

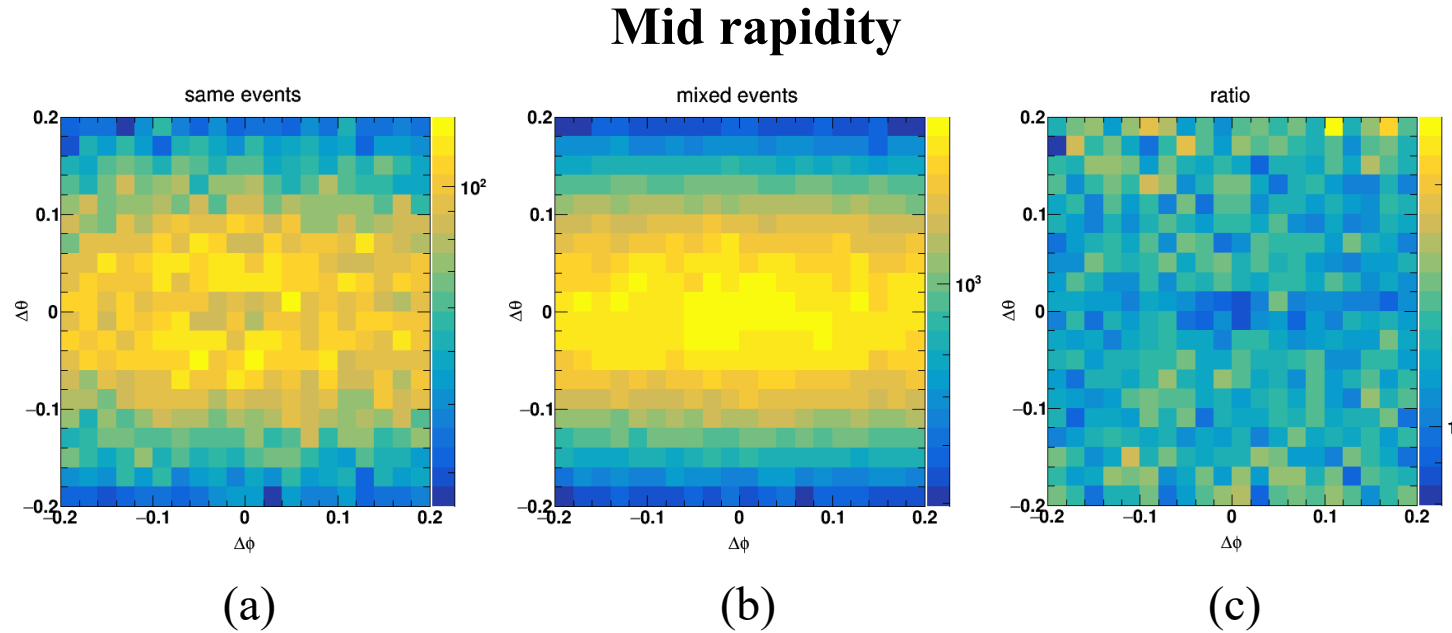
# **$K^+K^+$ correlation functions in Au+Au collisions at 3.2 GeV**

Bijun Fan

Central China Normal University

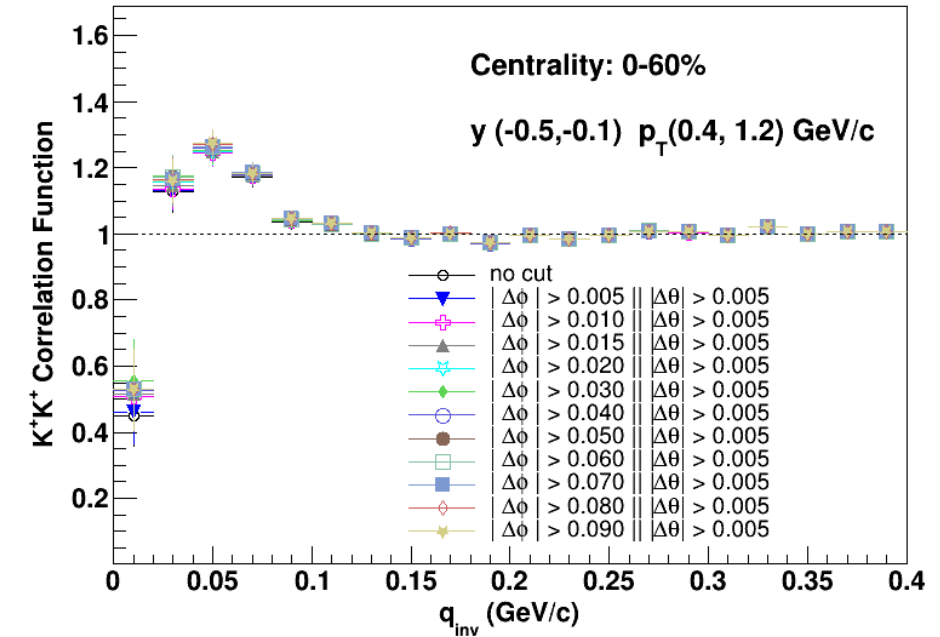
May 26, 2023

# Correction: track-merging effect



The distribution of  $\Delta\theta$  &  $\Delta\phi$  of (a) same events (b) mixed events (c) the ratio of same events / mixed events after normalization.

