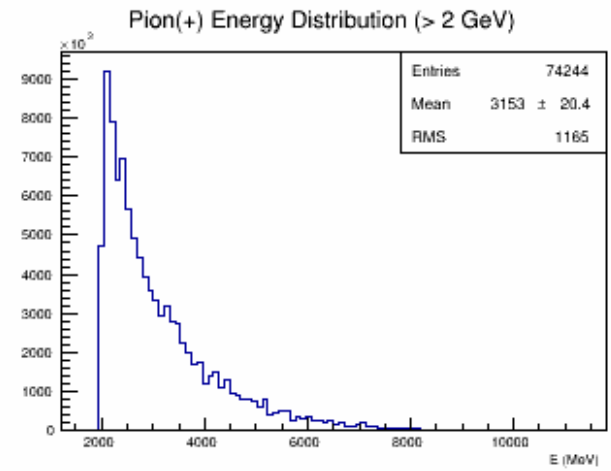
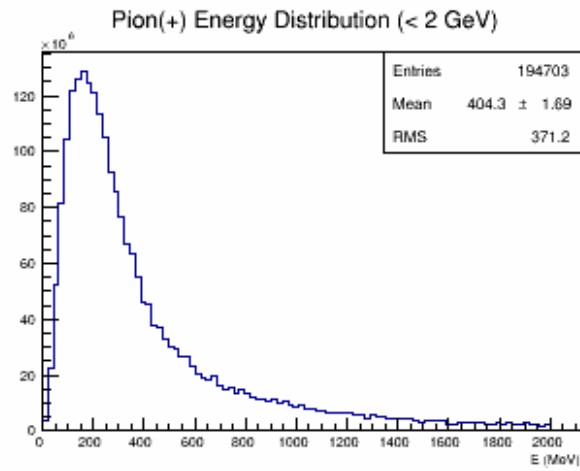


# Pions(+) Background Study - 1

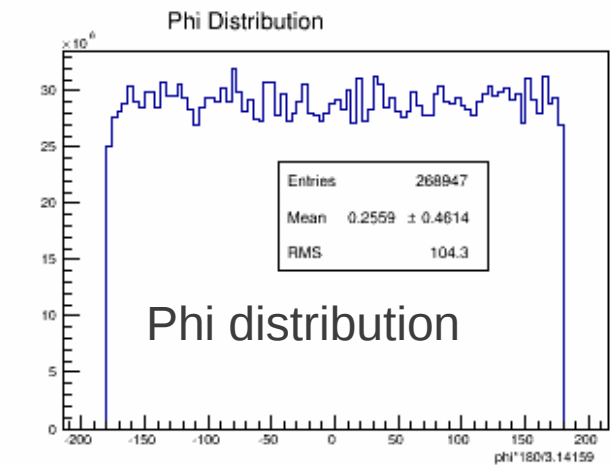
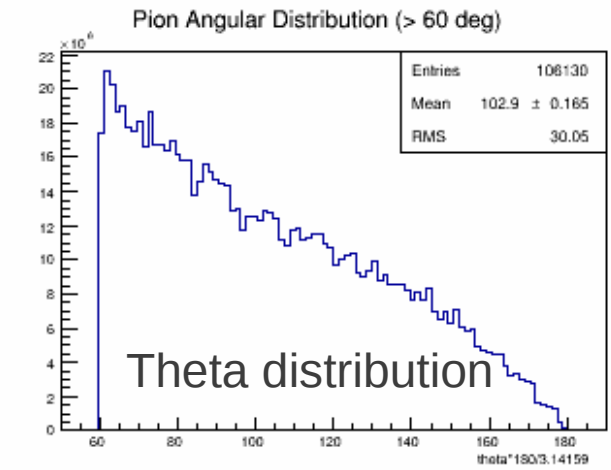
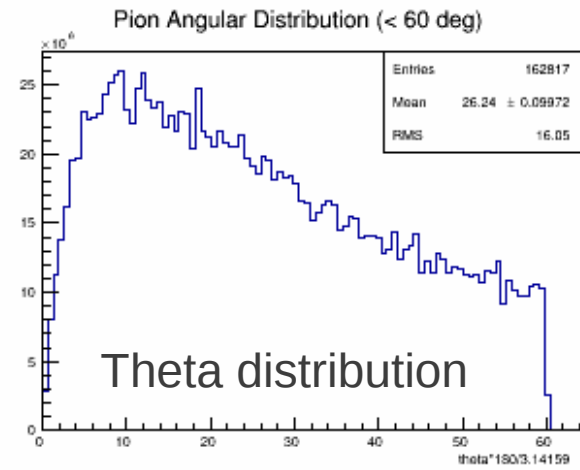
# Input Summary

