BKLM DQM Manual

Global Cosmic Run (version 1)

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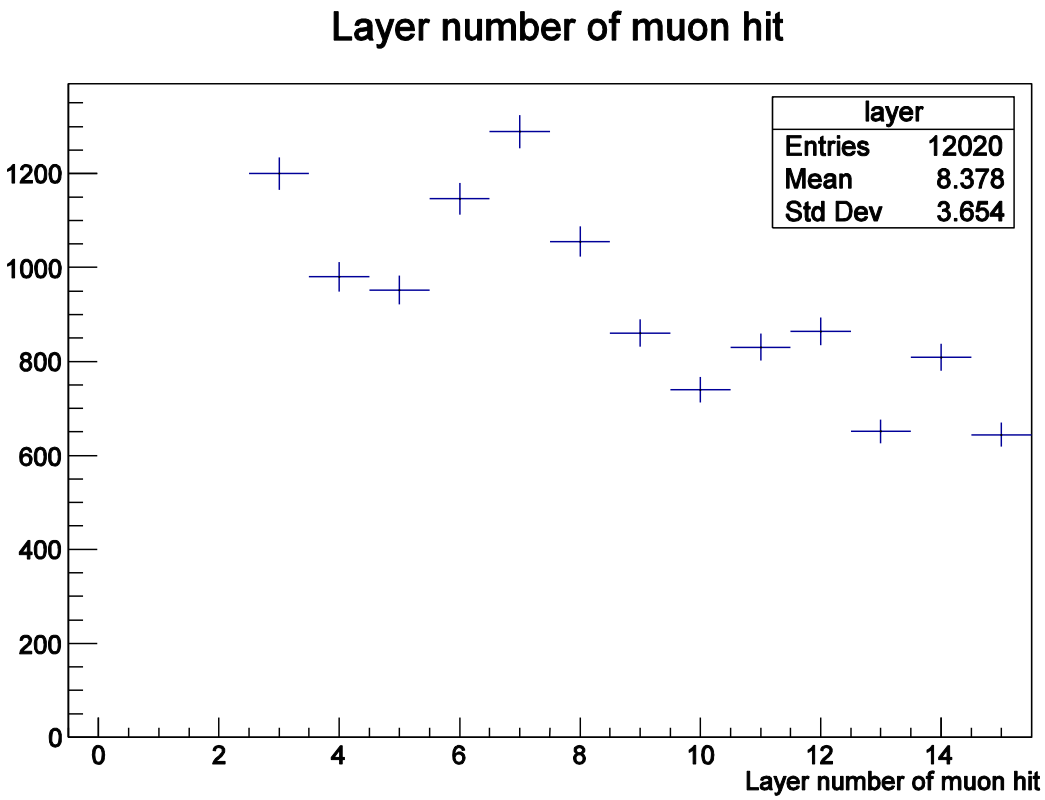
Suggestions from Yinghui:

1. To use run GCR3580 in which we first included both barrel forward KLM and barrel backward KLM
2. In run GCR3580 the scintillator hits is absent, that's why we can-not obtain the pulse height (charge)

"Reconstructed hit time relative to trigger" information is recorded but interpreter error recovered while plotting in ROOT

Same issue with GCR3647 ➔Mention it to Itoh-San

IM: Please research location of run information- for example look for GCR3580 in elog entries or ...
and find out information such as time, number of events, trigger condition and ... and report with the data



