D0 Collaboration Meeting
13 September 2001
muon meeting

PDT and MSC Hits and Segments

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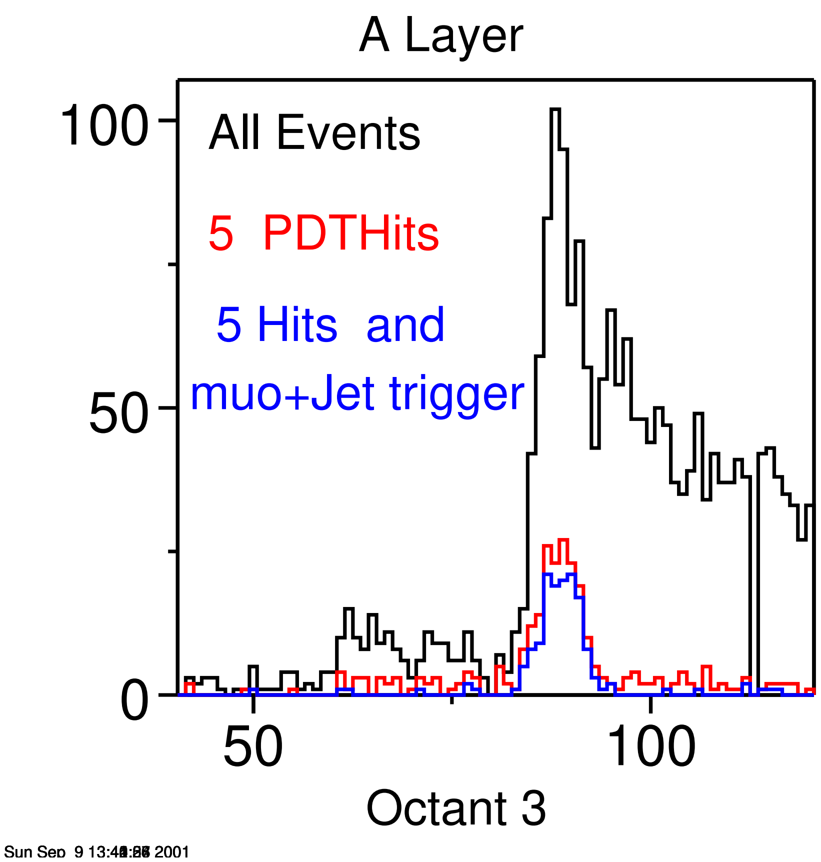
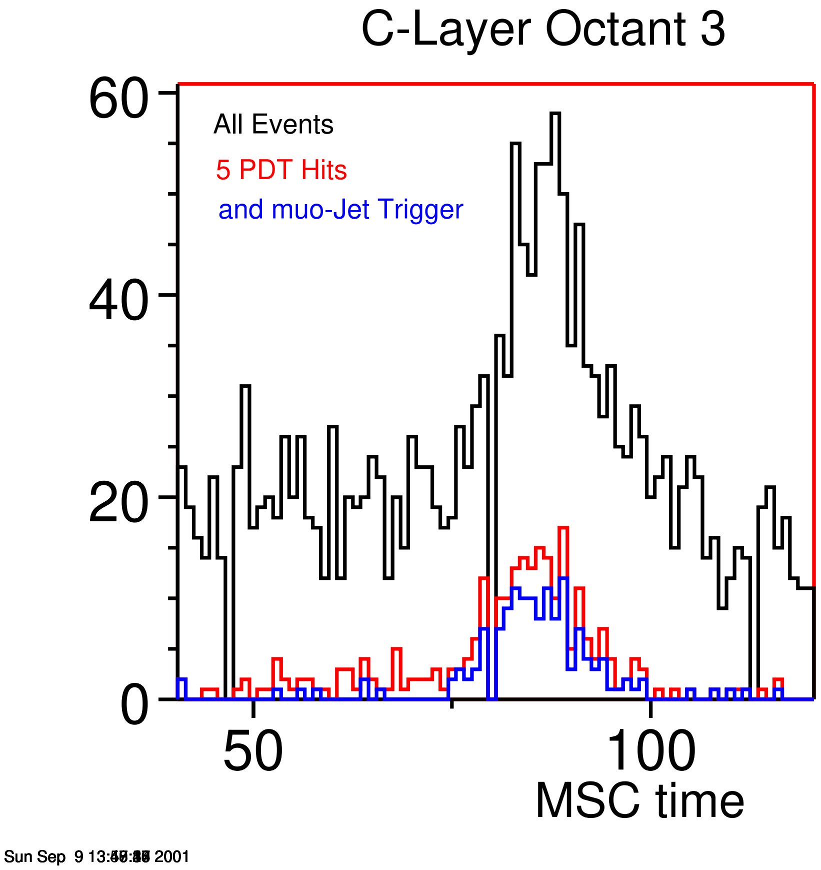
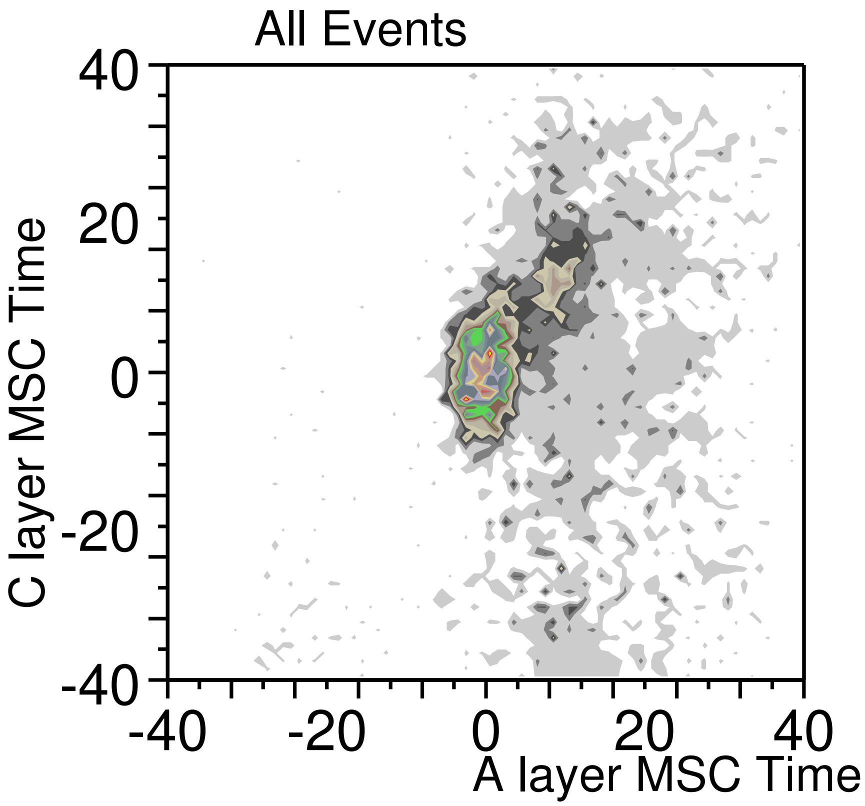
- We now have PDT hits in muo_analyze.
- Study done with run 129677
- Two Types of 'moun candidates' in an Octant
  - 2 MSC hit (in time window)
  - 5 PDT hits in Layer B and C
- 2000 'golden" canditats
- Check MSC and PDT timing
- First look at Segments

