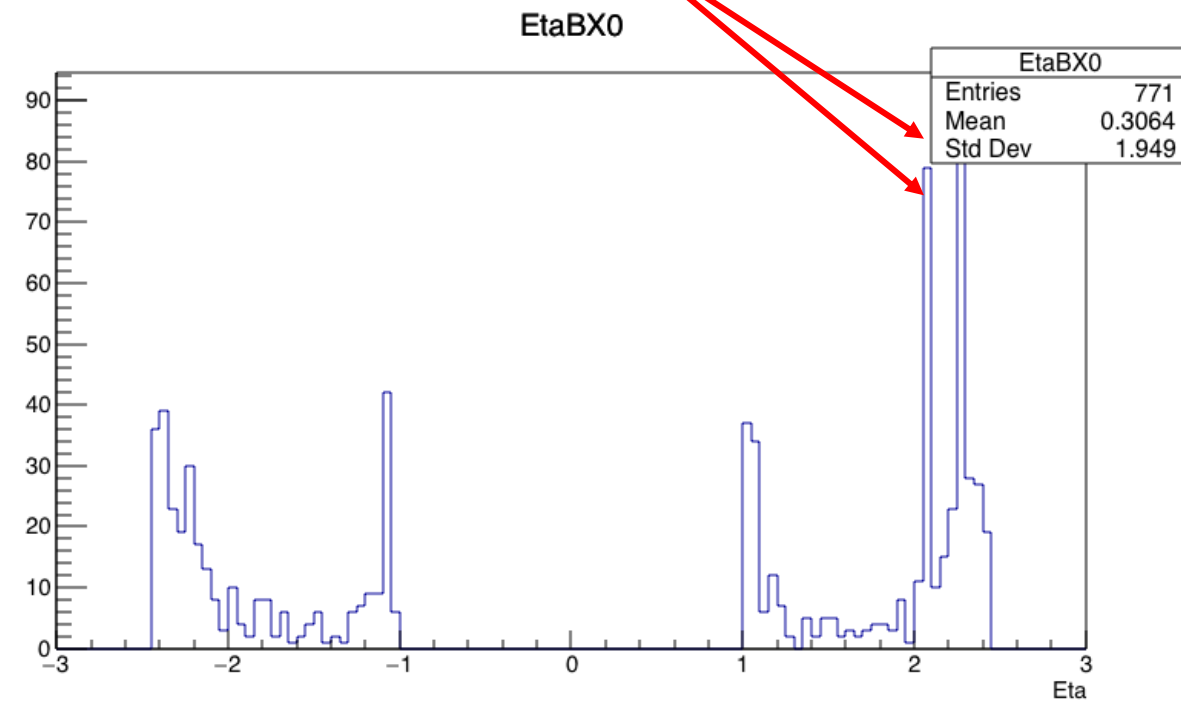


BX=0 ($p_T > 22$ GeV)

Eta

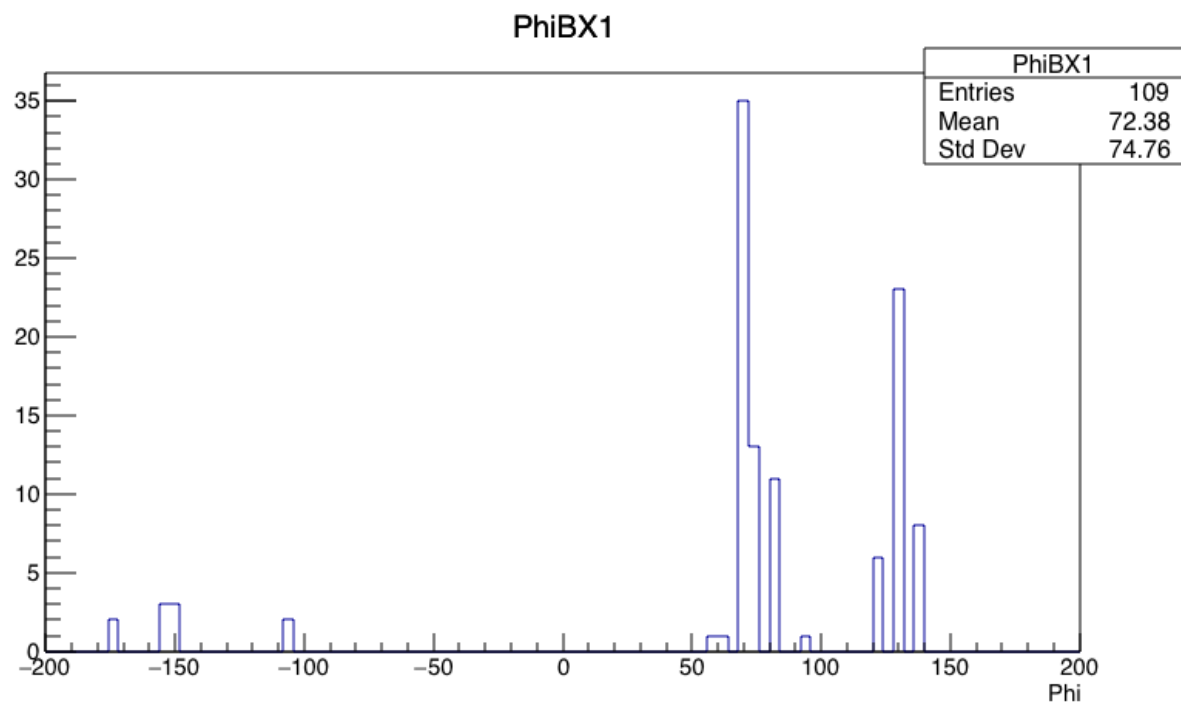


BX=1 ($p_T > 22$ GeV)

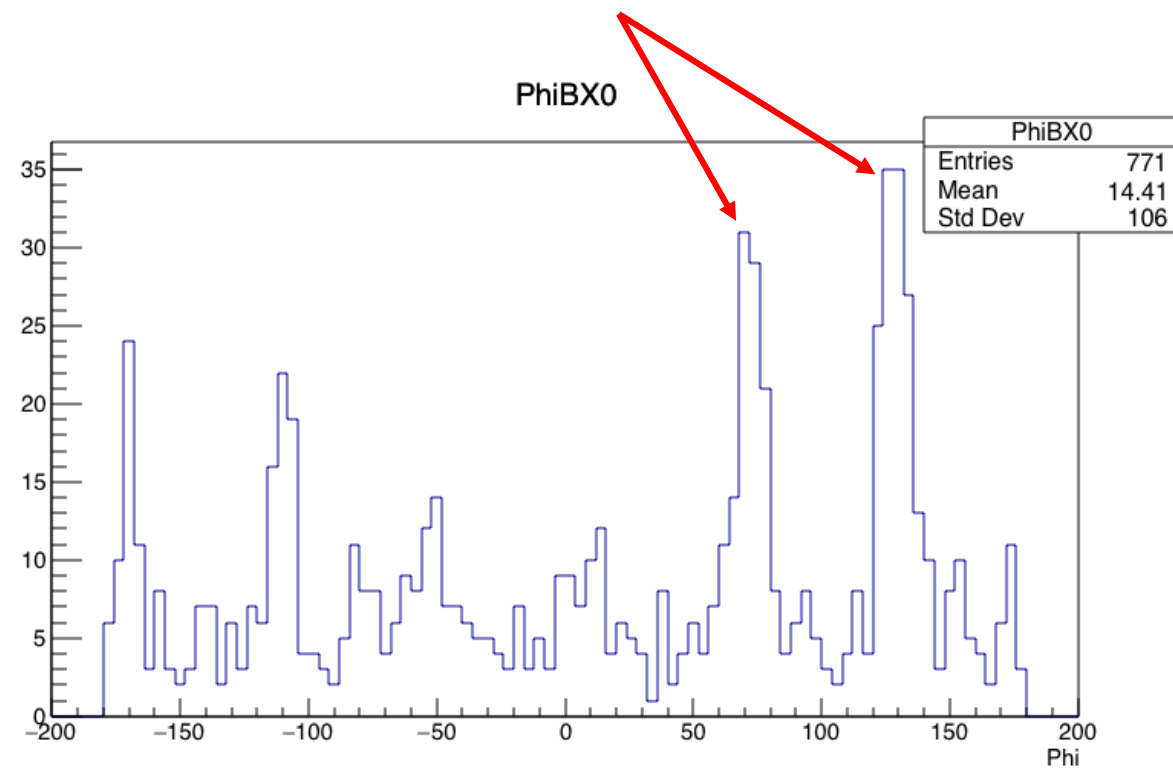


BX=0 ($p_T > 22$ GeV)

Phi

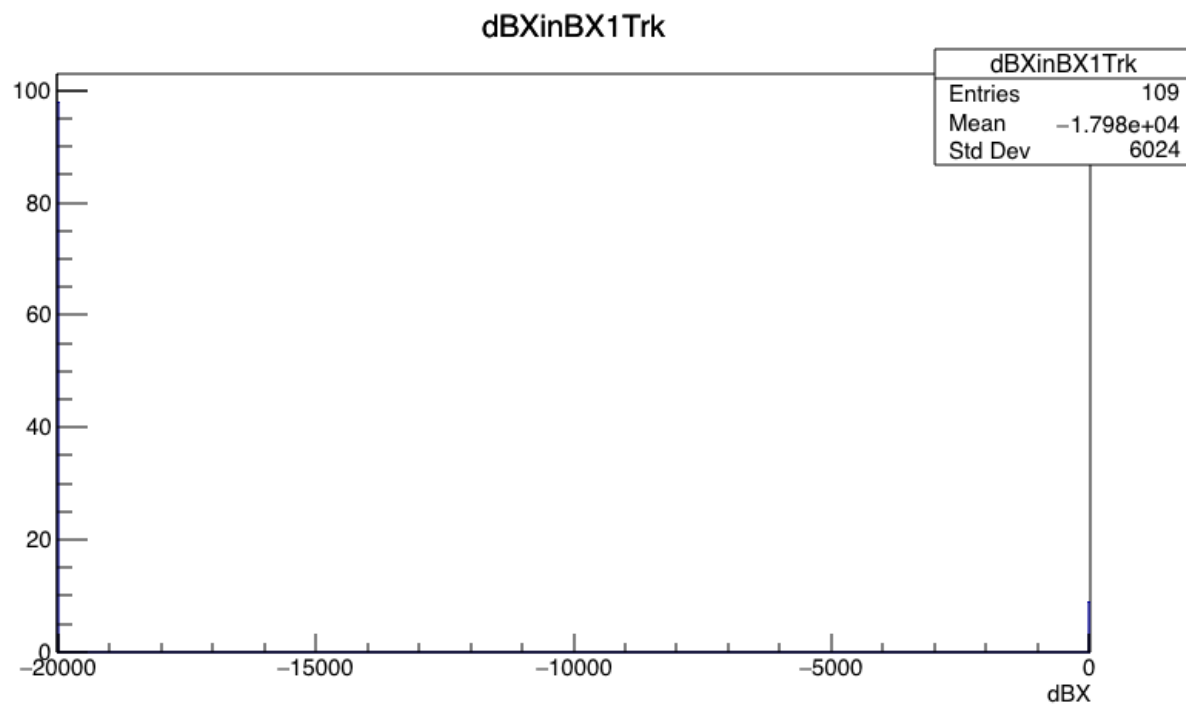


BX=1 ($p_T > 22$ GeV)