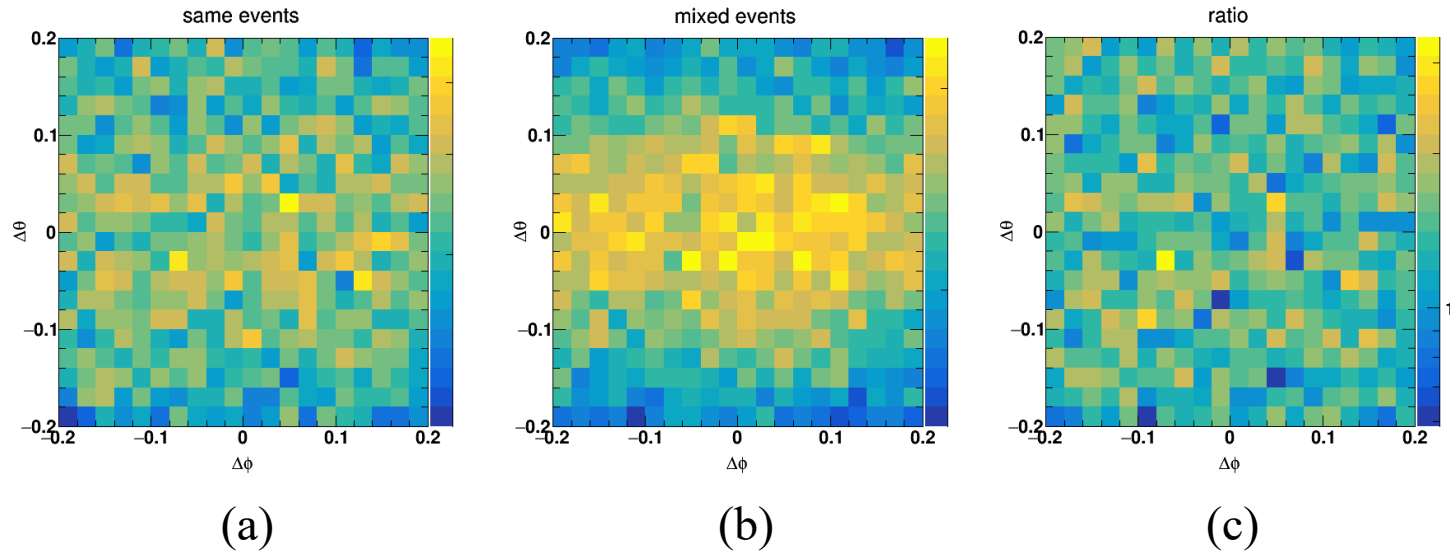
Track-merging effect happens at narrow phase space such as when both  $\Delta\theta$  &  $\Delta\phi$  approaching zero.



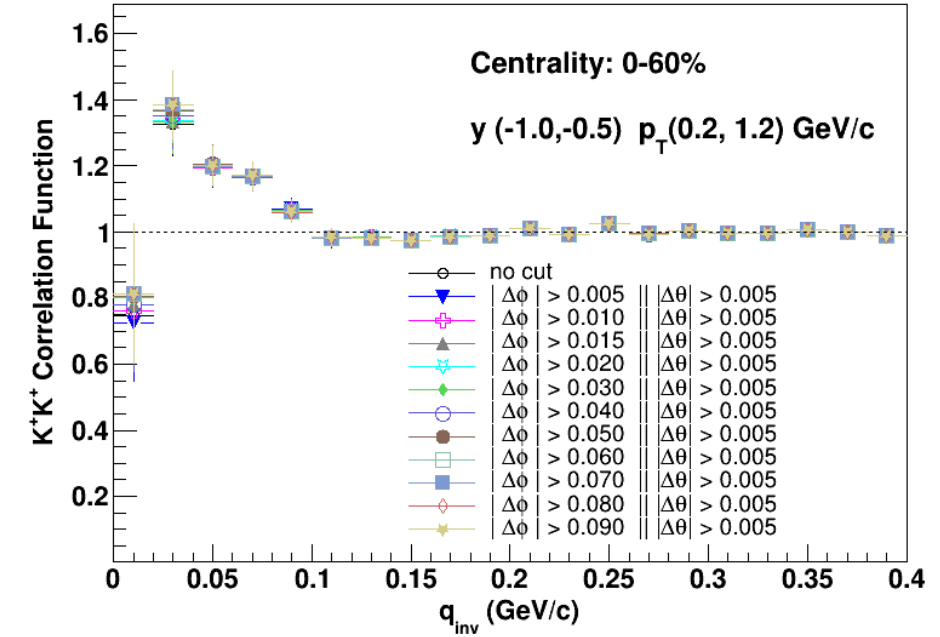
Due to large statistical fluctuation, track merging effect is not significant, then we use  $|\Delta\theta| > 0.005$  or  $|\Delta\phi| > 0.005$  as default cuts for removing track merging effect.

