SuperB:
DCH Update on FullSim Bkg Studies

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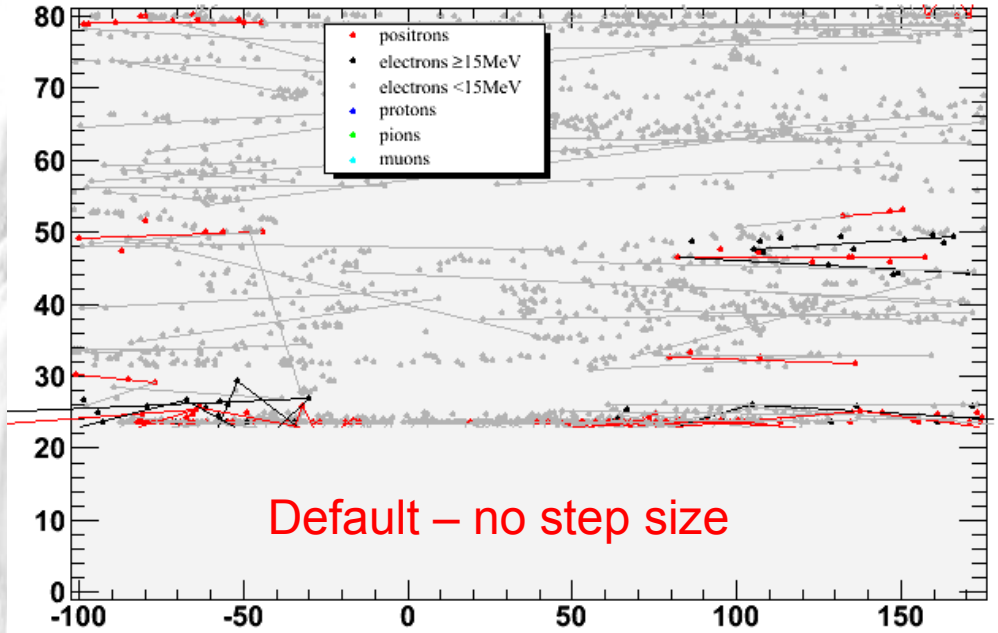
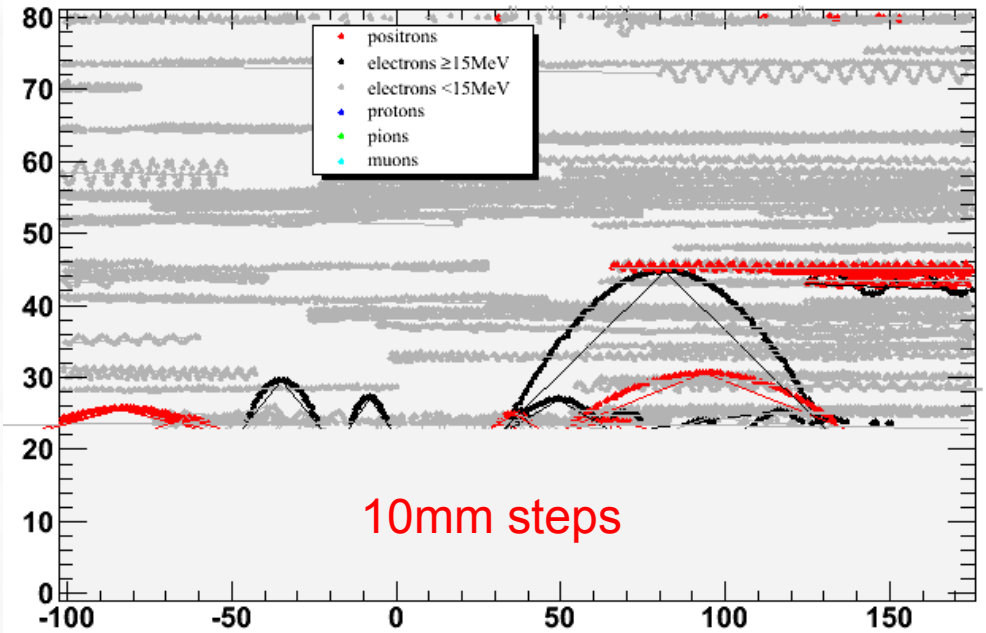
DCH meeting
Feb 14, 2011

Overview

- Occupancies for New vs. Old Geometry
- Attempt at an explanation of why the increase!

