

# Pions HBT in Bi+Bi at 7.7 GeV

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# Analysis

Stable Bi nucleus: A=209 Z=83

- Dataset (pure generator tracks)

- UrQMD:

- /zfs/store7.hydra.local/gnigmat/mc  
Dst/urqmd/bibi/7gev

- 3 centrality bins (0-10% = 0-4.8 fm, 30-40% = 8.2-9.5 fm, 70-80% = 12.6-13.4 fm)

- 5  $k_T$  bins (0.15 – 0.65 GeV/c with step = 100 MeV)

- Kinematic conditions for pions

- $0.15 < p_T < 2.8$

- $|\eta| < 1$

- Analysis procedure:

- Correlation function construction:  $C(q) = \frac{A(q)}{B(q)} \begin{cases} A(q) - q \text{ distribution} \\ \text{with Weight} = \text{lednicky codes} \\ B(q) - q \text{ distribution} \\ \text{with Weight} = 1 \end{cases}$

- Fit:  $C(q) = 1 + \lambda G(q)$

$$\begin{cases} \mathbf{3D}: G(q) = e^{-q_{out}^2 R_{out}^2 - q_{side}^2 R_{side}^2 - q_{long}^2 R_{long}^2} \\ \mathbf{1D}: G(q) = e^{-q_{inv}^2 R_{inv}^2} \end{cases}$$

