Update on Vahe's GEANT4 BigBite Simulation

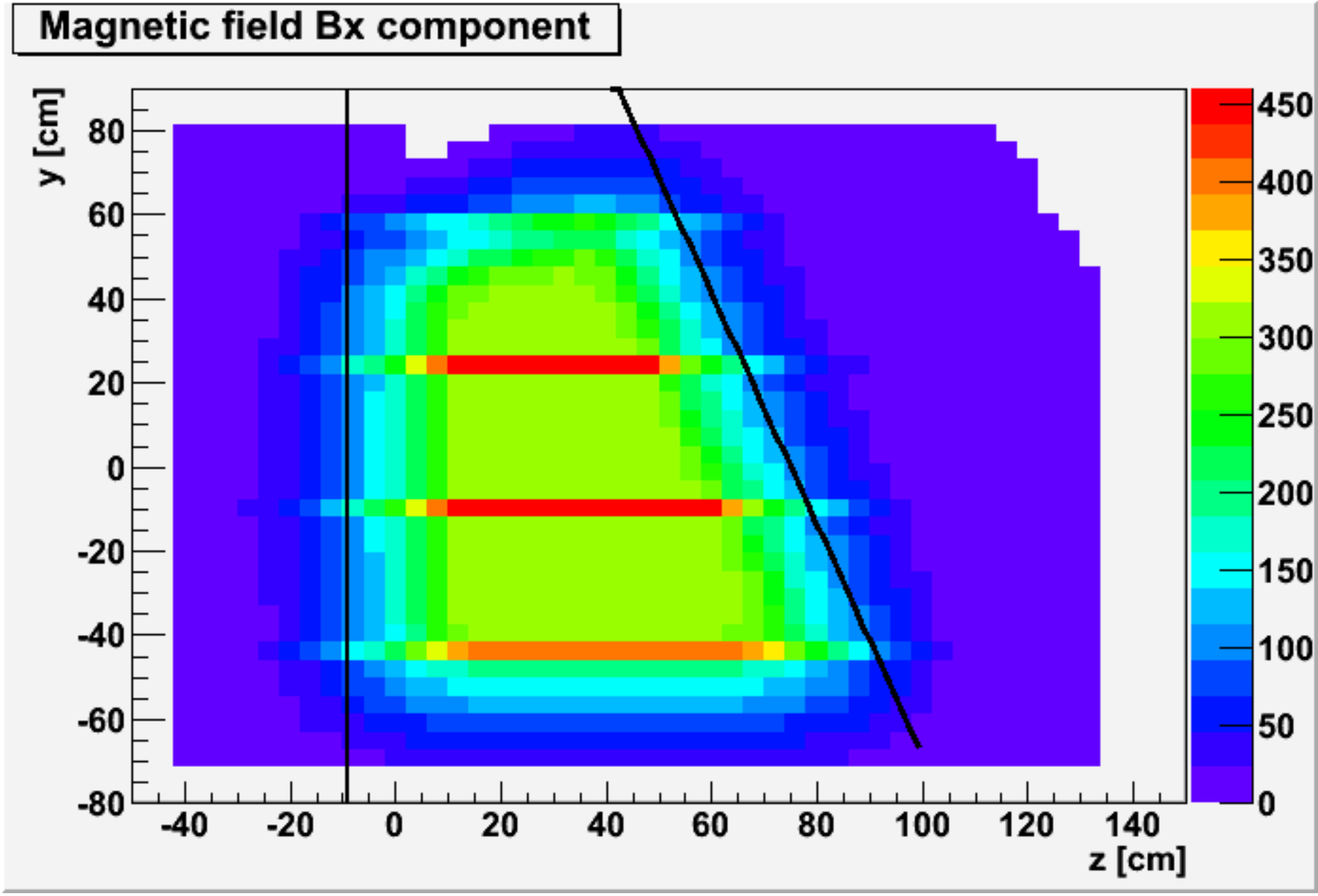
- Momentum reconstruction implemented
  - Event generation done using BigBite field simulation.
  - Momentum reconstruction performed with semi-analytic solution assuming uniform B-field between effective field boundaries
  - Still need to add out-of-bend-plane geometry to reconstruction
- Pizero simulation with uniform distribution