Visualization of Step Sizes



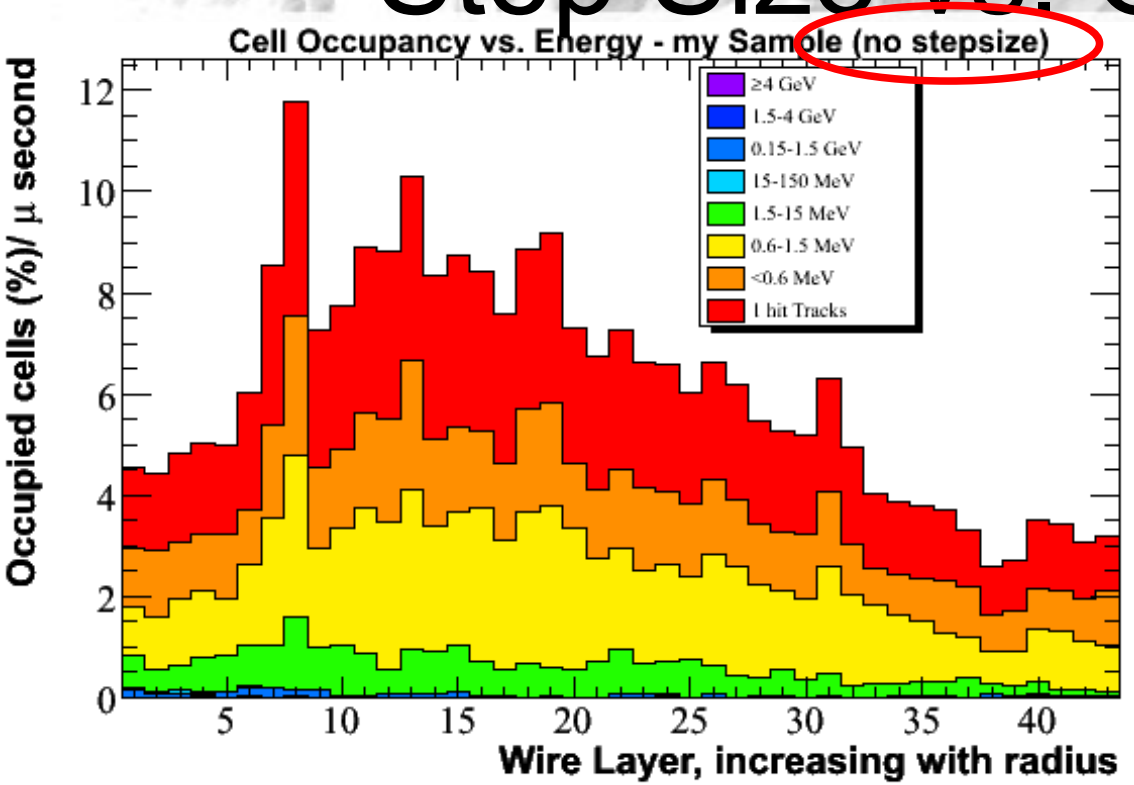


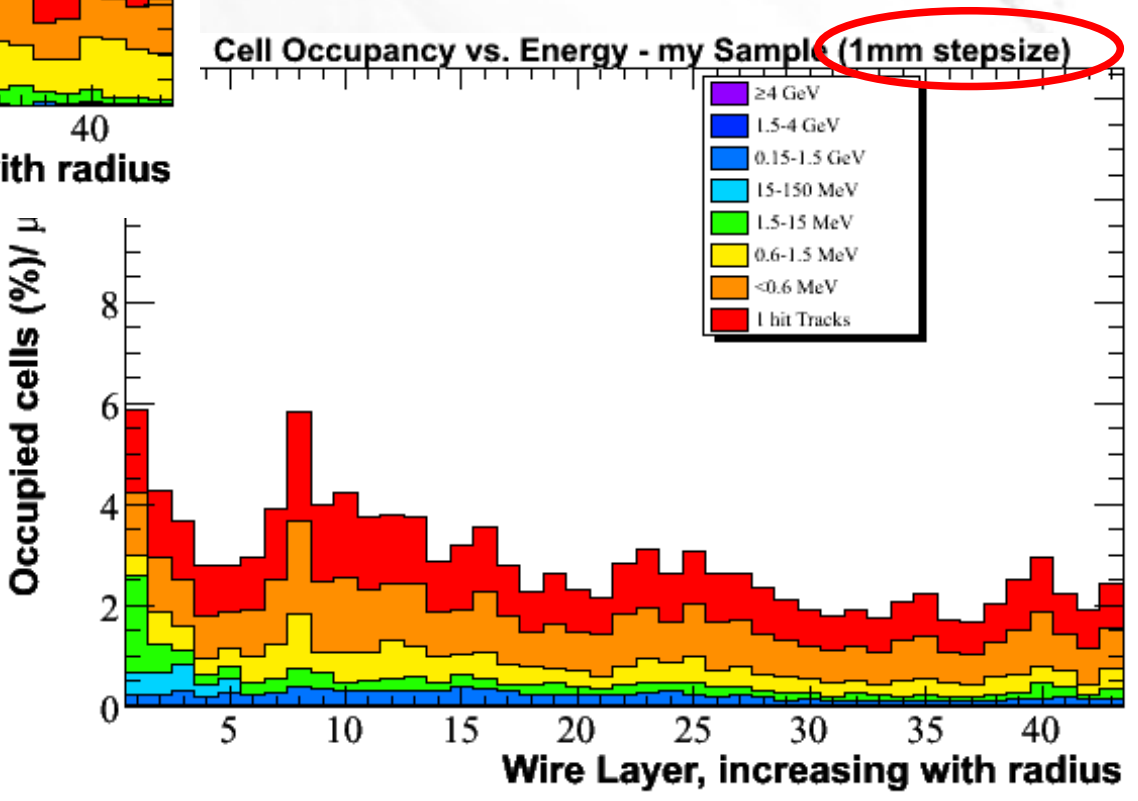
Same 200 events (>5deg) with tracks 1.5MeV < E < 150MeV, hits with deposited E > 0 only

- New occupancy method:

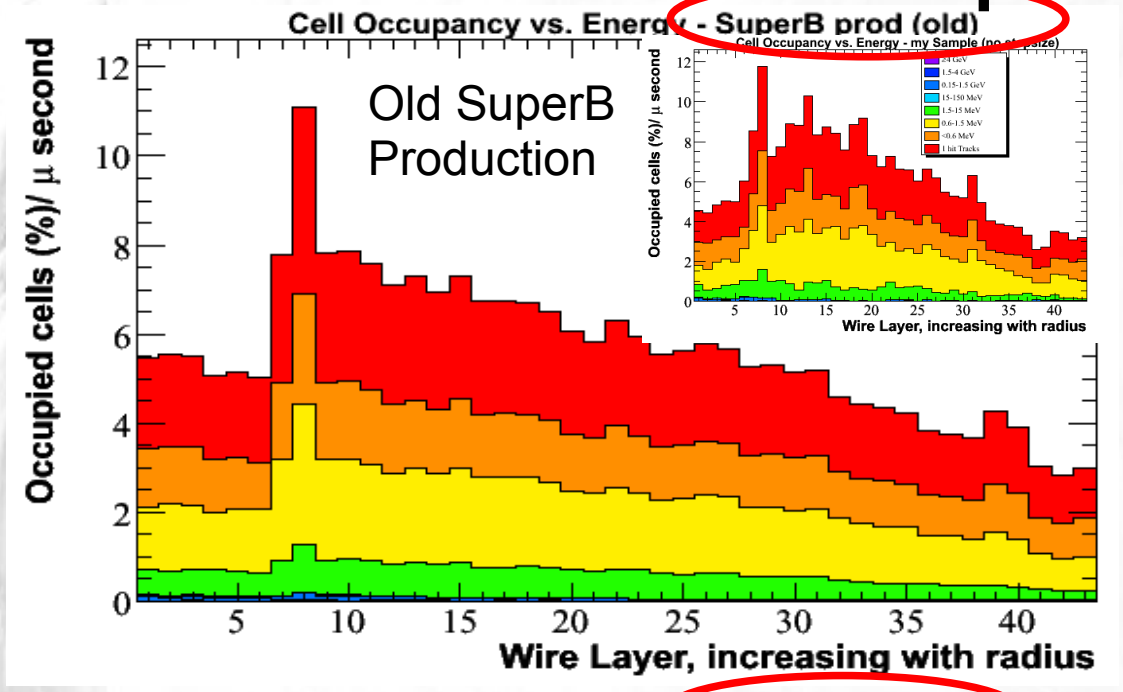
  With smaller step-sizes (1mm Bruno & 10mm Bhwide), each instance of deposited energy counts as one “hit” on whichever wire is closest (axial wires only). Only one hit/wire/event is allowed.