- Pions(+) generated with following input conditions,
  - Incident electron beam energy: 11 GeV
  - Target length: 40 cm
  - Raster: 2x2 mm<sup>2</sup>
  - About 1 million events

# Input Summary



Pions(+) Energy Distribution (MeV)

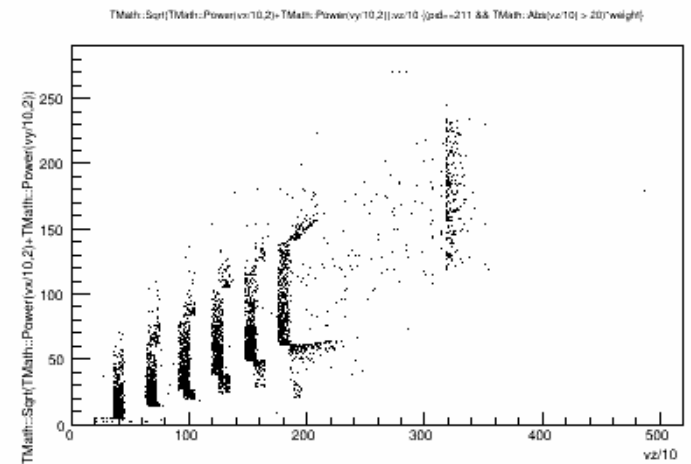
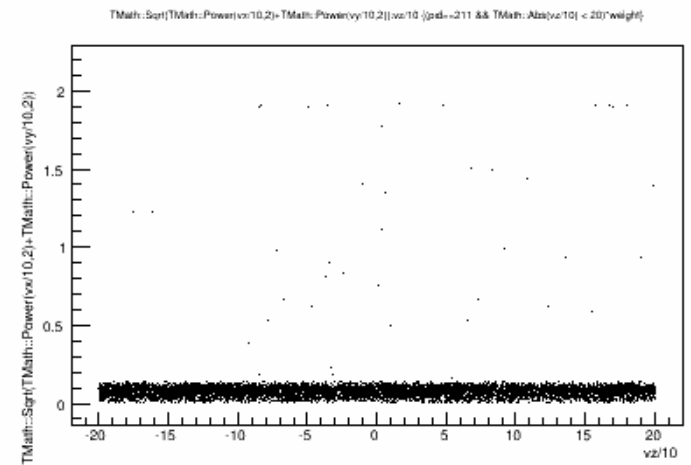
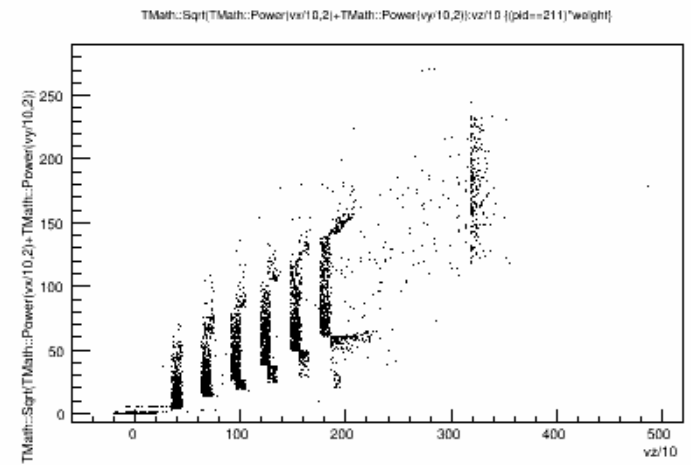