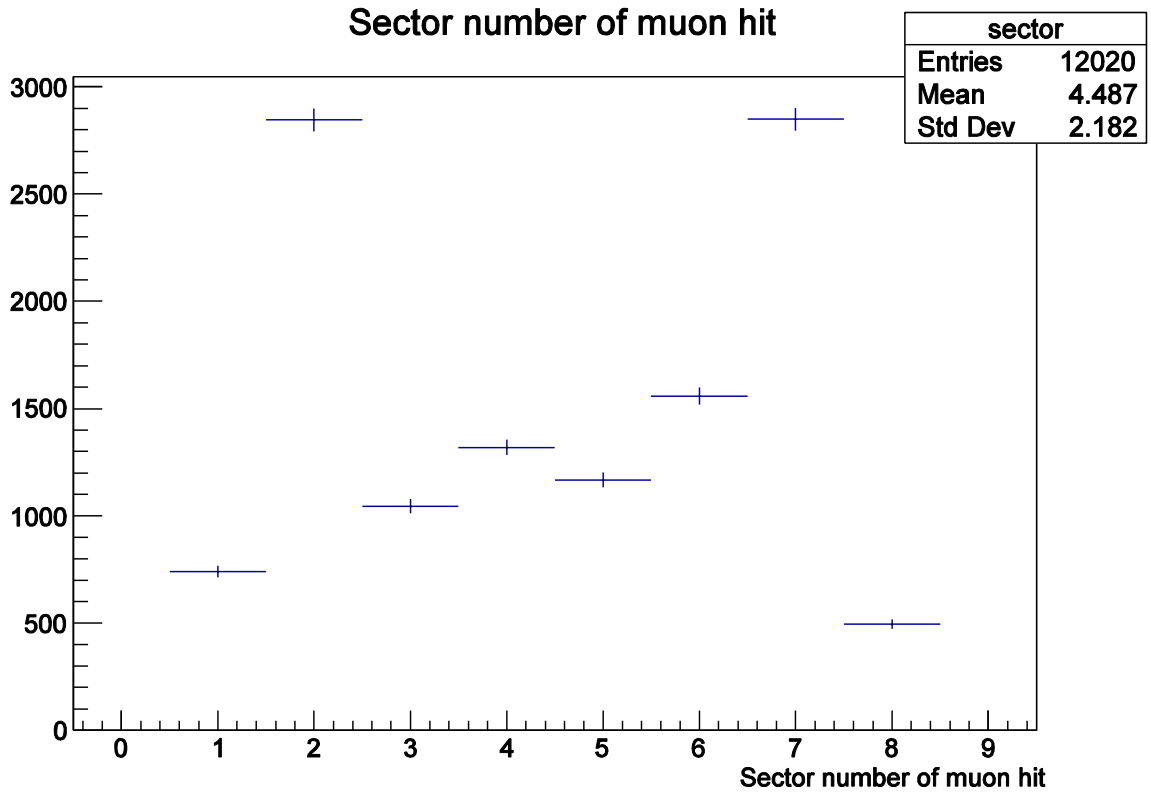
Description: The raw number of hits for each BKLM layer is histogrammed

Key features: Hits decreases with an increasing number of layers

You should check that: Should peak at 1 and then a tail from left to right. The typical number of hits decreases across the plot as shown after 1

Known problem: Hits missing in first two layers. Peak at 1 is not observed

IM: We were trying to tweak the lookback window for the two layers of scint and then there was a error in data taking which halted data taking- we now have the mechanism to change the lookback for the scint. layers and we can try again as soon as system is back online.