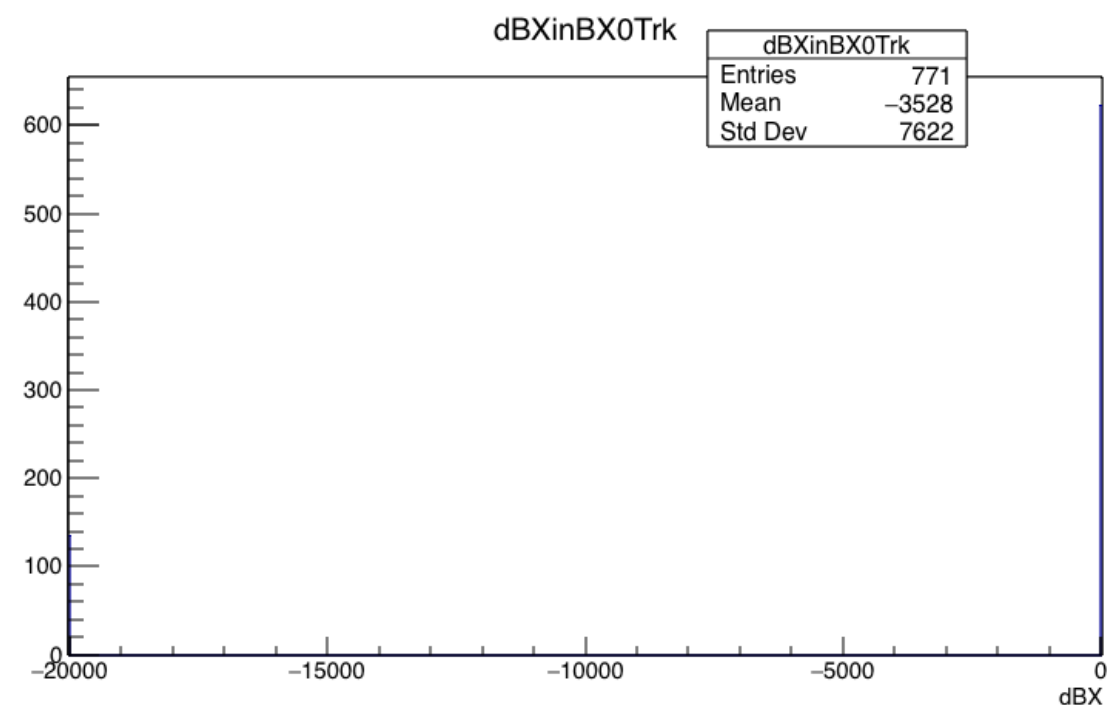


BX=0 ($p_T > 22$ GeV)

dBX



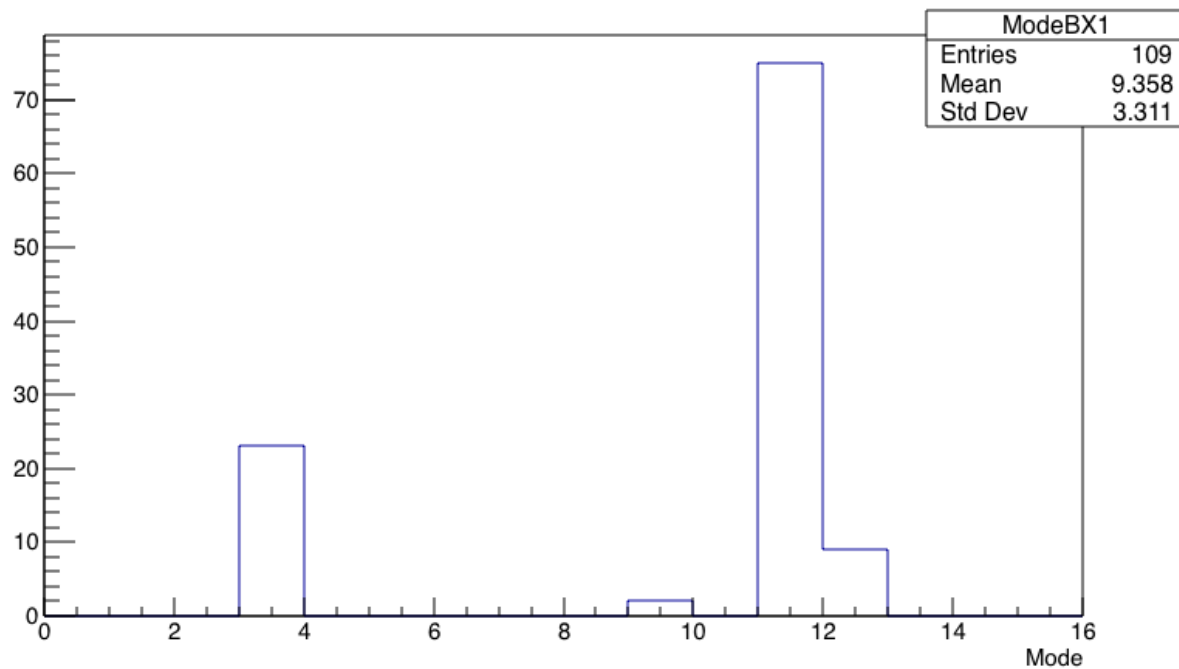
BX=1 (pT>22 GeV)



BX=0 (pT>22 GeV)

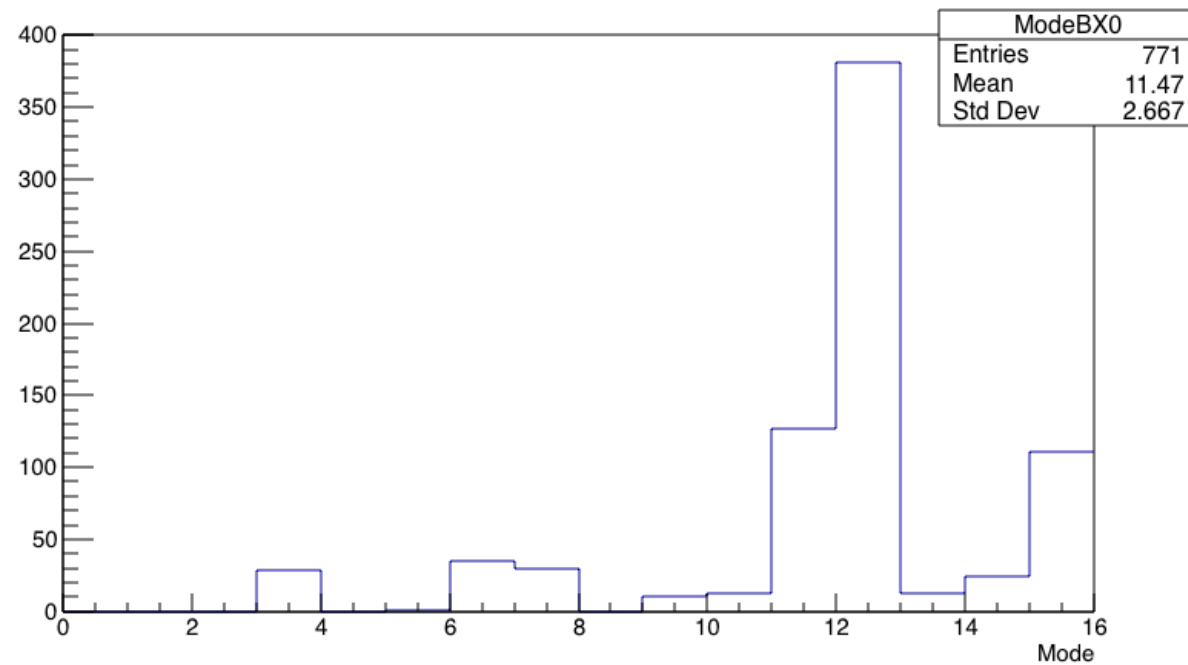
Mode

ModeBX1



BX=1 ($p_T > 22$ GeV)

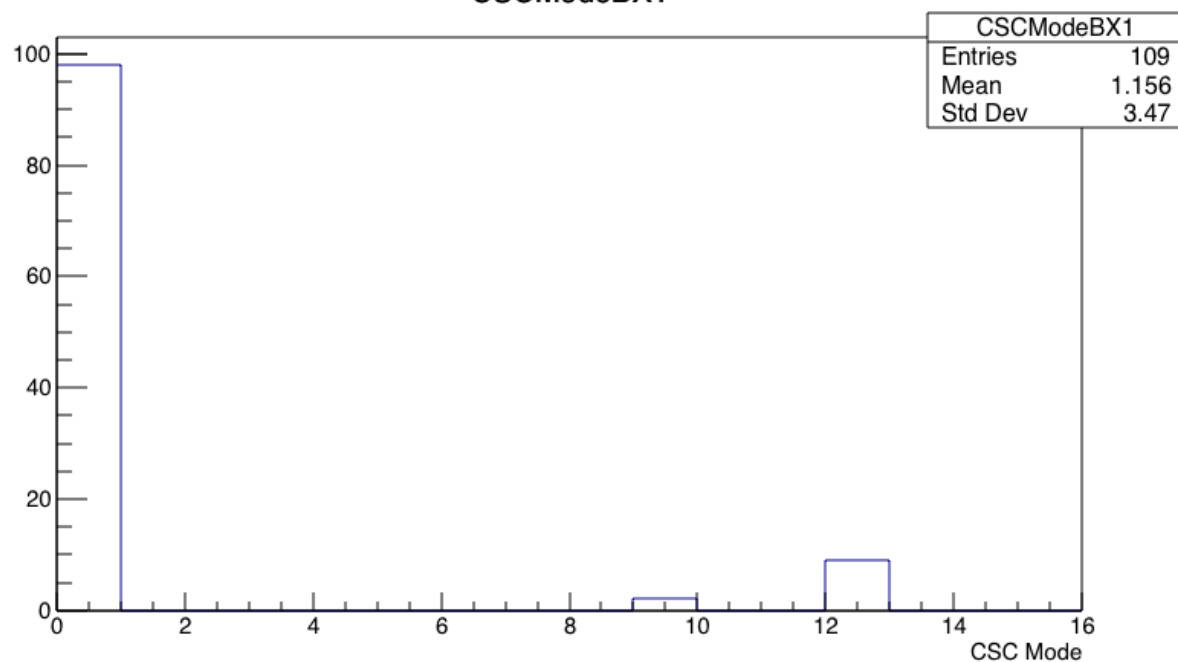
ModeBX0



BX=0 ($p_T > 22$ GeV)

