Request for high priority account on OSG for new MC mass production

Why asking new production?

New MC tuned.
BKG Merged available.
GEMC 4.4.1 (old was done with 4.3.2)

Who does need this MC?

Giovanni Angelini: PhD Thesis on Pion Multiplicities
Orlando Soto: Analysis on Di-Hadron Multiplicities
Can be utilize for all the inclusive analysis (ex pi BSA)

Configuration:

RGA fall 2018 - Inbending - BKG Merged
CLASDIS Generator using LUND file produced on FARM
Run on OSG

Number of events and timeline:

4 Billon to have at least twice statistic of RGA in-bending: we need phi dependent acceptances

2 Months of production

Cut used for comparisons

Electron Cuts:

-Trigger particle to be an electron
- Calorimeter position cuts as RGA Common Note (loose)
- Sampling Fraction as RGA
- Min energy deposited in PCAL as RGA Common Note
- Fiducial Cuts DC as Common analysis note
- Vertex cut as RGA Common Analysis note

Kinematic Cuts:

-$Q^2 > 1$ GeV ^{2}
- W > 2 GeV
-y <0.75

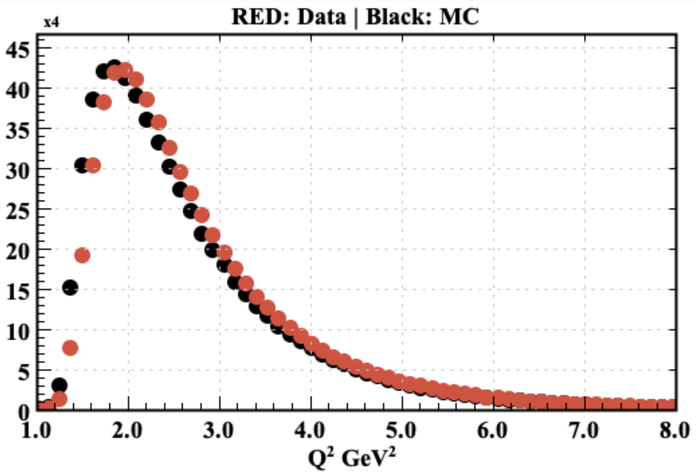
Pions:

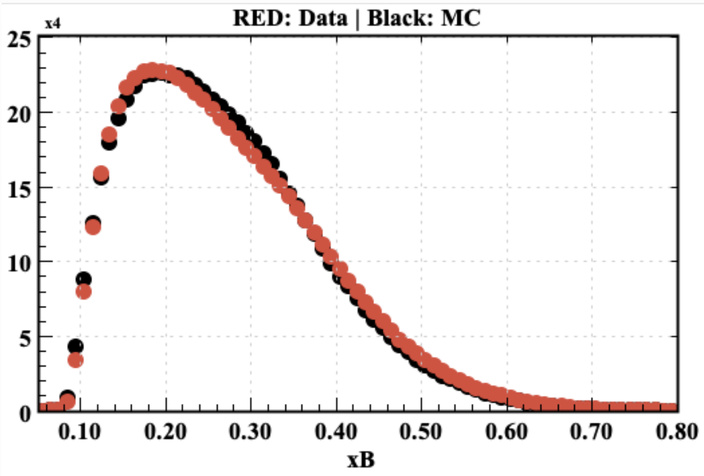
- Momentum between 1.25 GeV and 5 GeV
- Chi 2PID cut as common analysis note
- Fiducial Cuts DC as Common Analysis note
- Vertex cuts as RGA Common Analysis note

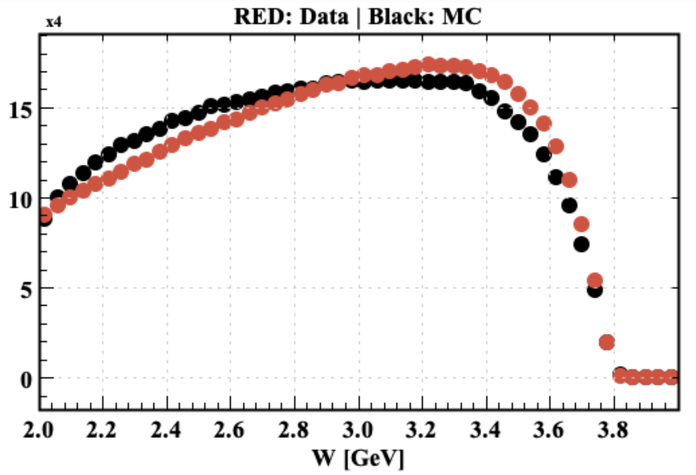
The plots that will been shown are normalized to the same number of reconstructed electrons

