pXp analysis

Luiz Emediato (Sao Paulo)
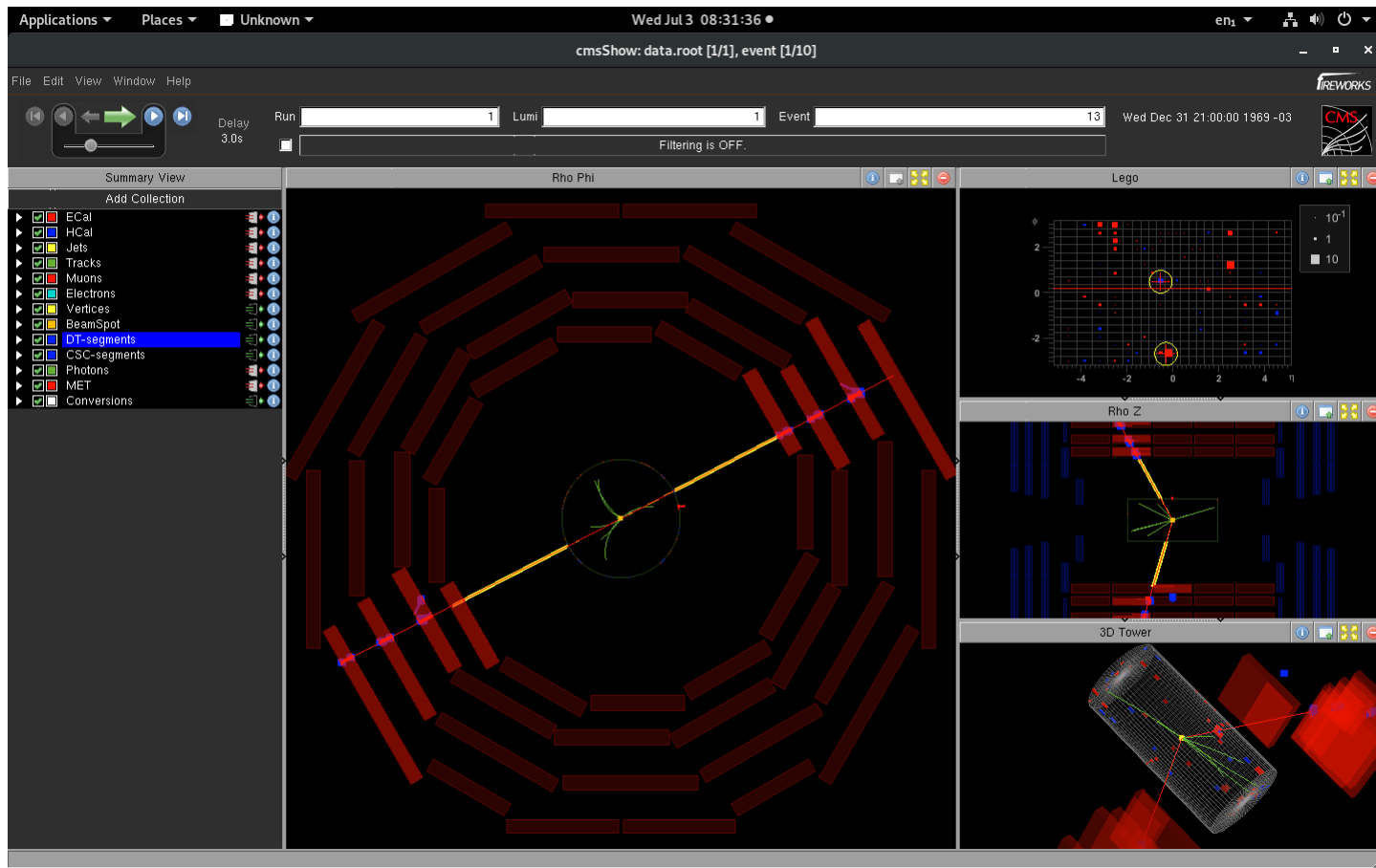Tom McDowell, Cory Rude, Jane Nachtman (Iowa)