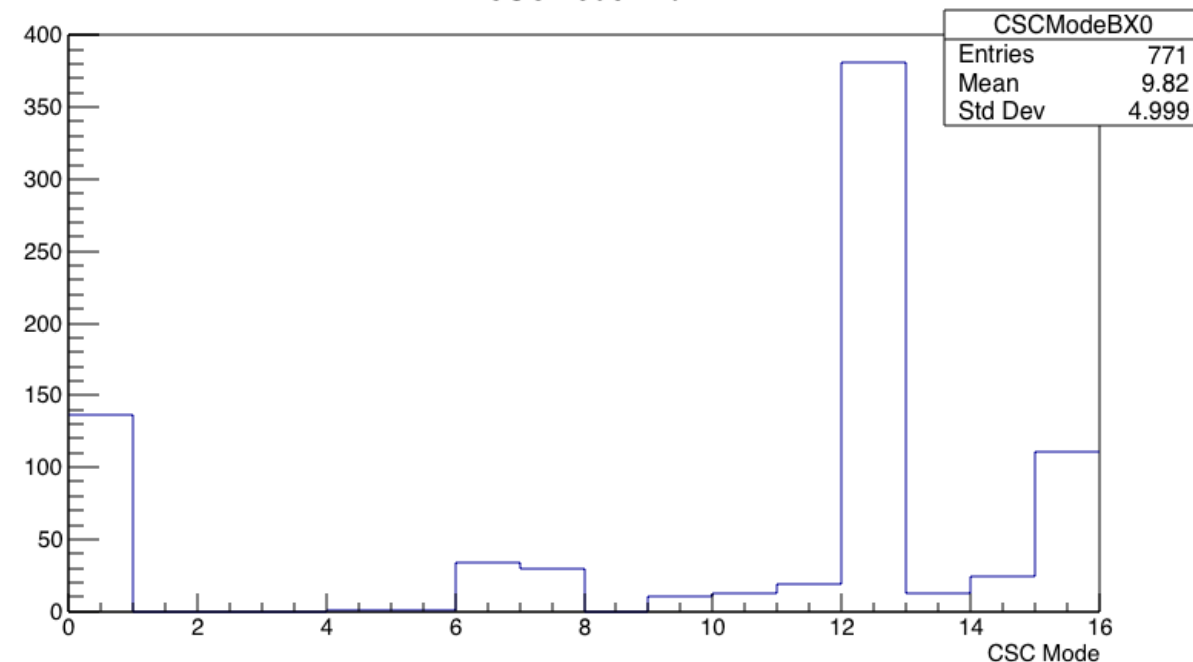
CSC Mode

CSCModeBX1



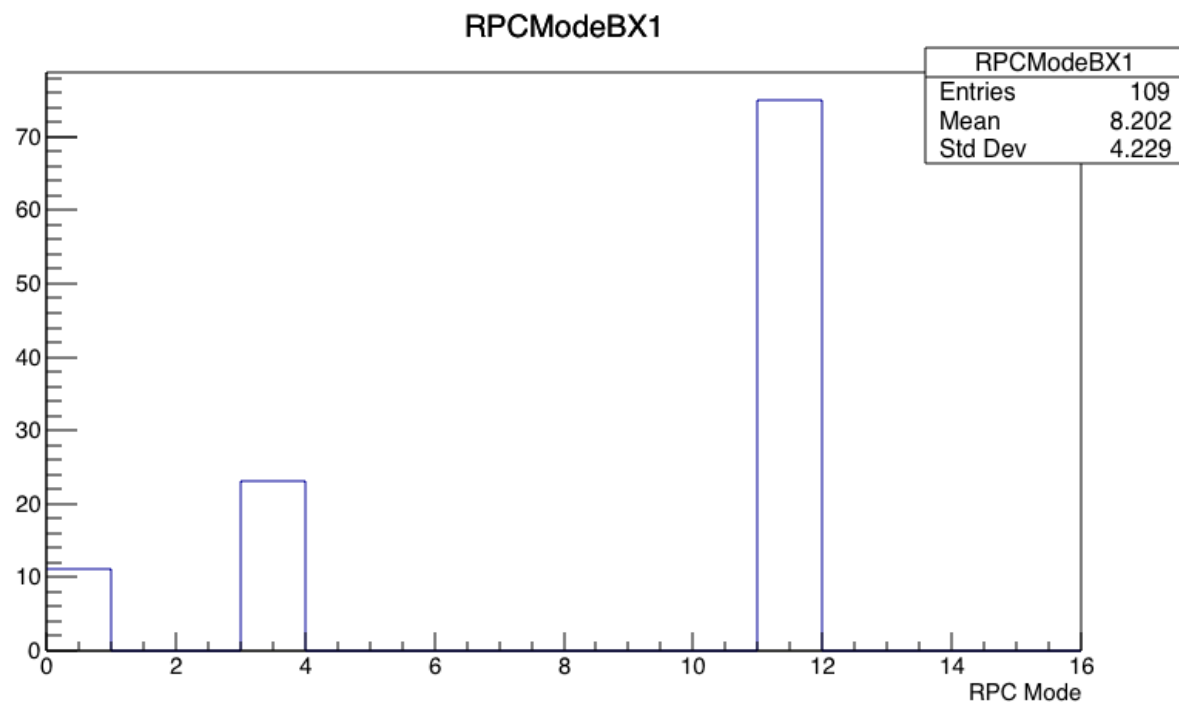
BX=1 ($p_T > 22$ GeV)

CSCModeBX0

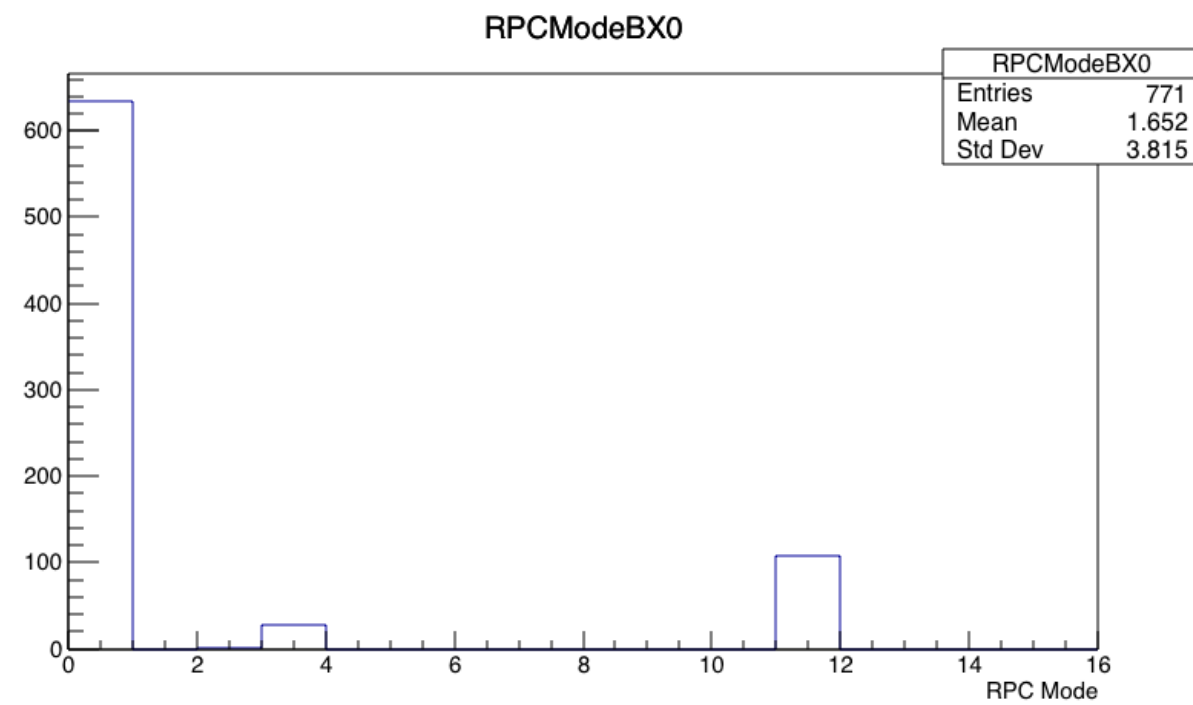


BX=0 ($p_T > 22$ GeV)

RPC Mode

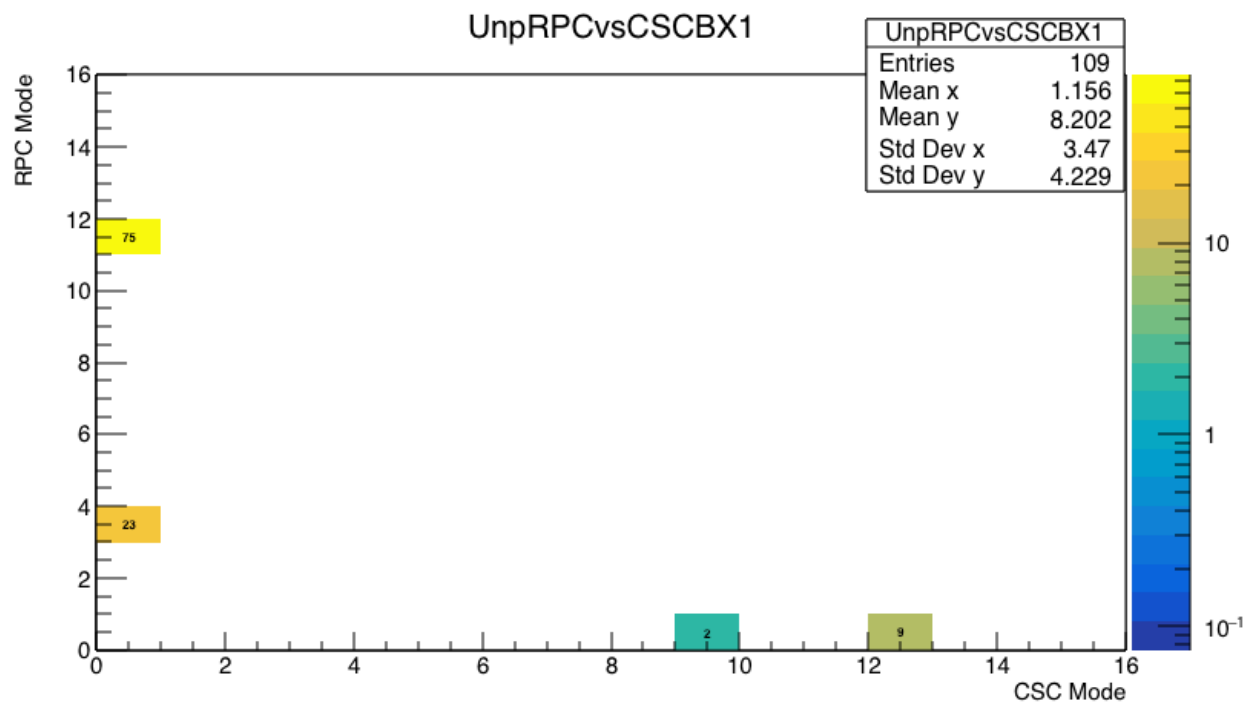


BX=1 ($p_T > 22$ GeV)

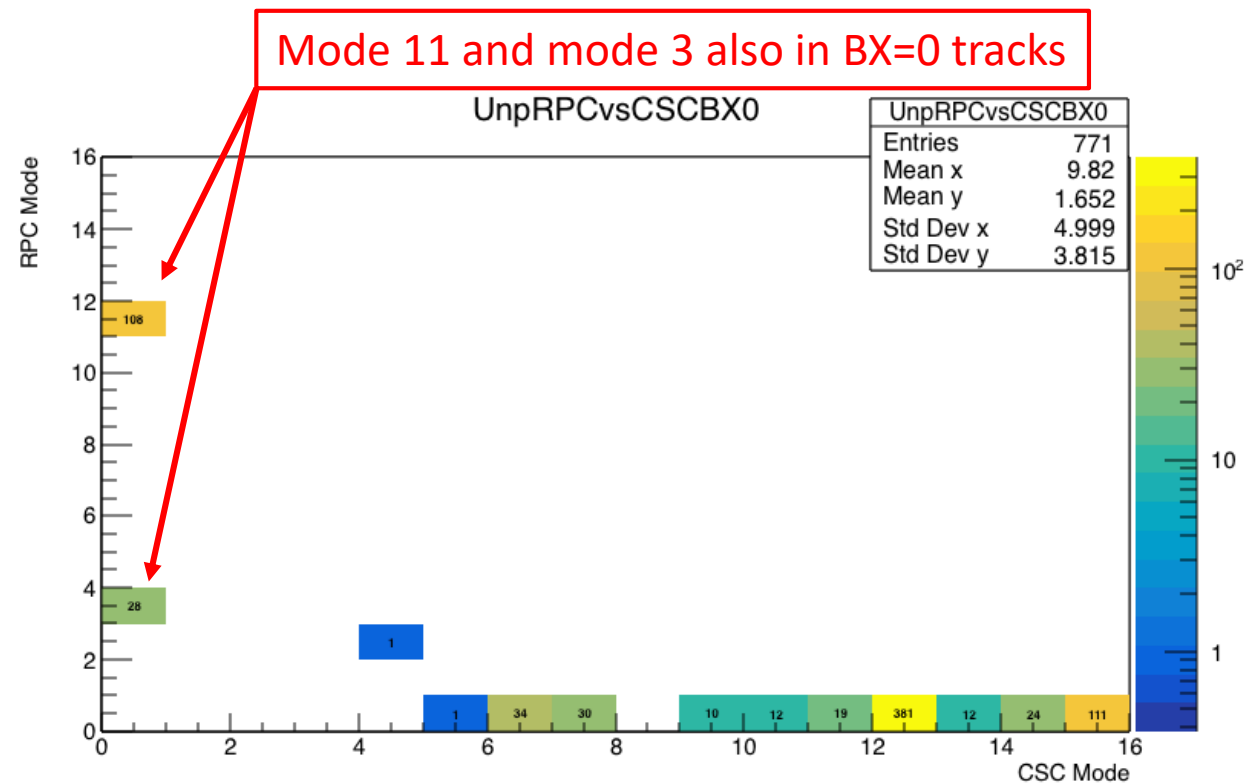


BX=0 ($p_T > 22$ GeV)