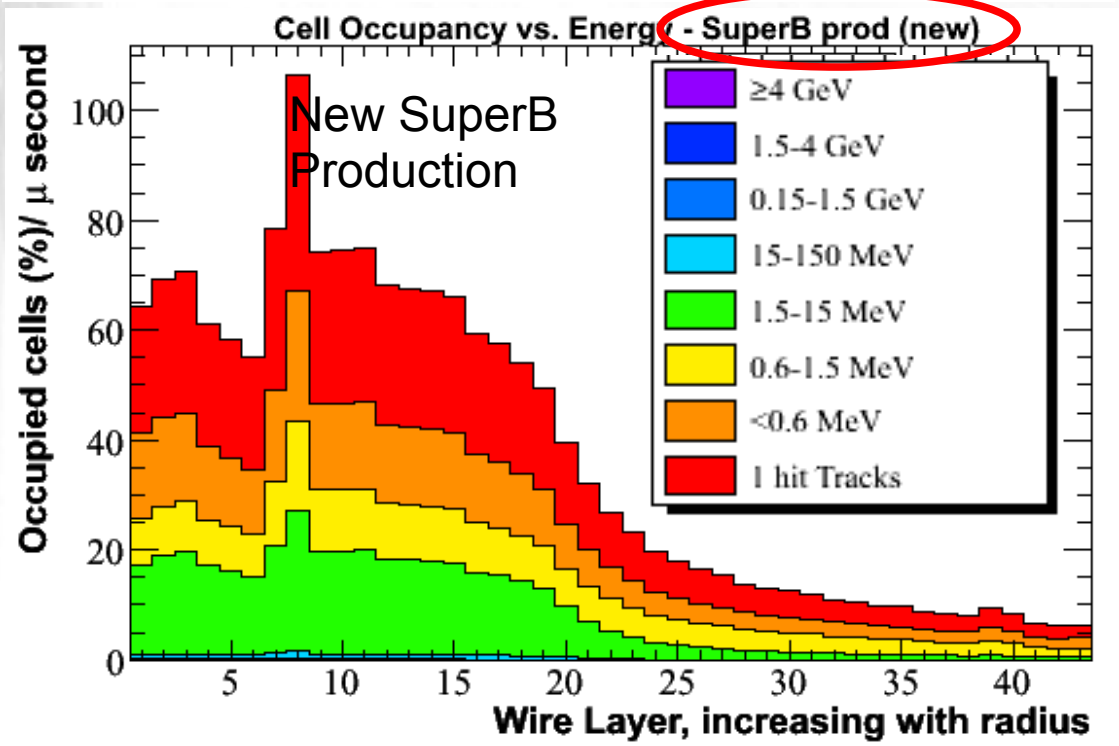
Step Size vs. Occupancy