MSC timing


A Layer
All Events
5 PDTHits
5 Hits and
muo+Jet trigger
100
50
0
50
100
Octant 3


C-Layer Octant 3
All Events
5 PDT Hits
and muo-Jet Trigger
60
40
20
0
50
100
MSC time

MSC timing



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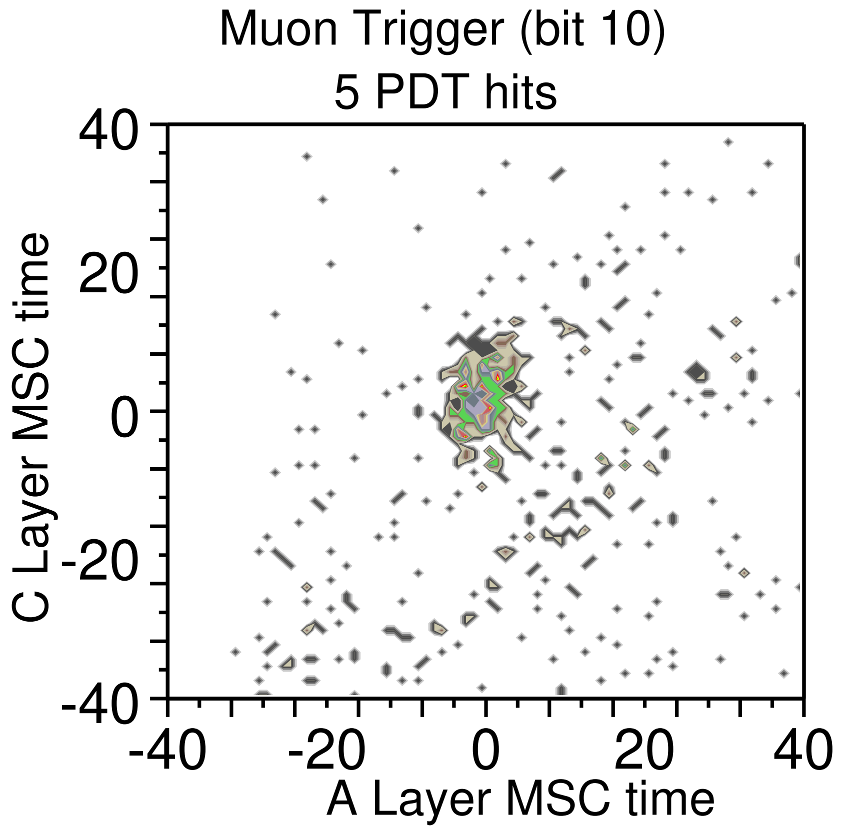