Unpacked tracks: RPC vs CSC mode



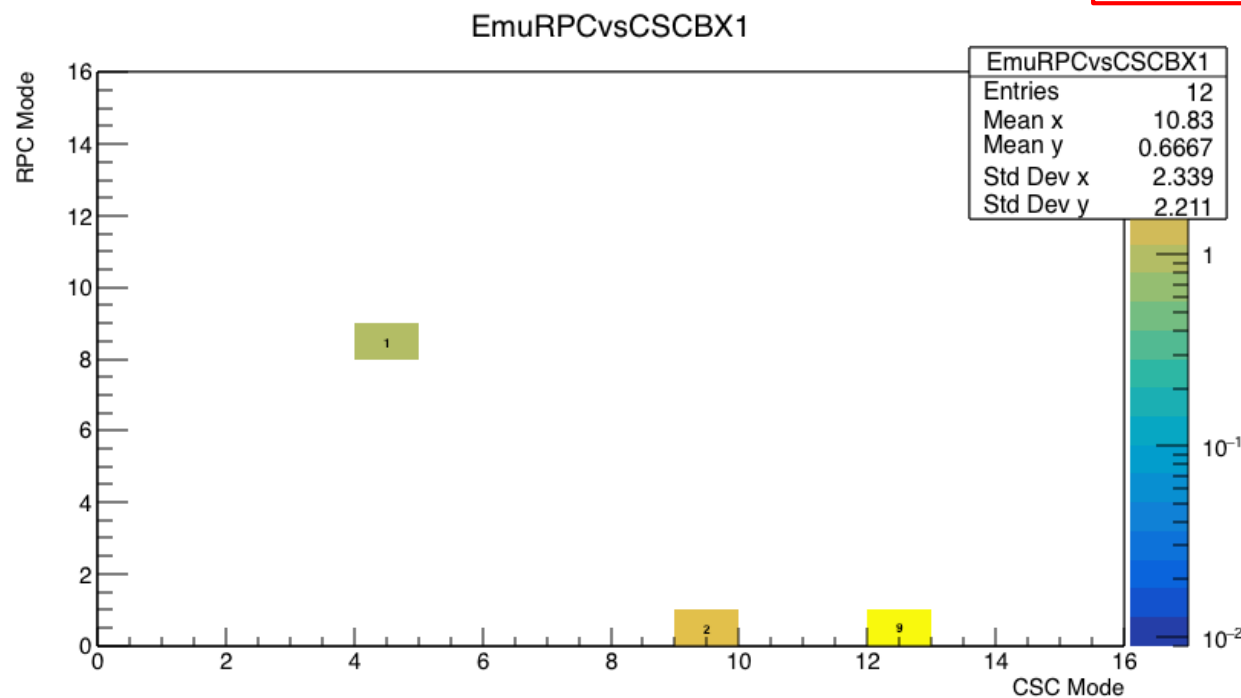
BX=1 ($p_T > 22$ GeV)



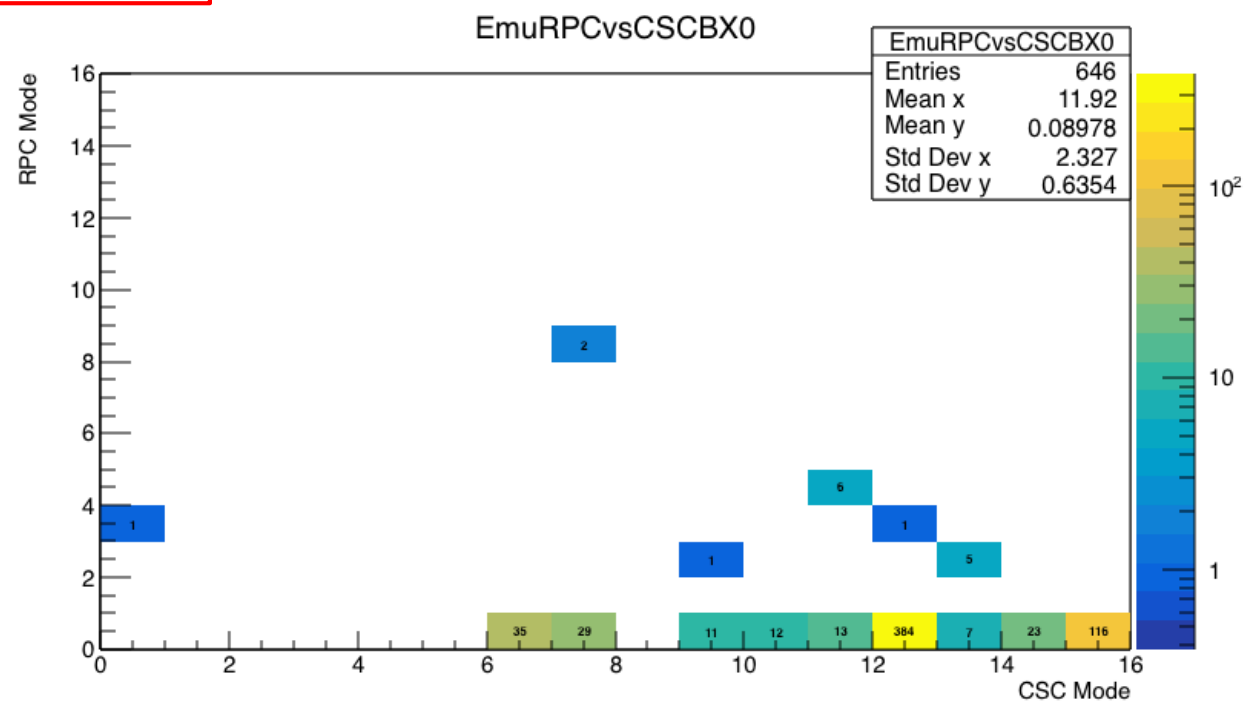
BX=0 ($p_T > 22$ GeV)

Emulated tracks: RPC vs CSC mode

Good in emulator



BX=1 ($p_T > 22$ GeV)



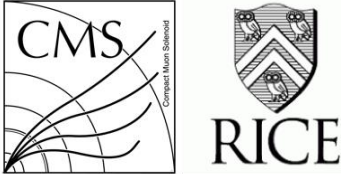
BX=0 ($p_T > 22$ GeV)

Selected Events

4 selected events containing tracks BX=1 ($p_T > 22$ GeV)

[Link to all post-fired events in this run](#)

```
*****
*   Row   * Instance *   evt_run *   evt_LS *   evt_BX *   evt_even *   evt_orbi *
*****
[*   9436 *         1 *   314650 *    379 *    1986 * 418802017 * 99117109 *
*   26431 *         3 *   314650 *    457 *     301 * 506257944 * 119620348 *
*   64624 *         3 *   314650 *    566 *     101 * 628395181 * 148289268 *
*   70718 *         2 *   314650 *     13 *        1 * 135444448 * 3313429 *
*****
```



Emulated tracks

* Row	* Instance	* trk_BX	* trk_dBX	* trk_endc	* trk_sect	* trk_eta	* trk_phi	* trk_pt	* trk_mode	* trk_mode
* 9436	* 0	* 0	* 0	* 1	* 2	* 1.5048421	* 123.71666	* 4.5	* 15	* 0

Unpacked tracks

* Row	* Instance	* unp_trk_B	* unp_trk_	* unp_trk_	* unp_trk_	* unp_trk_	* unp_trk_	* unp_trk_	* unp_trk_	* unp_trk_
* 9436	* 0	* 0	* 0	* 1	* 2	* 1.5007499	* 123.71666	* 8	* 14	* 0
* 9436	* 1	* 1	* -19998	* 1	* 2	* 2.2511251	* 122.86666	* 32	* 0	* 11

Emulated hits

* Row	* Instance	* sim_hit_B	* sim_hit_	* sim_hit_	* sim_hit_	* sim_hit_	* sim_hit_	* sim_hit_	* sim_hit_	* sim_hit_	* sim_hit_
* 9436	* 0	* 0	* 1	* 0	* 1	* 2	* 1	* 2	* 13	* 1.4931452	* 123.06666
* 9436	* 1	* 0	* 1	* 0	* 1	* 2	* 2	* 2	* 13	* 1.5048421	* 123.71666
* 9436	* 2	* 0	* 0	* 1	* 1	* 2	* 2	* 2	* 13	* 1.5286152	* 123.59999
* 9436	* 3	* 0	* 1	* 0	* 1	* 2	* 3	* 2	* 13	* 1.5048421	* 122.94999
* 9436	* 4	* 0	* 0	* 1	* 1	* 2	* 3	* 2	* 13	* 1.4815704	* 122.19999
* 9436	* 5	* 0	* 1	* 0	* 1	* 2	* 4	* 2	* 13	* 1.5048421	* 121.73333
* 9436	* 6	* 0	* 0	* 1	* 1	* 2	* 4	* 2	* 13	* 1.5777648	* 121.26666
* 9436	* 7	* 1	* 0	* 1	* -1	* 5	* 2	* 2	* 27	* -1.528615	* -95.80000
* 9436	* 8	* -2	* 0	* 1	* -1	* 6	* 2	* 2	* 34	* -1.310973	* -30.79999
* 9436	* 9	* 1	* 0	* 1	* -1	* 6	* 2	* 2	* 34	* -1.310973	* -30.79999

SAME

Unpacked hits

* Row	* Instance	* hit_BX	* hit_isCS	* hit_isRP	* hit_endc	* hit_sect	* hit_stat	* hit_ring	* hit_cham	* hit_eta	* hit_phi
* 9436	* 0	* 0	* 1	* 0	* 1	* 2	* 1	* 2	* 13	* 1.4931452	* 123.06666
* 9436	* 1	* 0	* 1	* 0	* 1	* 2	* 2	* 2	* 13	* 1.5048421	* 123.71666
* 9436	* 2	* 0	* 0	* 1	* 1	* 2	* 2	* 2	* 13	* 1.5286152	* 123.59999
* 9436	* 3	* 0	* 1	* 0	* 1	* 2	* 3	* 2	* 13	* 1.5048421	* 122.94999
* 9436	* 4	* 0	* 0	* 1	* 1	* 2	* 3	* 2	* 13	* 1.4815704	* 122.19999
* 9436	* 5	* 0	* 1	* 0	* 1	* 2	* 4	* 2	* 13	* 1.5048421	* 121.73333
* 9436	* 6	* 0	* 0	* 1	* 1	* 2	* 4	* 2	* 13	* 1.5777648	* 121.26666
* 9436	* 7	* 1	* 0	* 1	* -1	* 5	* 2	* 2	* 27	* -1.528615	* -95.80000
* 9436	* 8	* -2	* 0	* 1	* -1	* 6	* 2	* 2	* 34	* -1.310973	* -30.79999
* 9436	* 9	* 1	* 0	* 1	* -1	* 6	* 2	* 2	* 34	* -1.310973	* -30.79999