# Simulation Summary

- Used solgemc and results are weighted using the pion rate
- Things included in the simulation,
  - CLEO solenoid
  - Target
  - Al Beamline: may need to update the geometry
  - Pb Baffles: may need to update the geometry
  - Cerenkov
  - GEM (4 GEMs)
  - EC forward-angle
- Field is ON
- Ran about 1 million events

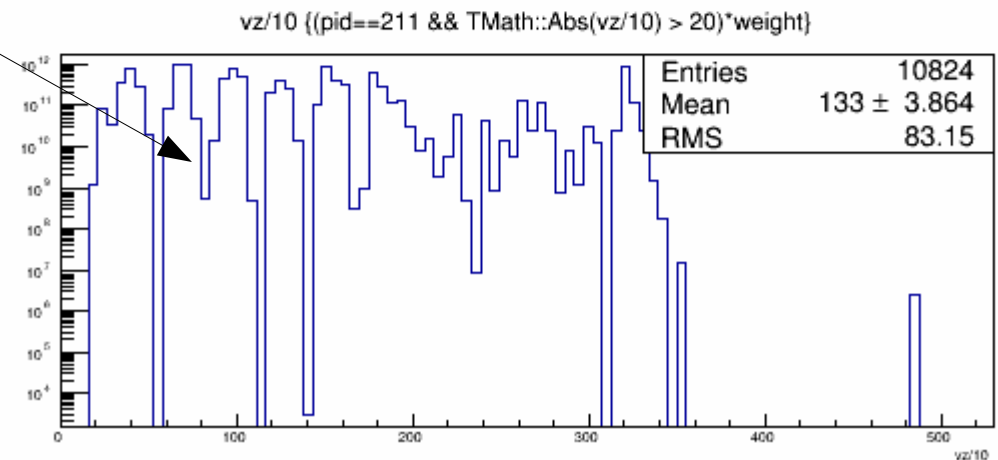
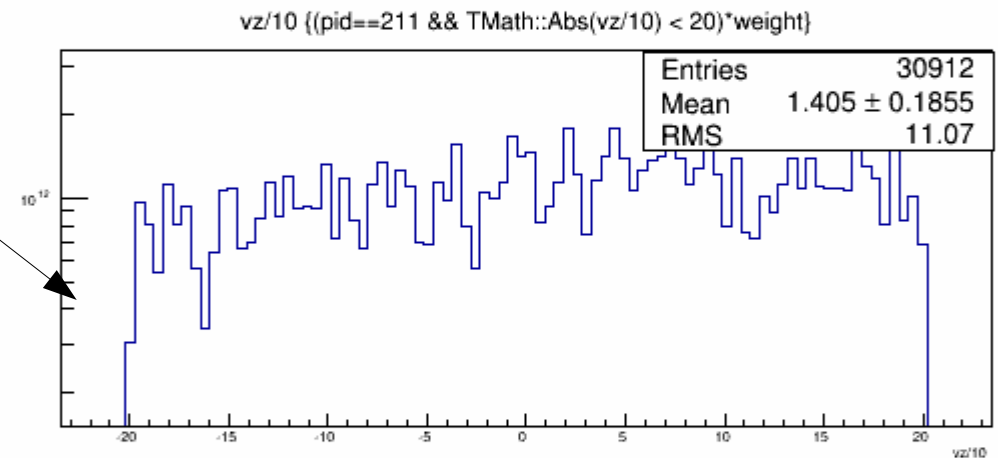
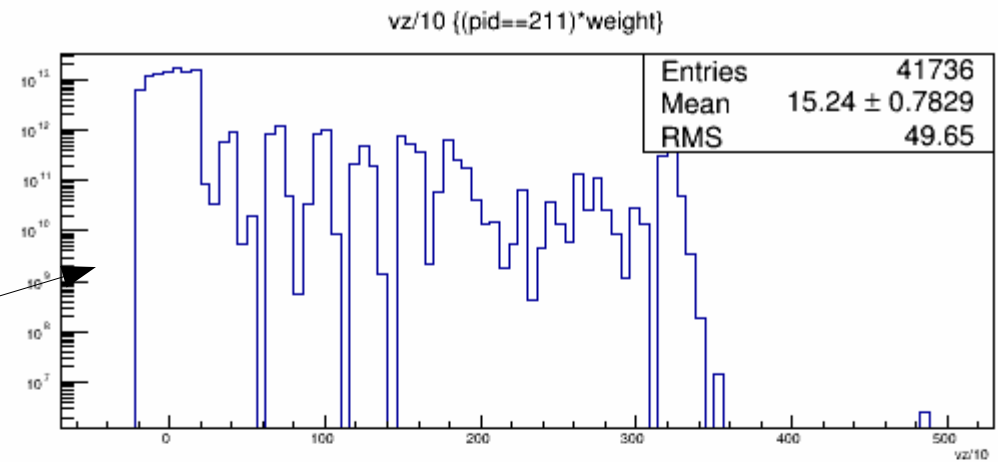
# Pions(+) Vertex Distribution