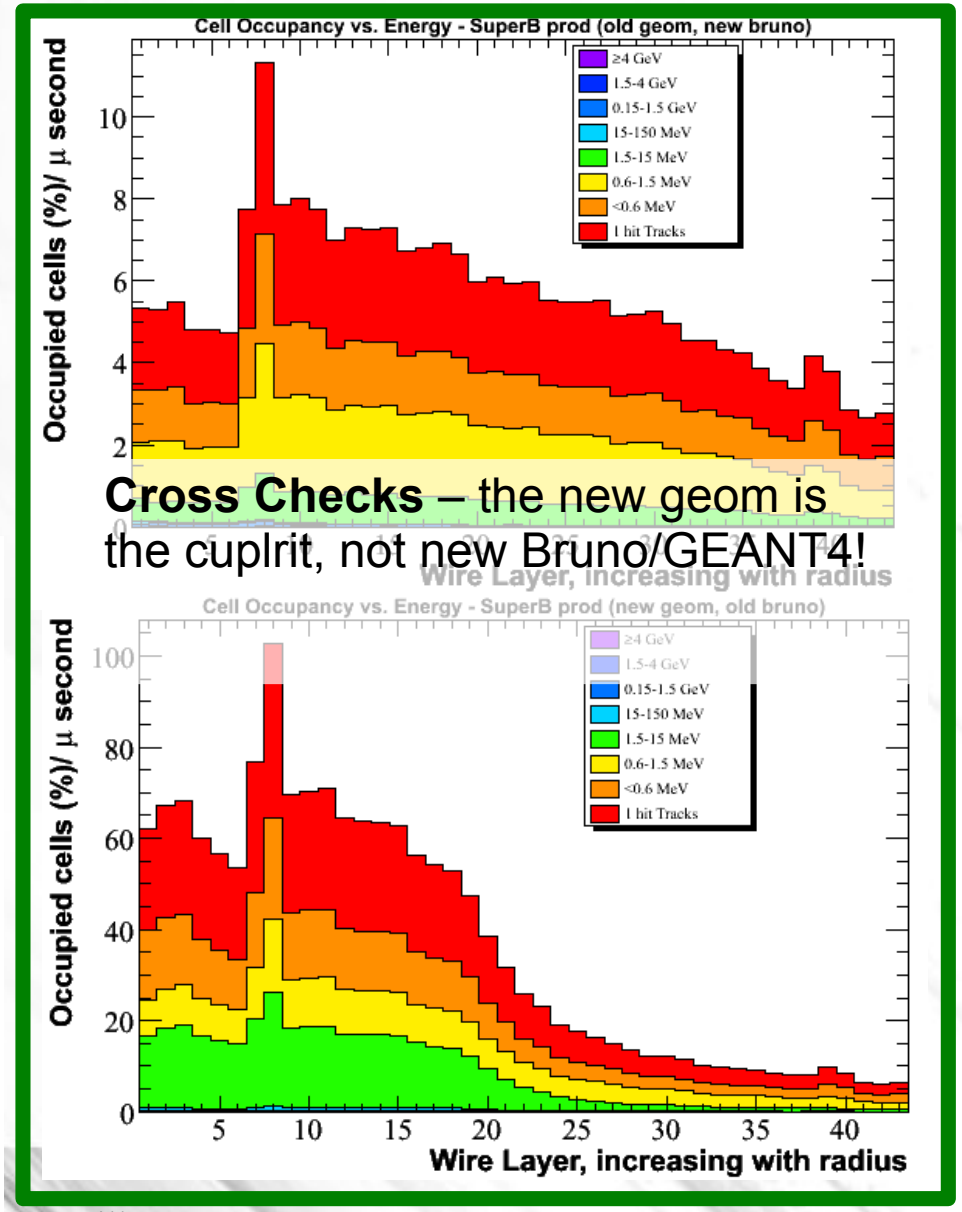




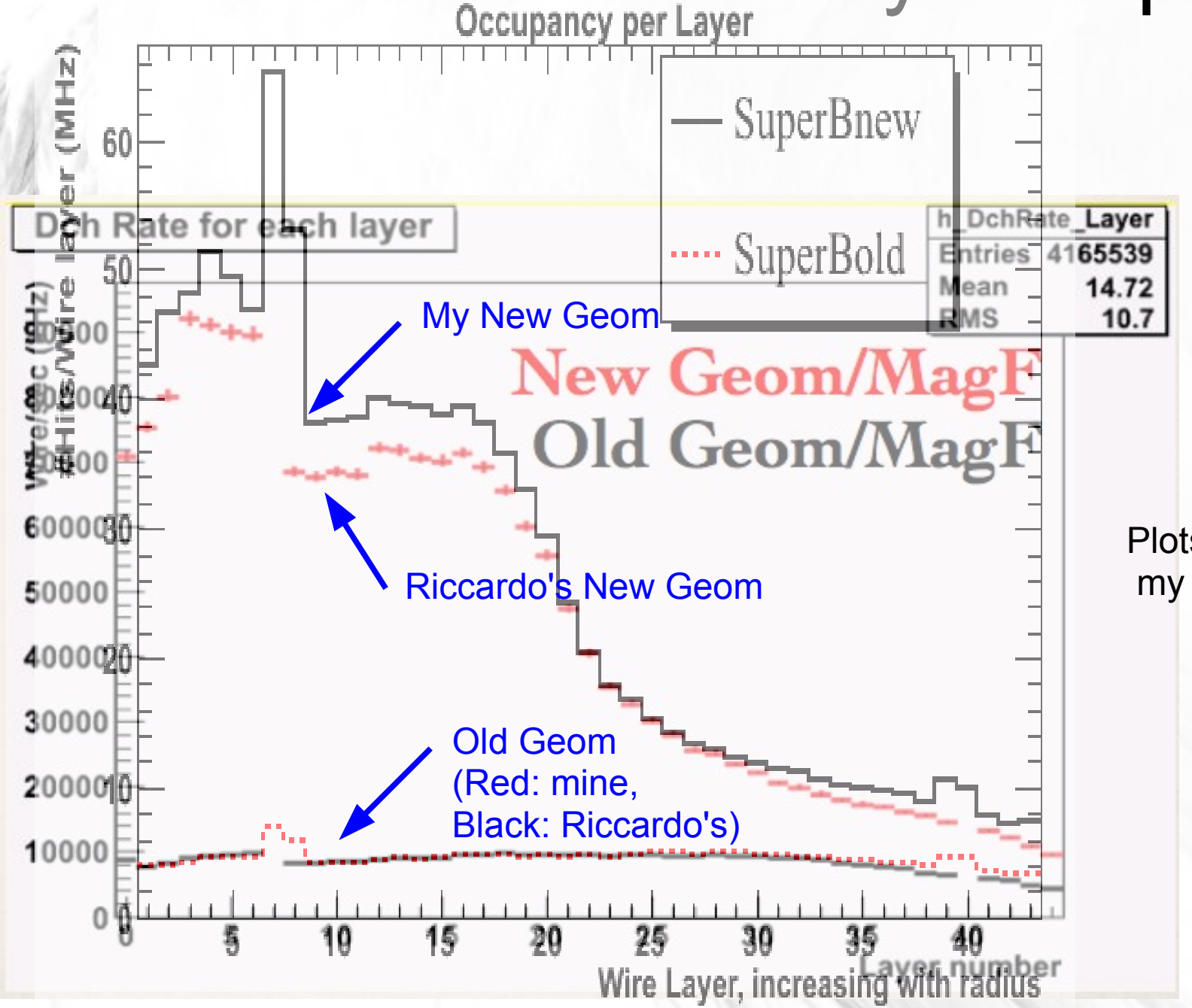