Event #506257944: Tracks

Emulated tracks

Duplicate b/t neighboring sectors?

```
*****
*   Row   * Instance *   trk_BX *   trk_dBX *   trk_endc *   trk_sect *   trk_eta *   trk_phi *   trk_pt *   trk_mode *   trk_mode *
*****
*  26431 *         0 *         0 *         0 *         1 *         1 * 1.5286152 * 71.066665 *        3.5 *         11 *         4 *
*  26431 *         1 *         0 *         0 *         1 *         2 * 1.5286152 * 71.066665 *        3.5 *         11 *         4 *
*  26431 *         2 *         0 *         0 *        -1 *         3 * -1.094380 * 138.81666 *        14 *         12 *         0 *
*****
```

Unpacked tracks

```
*****
*   Row   * Instance * unp_trk_B * unp_trk_ * unp_trk_ * unp_trk_ * unp_trk_ * unp_trk_ * unp_trk_ * unp_trk_ * unp_trk_ *
*****
*  26431 *         0 *         0 *         0 *        -1 *         3 * -1.098374 * 138.81666 *        14 *         12 *         0 *
*  26431 *         1 *         0 *         0 *         1 *         2 * 1.5986249 * 70.349998 *        3.5 *         11 *         0 *
*  26431 *         2 *         0 * -19998 *         1 *         2 * 2.0771250 * 70.599998 *        52 *          0 *        11 *
*  26431 *         3 *         1 * -19998 *         1 *         2 * 2.0771250 * 71.666664 *        52 *          0 *        11 *
*  26431 *         4 *         0 *         0 *         1 *         1 * 1.5986249 * 70.349998 *        3.5 *         11 *         0 *
*****
```


Event #506257944: Hits

Emulated hits

* Row	* Instance	* sim_hit_B	* sim_hit_*	* sim_hit_*	* sim_hit_*	* sim_hit_*	* sim_hit_*	* sim_hit_*	* sim_hit_*	* sim_hit_*	* sim_hit_*	* sim_hit_*	* sim_hit_*

* 26431	* 0	* 0	* 1	* 0	* 1	* 1	* 1	* 1	* 2	* 8	* 1.5406972	* 68.949996	* 8
* 26431	* 1	* 0	* 0	* 1	* 1	* 1	* 1	* 1	* 2	* 8	* 1.5286152	* 69.400001	* 8
* 26431	* 2	* 0	* 0	* 1	* 1	* 1	* 1	* 2	* 2	* 8	* 1.5286152	* 71.066665	* 8
* 26431	* 3	* 0	* 1	* 0	* 1	* 1	* 1	* 3	* 2	* 8	* 1.6031960	* 70.349998	* 8
* 26431	* 4	* 0	* 0	* 1	* 1	* 1	* 1	* 3	* 2	* 8	* 1.5777648	* 69.866668	* 8
* 26431	* 5	* 0	* 1	* 0	* 1	* 1	* 1	* 4	* 2	* 8	* 1.6031960	* 68.483337	* 8
* 26431	* 6	* 0	* 0	* 1	* 1	* 1	* 1	* 4	* 2	* 8	* 1.5777648	* 67.933334	* 8
* 26431	* 7	* 0	* 0	* 1	* 1	* 2	* 4	* 2	* 13	* 1.8003518	* 123.93333	* 123	* 13
* 26431	* 8	* 0	* 1	* 0	* 1	* 1	* 1	* 1	* 2	* 8	* 1.5406972	* 68.949996	* 8
* 26431	* 9	* 0	* 0	* 1	* 1	* 1	* 1	* 1	* 2	* 8	* 1.5286152	* 69.400001	* 8
* 26431	* 10	* 0	* 0	* 1	* 1	* 1	* 1	* 2	* 2	* 8	* 1.5286152	* 71.066665	* 8
* 26431	* 11	* 0	* 1	* 0	* 1	* 1	* 1	* 3	* 2	* 8	* 1.6031960	* 70.349998	* 8
* 26431	* 12	* 0	* 0	* 1	* 1	* 1	* 1	* 3	* 2	* 8	* 1.5777648	* 69.866668	* 8
* 26431	* 13	* 0	* 1	* 0	* 1	* 1	* 1	* 4	* 2	* 8	* 1.6031960	* 68.483329	* 8
* 26431	* 14	* 0	* 0	* 1	* 1	* 1	* 1	* 4	* 2	* 8	* 1.5777648	* 67.933334	* 8
* 26431	* 15	* 0	* 1	* 0	* -1	* 3	* 1	* 3	* 15	* -1.061739	* 137.06666	* 137	* 15
* 26431	* 16	* 0	* 1	* 0	* -1	* 3	* 2	* 2	* 15	* -1.094380	* 138.81666	* 138	* 15

SAME

Unpacked hits

* Row	* Instance	* hit_BX	* hit_isCS	* hit_isRP	* hit_endc	* hit_sect	* hit_stat	* hit_ring	* hit_cham	* hit_eta	* hit_phi
* 26431 *	0 *	0 *	1 *	0 *	1 *	1 *	1 *	2 *	8 *	1.5406972 *	68.949996 *
* 26431 *	1 *	0 *	0 *	1 *	1 *	1 *	1 *	2 *	8 *	1.5286152 *	69.400001 *
* 26431 *	2 *	0 *	0 *	1 *	1 *	1 *	2 *	2 *	8 *	1.5286152 *	71.066665 *
* 26431 *	3 *	0 *	1 *	0 *	1 *	1 *	3 *	2 *	8 *	1.6031960 *	70.349998 *
* 26431 *	4 *	0 *	0 *	1 *	1 *	1 *	3 *	2 *	8 *	1.5777648 *	69.866668 *
* 26431 *	5 *	0 *	1 *	0 *	1 *	1 *	4 *	2 *	8 *	1.6031960 *	68.483337 *
* 26431 *	6 *	0 *	0 *	1 *	1 *	1 *	4 *	2 *	8 *	1.5777648 *	67.933334 *
* 26431 *	7 *	0 *	0 *	1 *	1 *	2 *	4 *	2 *	13 *	1.8003518 *	123.93333 *
* 26431 *	8 *	0 *	1 *	0 *	1 *	1 *	1 *	2 *	8 *	1.5406972 *	68.949996 *
* 26431 *	9 *	0 *	0 *	1 *	1 *	1 *	1 *	2 *	8 *	1.5286152 *	69.400001 *
* 26431 *	10 *	0 *	0 *	1 *	1 *	1 *	2 *	2 *	8 *	1.5286152 *	71.066665 *
* 26431 *	11 *	0 *	1 *	0 *	1 *	1 *	3 *	2 *	8 *	1.6031960 *	70.349998 *
* 26431 *	12 *	0 *	0 *	1 *	1 *	1 *	3 *	2 *	8 *	1.5777648 *	69.866668 *
* 26431 *	13 *	0 *	1 *	0 *	1 *	1 *	4 *	2 *	8 *	1.6031960 *	68.483329 *
* 26431 *	14 *	0 *	0 *	1 *	1 *	1 *	4 *	2 *	8 *	1.5777648 *	67.933334 *
* 26431 *	15 *	0 *	1 *	0 *	-1 *	3 *	1 *	3 *	15 *	-1.061739 *	137.06666 *
* 26431 *	16 *	0 *	1 *	0 *	-1 *	3 *	2 *	2 *	15 *	-1.094380 *	138.81666 *



Duplicate b/t neighboring sectors?

Emulated tracks

* Row *	* Instance *	* trk_BX *	* trk_dBX *	* trk_endc *	* trk_sect *	* trk_eta *	* trk_phi *	* trk_pt *	* trk_mode *	* trk_mode *
* 64624 *	* 0 *	* 0 *	* 0 *	* 1 *	* 2 *	* 1.5286152 *	* 127.18333 *	* 4.5 *	* 15 *	* 0 *
* 64624 *	* 1 *	* 0 *	* 0 *	* 1 *	* 3 *	* 1.5286152 *	* 127.18333 *	* 4.5 *	* 15 *	* 0 *
* 64624 *	* 2 *	* 0 *	* 0 *	* -1 *	* 4 *	* -1.880693 *	* -120.7666 *	* 2 *	* 12 *	* 0 *

Unpacked tracks

* Row *	* Instance *	* unp_trk_B *	* unp_trk_ *	* unp_trk_ *	* unp_trk_ *	* unp_trk_ *	* unp_trk_ *	* unp_trk_ *	* unp_trk_ *	* unp_trk_ *
* 64624 *	* 0 *	* 0 *	* 0 *	* -1 *	* 4 *	* -1.881374 *	* -120.7666 *	* 2 *	* 12 *	* 0 *
* 64624 *	* 1 *	* 0 *	* 0 *	* 1 *	* 3 *	* 1.5225000 *	* 127.18333 *	* 4.5 *	* 15 *	* 0 *
* 64624 *	* 2 *	* 0 *	* -19998 *	* 1 *	* 2 *	* 2.2511251 *	* 127.13333 *	* 32 *	* 0 *	* 11 *
* 64624 *	* 3 *	* 1 *	* -19998 *	* 1 *	* 2 *	* 2.2511251 *	* 128.19999 *	* 32 *	* 0 *	* 11 *