- Total pions 41736:
- Pions from the target : 30912
- Pions from elsewhere: 10824

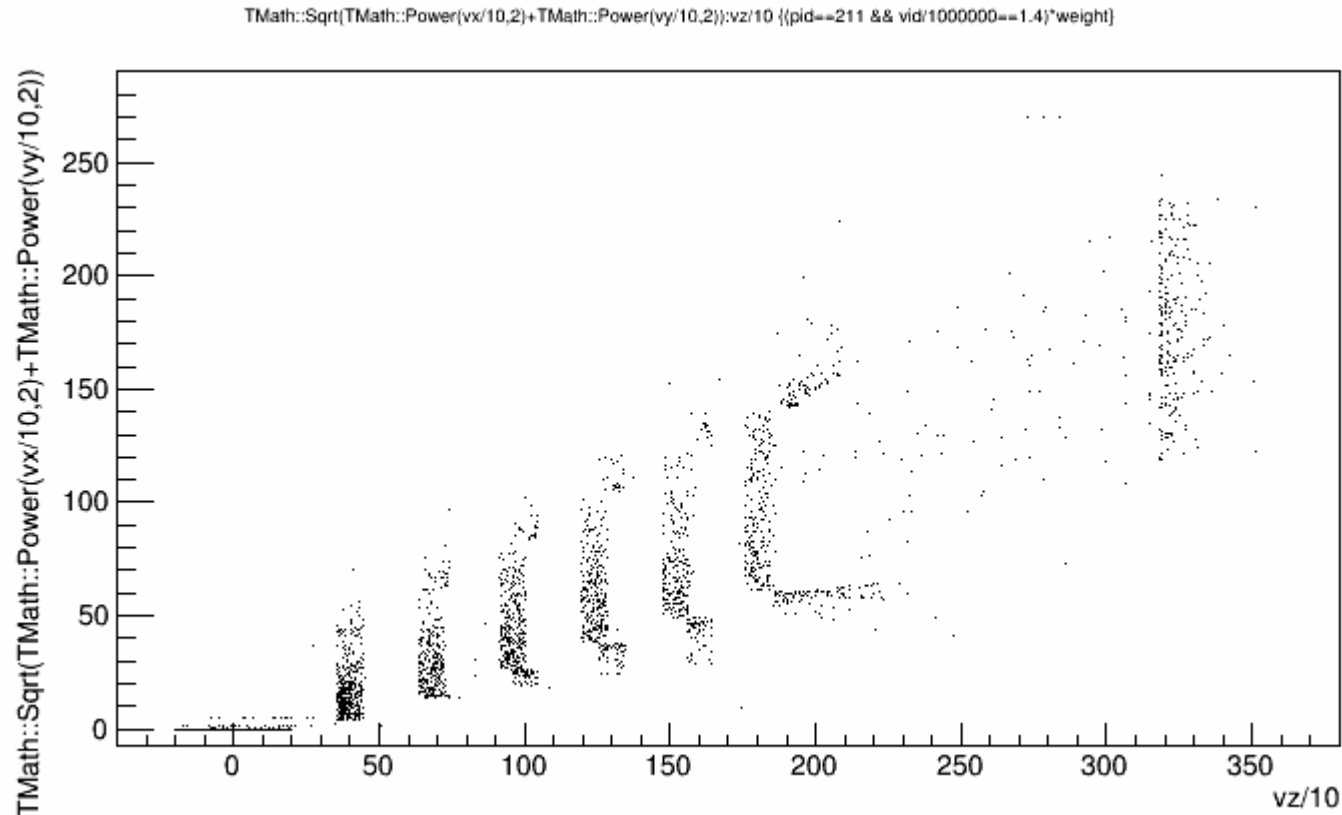


# Pions(+) Vertex Distribution Histograms

- Total pions: 41736
- Pions from the target: 30912
- Pions from elsewhere: 10824