New vs. Old SuperB Productions





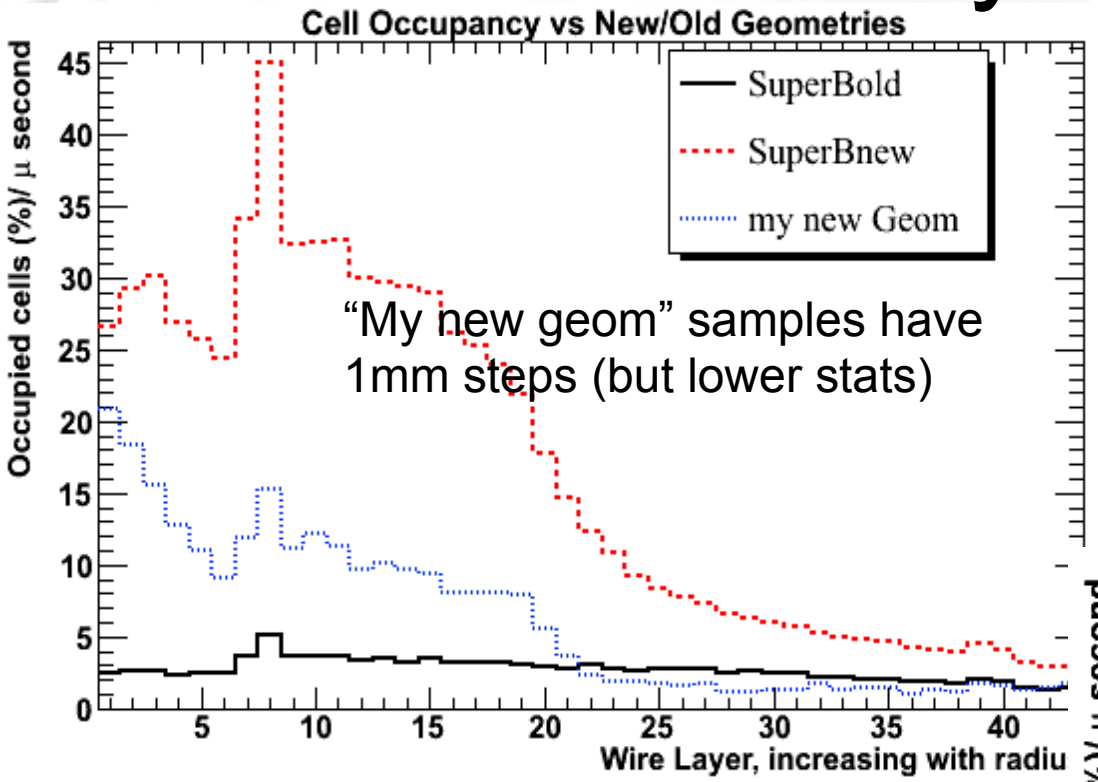