Mike Albrow (FNAL)
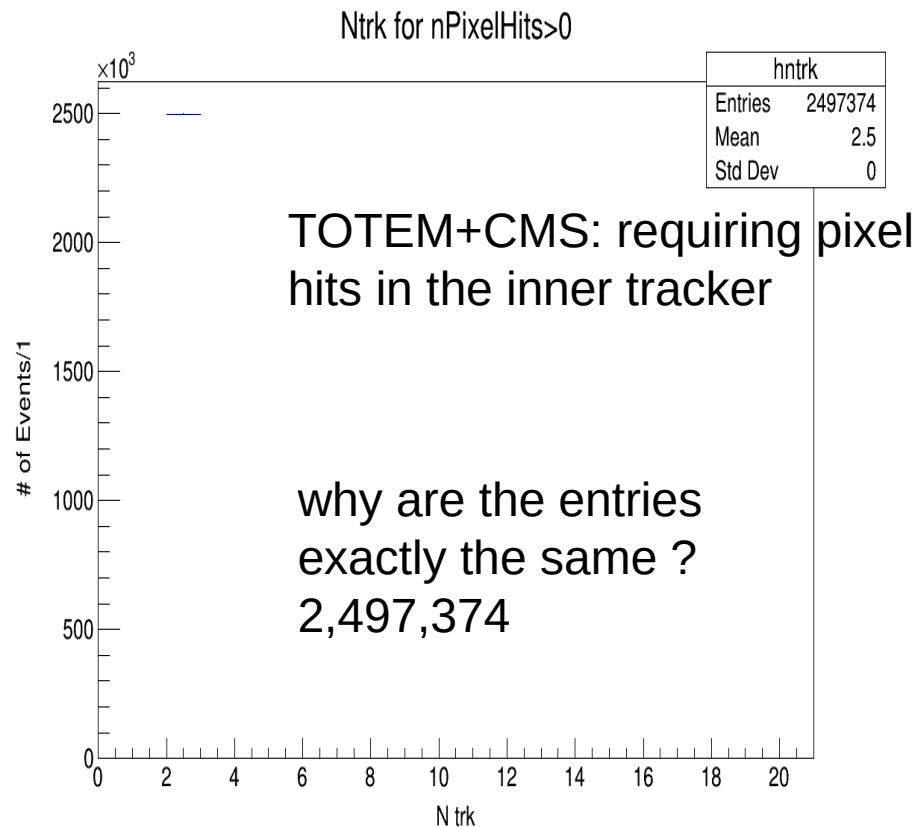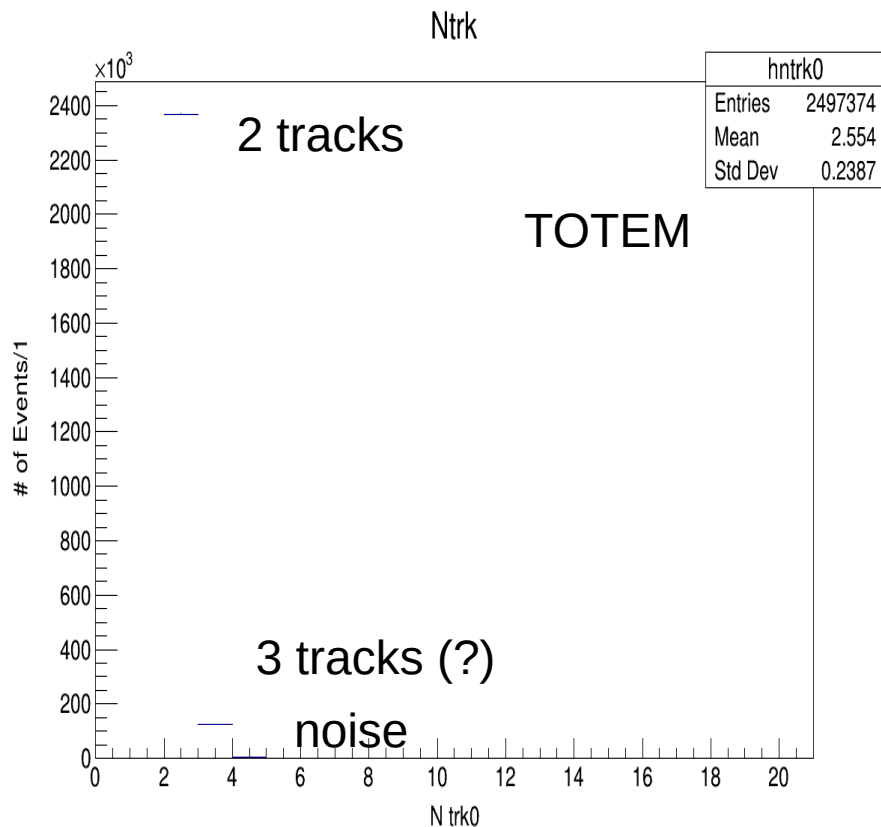
Overview