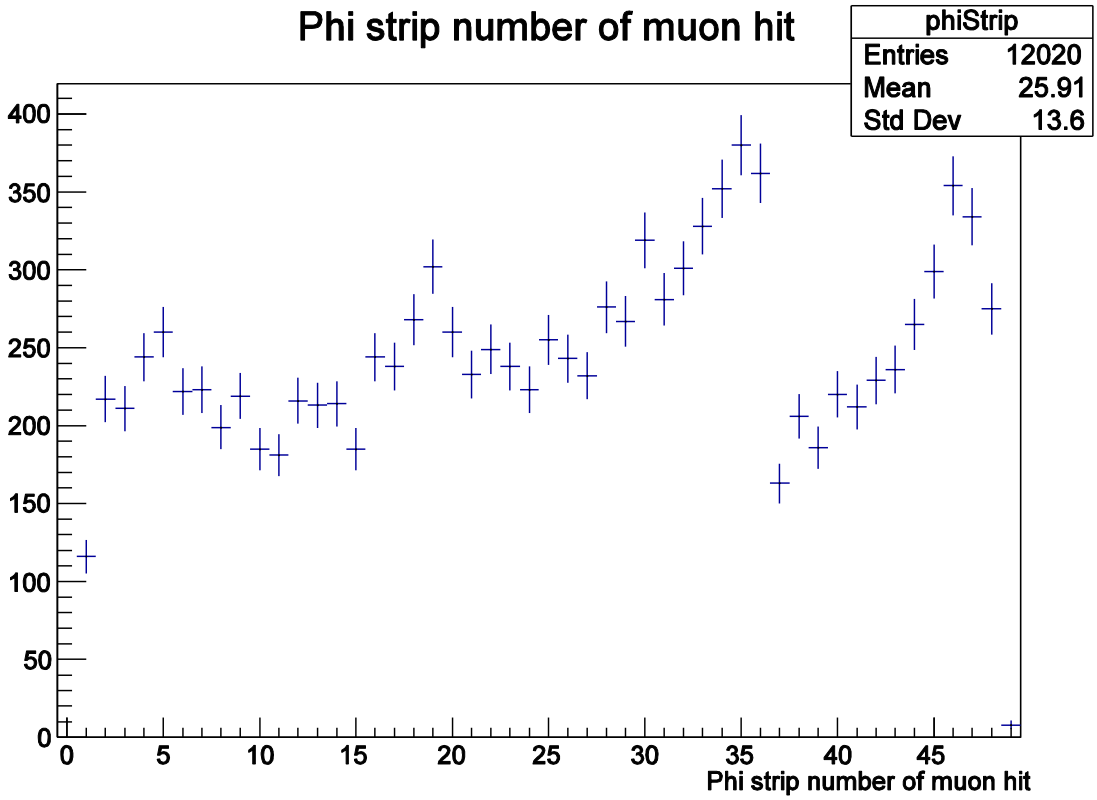
Description: The raw number of hits for each sector of the BKLM is histogrammed

Key features: The hit distribution should roughly be flat for all sectors from 1 to 8

You should check that: Hits in all eight sectors and distribution to be roughly flat. There should be no bins where the hit is significantly higher or lower than the reference

Known problem: Non uniform flat hits may be due to hits missed in first two layers

IM: Please separate BB and BF sectors.
The peaks on sector 2 and 7 correspond to BB1 and BB6 (or BF1 and BF6) which are located on top or bottom of the detector and possibly inline with the trigger condition for the CRT(?) and hence might be a reason that they are getting more hits.