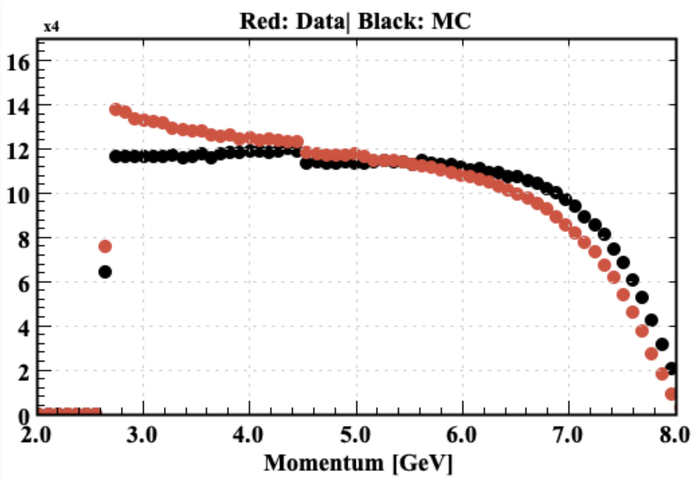
Inclusive eX

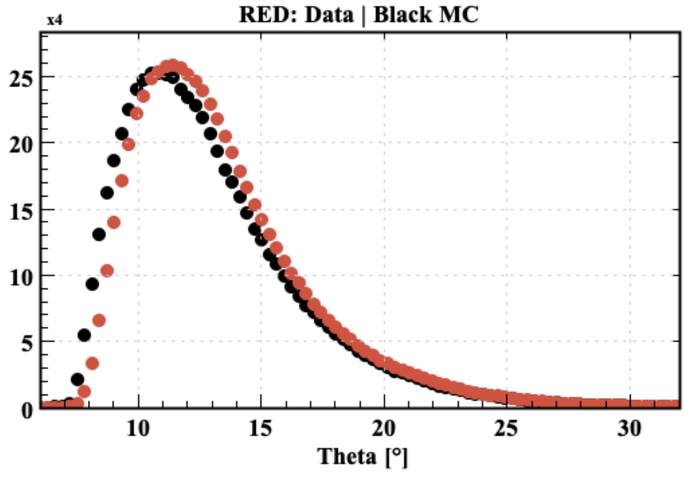
MC
DATA

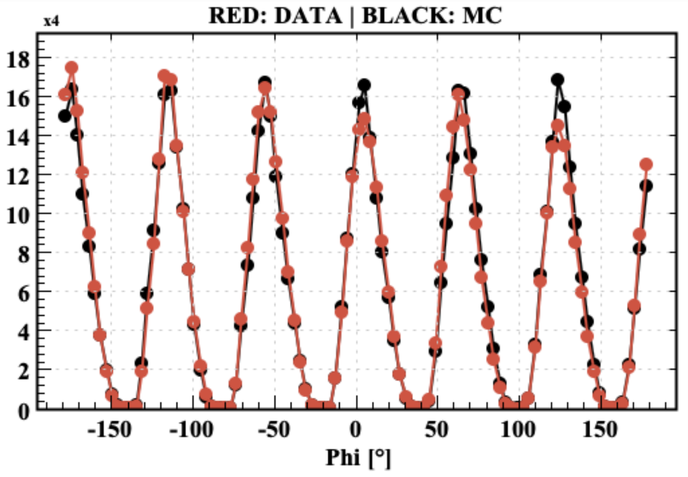






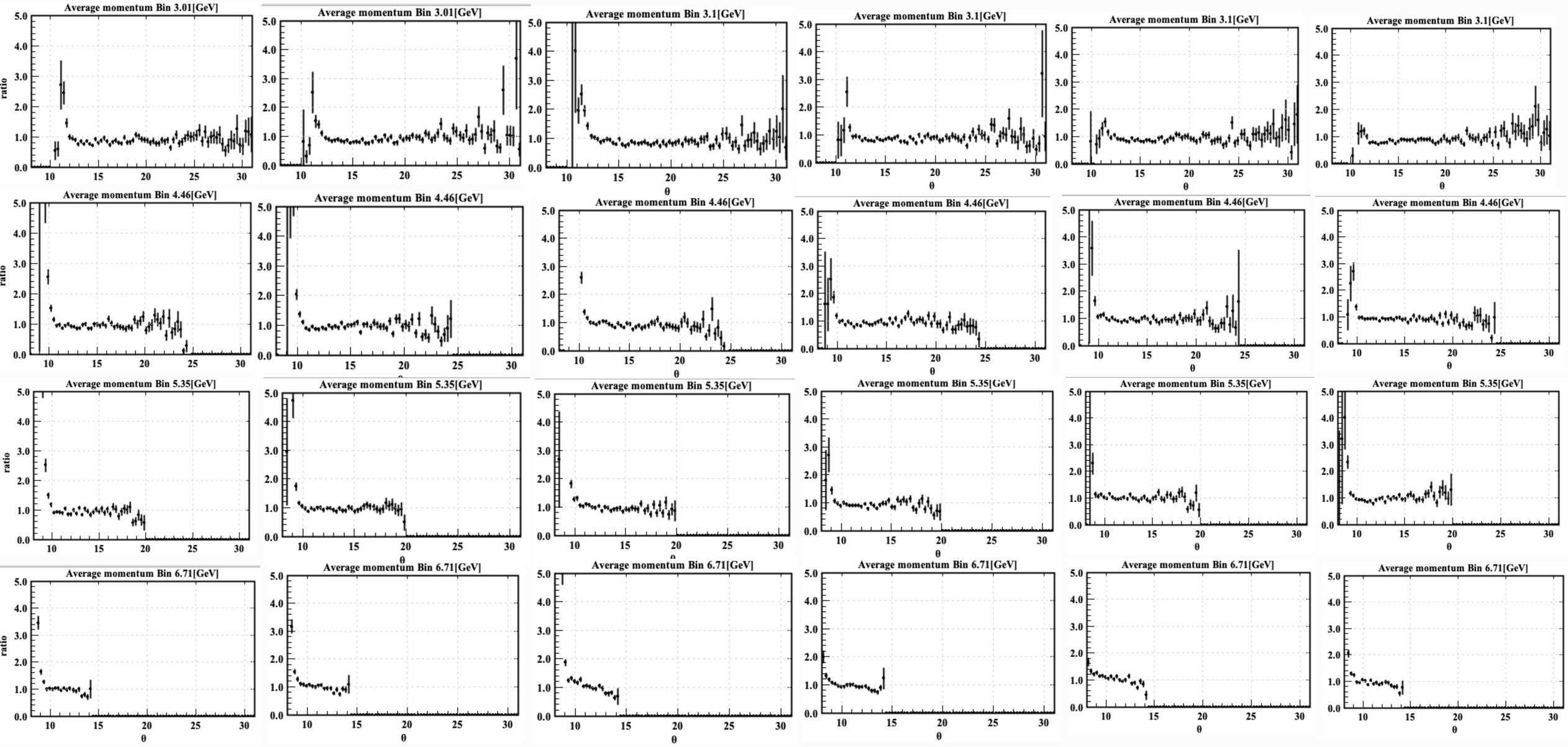




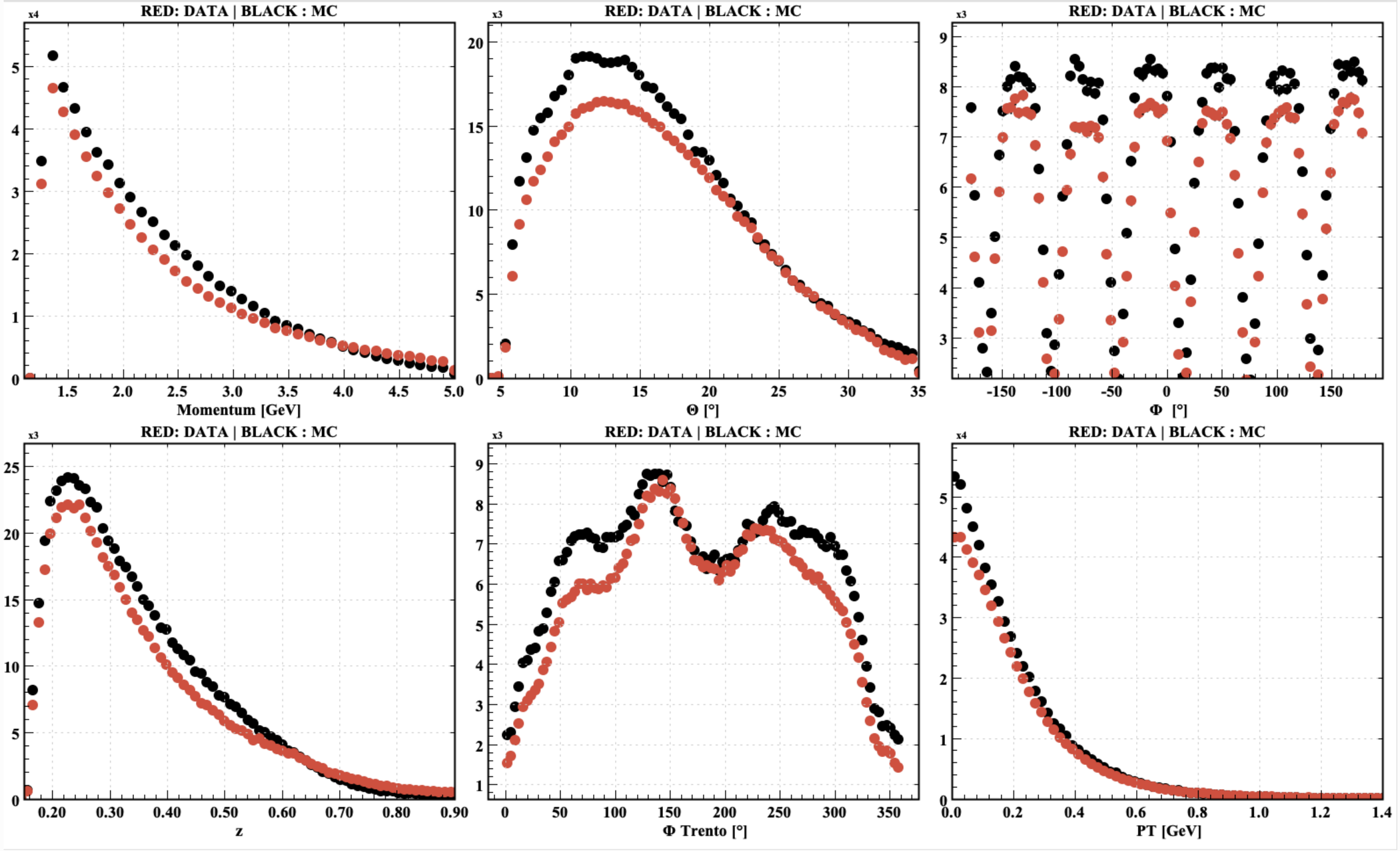


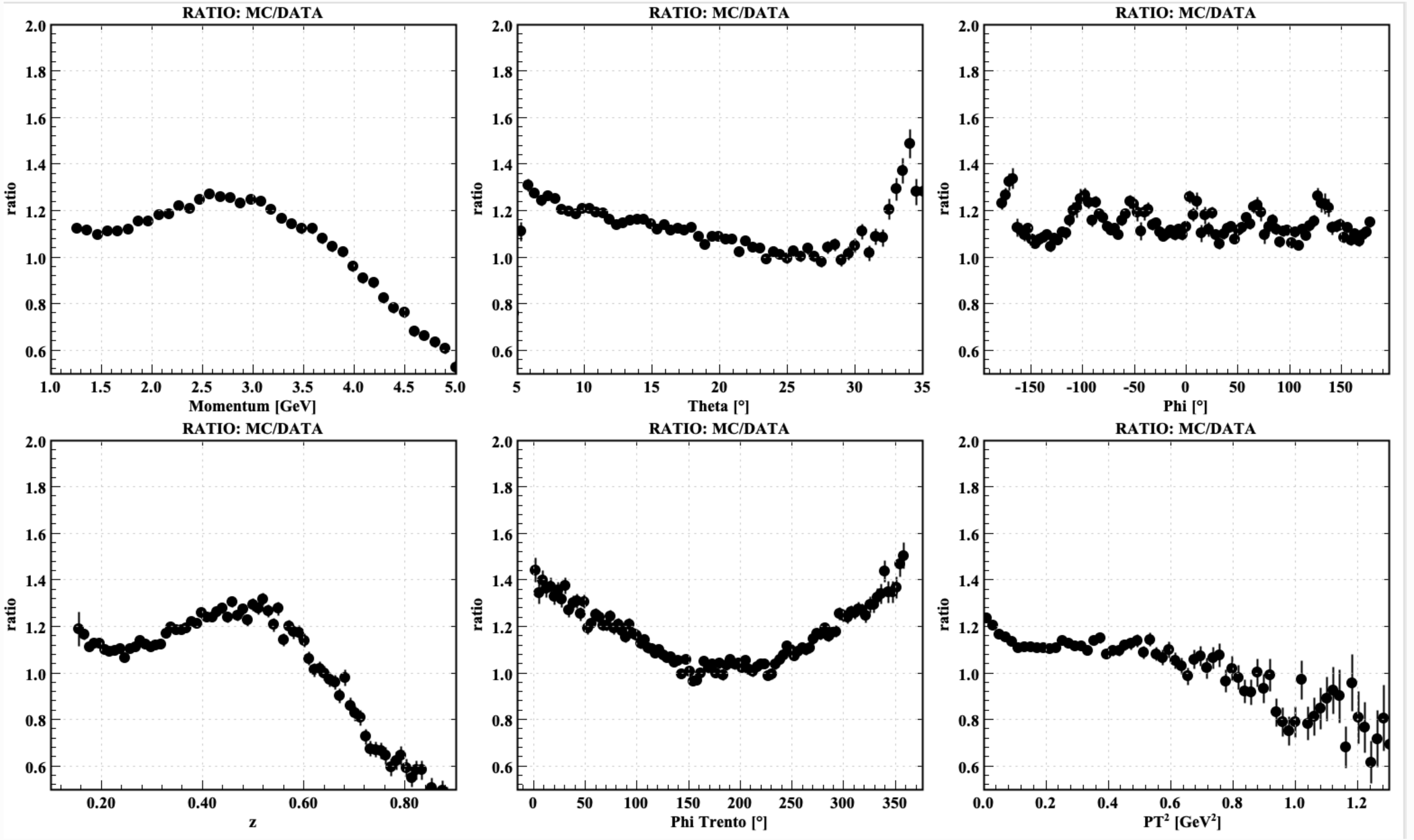