1. Fireworks – CMS 3D event display

2. Multiplicity

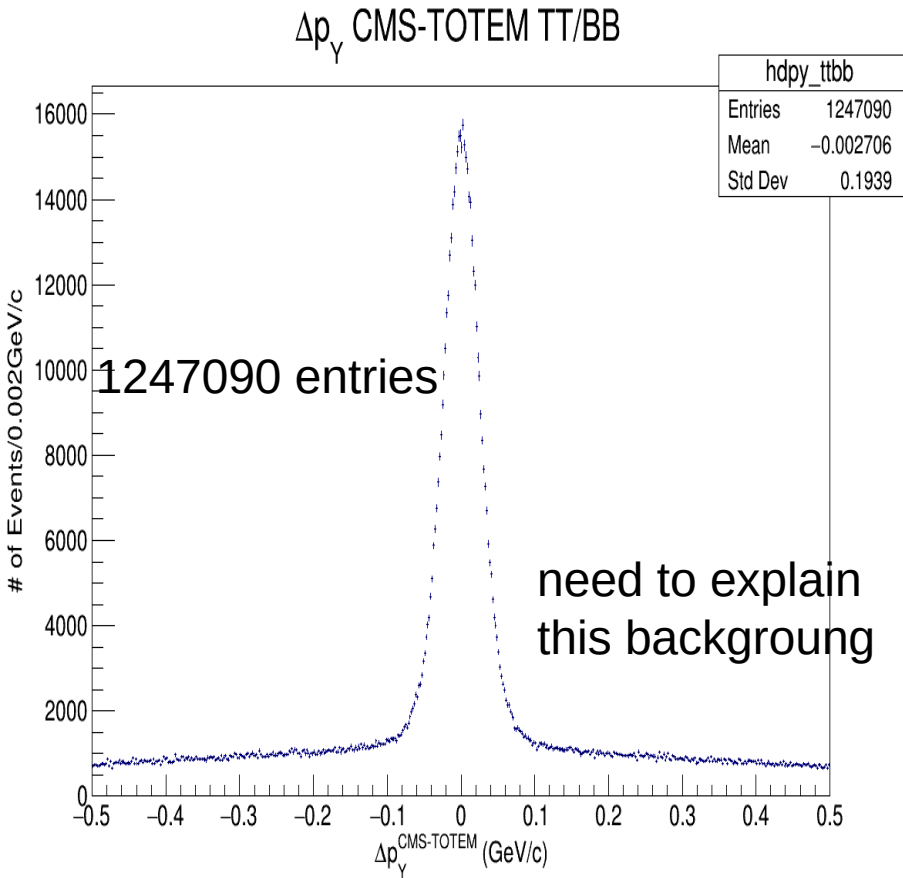3. Balance of transverse momenta

4. Acceptance phi vs |-t|

Fireworks command: **cmsShow** – TTree (ntuples) need to find how to include the Roman Pots

Multiplicity – 2-track events (reduced2) only – except run#9998

Ntrk

$\times 10^3$

hntrk0	
Entries	2497374
Mean	2.554
Std Dev	0.2387

2 tracks

TOTEM

3 tracks (?)