# Plotting scheme

## 3D HBT

### 1D HBT

0-10% = 0-4.8 fm

30-40% = 8.2-9.5 fm

70-80% = 12.6-13.4 fm

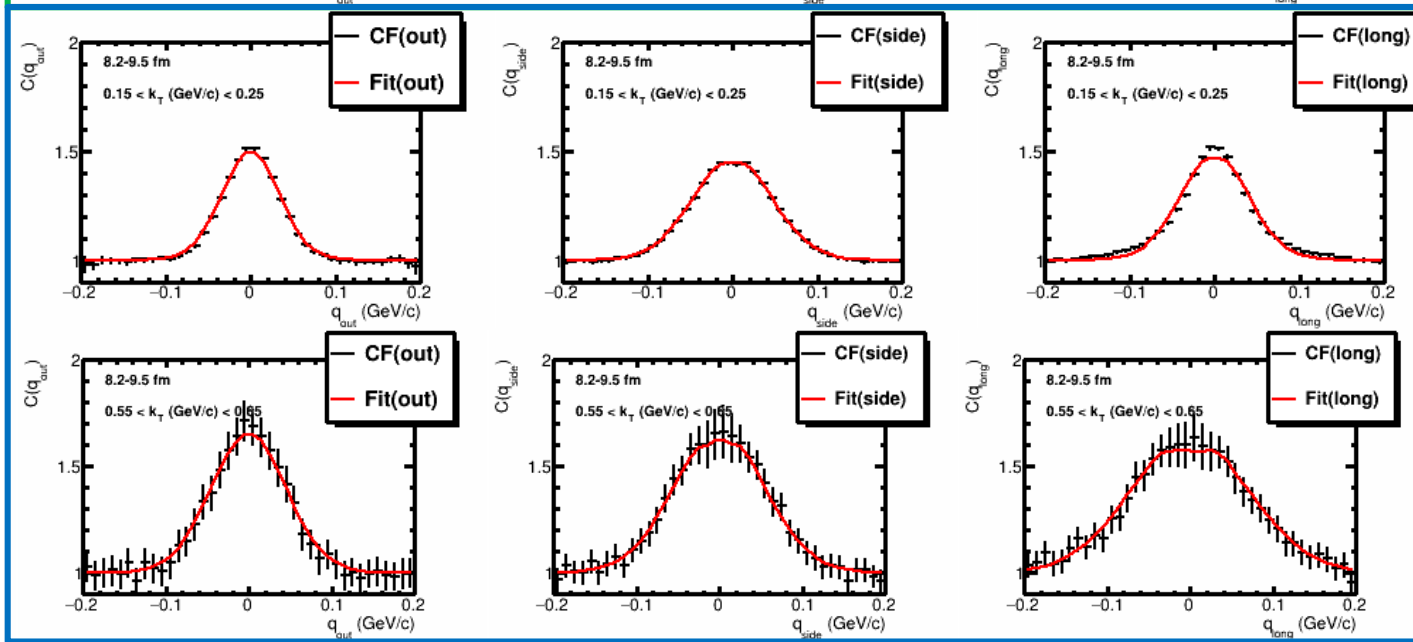