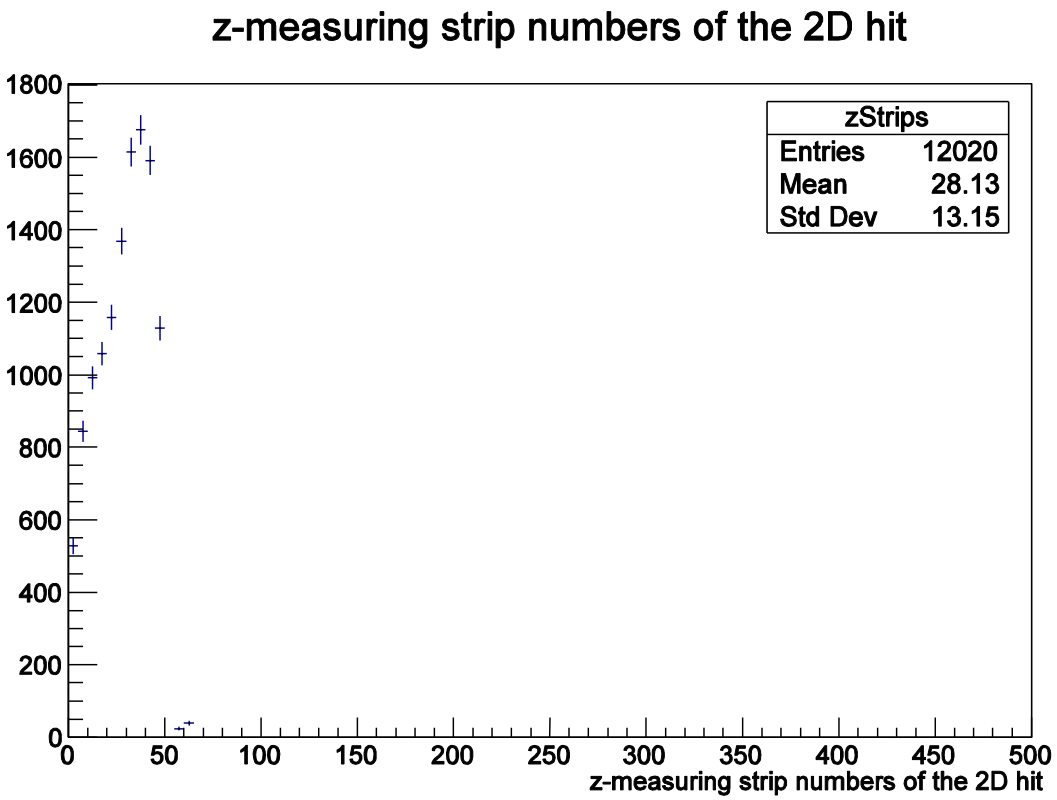


Description: The raw number of hits for each BKLM phi strip is histogrammed

Key feature: The distribution should be roughly flat from 1 to 35 for all layers. After 35 there should be a downward sloping for layers starting 6 or 7 onwards