noise

# of Events/1

N trk0

Ntrk for nPixelHits>0

$\times 10^3$

hntrk	
Entries	2497374
Mean	2.5
Std Dev	0

TOTEM+CMS: requiring pixel hits in the inner tracker

why are the entries exactly the same ? 2,497,374

# of Events/1

N trk

4

Balance in transverse momenta: single track events, all 2015 data

Δp_Y CMS-TOTEM TT/BB

hdpy_ttbb	
Entries	1247090
Mean	−0.002706
Std Dev	0.1939

1247090 entries

need to explain
this backgroung

Δp_X CMS-TOTEM TT/BB

hdpx_ttbb	
Entries	507688
Mean	0.000999
Std Dev	0.1002

507688 entries
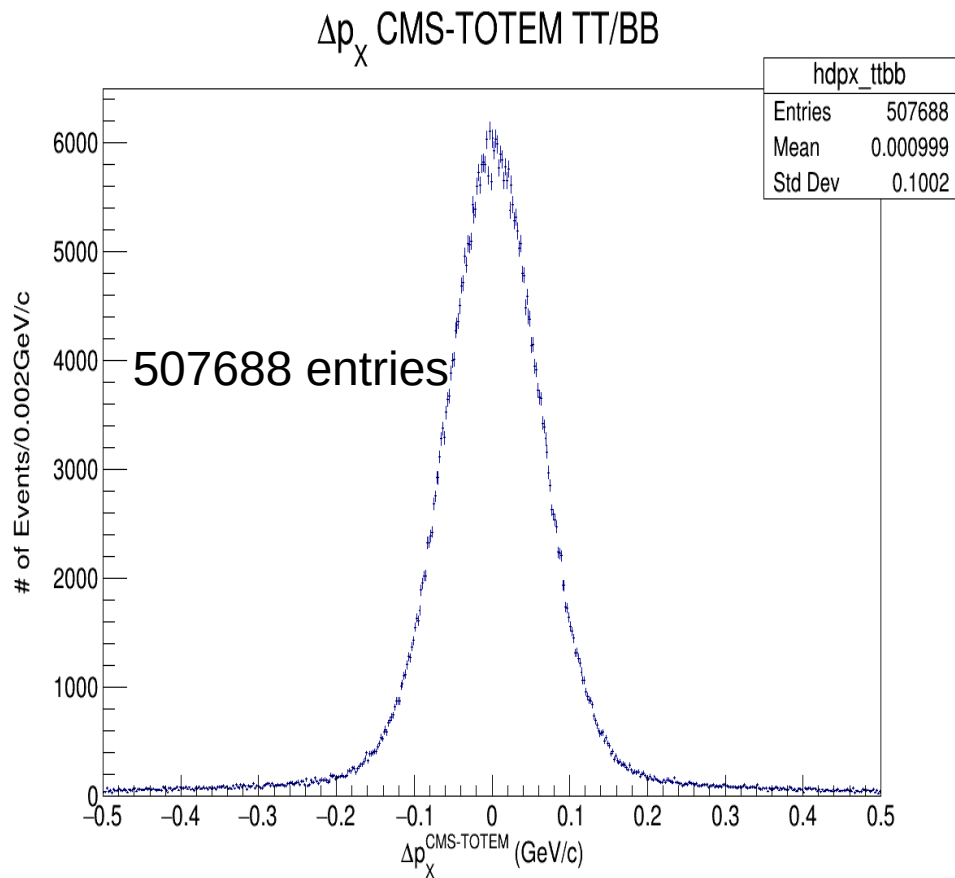
Acceptance A(t,phi)
single track events - run#4510

TT - right   φ vs |-t|

phi_proton_right_t_tt	
Entries	390764
Mean x	0.2548
Mean y	1.534
Std Dev x	0.2043
Std Dev y	0.6539

BB - right   φ vs |-t|

phi_proton_right_t_bb	
Entries	445423
Mean x	0.2384
Mean y	−1.542
Std Dev x	0.2019
Std Dev y	0.6827