Inclusive eX: Ratio MC/Data

Sec 1 | Sec 2 | Sec 3 | Sec 4 | Sec 5 | Sec 6

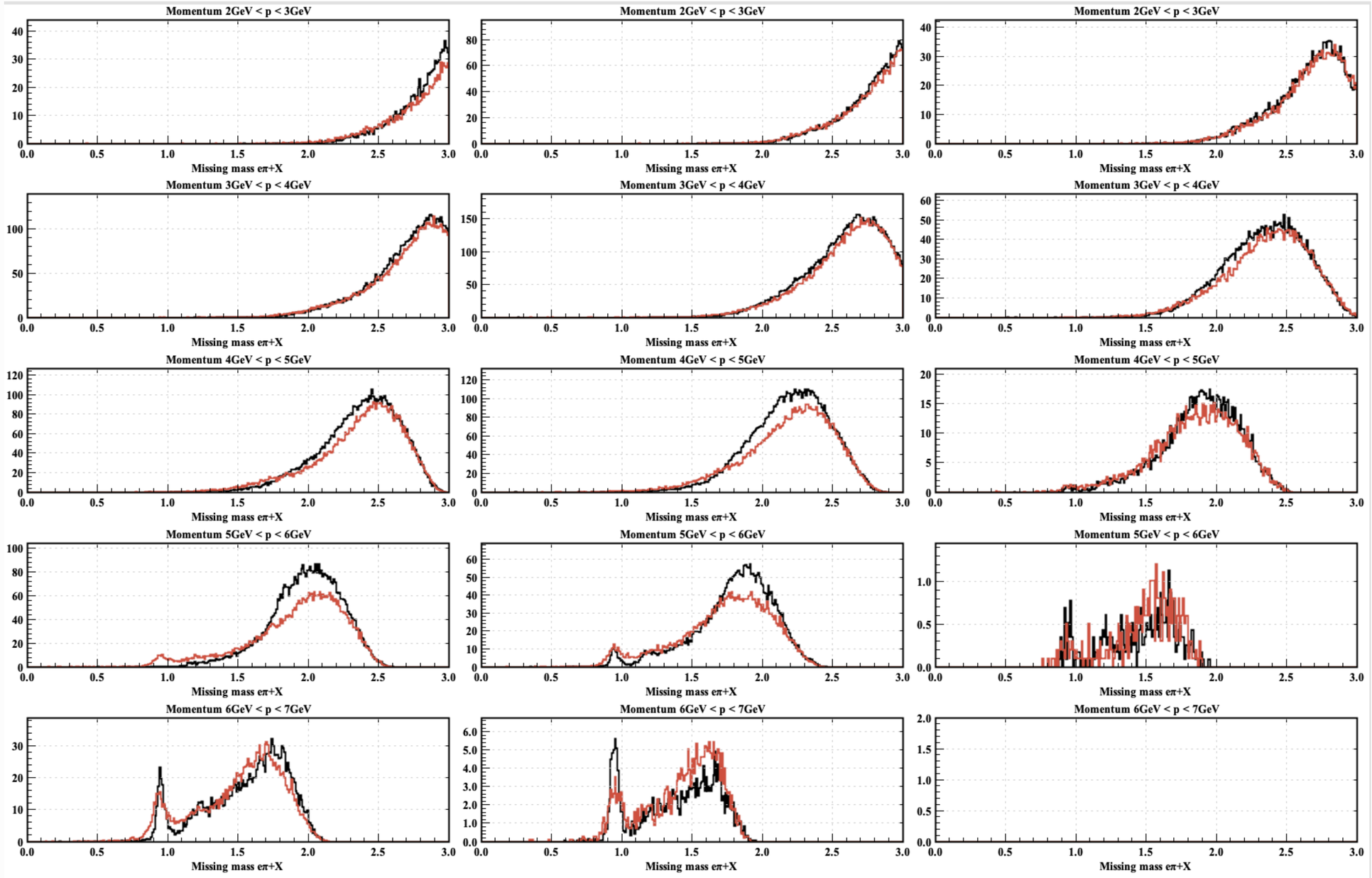


PiP from : eπ+X

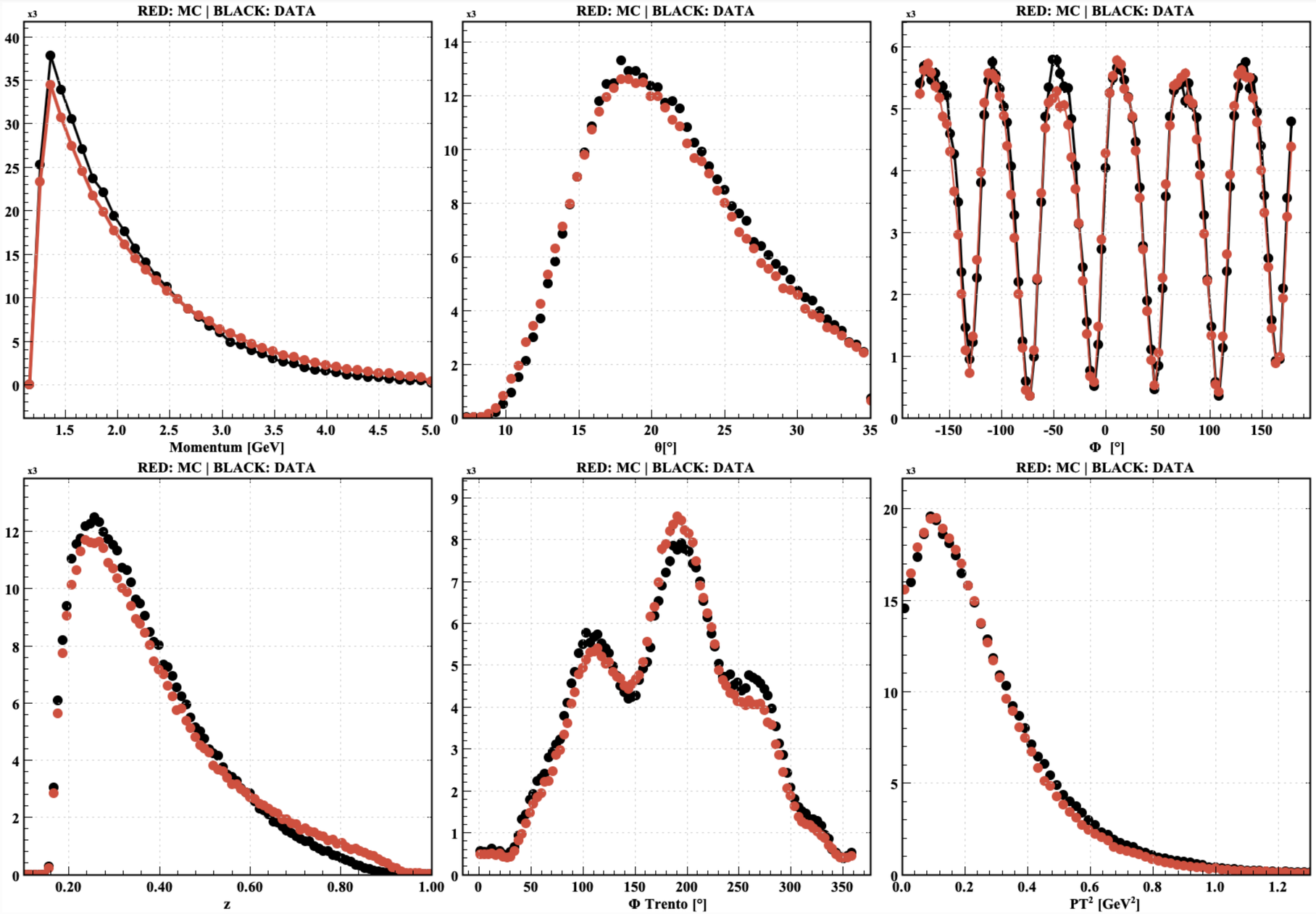

RED: DATA | BLACK : MC
x4
Momentum [GeV]
RED: DATA | BLACK : MC
x3
Θ [°]
RED: DATA | BLACK : MC
x3
Φ [°]
RED: DATA | BLACK : MC
x3
z
RED: DATA | BLACK : MC
x3
Φ Trento [°]
RED: DATA | BLACK : MC
x4
PT [GeV]


RATIO: MC/DATA
ratio
Momentum [GeV]
RATIO: MC/DATA
ratio
Theta [°]
RATIO: MC/DATA
ratio
Phi [°]
RATIO: MC/DATA
ratio
z
RATIO: MC/DATA
ratio
Phi Trento [°]
RATIO: MC/DATA
ratio
PT² [GeV²]