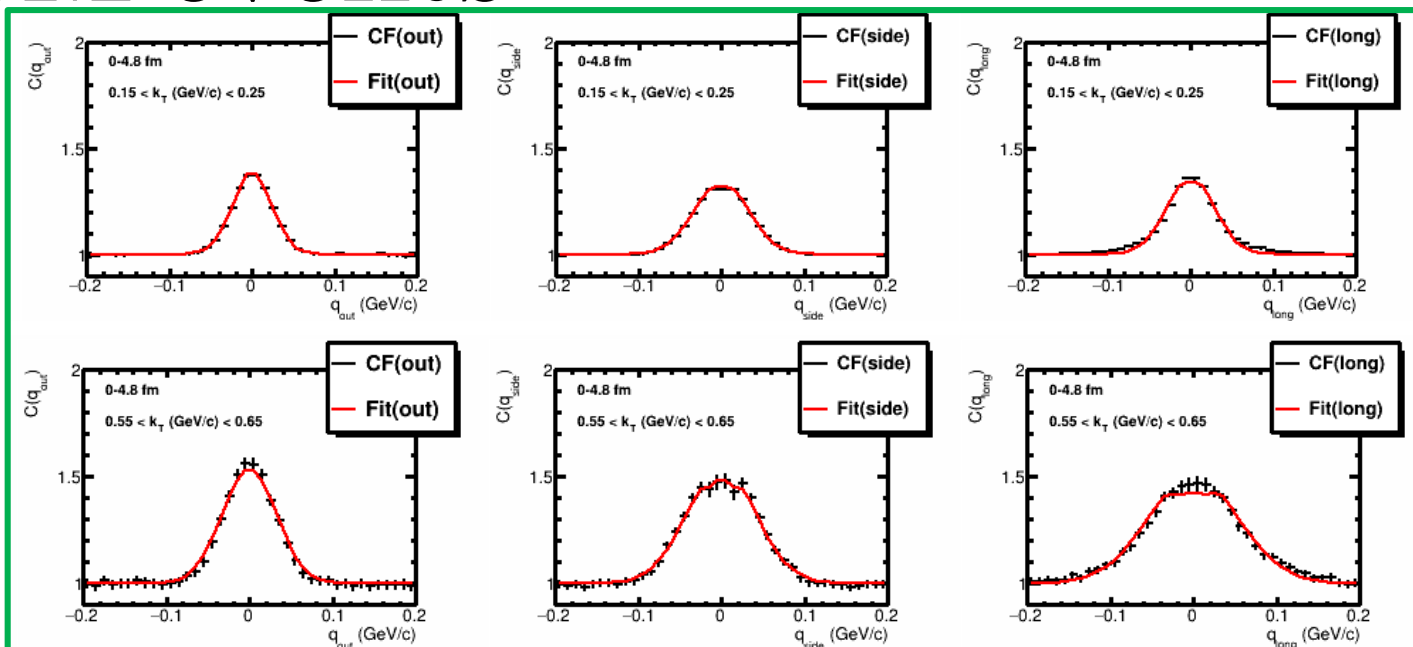
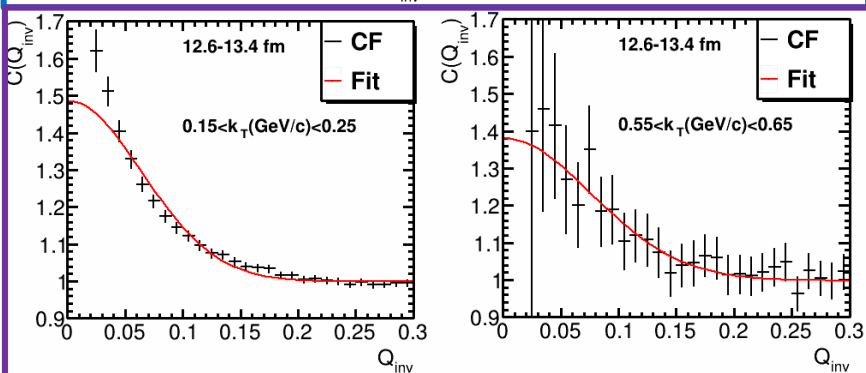
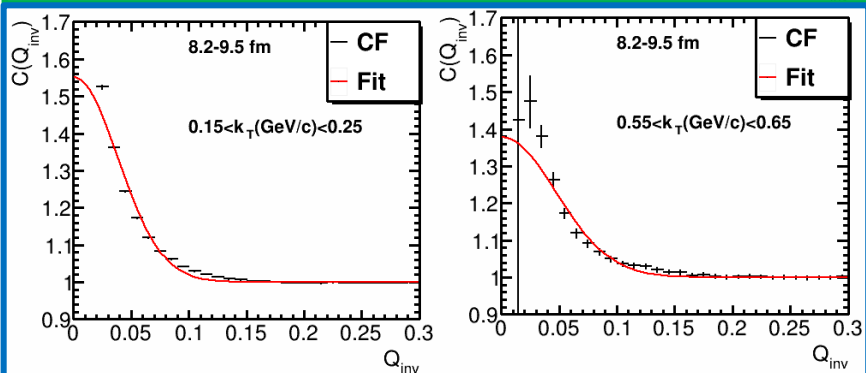
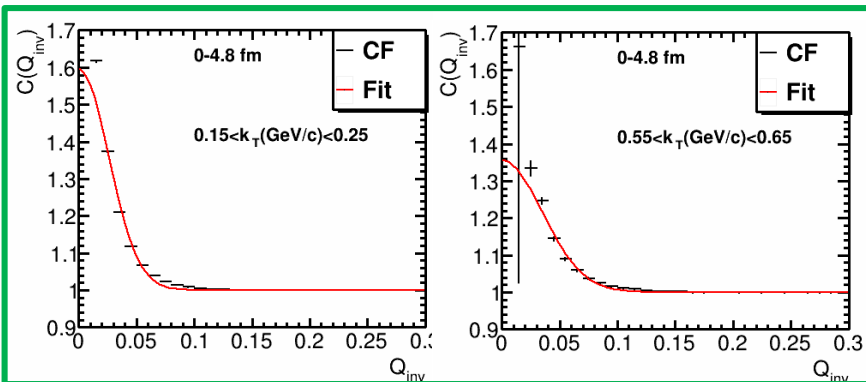
0-10% = 0-4.8 fm