# Correction: track-merging effect

## Forward rapidity



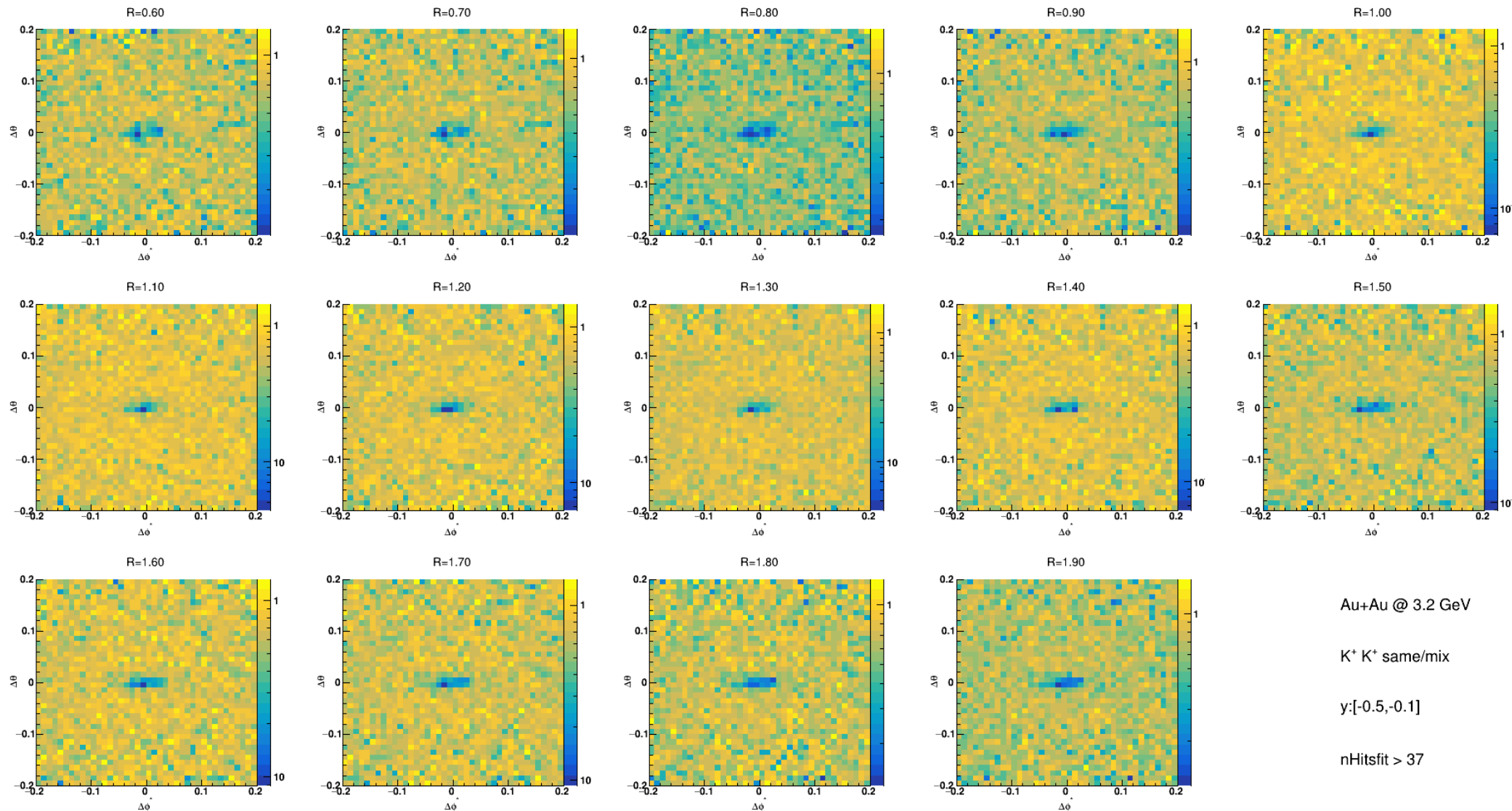
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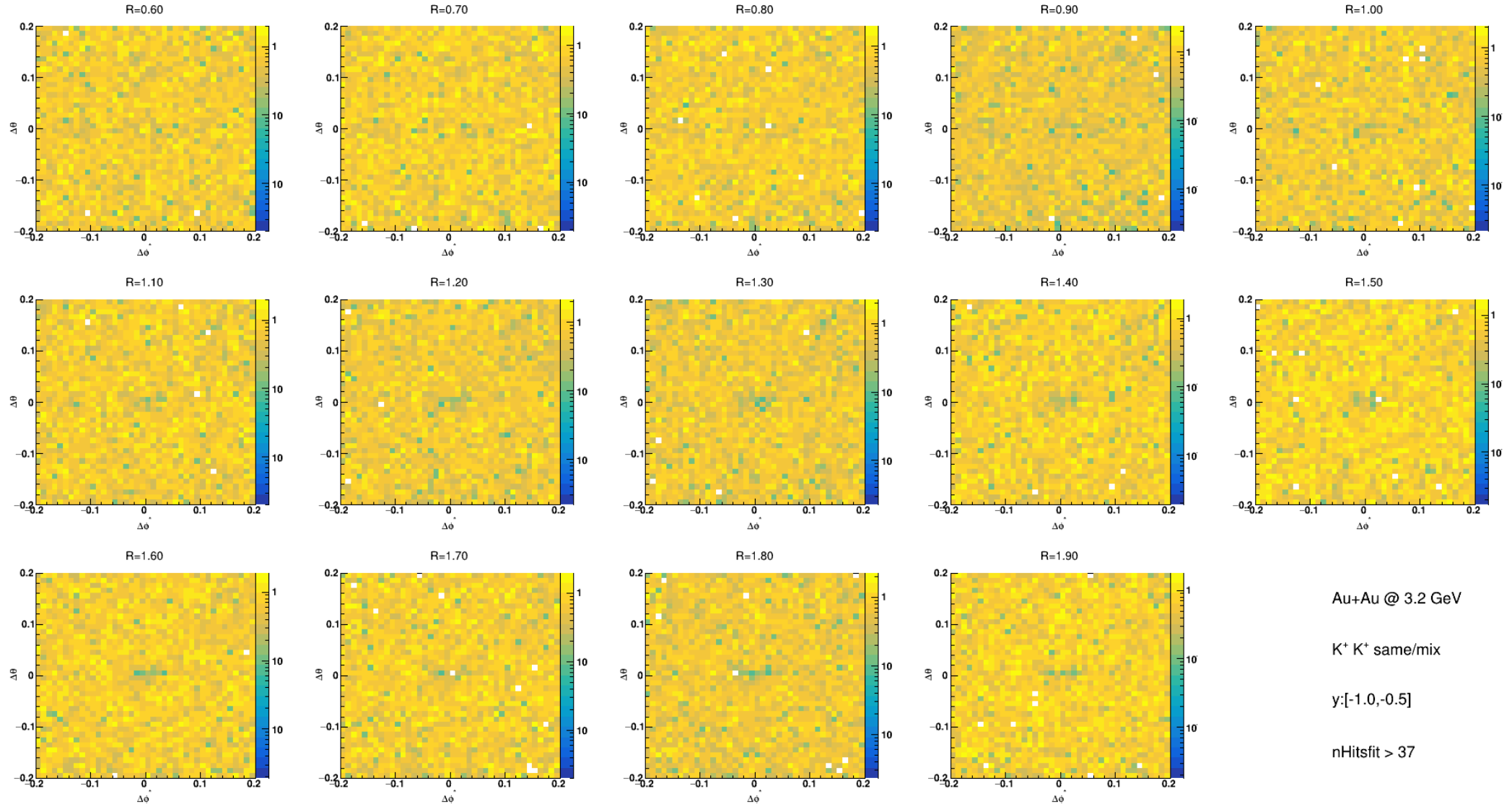
# Correction: track-merging effect ( $\phi^*$ )

