CNT QA

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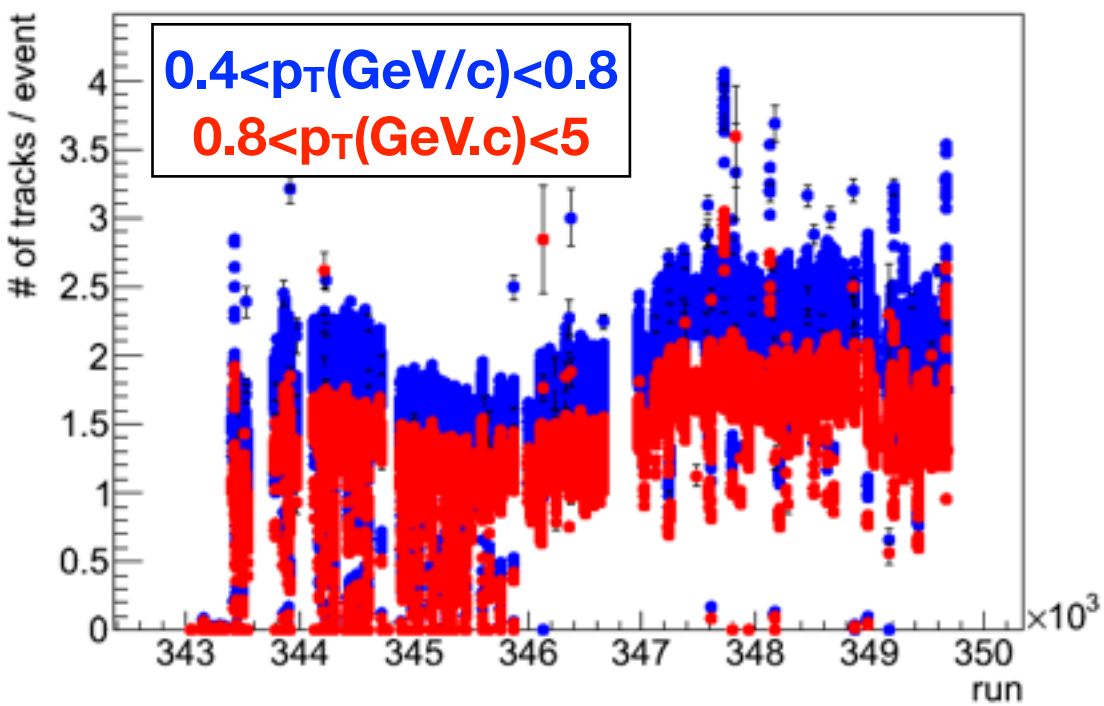
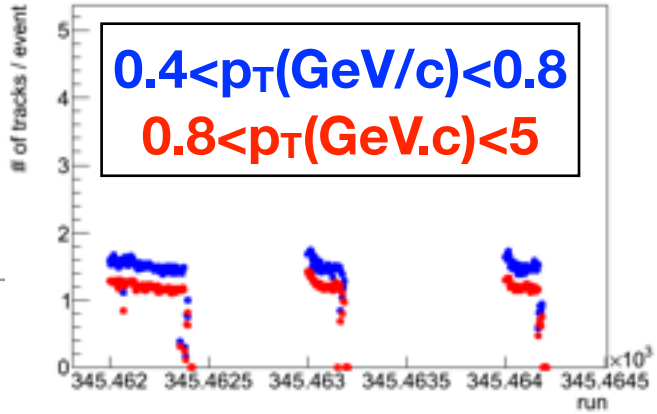
RIKEN VTX software meeting
Ryohji Akimoto

Introduction

- I checked track multiplicity as a function of run number.
  - use SvxCntQA files
- Track selection
  - cut for event selection
    - ✓BBC charge > 50
    - ✓|BBC z-vertex| < 8cm
  - cut for CNT
    - ✓track quality : 31 or 63
    - ✓|zed| < 75
  - cut for VXT
    - ✓chi2/ndf<10
    - ✓nhit>2
    - ✓require B0 hit