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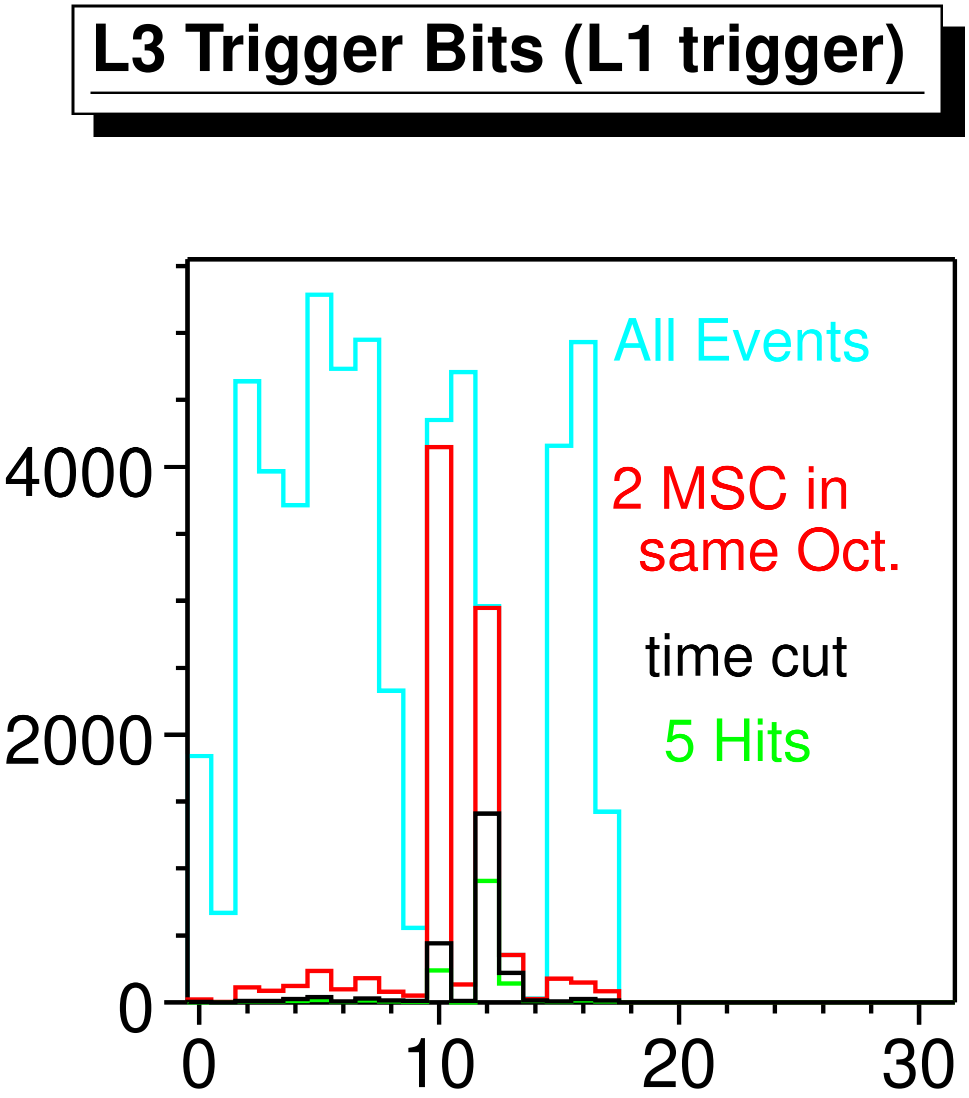
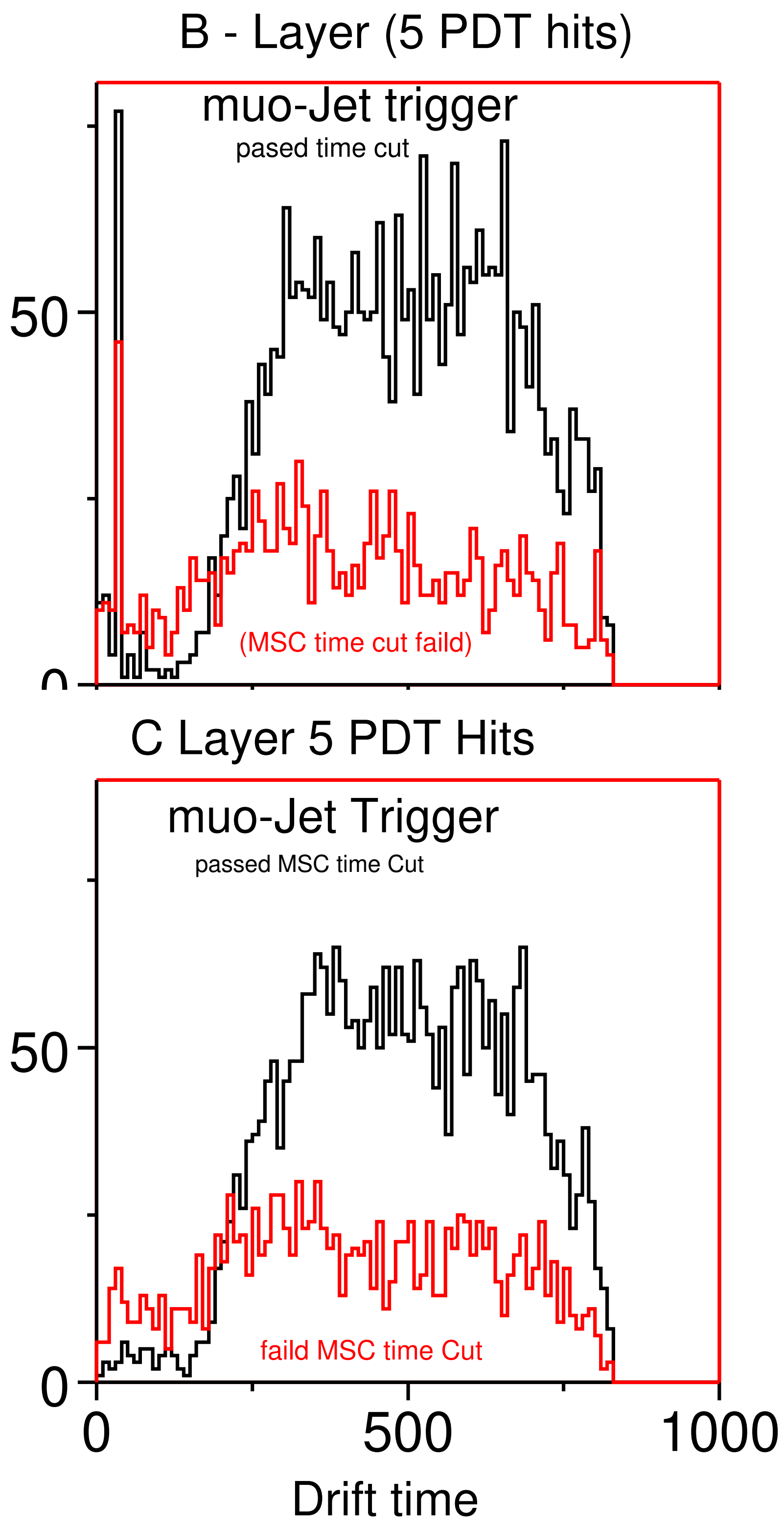