Mid rapidity



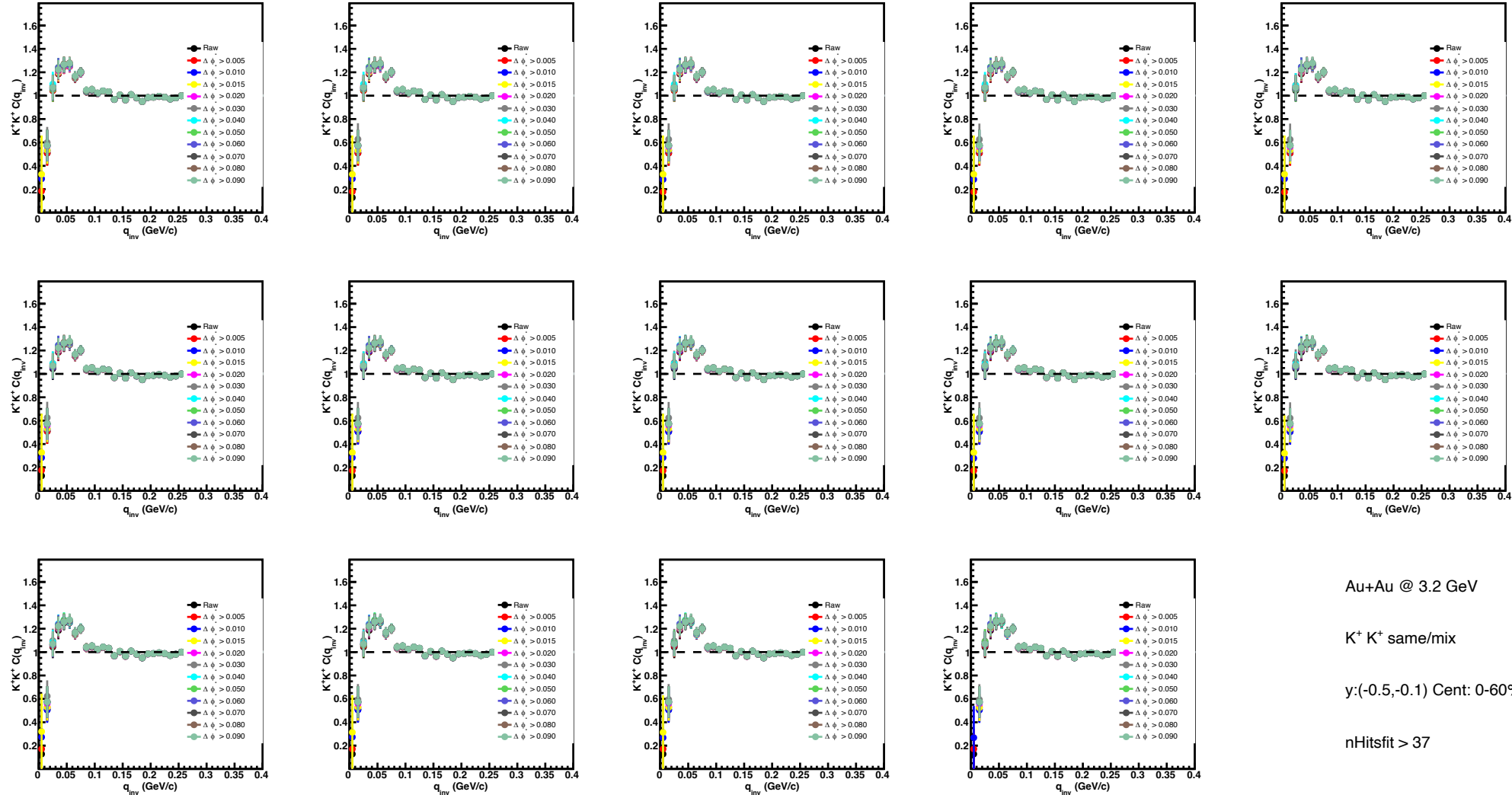
# Correction: track-merging effect ( $\phi^*$ )