30-40% = 8.2-9.5 fm

# Analysis of 5M events

## 3D

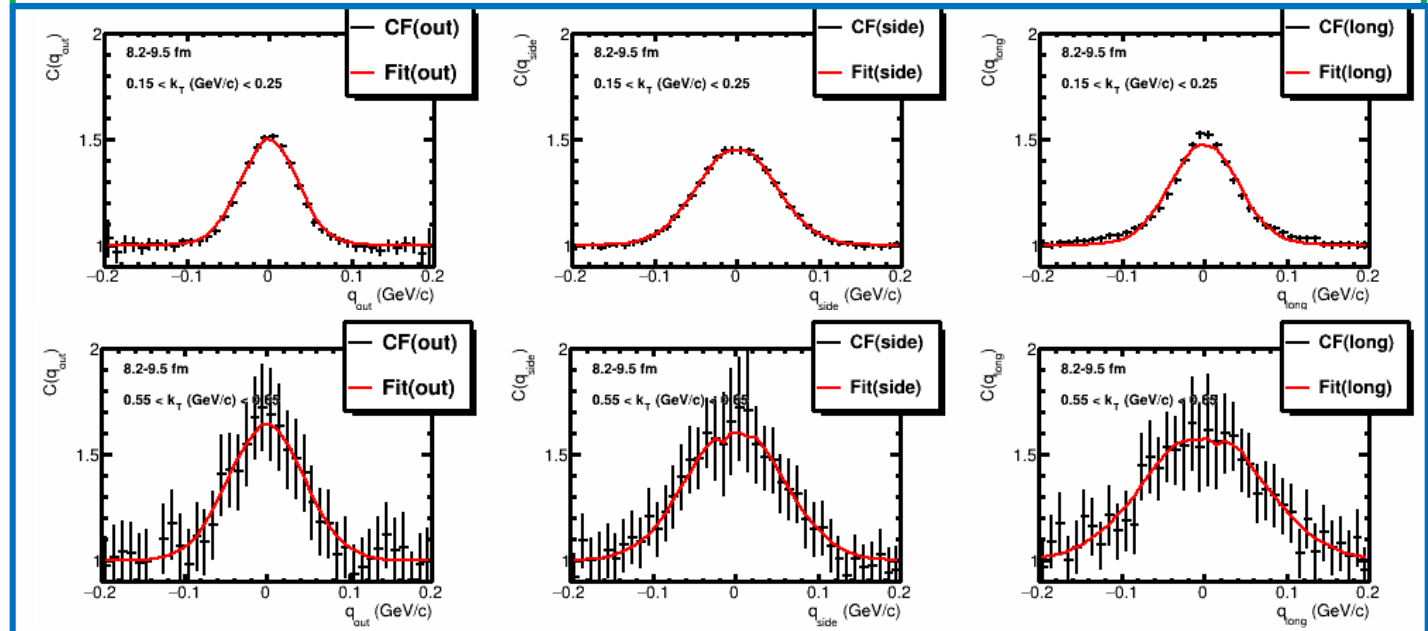
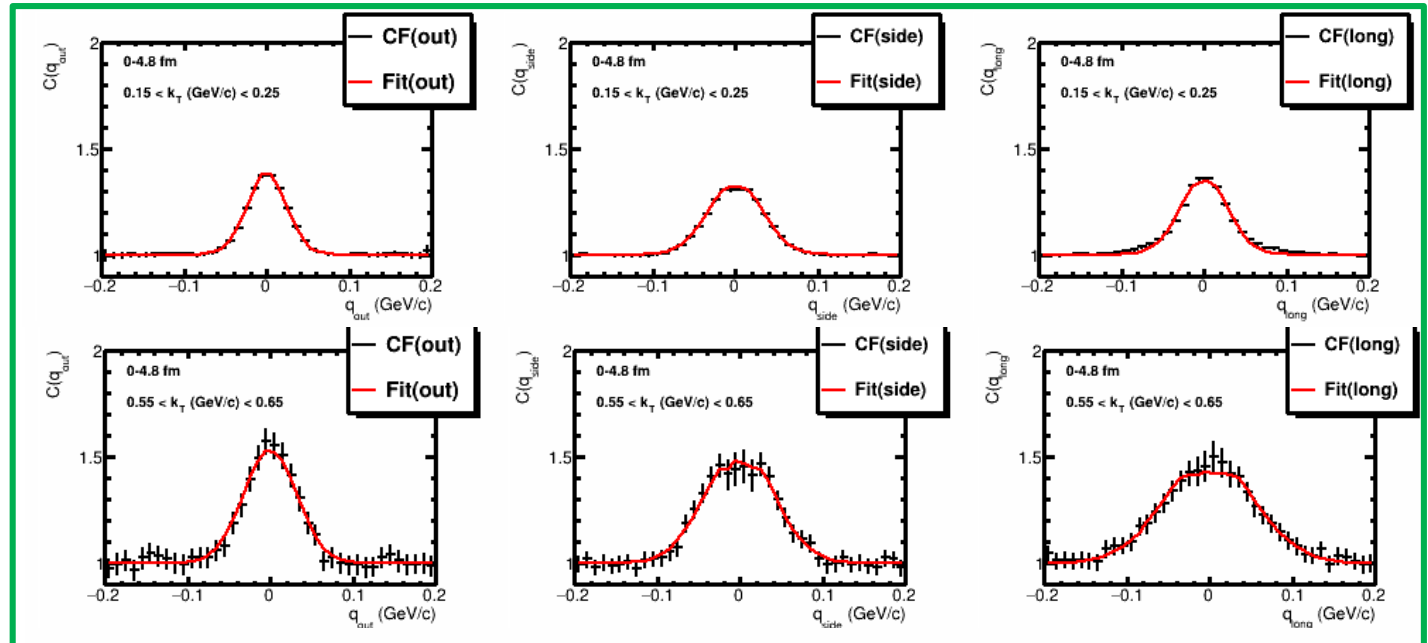