Event #628395181: Hits

Emulated hits

* Row	* Instance	* sim_hit_B	* sim_hit_*	* sim_hit_*	* sim_hit_*	* sim_hit_*	* sim_hit_*	* sim_hit_*	* sim_hit_*	* sim_hit_*	* sim_hit_*	* sim_hit_*
* 64624	* 0	* -2	* 0	* 1	* 1	* 6	* 1	* 2	* 2	* 1.2343300	* 8.6000003	* 8.6000003
* 64624	* 1	* 0	* 1	* 0	* 1	* 1	* 1	* 1	* 7	* 1.9497185	* 62.700000	* 62.700000
* 64624	* 2	* 0	* 1	* 0	* 1	* 1	* 1	* 1	* 8	* 1.9677713	* 64.900001	* 64.900001
* 64624	* 3	* 0	* 1	* 0	* 1	* 1	* 1	* 1	* 8	* 1.9320297	* 64.900001	* 64.900001
* 64624	* 4	* 0	* 1	* 0	* 1	* 2	* 1	* 2	* 14	* 1.5166645	* 129.96667	* 129.96667
* 64624	* 5	* 0	* 1	* 0	* 1	* 2	* 2	* 2	* 14	* 1.5286152	* 127.18333	* 127.18333
* 64624	* 6	* 0	* 0	* 1	* 1	* 2	* 2	* 2	* 14	* 1.5286152	* 127.33332	* 127.33332
* 64624	* 7	* 0	* 1	* 0	* 1	* 2	* 3	* 2	* 14	* 1.5406972	* 126.33332	* 126.33332
* 64624	* 8	* 0	* 0	* 1	* 1	* 2	* 3	* 2	* 14	* 1.4815704	* 126.26666	* 126.26666
* 64624	* 9	* 0	* 1	* 0	* 1	* 2	* 4	* 2	* 14	* 1.5286152	* 126.59999	* 126.59999
* 64624	* 10	* 0	* 0	* 1	* 1	* 2	* 4	* 2	* 14	* 1.5777648	* 127	* 127
* 64624	* 11	* 0	* 0	* 1	* 1	* 2	* 4	* 2	* 14	* 1.5777648	* 126.40000	* 126.40000
* 64624	* 12	* 0	* 1	* 0	* 1	* 1	* 1	* 1	* 8	* 1.9677713	* 64.900001	* 64.900001
* 64624	* 13	* 0	* 1	* 0	* 1	* 1	* 1	* 1	* 8	* 1.9320297	* 64.900001	* 64.900001
* 64624	* 14	* 0	* 1	* 0	* 1	* 3	* 1	* 4	* 16	* 2.1895442	* 150.55000	* 150.55000
* 64624	* 15	* 0	* 1	* 0	* 1	* 2	* 1	* 2	* 14	* 1.5166645	* 129.96666	* 129.96666
* 64624	* 16	* 0	* 1	* 0	* 1	* 2	* 2	* 2	* 14	* 1.5286152	* 127.18333	* 127.18333
* 64624	* 17	* 0	* 0	* 1	* 1	* 2	* 2	* 2	* 14	* 1.5286152	* 127.33333	* 127.33333
* 64624	* 18	* 0	* 1	* 0	* 1	* 2	* 3	* 2	* 14	* 1.5406972	* 126.33333	* 126.33333
* 64624	* 19	* 0	* 0	* 1	* 1	* 2	* 3	* 2	* 14	* 1.4815704	* 126.26666	* 126.26666
* 64624	* 20	* 0	* 1	* 0	* 1	* 2	* 4	* 2	* 14	* 1.5286152	* 126.59999	* 126.59999
* 64624	* 21	* 0	* 0	* 1	* 1	* 2	* 4	* 2	* 14	* 1.5777648	* 127	* 127
* 64624	* 22	* 0	* 0	* 1	* 1	* 2	* 4	* 2	* 14	* 1.5777648	* 126.40000	* 126.40000
* 64624	* 23	* -2	* 0	* 1	* 1	* 6	* 1	* 2	* 2	* 1.2343300	* 8.5999984	* 8.5999984
* 64624	* 24	* 0	* 1	* 0	* -1	* 4	* 1	* 1	* 25	* -1.815937	* -121.5166	* -121.5166
Type <CR> to continue or q to quit ==>												
* 64624	* 25	* 0	* 1	* 0	* -1	* 4	* 2	* 1	* 13	* -1.880693	* -120.7666	* -120.7666
* 64624	* 26	* 0	* 1	* 0	* -1	* 4	* 2	* 1	* 13	* -1.880693	* -120.7666	* -120.7666

SAME

Unpacked hits

* Row	* Instance	* hit_BX	* hit_isCS	* hit_isRP	* hit_endc	* hit_sect	* hit_stat	* hit_ring	* hit_cham	* hit_eta	* hit_phi
* 64624	* 0	* -2	* 0	* 1	* 1	* 6	* 1	* 2	* 2	* 1.2343300	* 8.6000003
* 64624	* 1	* 0	* 1	* 0	* 1	* 1	* 1	* 1	* 7	* 1.9497185	* 62.700000
* 64624	* 2	* 0	* 1	* 0	* 1	* 1	* 1	* 1	* 8	* 1.9677713	* 64.900001
* 64624	* 3	* 0	* 1	* 0	* 1	* 1	* 1	* 1	* 8	* 1.9320297	* 64.900001
* 64624	* 4	* 0	* 1	* 0	* 1	* 2	* 1	* 2	* 14	* 1.5166645	* 129.96667
* 64624	* 5	* 0	* 1	* 0	* 1	* 2	* 2	* 2	* 14	* 1.5286152	* 127.18333
* 64624	* 6	* 0	* 0	* 1	* 1	* 2	* 2	* 2	* 14	* 1.5286152	* 127.33332
* 64624	* 7	* 0	* 1	* 0	* 1	* 2	* 3	* 2	* 14	* 1.5406972	* 126.33332
* 64624	* 8	* 0	* 0	* 1	* 1	* 2	* 3	* 2	* 14	* 1.4815704	* 126.26666
* 64624	* 9	* 0	* 1	* 0	* 1	* 2	* 4	* 2	* 14	* 1.5286152	* 126.59999
* 64624	* 10	* 0	* 0	* 1	* 1	* 2	* 4	* 2	* 14	* 1.5777648	* 127
* 64624	* 11	* 0	* 0	* 1	* 1	* 2	* 4	* 2	* 14	* 1.5777648	* 126.40000
* 64624	* 12	* 0	* 1	* 0	* 1	* 1	* 1	* 1	* 8	* 1.9677713	* 64.900001
* 64624	* 13	* 0	* 1	* 0	* 1	* 1	* 1	* 1	* 8	* 1.9320297	* 64.900001
* 64624	* 14	* 0	* 1	* 0	* 1	* 3	* 1	* 4	* 16	* 2.1895442	* 150.55000
* 64624	* 15	* 0	* 1	* 0	* 1	* 2	* 1	* 2	* 14	* 1.5166645	* 129.96666
* 64624	* 16	* 0	* 1	* 0	* 1	* 2	* 2	* 2	* 14	* 1.5286152	* 127.18333
* 64624	* 17	* 0	* 0	* 1	* 1	* 2	* 2	* 2	* 14	* 1.5286152	* 127.33333
* 64624	* 18	* 0	* 1	* 0	* 1	* 2	* 3	* 2	* 14	* 1.5406972	* 126.33333
* 64624	* 19	* 0	* 0	* 1	* 1	* 2	* 3	* 2	* 14	* 1.4815704	* 126.26666
* 64624	* 20	* 0	* 1	* 0	* 1	* 2	* 4	* 2	* 14	* 1.5286152	* 126.59999
* 64624	* 21	* 0	* 0	* 1	* 1	* 2	* 4	* 2	* 14	* 1.5777648	* 127
* 64624	* 22	* 0	* 0	* 1	* 1	* 2	* 4	* 2	* 14	* 1.5777648	* 126.40000
* 64624	* 23	* -2	* 0	* 1	* 1	* 6	* 1	* 2	* 2	* 1.2343300	* 8.5999984
* 64624	* 24	* 0	* 1	* 0	* -1	* 4	* 1	* 1	* 25	* -1.815937	* -121.5166
Type <CR> to continue or q to quit ==> CR											
* 64624	* 25	* 0	* 1	* 0	* -1	* 4	* 2	* 1	* 13	* -1.880693	* -120.7666
* 64624	* 26	* 0	* 1	* 0	* -1	* 4	* 2	* 1	* 13	* -1.880693	* -120.7666

Emulated tracks

* Row	* Instance	* trk_BX	* trk_dBX	* trk_endc	* trk_sect	* trk_eta	* trk_phi	* trk_pt	* trk_mode	* trk_mode	*

* 70718	* 0	* 0	* 0	* 1	* 3	* 1.4587771	* 137.28334	* 4	* 15	* 0	*

Unpacked tracks

* Row	* Instance	* unp_trk_B	* unp_trk_	* unp_trk_	* unp_trk_	* unp_trk_	* unp_trk_	* unp_trk_	* unp_trk_	* unp_trk_	*

* 70718	* 0	* 0	* 0	* 1	* 3	* 1.45725	* 137.28334	* 4	* 7	* 0	*
* 70718	* 1	* 0	* -19998	* 1	* 2	* 2.2511251	* 135.66667	* 32	* 0	* 11	*
* 70718	* 2	* 1	* -19998	* 1	* 2	* 2.2511251	* 136.73333	* 32	* 0	* 11	*

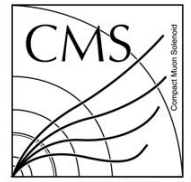
Emulated hits

* Row	* Instance	* sim_hit_B	* sim_hit_*	* sim_hit_*	* sim_hit_*	* sim_hit_*	* sim_hit_*	* sim_hit_*	* sim_hit_*	* sim_hit_*	* sim_hit_*
* 70718	* 0	* 0	* 1	* 0	* 1	* 2	* 1	* 2	* 14	* 1.3824697	* 134.76666
* 70718	* 1	* 0	* 0	* 1	* 1	* 2	* 1	* 2	* 14	* 1.3512803	* 134.86666
* 70718	* 2	* 0	* 1	* 0	* 1	* 2	* 4	* 2	* 14	* 1.5286152	* 134.41667
* 70718	* 3	* 1	* 0	* 1	* 1	* 2	* 4	* 2	* 14	* 1.5777648	* 133.93333
* 70718	* 4	* 0	* 1	* 0	* 1	* 3	* 1	* 2	* 15	* 1.4037491	* 135.63333
* 70718	* 5	* 0	* 0	* 1	* 1	* 3	* 1	* 2	* 15	* 1.3930594	* 135.93333
* 70718	* 6	* 0	* 1	* 0	* 1	* 3	* 2	* 2	* 15	* 1.4587771	* 137.28334
* 70718	* 7	* 0	* 0	* 1	* 1	* 3	* 2	* 2	* 15	* 1.4364407	* 137.19999
* 70718	* 8	* 0	* 1	* 0	* 1	* 3	* 3	* 2	* 15	* 1.4931452	* 136.55000
* 70718	* 9	* 0	* 1	* 0	* 1	* 3	* 4	* 2	* 15	* 1.5286152	* 134.94999
* 70718	* 10	* 0	* 1	* 0	* 1	* 2	* 1	* 2	* 14	* 1.3824697	* 134.76666
* 70718	* 11	* 0	* 0	* 1	* 1	* 2	* 1	* 2	* 14	* 1.3512803	* 134.86666
* 70718	* 12	* 0	* 1	* 0	* 1	* 2	* 4	* 2	* 14	* 1.5286152	* 134.41667
* 70718	* 13	* 1	* 0	* 1	* 1	* 2	* 4	* 2	* 14	* 1.5777648	* 133.93333

SAME

Unpacked hits

* Row	* Instance	* hit_BX	* hit_isCS	* hit_isRP	* hit_endc	* hit_sect	* hit_stat	* hit_ring	* hit_cham	* hit_eta	* hit_phi
* 70718	* 0	* 0	* 1	* 0	* 1	* 2	* 1	* 2	* 14	* 1.3824697	* 134.76666
* 70718	* 1	* 0	* 0	* 1	* 1	* 2	* 1	* 2	* 14	* 1.3512803	* 134.86666
* 70718	* 2	* 0	* 1	* 0	* 1	* 2	* 4	* 2	* 14	* 1.5286152	* 134.41667
* 70718	* 3	* 1	* 0	* 1	* 1	* 2	* 4	* 2	* 14	* 1.5777648	* 133.93333
* 70718	* 4	* 0	* 1	* 0	* 1	* 3	* 1	* 2	* 15	* 1.4037491	* 135.63333
* 70718	* 5	* 0	* 0	* 1	* 1	* 3	* 1	* 2	* 15	* 1.3930594	* 135.93333
* 70718	* 6	* 0	* 1	* 0	* 1	* 3	* 2	* 2	* 15	* 1.4587771	* 137.28334
* 70718	* 7	* 0	* 0	* 1	* 1	* 3	* 2	* 2	* 15	* 1.4364407	* 137.19999
* 70718	* 8	* 0	* 1	* 0	* 1	* 3	* 3	* 2	* 15	* 1.4931452	* 136.55000
* 70718	* 9	* 0	* 1	* 0	* 1	* 3	* 4	* 2	* 15	* 1.5286152	* 134.94999
* 70718	* 10	* 0	* 1	* 0	* 1	* 2	* 1	* 2	* 14	* 1.3824697	* 134.76666
* 70718	* 11	* 0	* 0	* 1	* 1	* 2	* 1	* 2	* 14	* 1.3512803	* 134.86666
* 70718	* 12	* 0	* 1	* 0	* 1	* 2	* 4	* 2	* 14	* 1.5286152	* 134.41667
* 70718	* 13	* 1	* 0	* 1	* 1	* 2	* 4	* 2	* 14	* 1.5777648	* 133.93333