For rapidity



# Correction: track-merging effect ( $\phi^*$ )

Mid rapidity



Au+Au @ 3.2 GeV

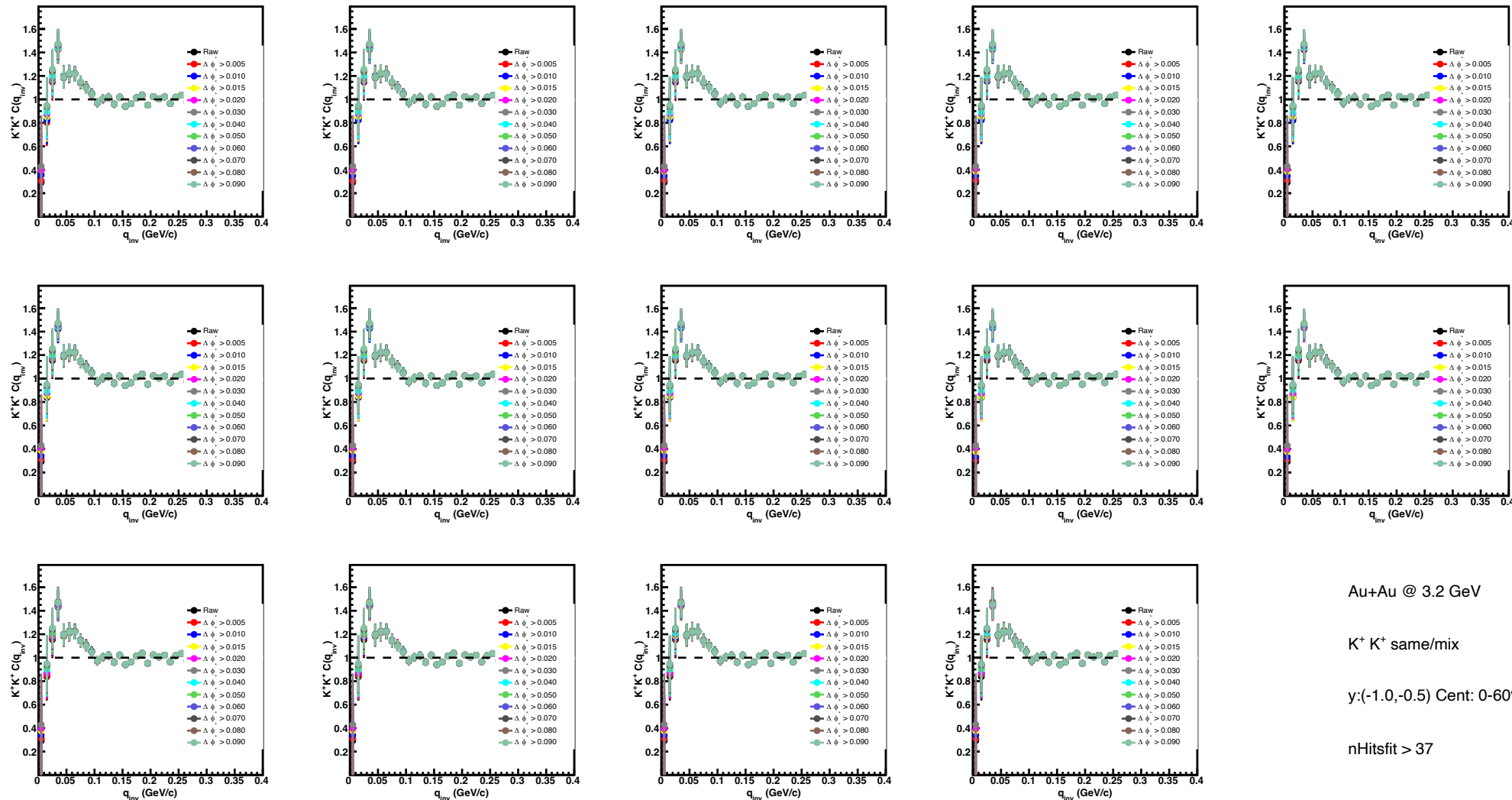
$K^+ K^+$  same/mix

$y: (-0.5, -0.1)$  Cent: 0-60%

nHitsfit > 37

# Correction: track-merging effect ( $\phi^*$ )

For rapidity



Due to large statistical fluctuation, track merging effect is not significant, then we use  $|\Delta\theta| > 0.005$  or  $|\Delta\phi^*| > 0.005$  as default cuts for removing track merging effect.