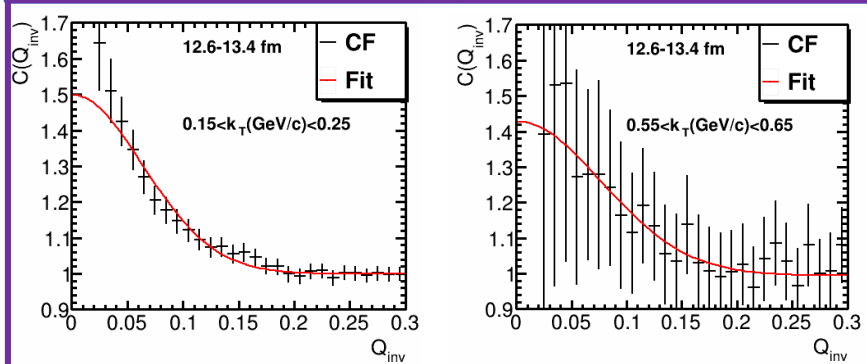
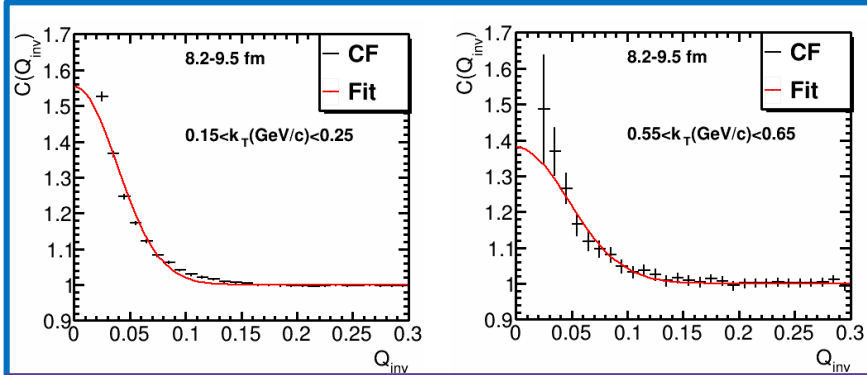
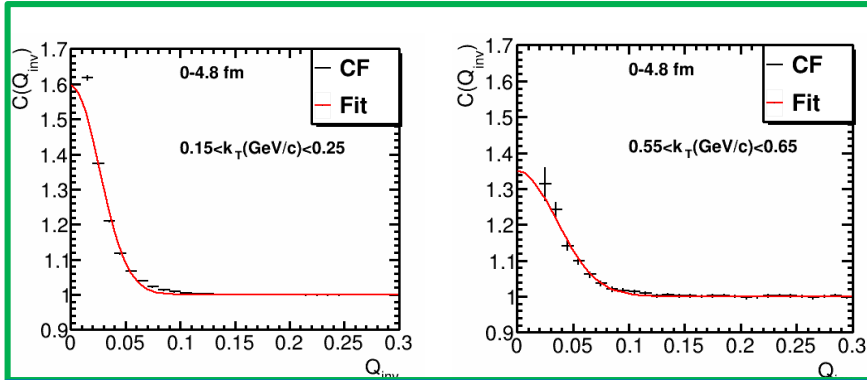
### 1D