Run QA



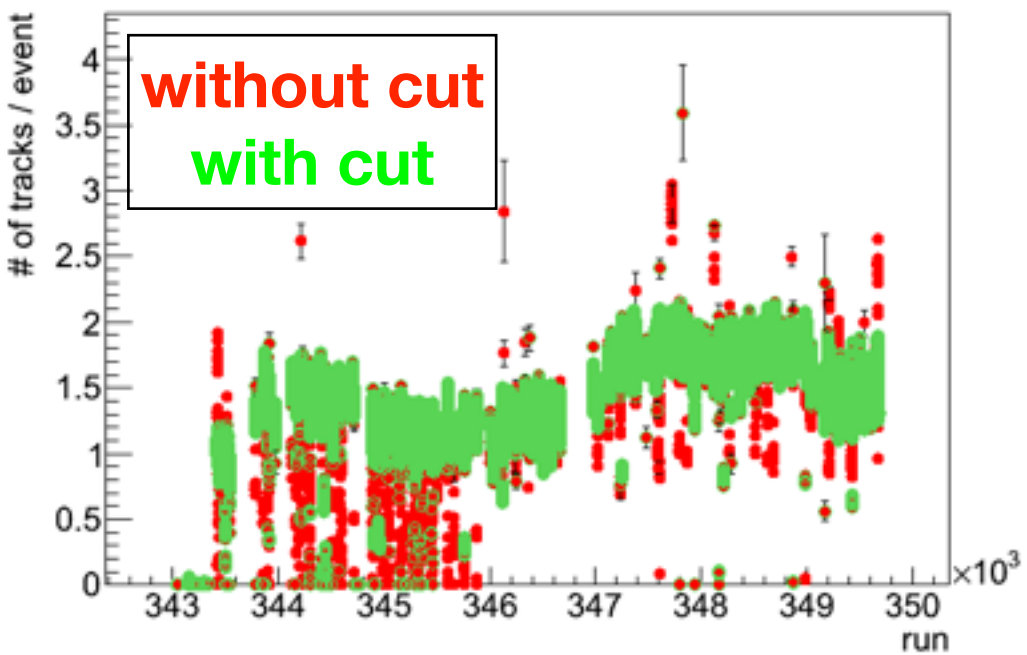
- Run QA plan
  - categorize some run groups, then cut runs where mean track multiplicities are far from the mean track multiplicity of the run group.
- But, track multiplicities suddenly increase or decrease in some runs.
  - cell ID stuck problem, suddenly increase hot channels, ...
- Events after the change should be cut before calculating mean track multiplicity of the run.
  - They will be able to be cut by other QA (cell ID and # of clusters).
  - I also tried to cut them from track multiplicity of a file segment.

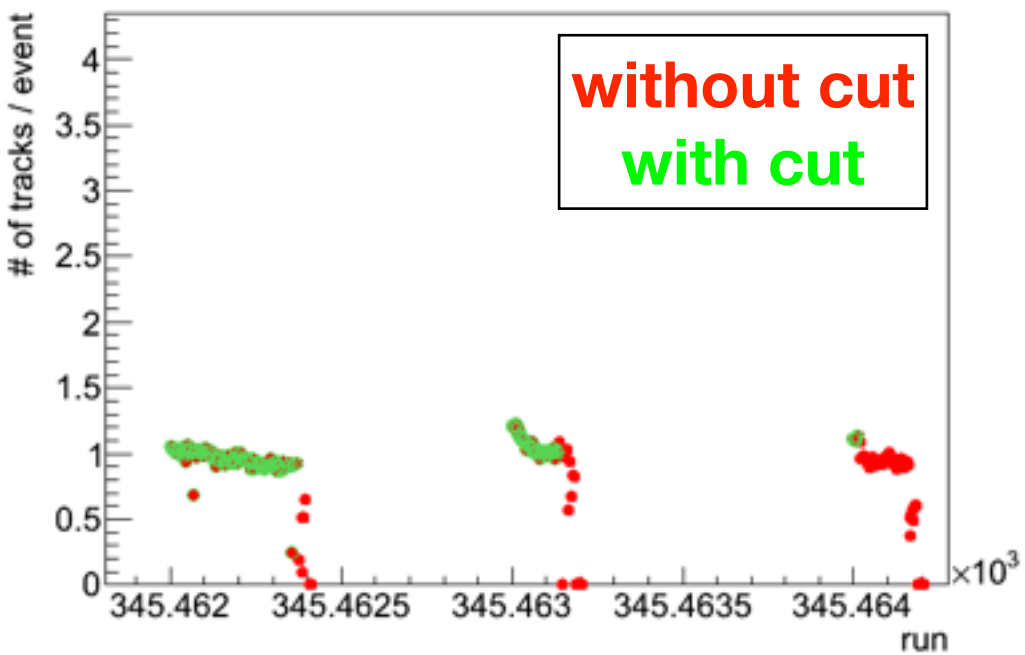
Segment QA

- I tried to cut events after increasing or decreasing the track multiplicity suddenly from track multiplicity of a file segment.
- How to cut
  - start from the first file segment and check with next 4 file segments.
  - select 3 segments among 4 and make 4 combinations of 3 segments.
  - calculate standard deviation for each of the combinations and search minimum among 4 combinations. Cut is applied to the minimum.