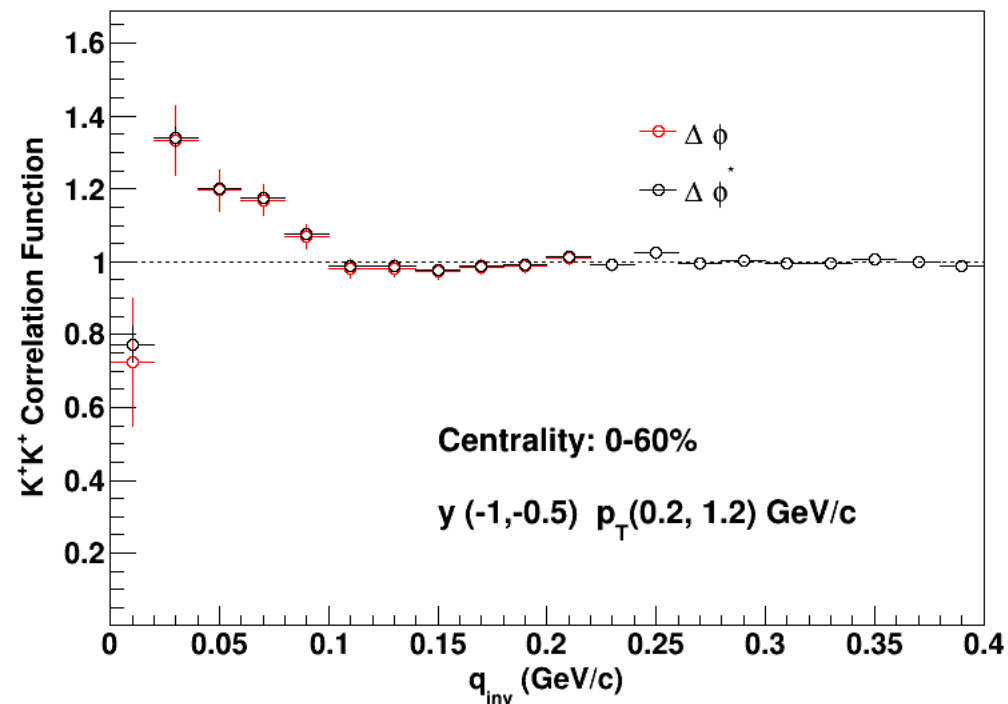
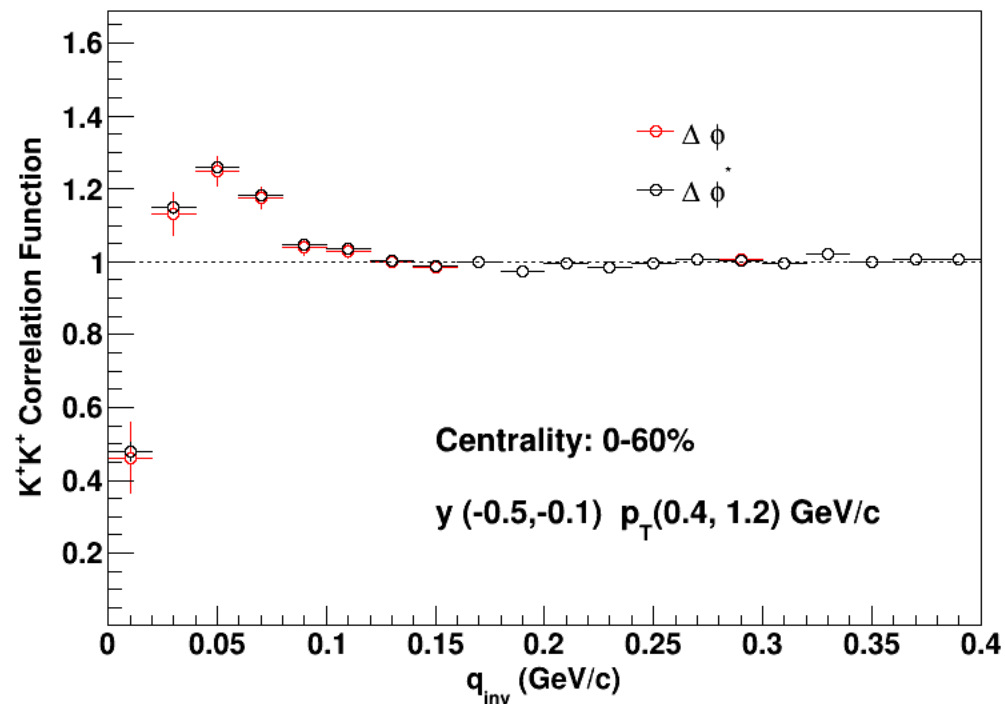
Au+Au @ 3.2 GeV