L3 Trigger Bits (L1 trigger)
All Events
2 MSC in
same Oct.
time cut
5 Hits
4000
2000
0
0
10
20
30

PDT timing



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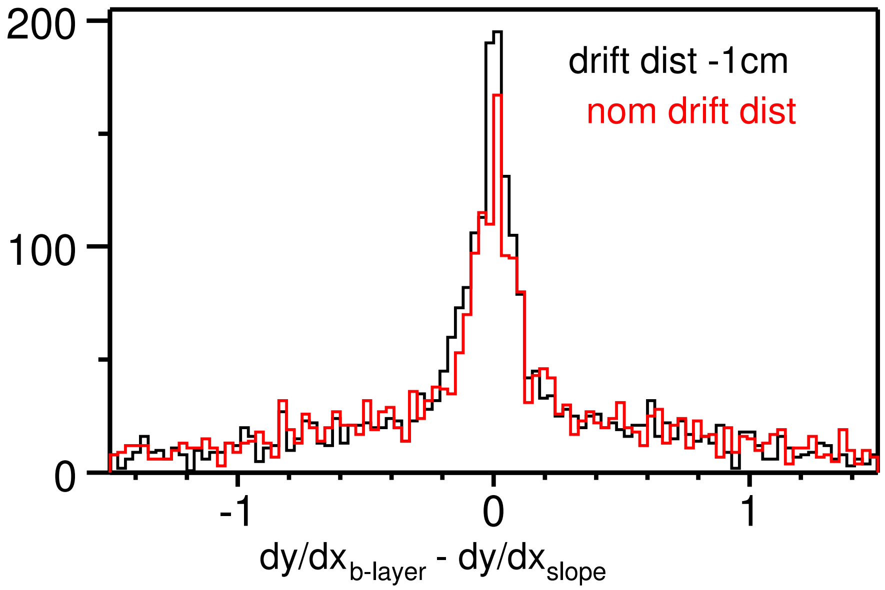
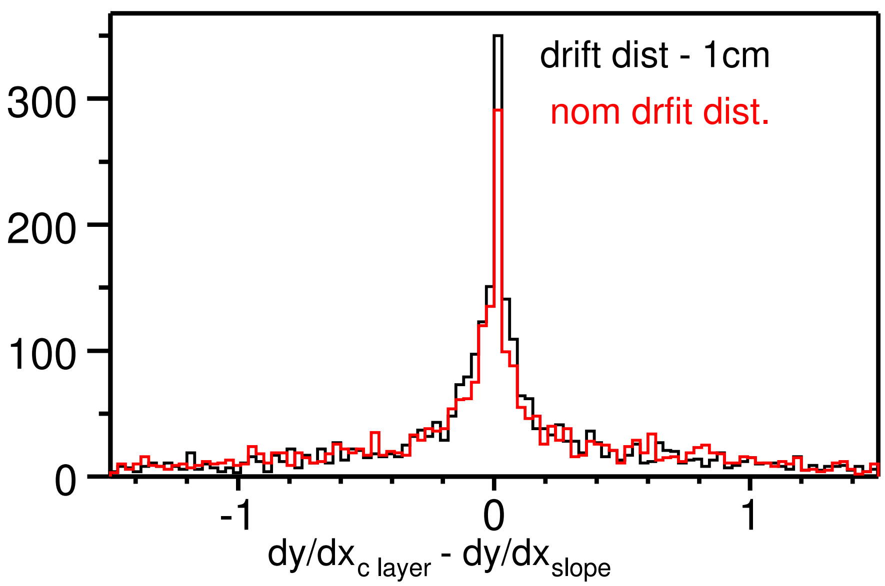
BC Segments