# Analysis of 1M events

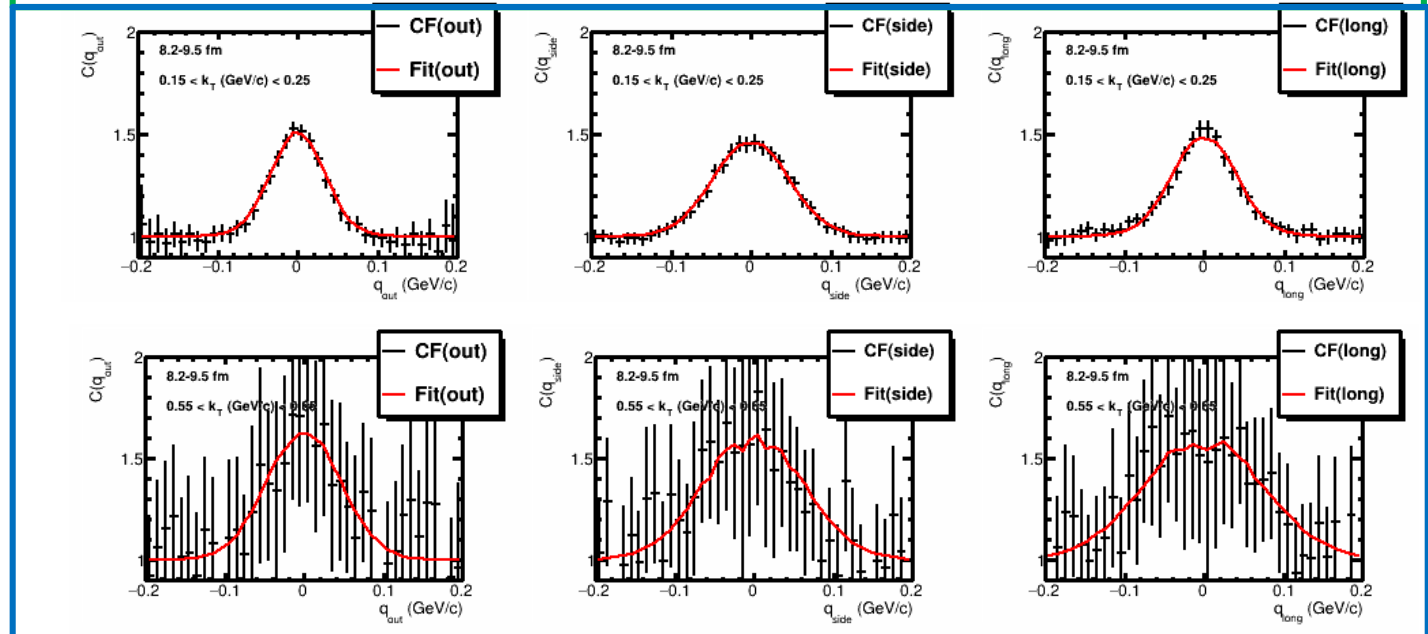
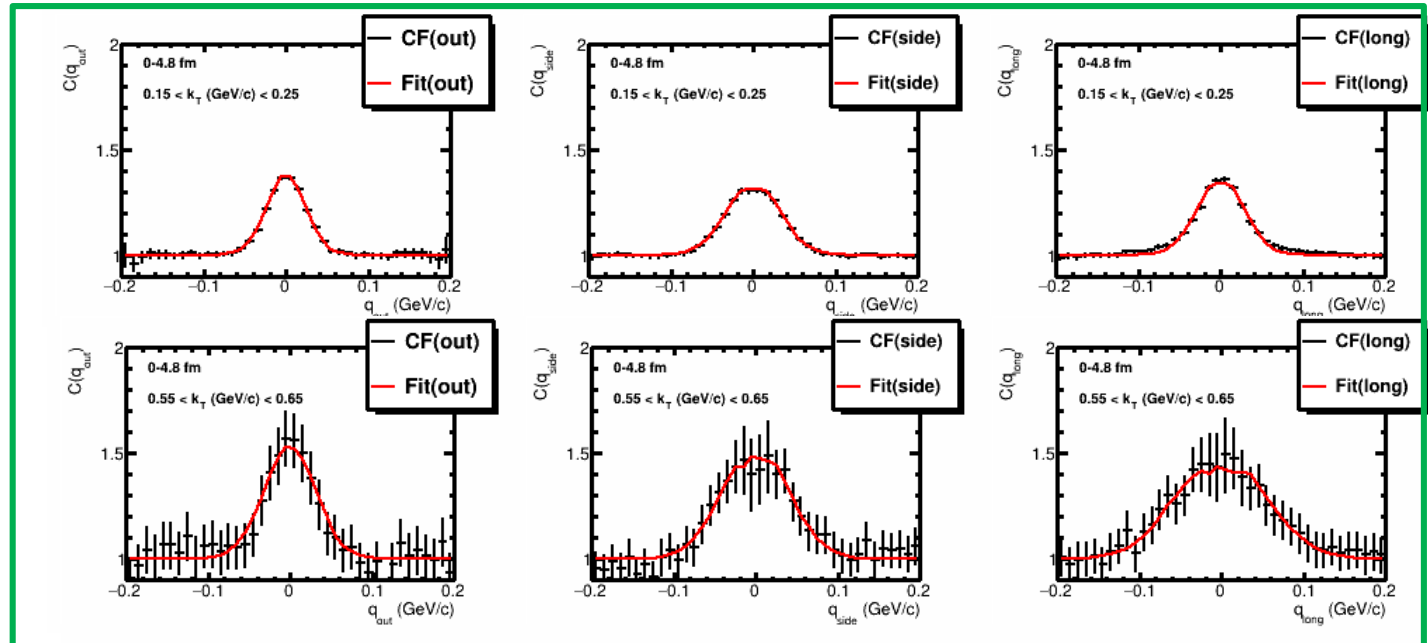
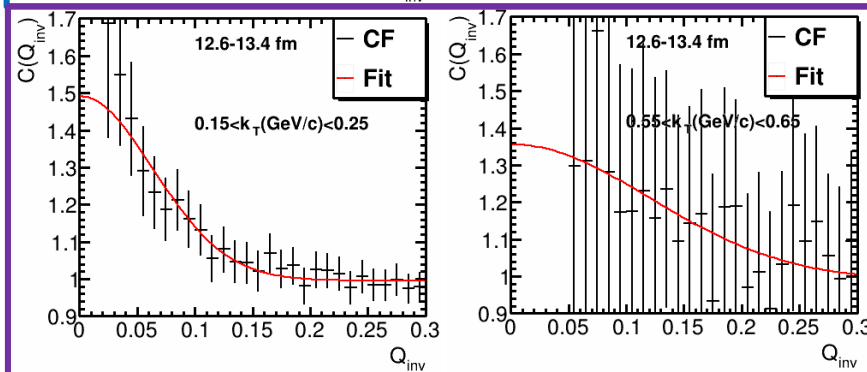