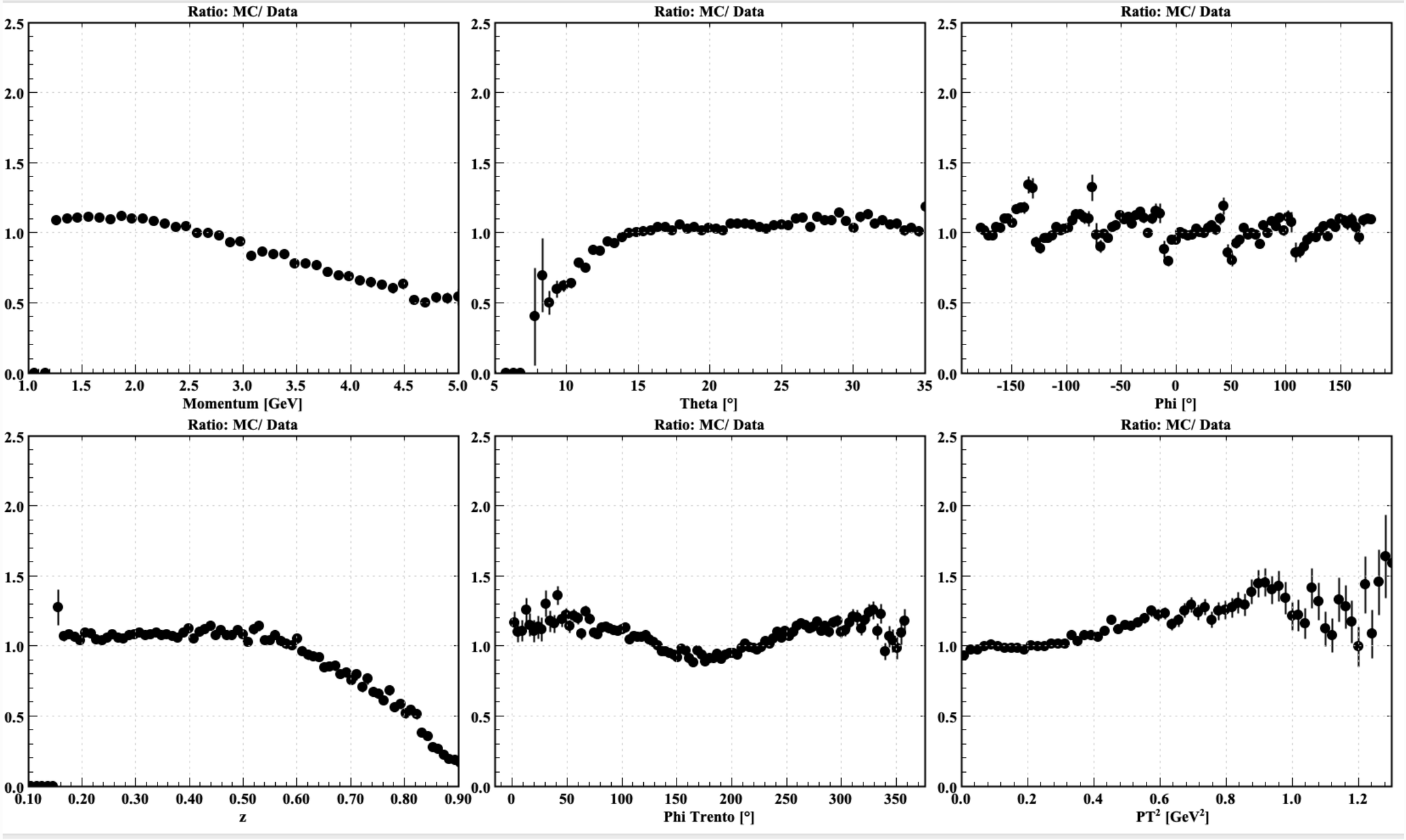
Missing Mass ePiPX



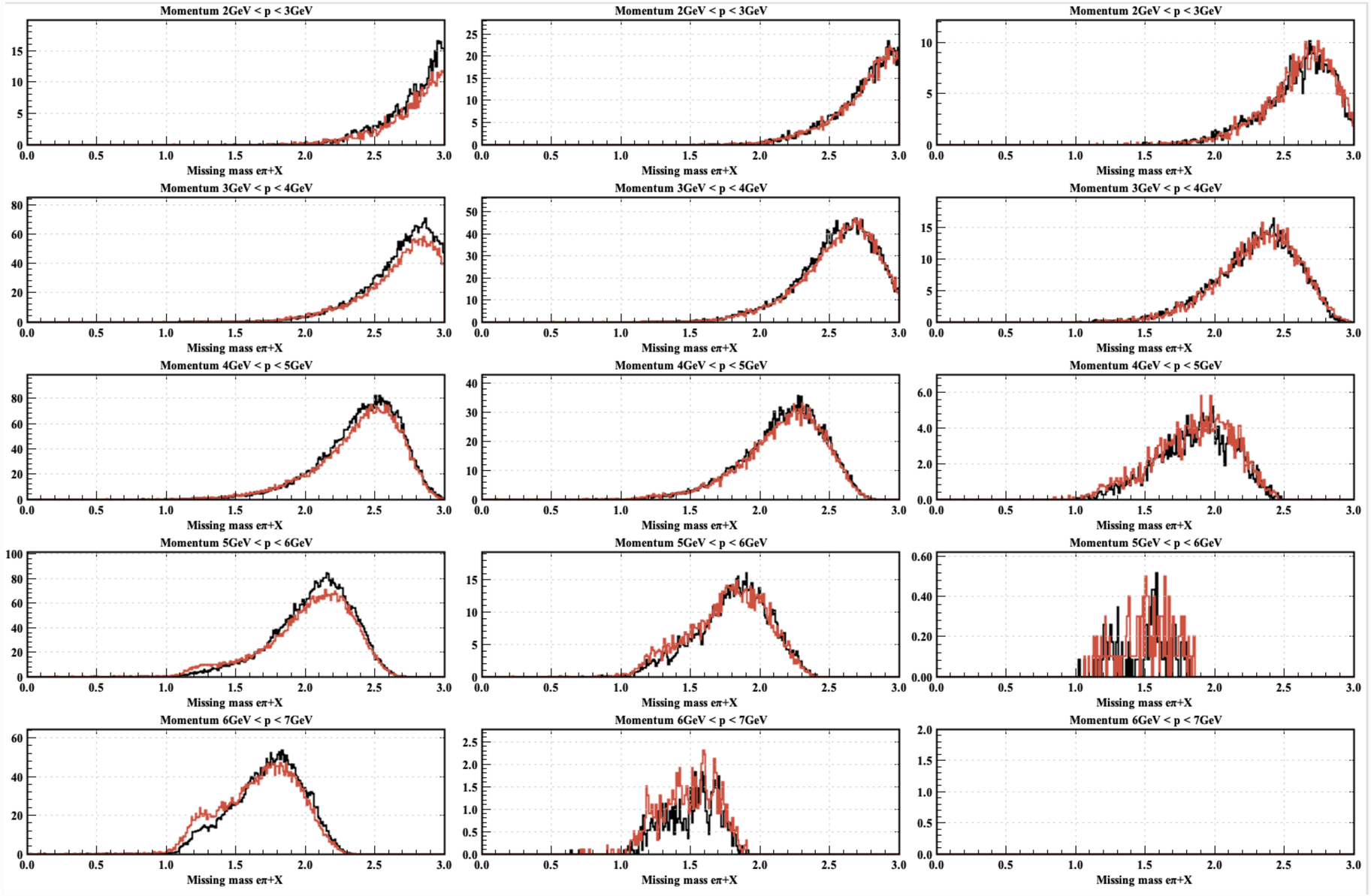
PiM from: eπ-X



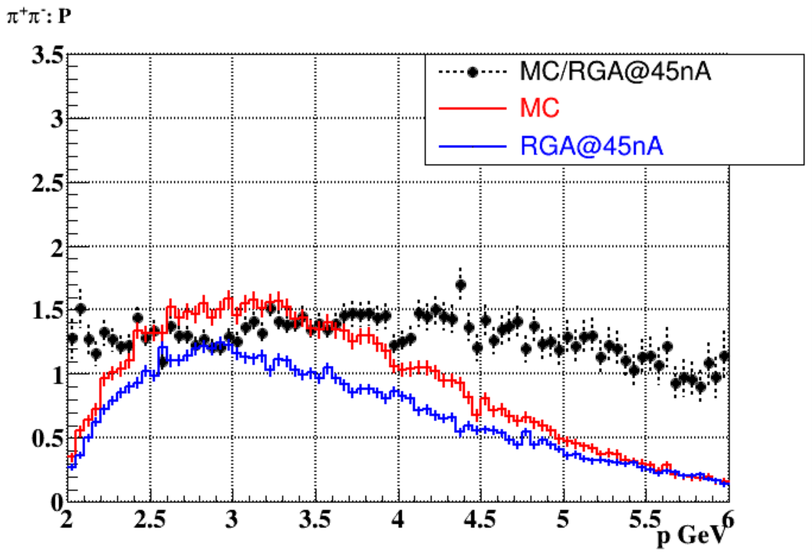
PiM : ratio MC/Data

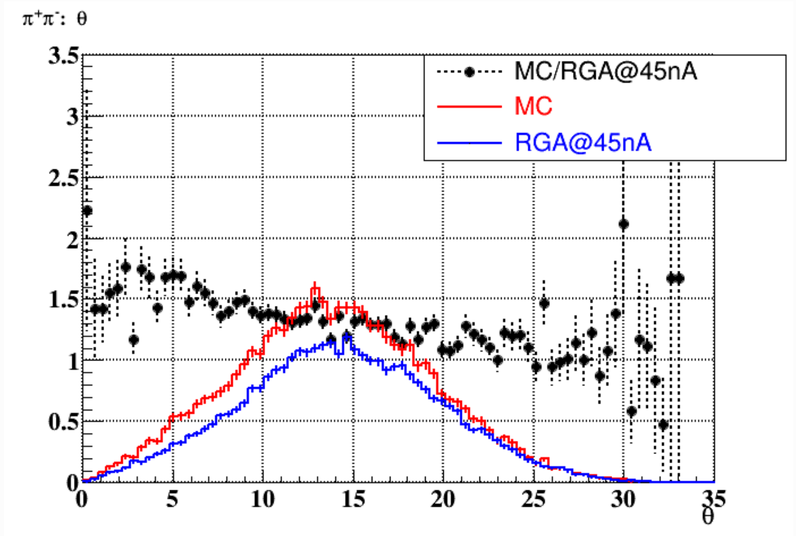