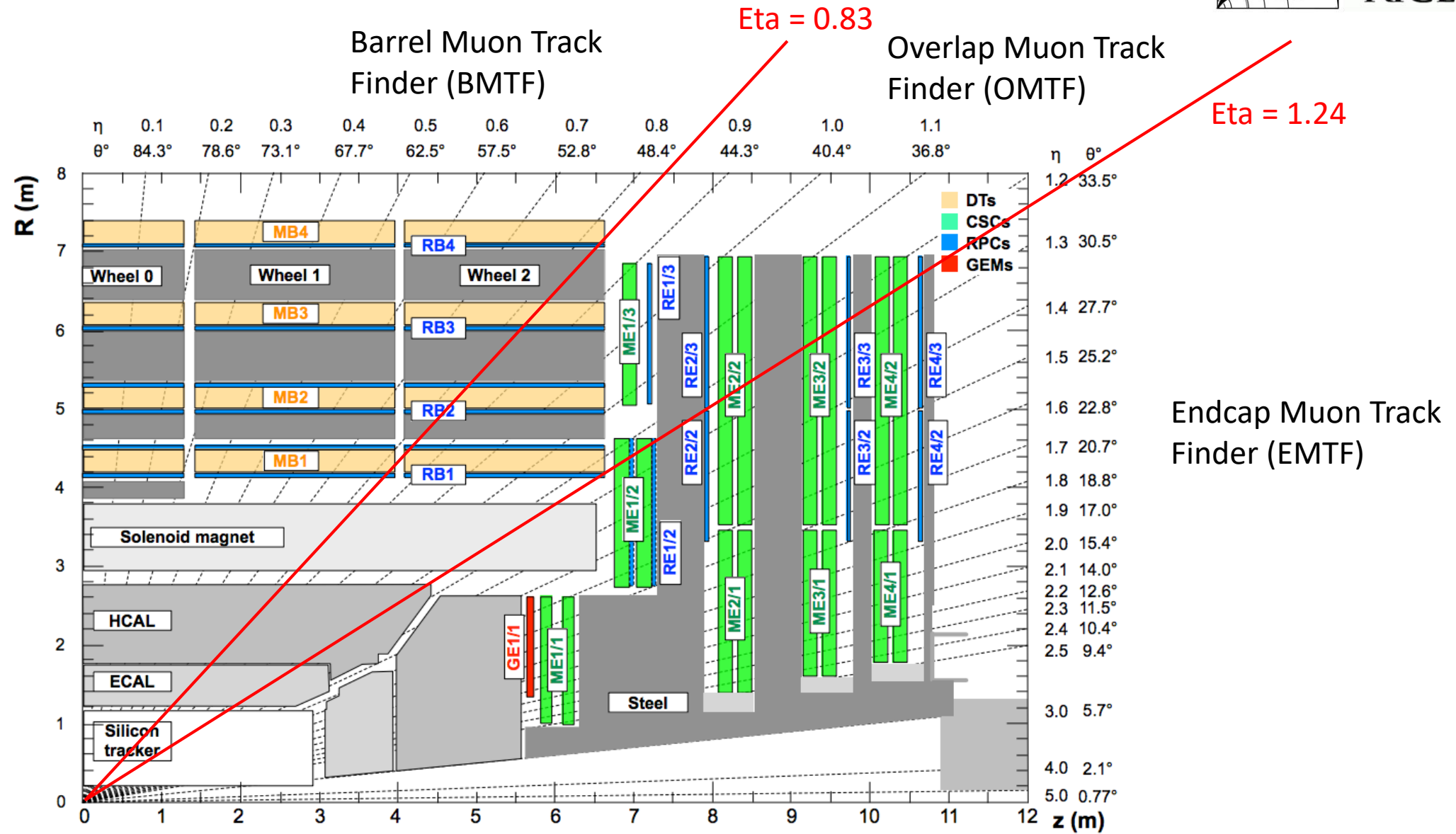


Back Up

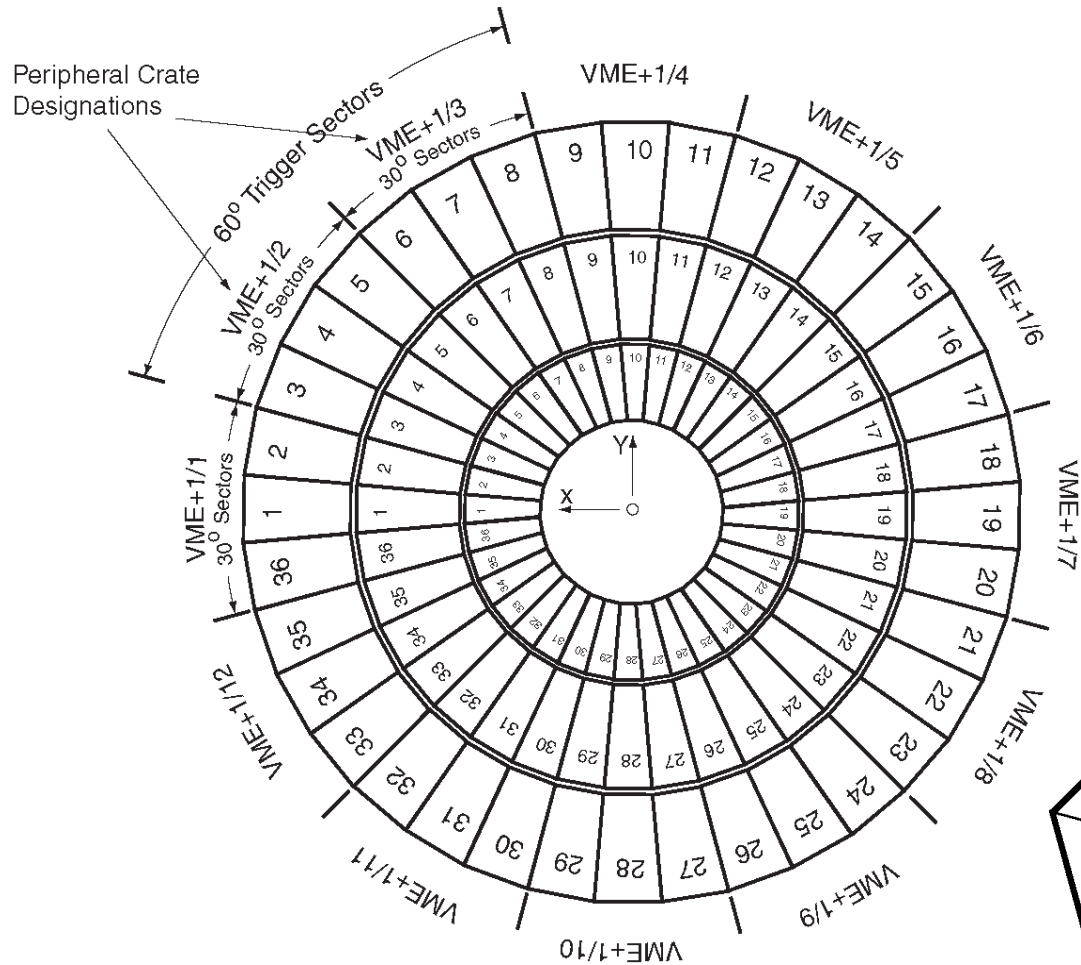
Files

- /afs/cern.ch/work/w/wshi/public/EMTFAnalyzer/CMSSW_10_1_1/src/EMTFAnalyzer/NTupleMaker/test/
 1. EMTF_NTuple_314650.root
 2. [Output 314650.root](#)
 3. [PostFired Events.txt](#)