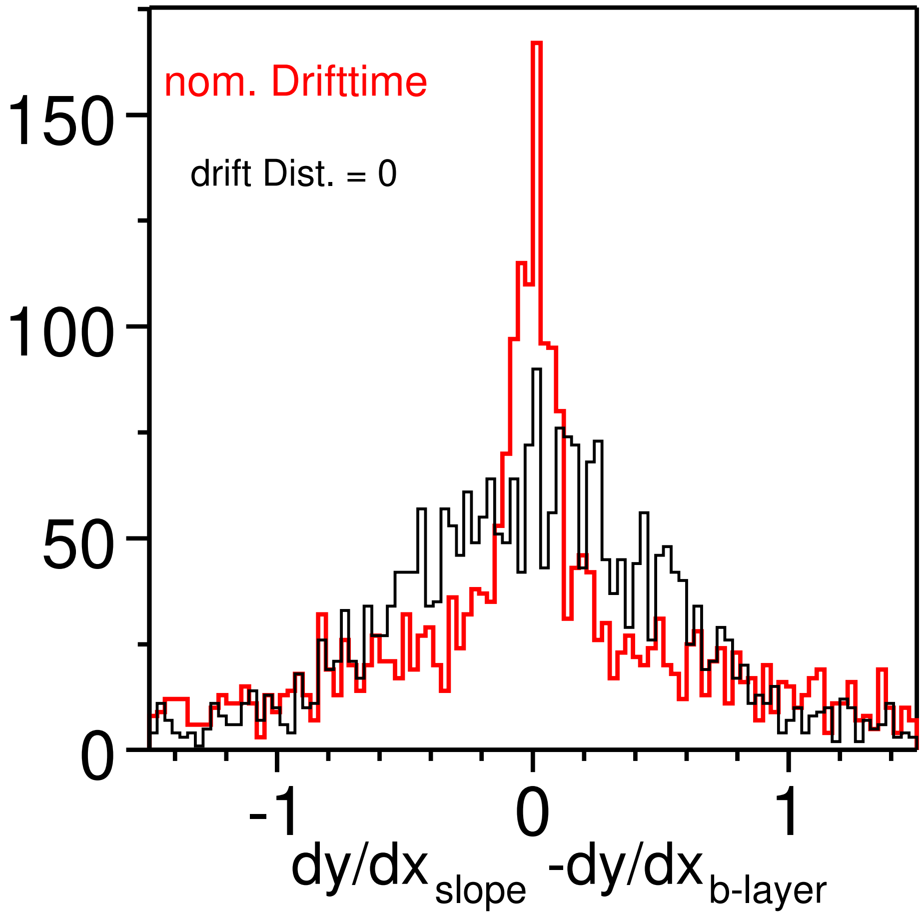
Compare slope between B and C layer with direction in B or C layer.