$K^+ K^+$  same/mix

$y: (-1.0, -0.5)$  Cent: 0-60%

nHitsfit > 37

# Comparison of $\Delta \phi$ & $\Delta \phi^*$



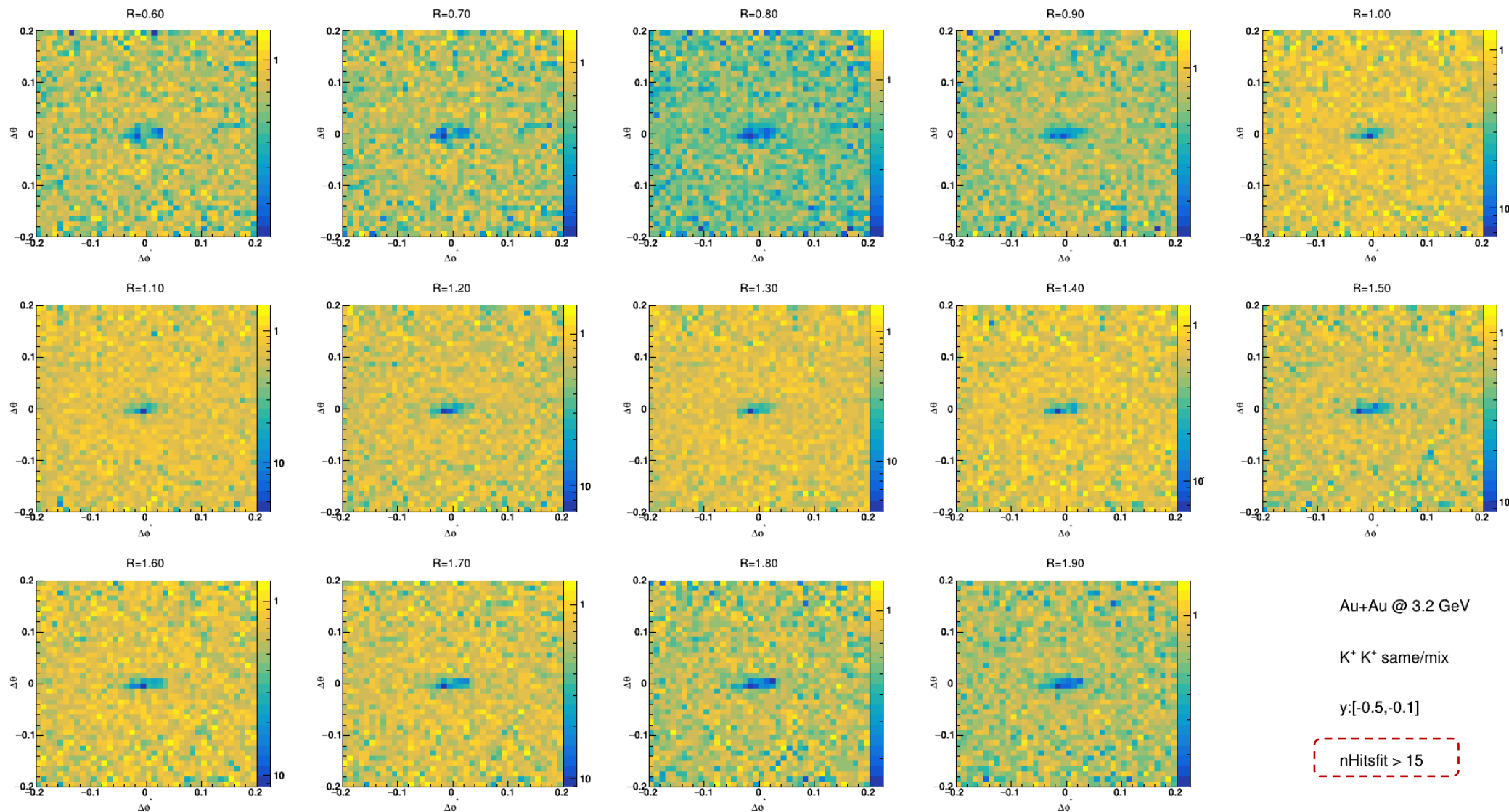
The results of the two methods consistent with each other within error.



**backup**

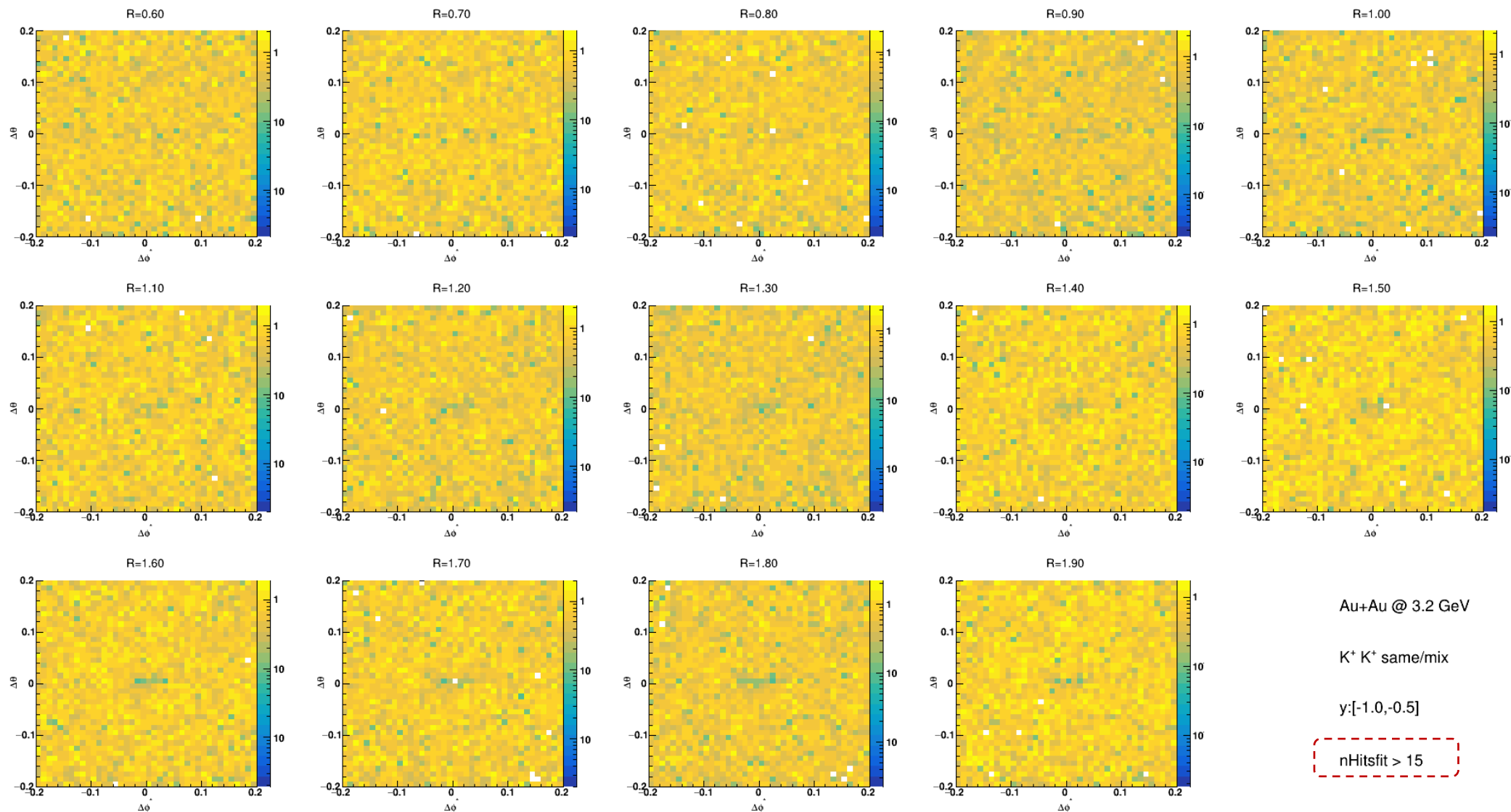
# Correction: track-merging effect ( $\phi^*$ )