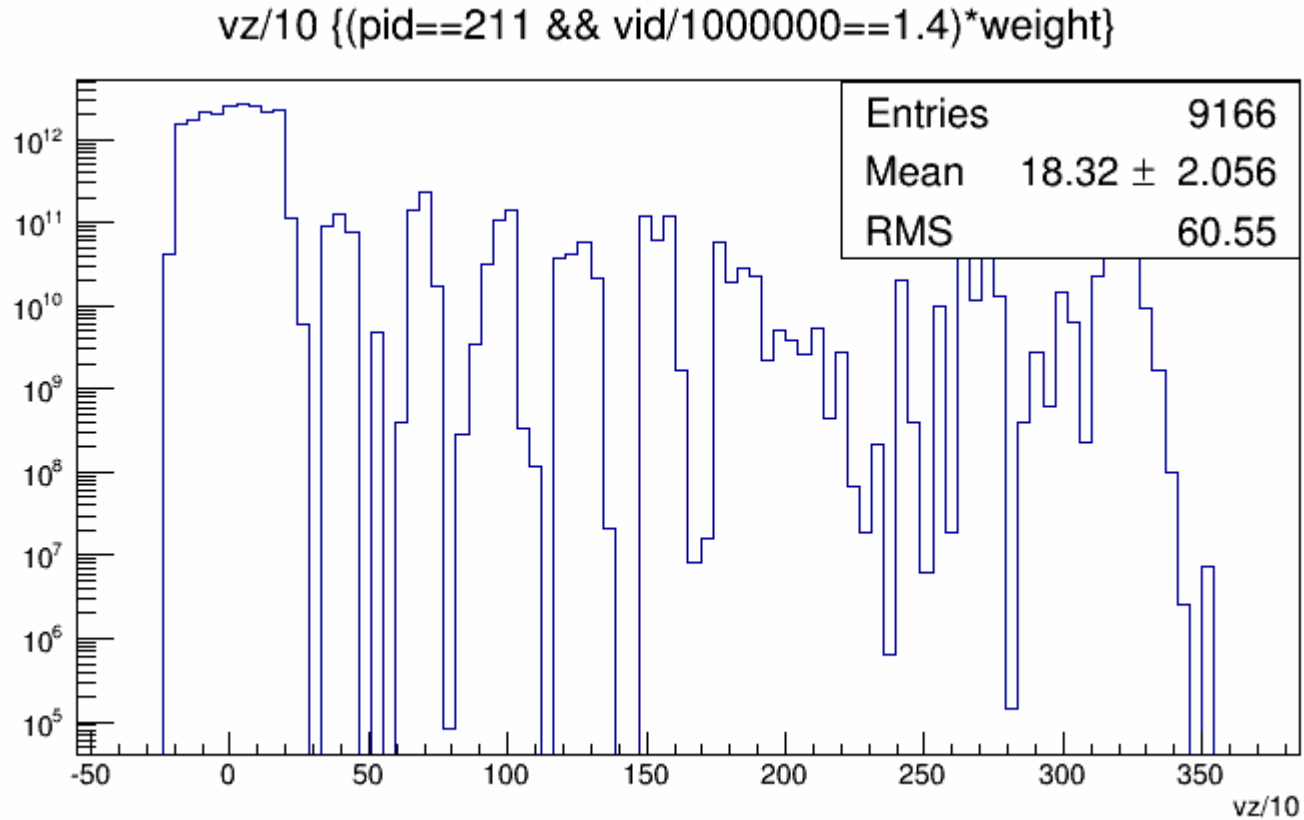


# Pions(+) Vertex Distribution at Last GEM



- The vertices of Pions observed at the last GEM (4<sup>th</sup> one)
- Total Pions observed:9166
- 22% of Pions produced ended up at last GEM