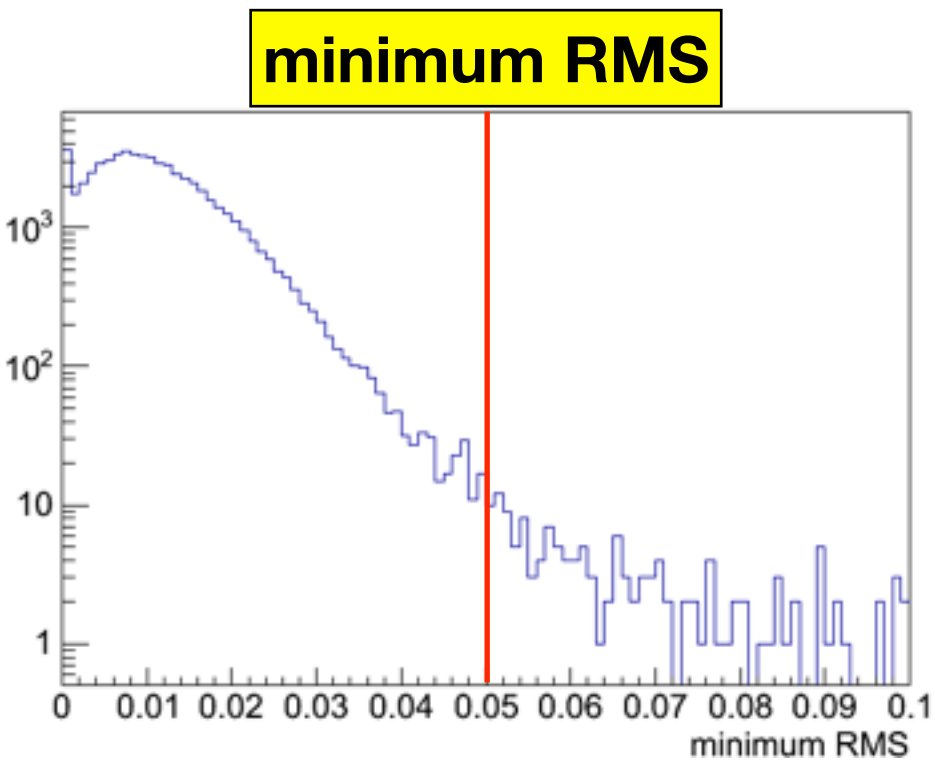
    ✓threshold : 0.05

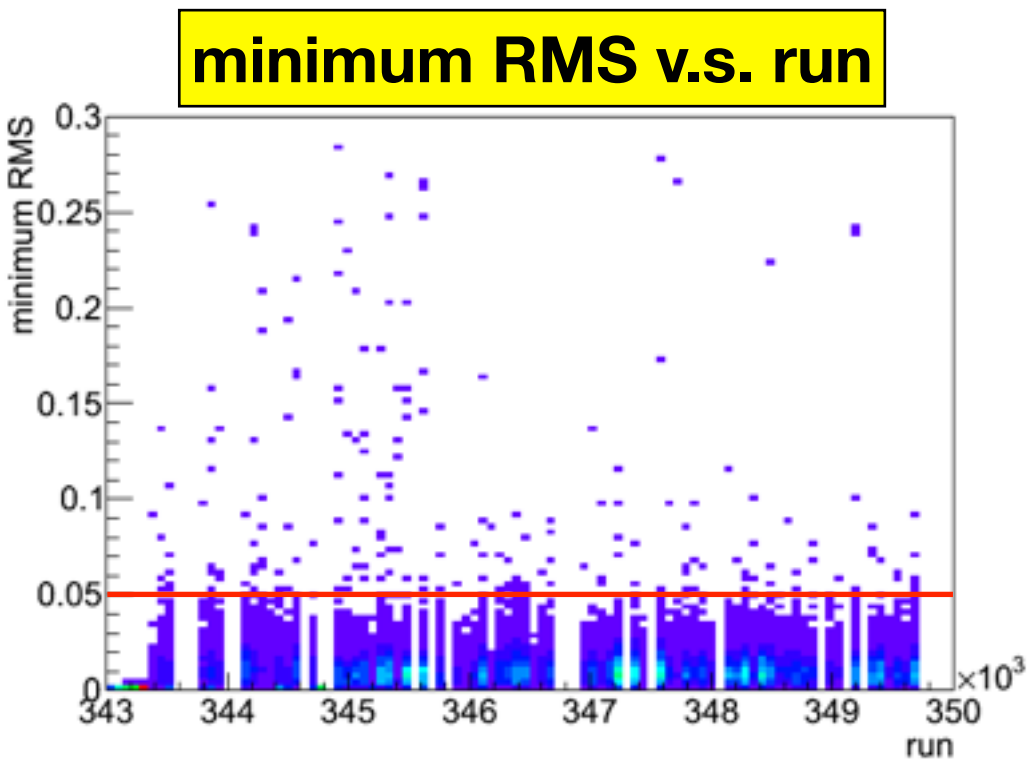
Result (0.8 < pT(GeV/c) < 5)





minimum RMS


minimum RMS
10^3
10^2
10
1
0
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.1
minimum RMS


minimum RMS v.s. run
minimum RMS
0.3
0.25
0.2
0.15
0.1
0.05
0
343
344
345
346
347
348
349
350
$\times 10^3$
run