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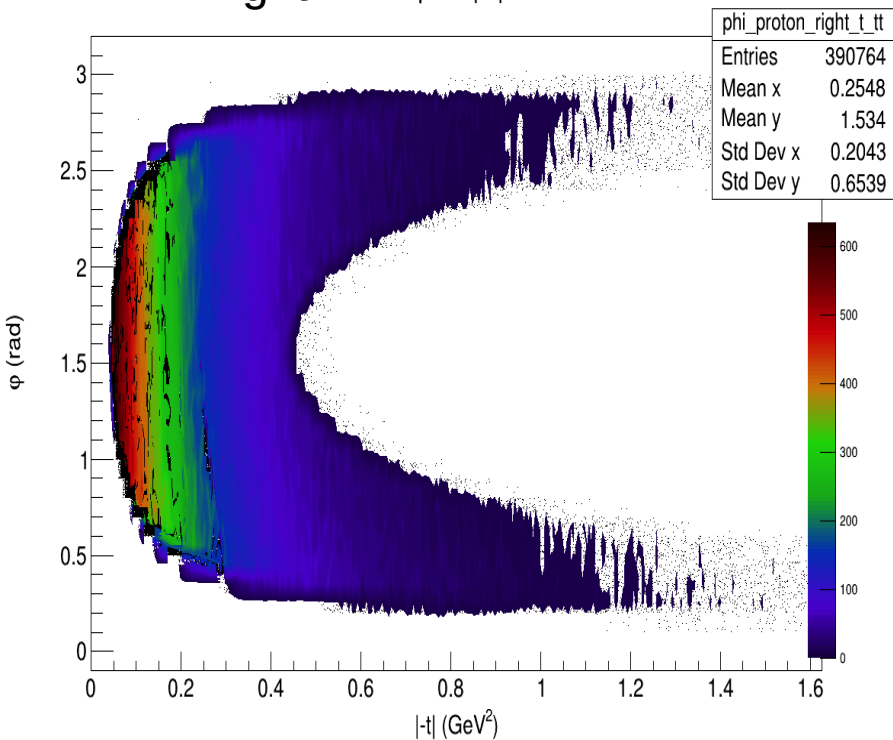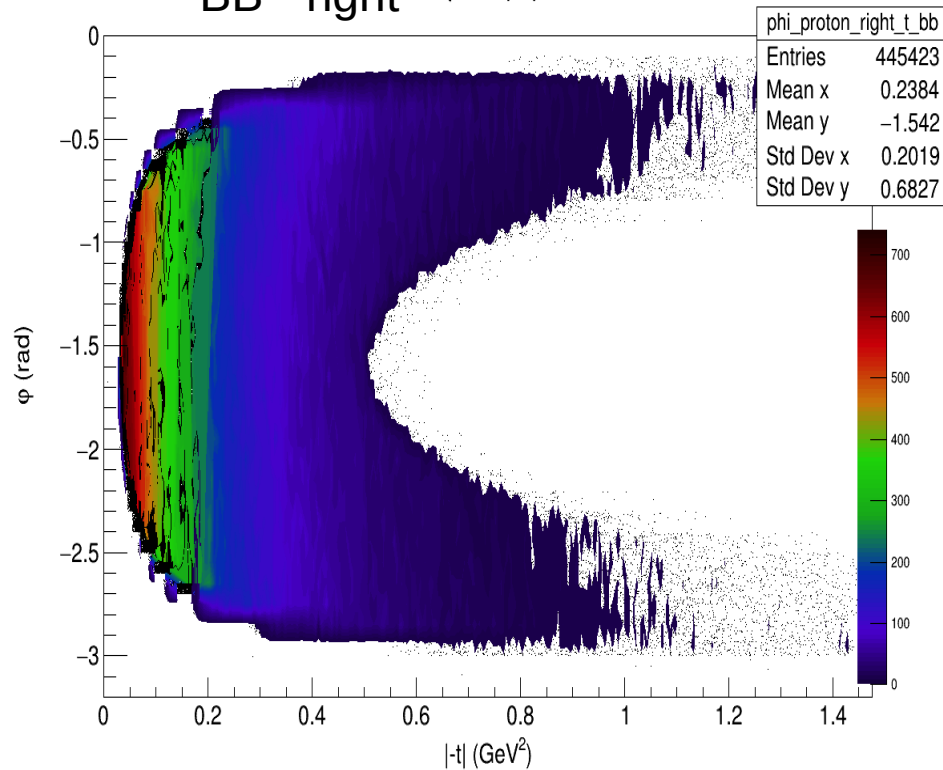
Acceptance A(t,phi): single track events - run#4510

diag TB+BT - right

φ vs |-t|

phi_proton_right_t_diag	
Entries	828584
Mean x	0.2636
Mean y	−0.1741
Std Dev x	0.2126
Std Dev y	1.666