You should check that: Flat distribution followed by a downward sloping

Known problems: The downward sloping is not clearly visible

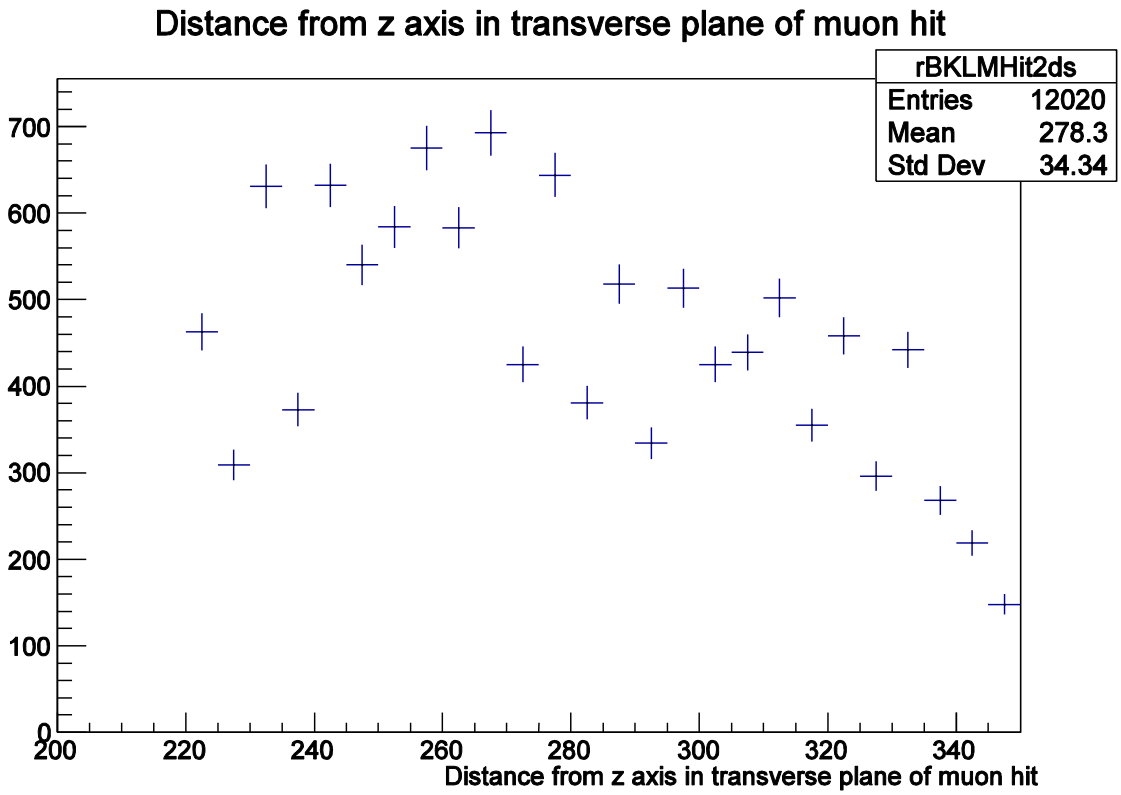


Description: The raw number of hits of the BKLM z measuring strips

Key feature: Shoulder from 49 for starting first few layers while below 49 a downward sloping for all layers

You should check that: The hit pattern is same as the reference with the downward sloping behaviour followed by the shoulder after 48

Known problems: None



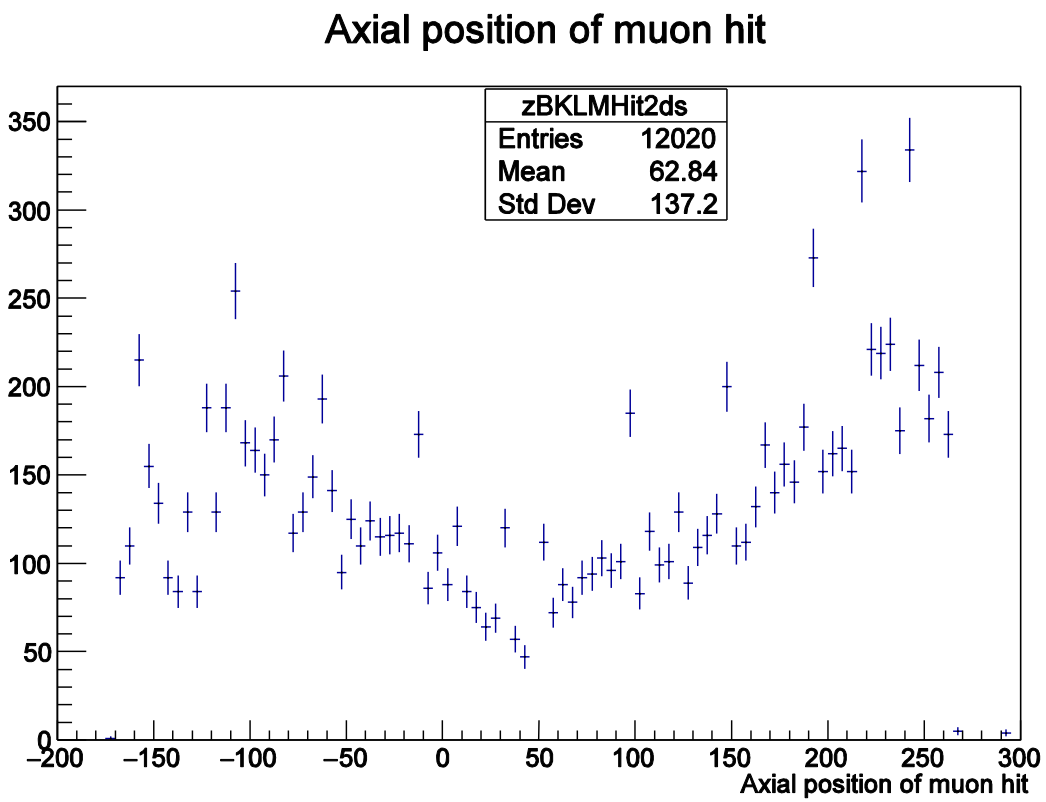
Description: The plot shows distance from z axis in transverse plane of muon hits

Key features: The hits should decrease eventually with an increasing distance from the z axis in transverse plane

You should check that: The hit pattern is same as the reference with a choppy downward sloping behaviour

Known problems: Hits missing in between 200 to 220

IM, 8/2/17: Does the missing hits rage correspond to scint. layers? or is that a channel map issue? what is the known z range supposed to be?