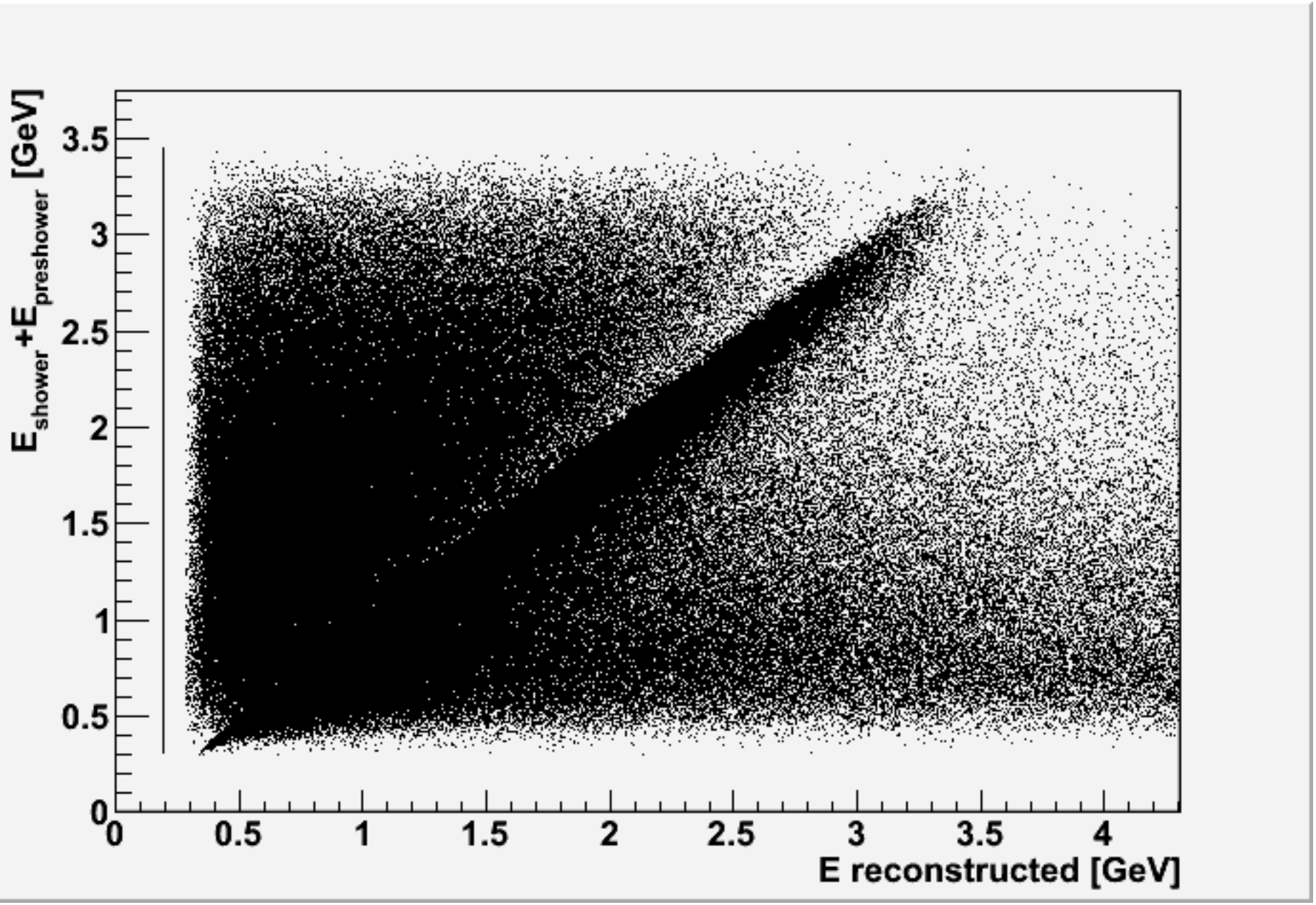
Attached is reconstructed energy (from tracks in drift chambers) of e-/e+ when pi0 decay photons interact with air before drift chamber 1.

Initial momentum of pi0 is distributed 1-3.5 GeV/c.
Momentum is calculated with this formula P = 0.3 * Bx (= 1.27 Tesla) * R (meters) [GeV/c].

The first EFB is given by Z= -9 cm line and the second one is given by Z = tan(110 *degree) * (z-75) cm line.

The coordinate system is located at x,y centre of magnet and z = 0 starts at front face of the magnet yoke


Magnetic field Bx component
y [cm]
80
60
40
20
0
-20
-40
-60
-80
-40
-20
0
20
40
60
80
100
120
140
z [cm]
450
400
350
300
250
200
150
100
50
0


$E_{shower}+E_{preshower}$ [GeV]
0
0.5
1
1.5
2
2.5
3
3.5
0
0.5
1
1.5
2
2.5
3
3.5
4
E reconstructed [GeV]