Mid rapidity



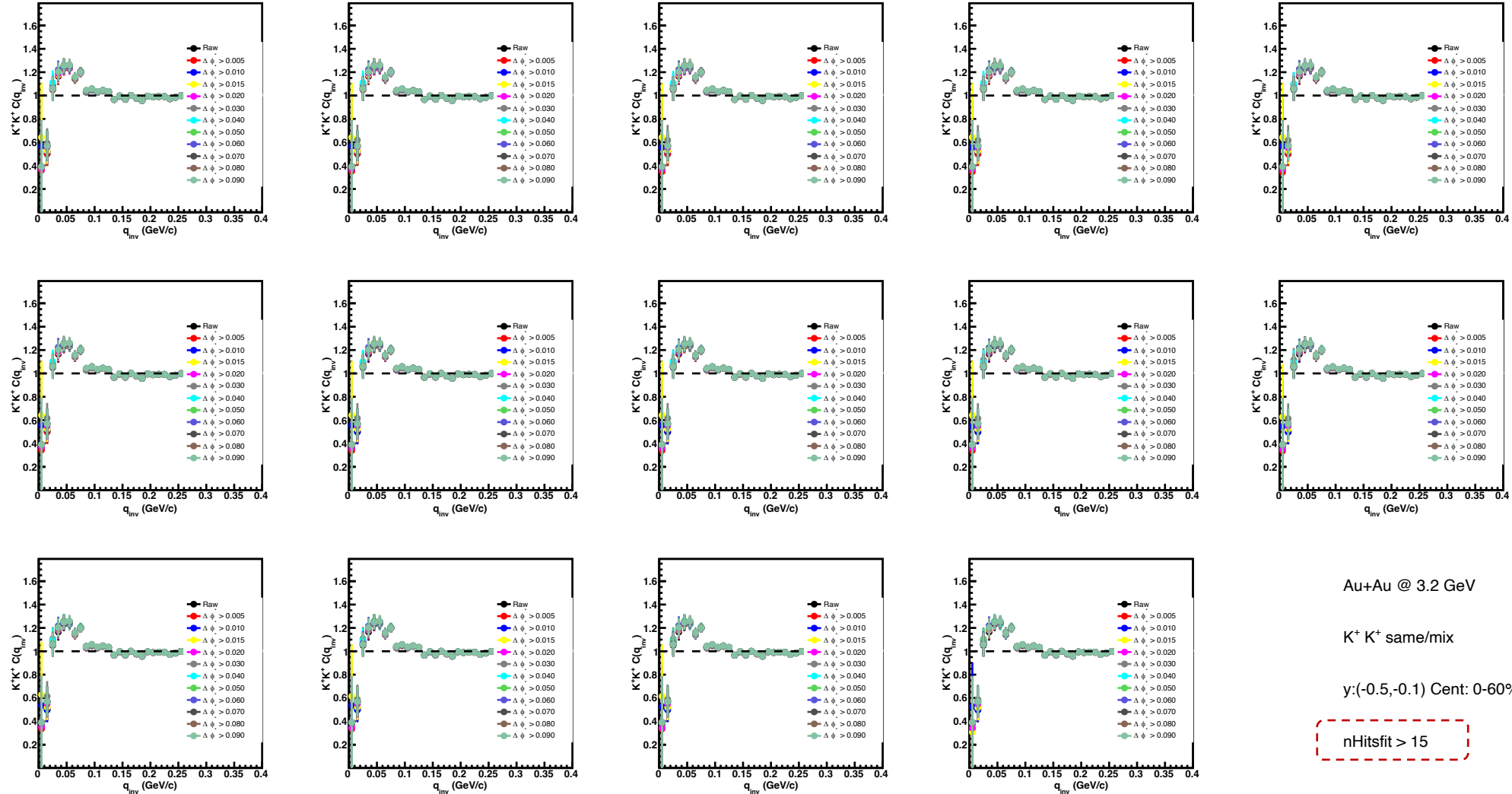
# Correction: track-merging effect ( $\phi^*$ )

For-rapidity



# Correction: track-merging effect ( $\phi^*$ )

Mid rapidity



Au+Au @ 3.2 GeV

$K^+ K^+$  same/mix

$y: (-0.5, -0.1)$  Cent: 0-60%

nHitsfit > 15

# Correction: track-merging effect ( $\phi^*$ )

For rapidity