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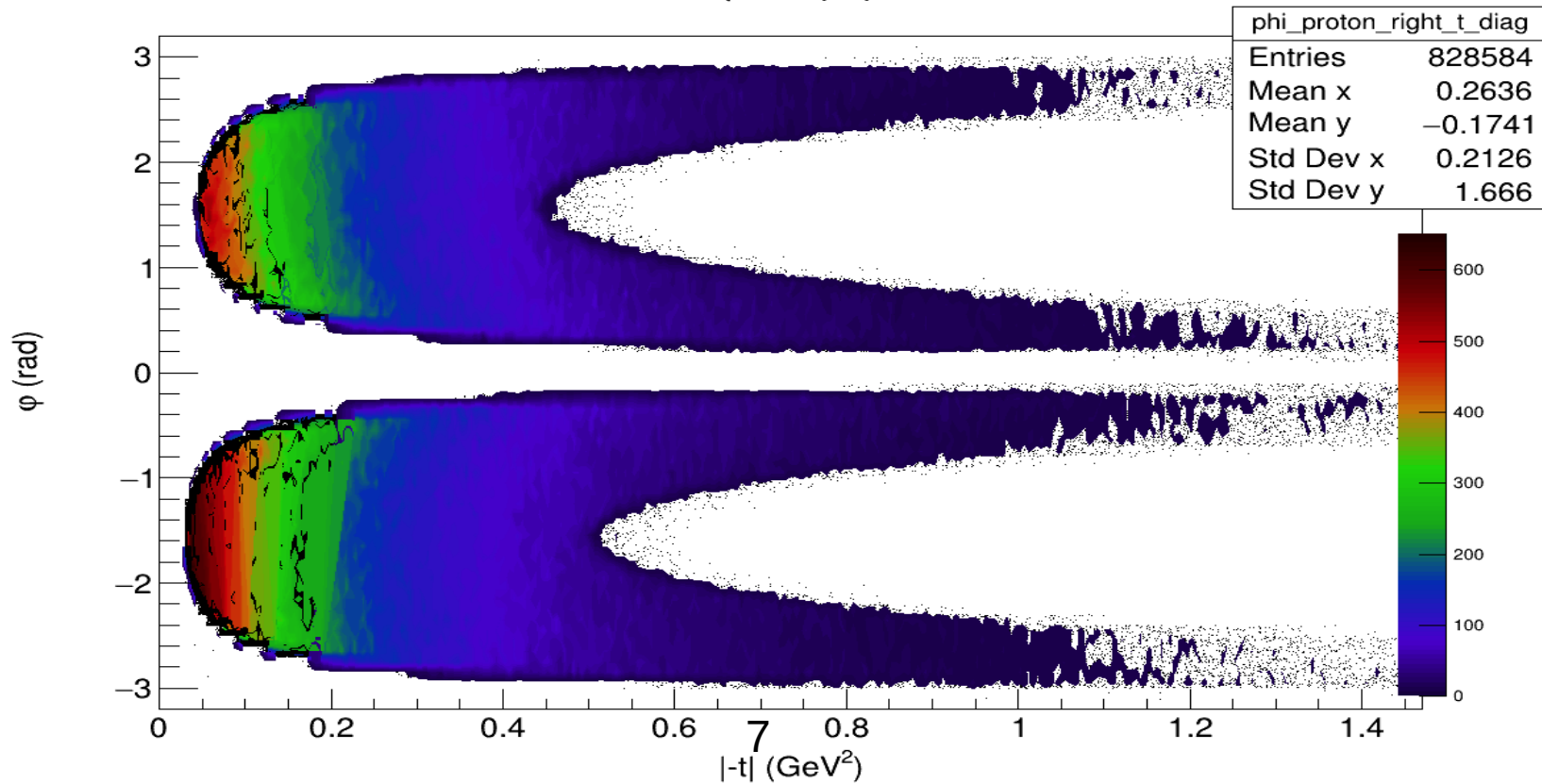
Have a nice 4th of July

Fireworks!

Thank you for your attention