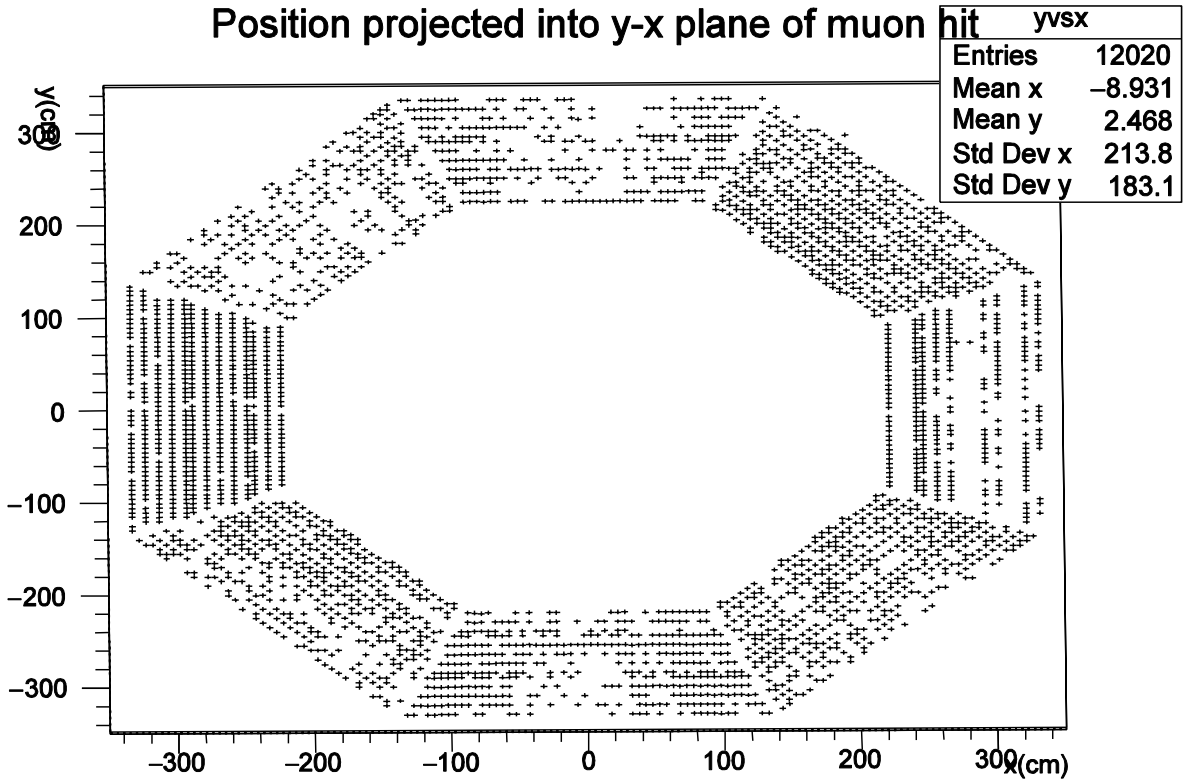


Description: The plot shows axial position of muon hit

Key feature: Dip around 45 cm

You should check that: The hit pattern is same as the reference with dip around 45

Known problems:



Description: The plot shows position projected into y-x plane of muon hit

Key feature: Octagonal pattern with all layers

You should check that: Hits in all eight sectors with uniform distribution

Known problems: Hits in some layers are missing

IM: Please separate BB and BF and make two separate plots.
This plot can help us identify the missing layers/other issues.