# Pions(+) Vertex Distribution Histogram at Last GEM

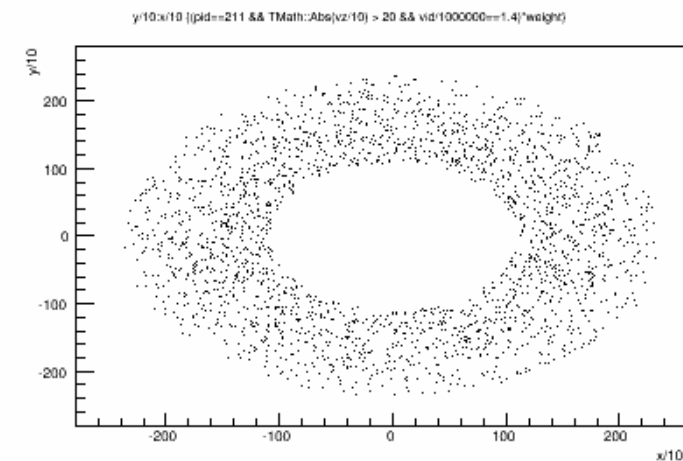
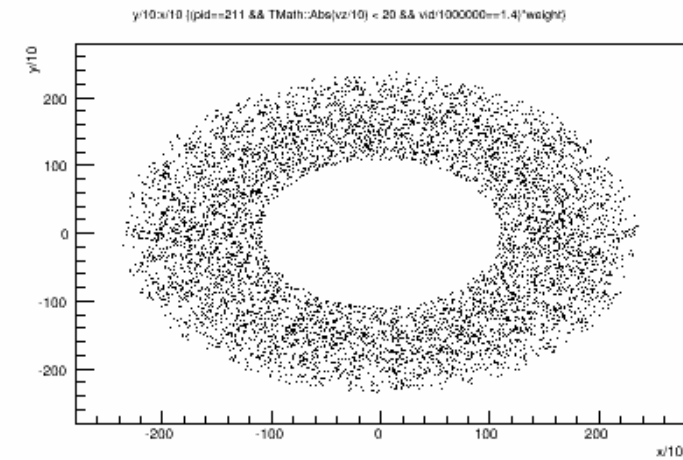
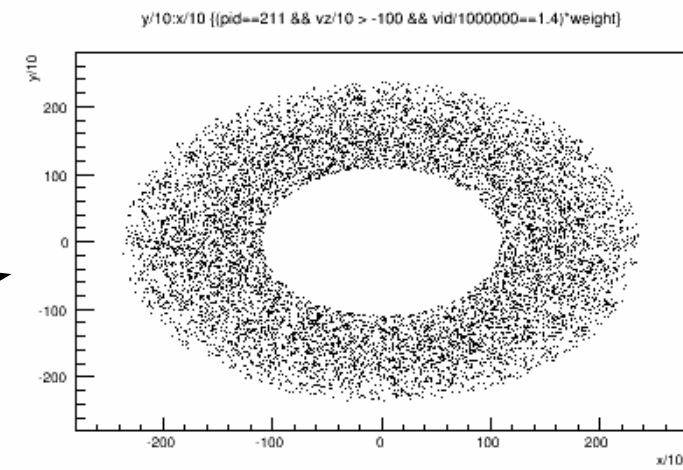


- The vertices of Pions observed at the last GEM (4<sup>th</sup> one)
- Total Pions observed:9166
- 22% of Pions produced ended up at last GEM



# Pions(+) Angular Distribution at Last GEM

- Total pions seen: 9166
- Pions from the target: 6793
- Pions from elsewhere: 2373



# Pions(+) Energy Distribution Histogram at Last GEM

- Total pions seen: 9166
- Pions from the target: 6793
- Pions from elsewhere: 2373