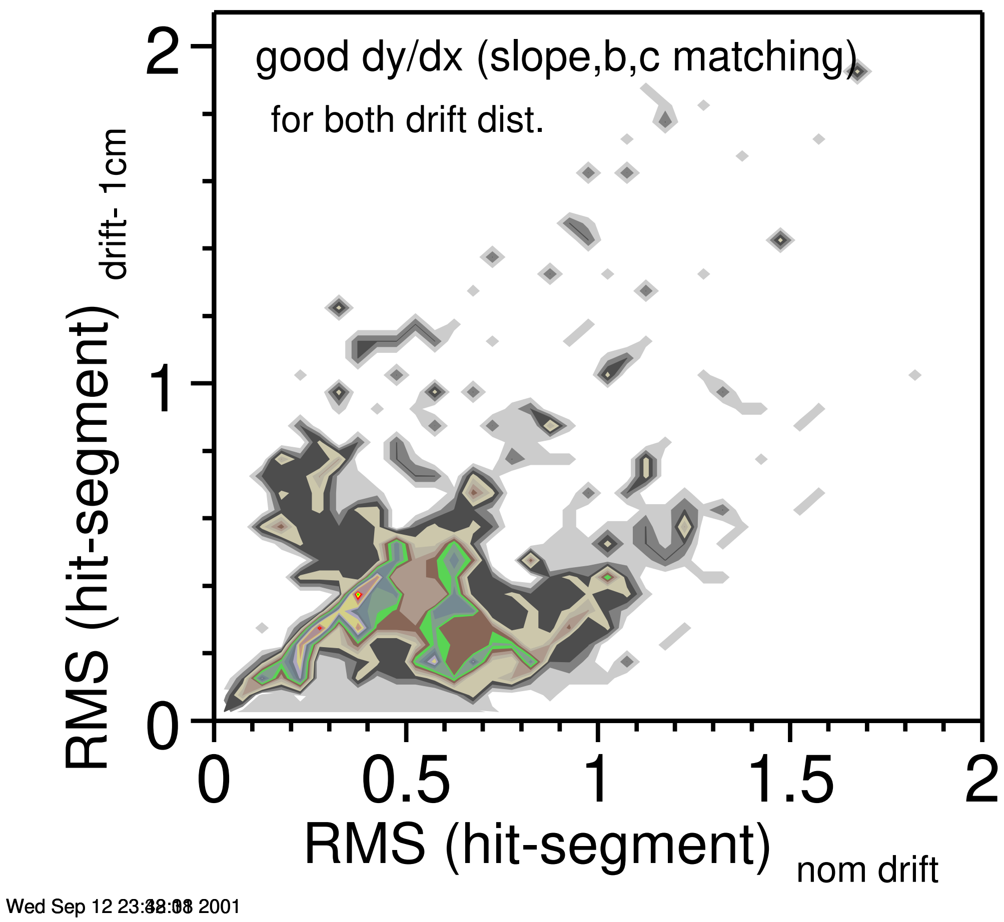
BC Segments

Compare slope between B and C layer with direction in B or C layer.