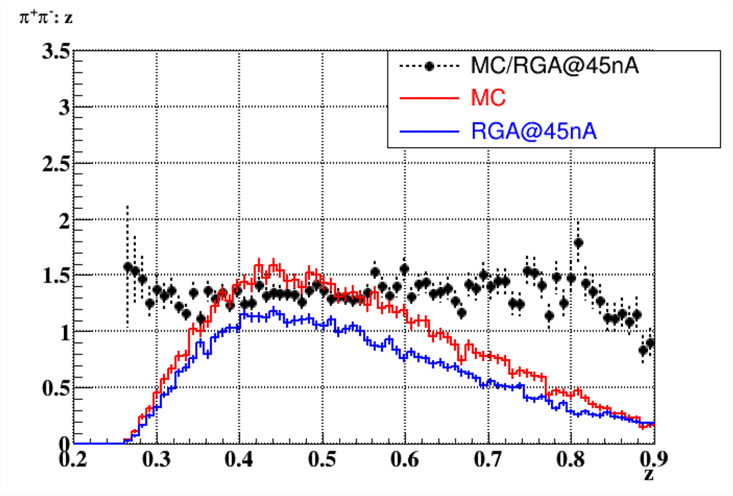
Missing Mass eπ-X

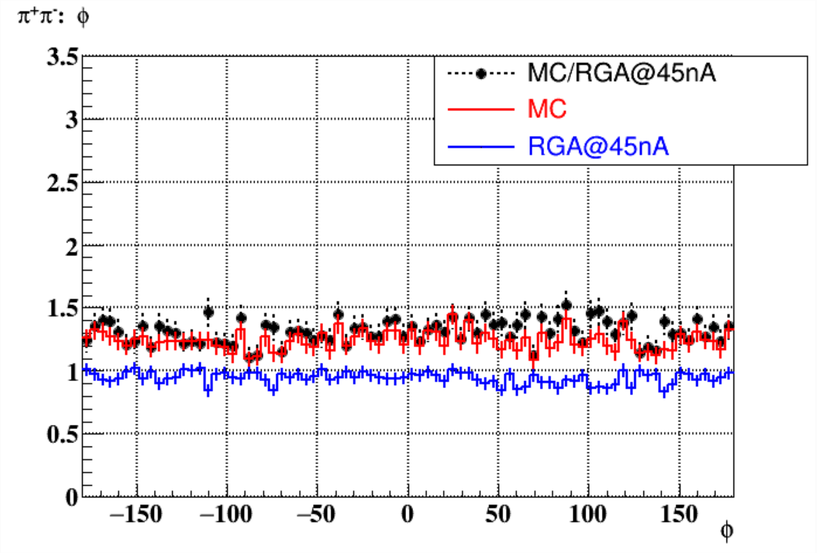


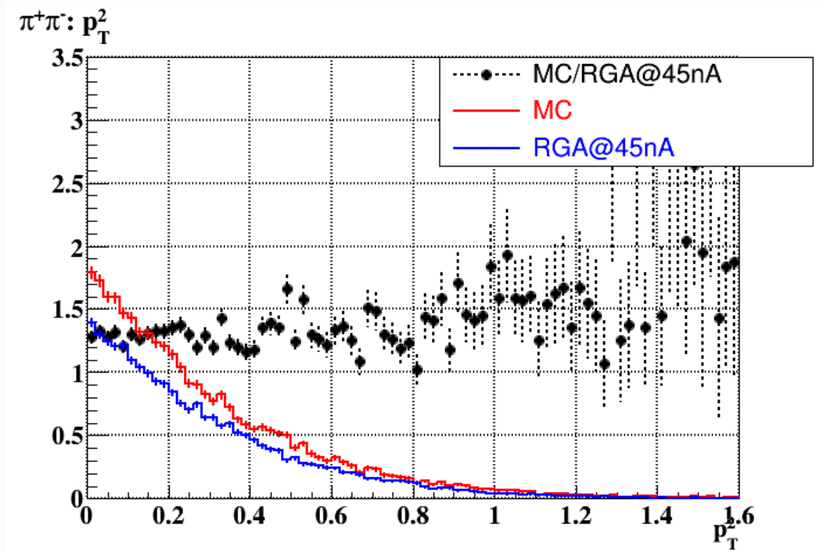
Di-Hadron Distributions (from Orlando Soto)