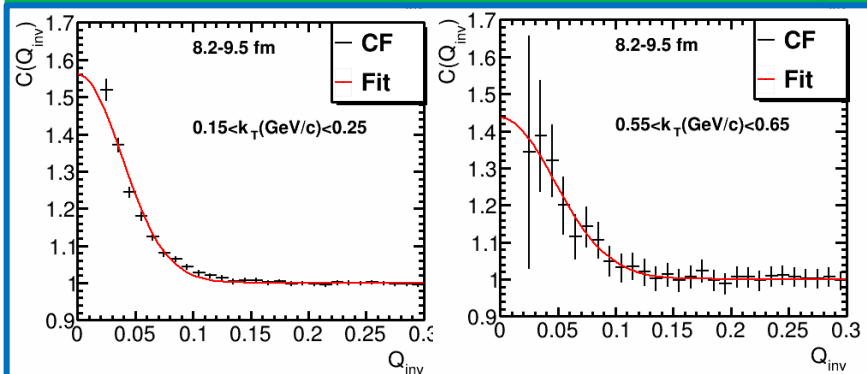
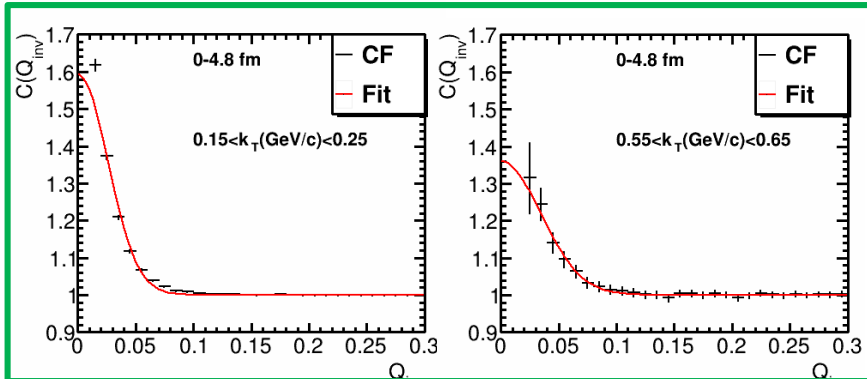
3D

1D



# Analysis of 200K events 3D

1D



# Analysis of 50K events

## 3D

### 1D