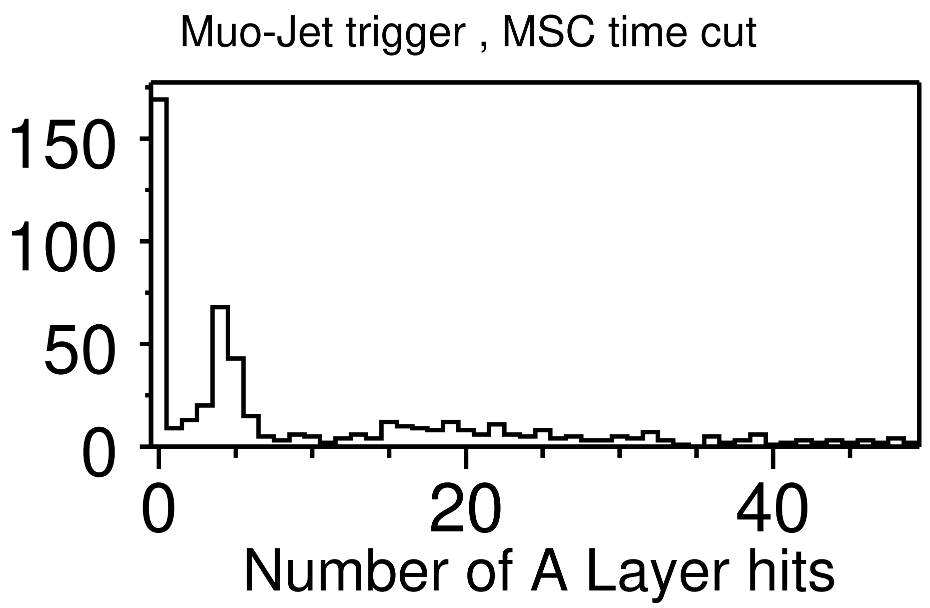
BC Segments

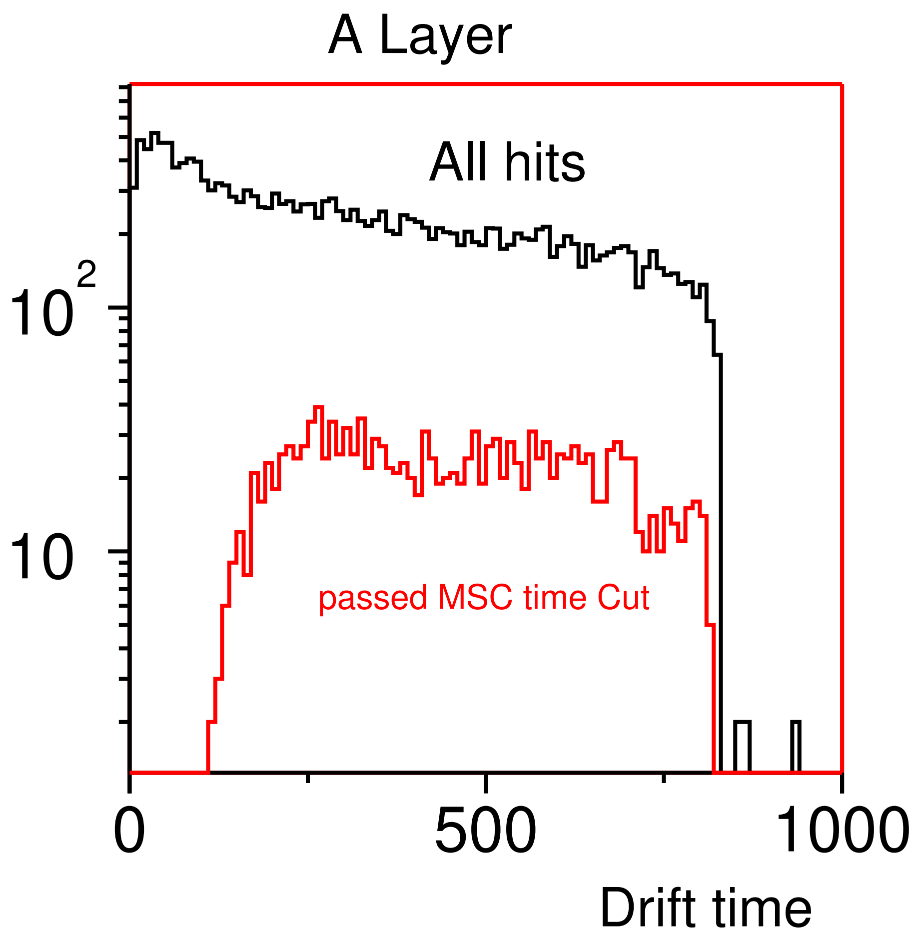
Calculated RMS of distance of hit to the Segment. (In plane perpendicular to wire)



Moving the drift distends improves the fit. (The decision which hits are used is always made with the nom. drift distance.)

A layer





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conclusions

- We see Muon segments in the PDT.
- The MSC timing looks good.
- We could reduce the single muon Rate by a Factor of 10 if we cut on the MSC time.
- The trigger would than be about 50% pure.
- The PDT t0 is off by about 200 ns.