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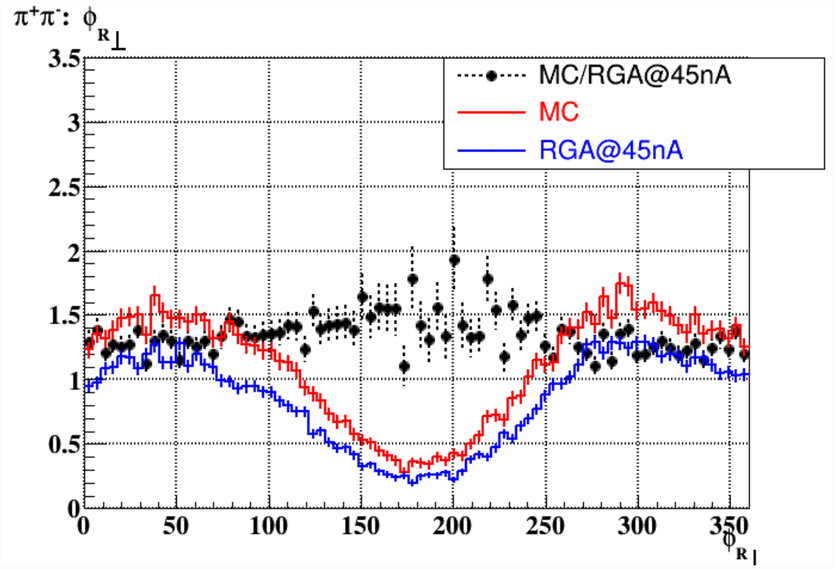
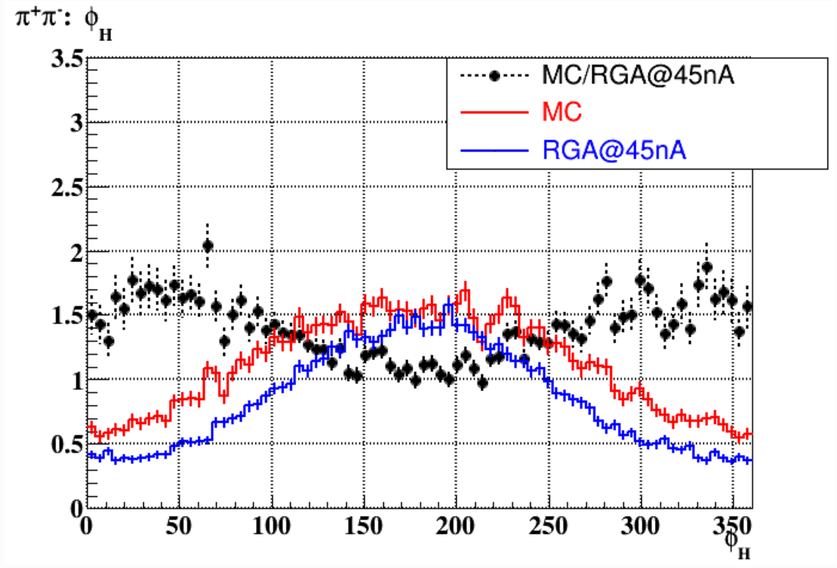
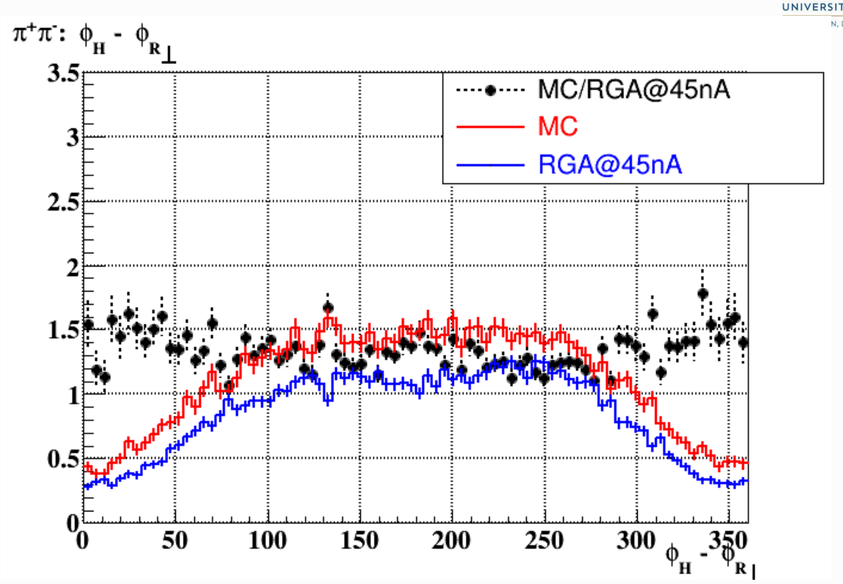
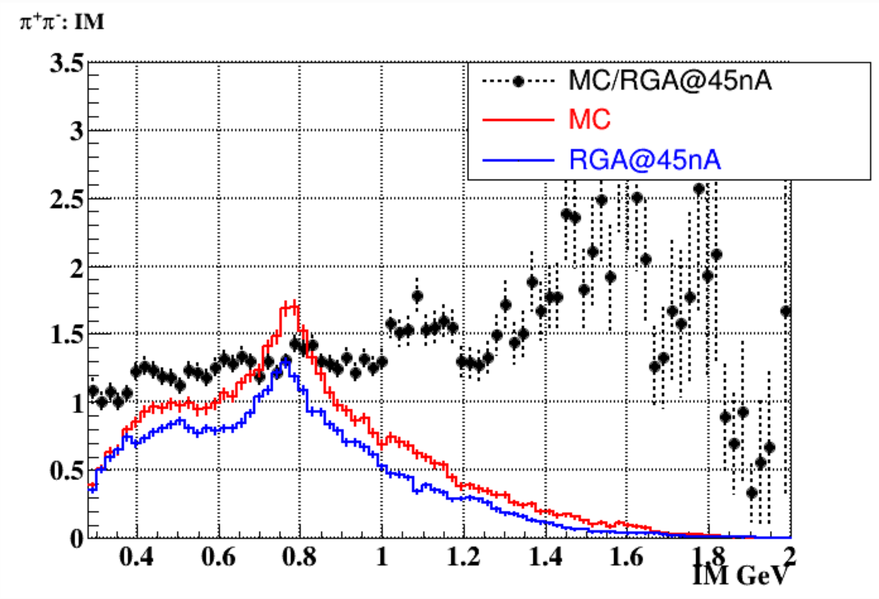
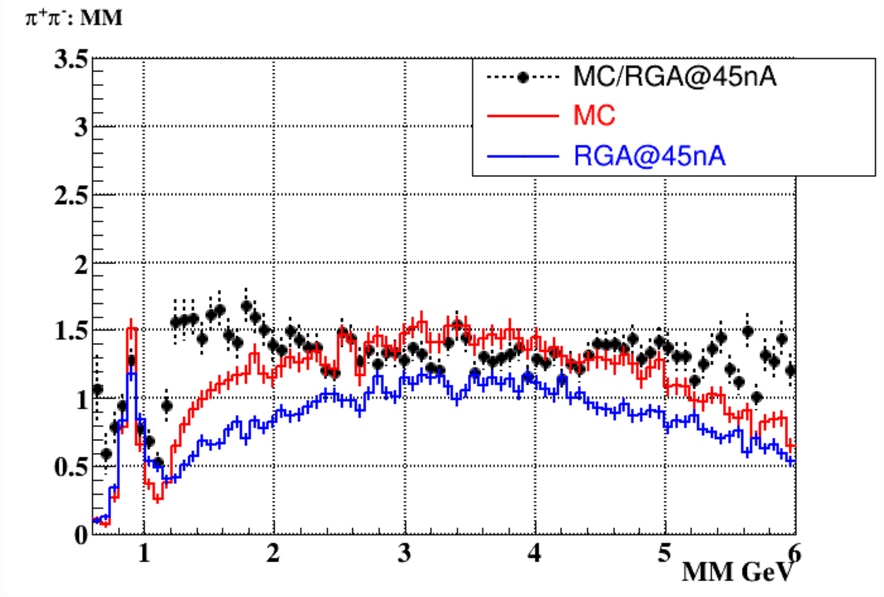










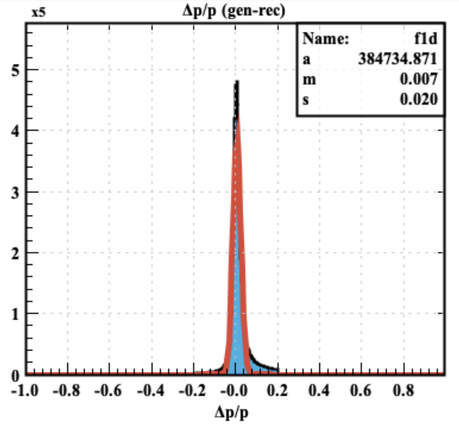
I am asking to endorse a submission to the Software Group so to obtain priority in the MC production.

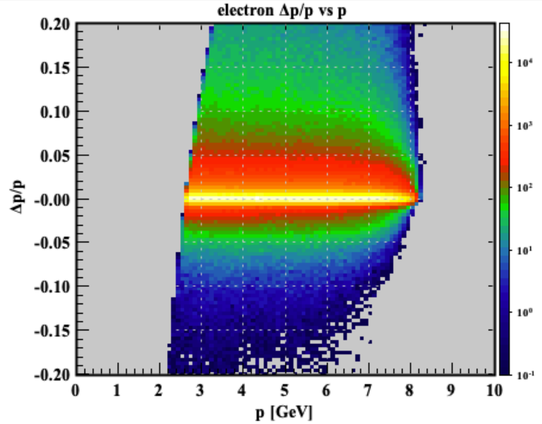
Priority Permission Increase Form

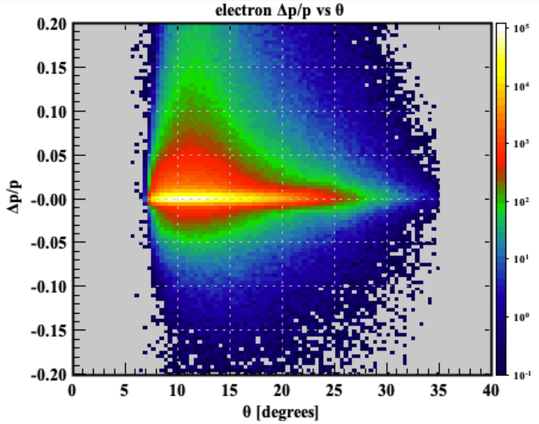
We request the increase of the user account gangel to perform CLAS12 simulations offsite, with the details below:

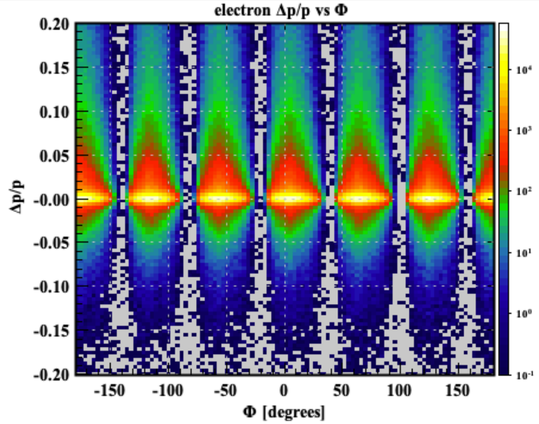
- Task name **MC SIDIS simulation**
- Channels **ep-> enπX , eππX**
- Event generators CLASDIS
- Kinematics Deep Inelastic Scattering
- Detector configuration (for instance RGB-Spring19, …) Fall 18 , Inbending configuration
- Desired statistics (M = millions of events, B = billion, T = trillion) **4B**
- Disk space needed for storage **9 TB**
- CPU time estimate 5 Million Core Hours
- Date of Start of High Priority: **Dec 21 2020**
- Duration of High Priority: **60 Days**
- Test with actual configuration performed: **YES** NO

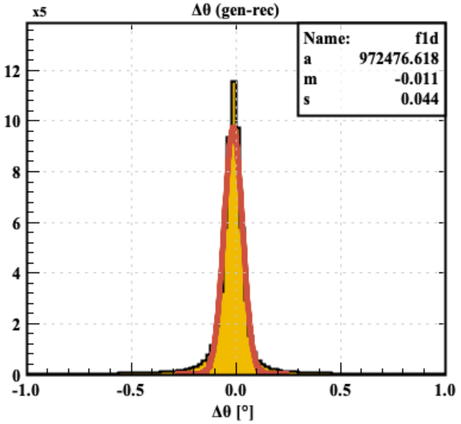
Resolutions Inclusive eX

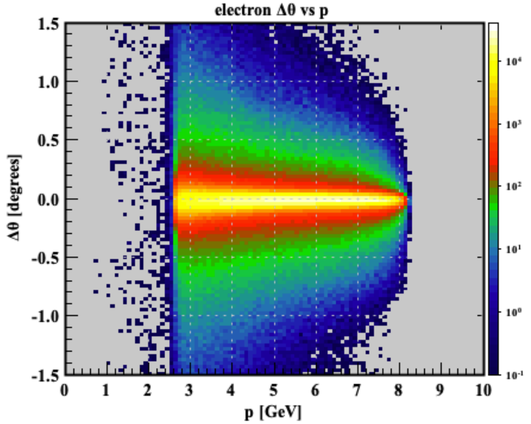


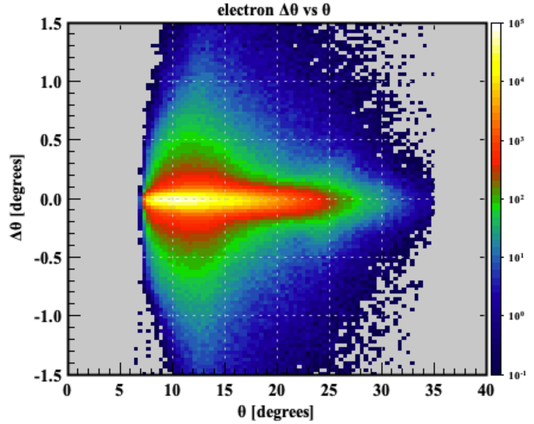


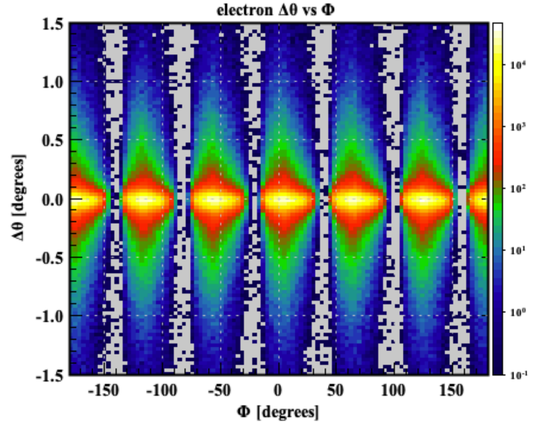


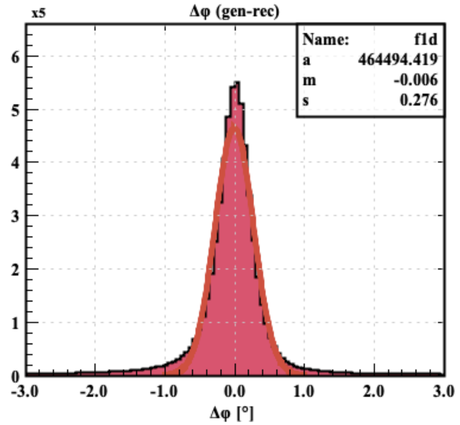


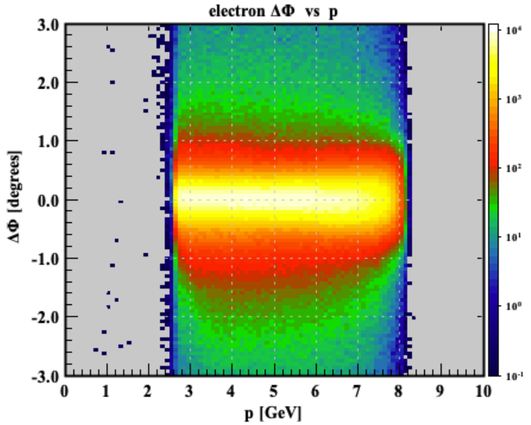


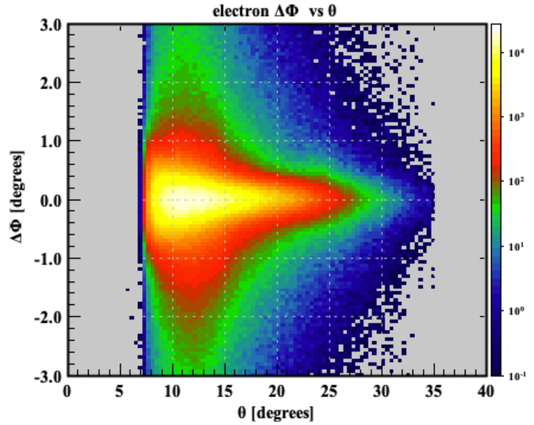


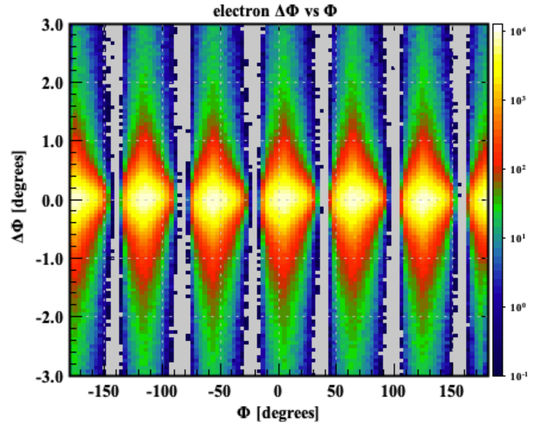












Resolutions Inclusive eX