MuTF Geometry

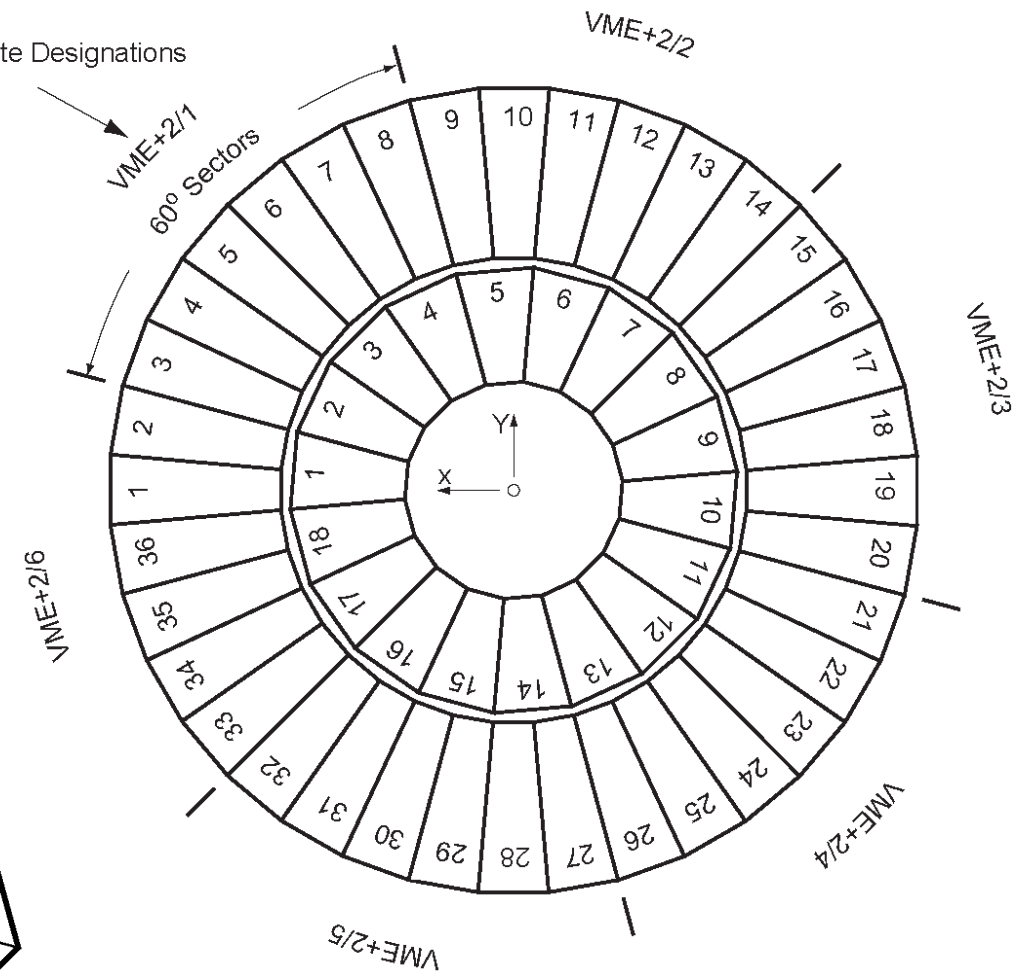


CSC Geometry

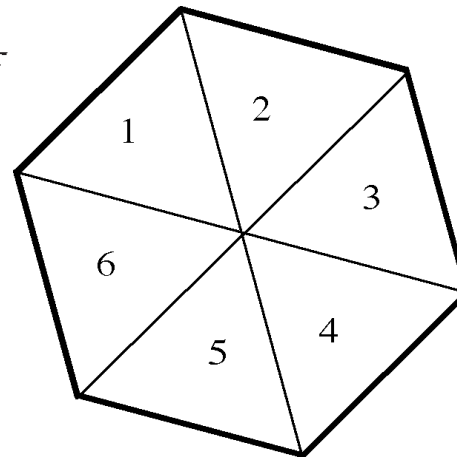


Station 1

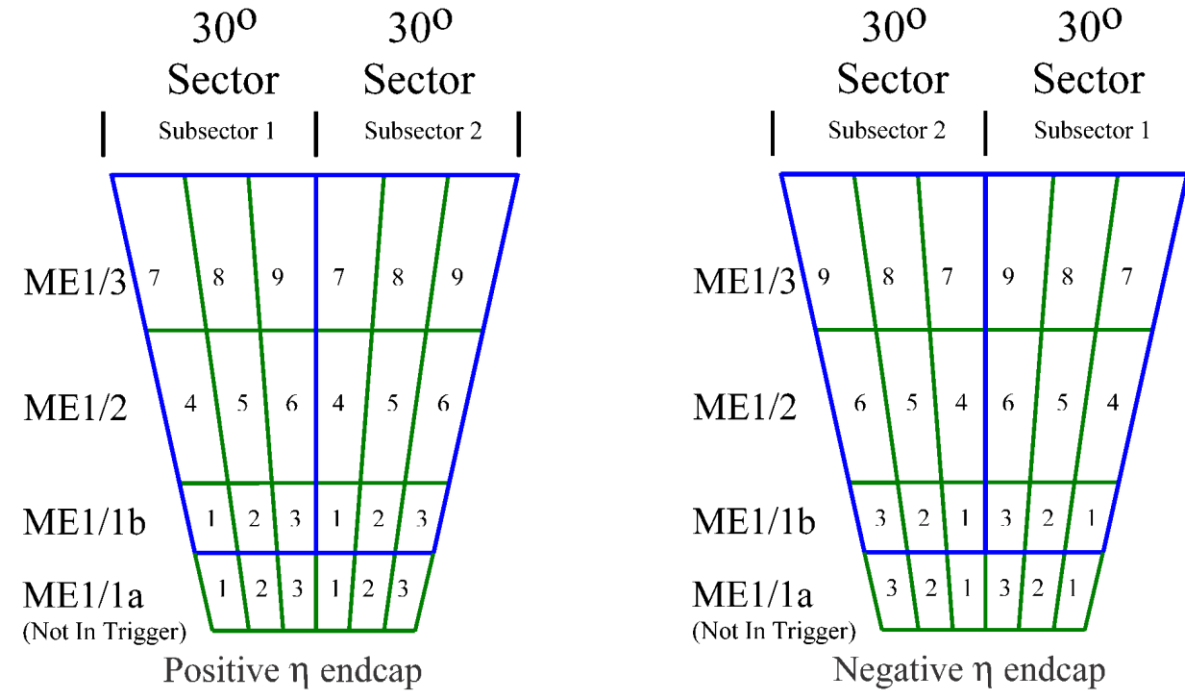
Peripheral Crate Designations



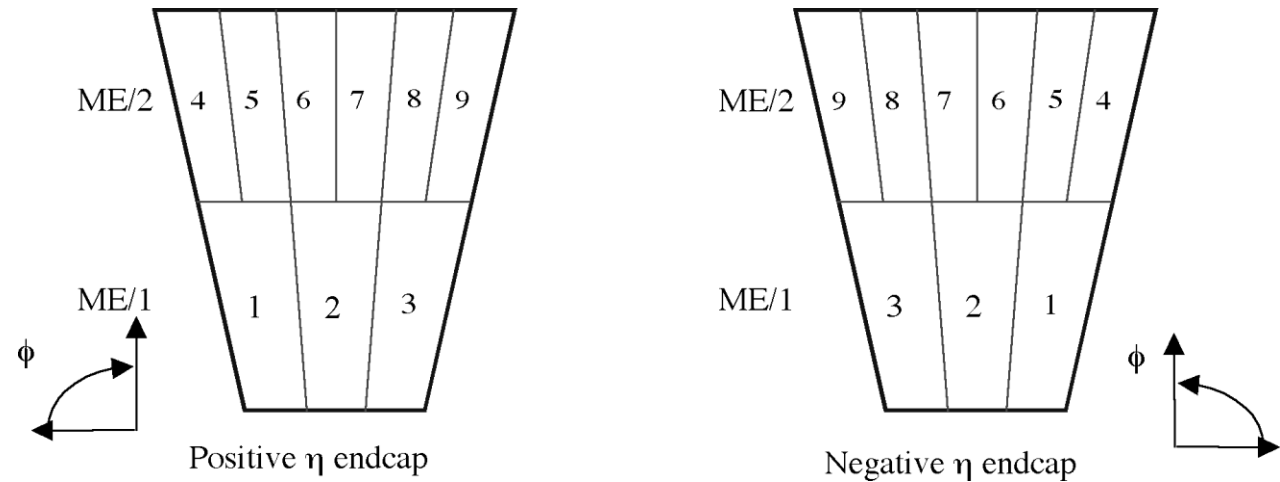
Station 2, 3, 4



CSCs in a trigger sector

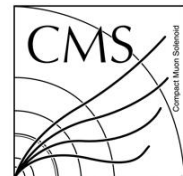


Station 1



Station 2, 3, 4

Map: Swatch input ports - CSCs



Link Label in swatch	Sector +/-1	Sector +/-2	Sector +/-3	Sector +/-4	Sector +/-5	Sector +/-6
me1a_2	1/1/4	1/1/10	1/1/16	1/1/22	1/1/28	1/1/34
me1a_3	1/1/5	1/1/11	1/1/17	1/1/23	1/1/29	1/1/35
me1a_4	1/2/3	1/2/9	1/2/15	1/2/21	1/2/27	1/2/33
me1a_5	1/2/4	1/2/10	1/2/16	1/2/22	1/2/28	1/2/34
me1a_6	1/2/5	1/2/11	1/2/17	1/2/23	1/2/29	1/2/35
me1a_7	1/3/3	1/3/9	1/3/15	1/3/21	1/3/27	1/3/33
me1a_8	1/3/4	1/3/10	1/3/16	1/3/22	1/3/28	1/3/34
me1a_9	1/3/5	1/3/11	1/3/17	1/3/23	1/3/29	1/3/35
me1b_2	1/1/7	1/1/13	1/1/19	1/1/25	1/1/31	1/1/1
me1b_3	1/1/8	1/1/14	1/1/20	1/1/26	1/1/32	1/1/2
me1b_4	1/2/6	1/2/12	1/2/18	1/2/24	1/2/30	1/2/36
me1b_5	1/2/7	1/2/13	1/2/19	1/2/25	1/2/31	1/2/1
me1b_6	1/2/8	1/2/14	1/2/20	1/2/26	1/2/32	1/2/2
me1b_7	1/3/6	1/3/12	1/3/18	1/3/24	1/3/30	1/3/36
me1b_8	1/3/7	1/3/13	1/3/19	1/3/25	1/3/31	1/3/1
me1b_9	1/3/8	1/3/14	1/3/20	1/3/26	1/3/32	1/3/2
me2_2	2/1/3	2/1/6	2/1/9	2/1/12	2/1/15	2/1/18
me2_3	2/1/4	2/1/7	2/1/10	2/1/13	2/1/16	2/1/19
me2_4	2/2/3	2/2/9	2/2/15	2/2/21	2/2/27	2/2/33
me2_5	2/2/4	2/2/10	2/2/16	2/2/22	2/2/28	2/2/34
me2_6	2/2/5	2/2/11	2/2/17	2/2/23	2/2/29	2/2/35
me2_7	2/2/6	2/2/12	2/2/18	2/2/24	2/2/30	2/2/36
me2_8	2/2/7	2/2/13	2/2/19	2/2/25	2/2/31	2/2/1
me2_9	2/2/8	2/2/14	2/2/20	2/2/26	2/2/32	2/2/2

me3_2	3/1/3	3/1/6	3/1/9	3/1/12	3/1/15	3/1/18
me3_3	3/1/4	3/1/7	3/1/10	3/1/13	3/1/16	3/1/19
me3_4	3/2/3	3/2/9	3/2/15	3/2/21	3/2/27	3/2/33
me3_5	3/2/4	3/2/10	3/2/16	3/2/22	3/2/28	3/2/34
me3_6	3/2/5	3/2/11	3/2/17	3/2/23	3/2/29	3/2/35
me3_7	3/2/6	3/2/12	3/2/18	3/2/24	3/2/30	3/2/36
me3_8	3/2/7	3/2/13	3/2/19	3/2/25	3/2/31	3/2/1
me3_9	3/2/8	3/2/14	3/2/20	3/2/26	3/2/32	3/2/2
me4_2	4/1/3	4/1/6	4/1/9	4/1/12	4/1/15	4/1/18
me4_3	4/1/4	4/1/7	4/1/10	4/1/13	4/1/16	4/1/19
me4_4	4/2/3	4/2/9	4/2/15	4/2/21	4/2/27	4/2/33
me4_5	4/2/4	4/2/10	4/2/16	4/2/22	4/2/28	4/2/34
me4_6	4/2/5	4/2/11	4/2/17	4/2/23	4/2/29	4/2/35
me4_7	4/2/6	4/2/12	4/2/18	4/2/24	4/2/30	4/2/36
me4_8	4/2/7	4/2/13	4/2/19	4/2/25	4/2/31	4/2/1
me4_9	4/2/8	4/2/14	4/2/20	4/2/26	4/2/32	4/2/2
me1n_3	1/1/2	1/1/8	1/1/14	1/1/20	1/1/26	1/1/32
me1n_6	1/2/2	1/2/8	1/2/14	1/2/20	1/2/26	1/2/32
me1n_9	1/3/2	1/3/8	1/3/14	1/3/20	1/3/26	1/3/32
me2n_3	2/1/1	2/1/4	2/1/7	2/1/10	2/1/13	2/1/16
me2n_9	2/2/2	2/2/8	2/2/14	2/2/20	2/2/26	2/2/32
me3n_3	3/1/1	3/1/4	3/1/7	3/1/10	3/1/13	3/1/16
me3n_9	3/2/2	3/2/8	3/2/14	3/2/20	3/2/26	3/2/32
me4n_3	4/1/1	4/1/4	4/1/7	4/1/10	4/1/13	4/1/16
me4n_9	4/2/2	4/2/8	4/2/14	4/2/20	4/2/26	4/2/32

Muon Track Quality from uGMT

- SingleMu Quality ($Q \geq 12$)
 - EMTF mode 15, 14, 13, 11
- DoubleMu Quality ($Q \geq 8$)
 - EMTF mode 12, 10, 7
 - EMTF mode 15, 14, 13, 11
- MuOpen Quality ($Q \geq 4$)
 - EMTF mode 9, 6, 5, 3
 - EMTF mode 12, 10, 7
 - EMTF mode 15, 14, 13, 11

Mode #	Definition	Stations
15	1+2+4+8	1,2,3,4
14	2+4+8	1,2,3
13	1+4+8	1,2,4
12	4+8	1,2
11	1+2+8	1,3,4
10	2+8	1,3
9	1+8	1,4
7	1+2+4	2,3,4
6	2+4	2,3
5	1+4	2,4
3	1+2	3,4