Riccardo's vs. My occupany

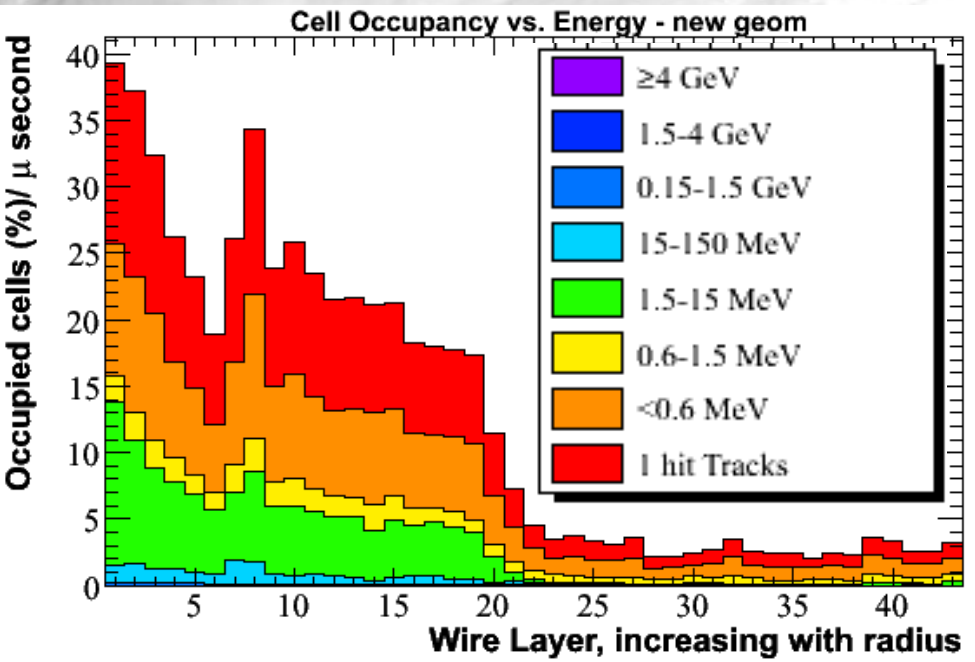


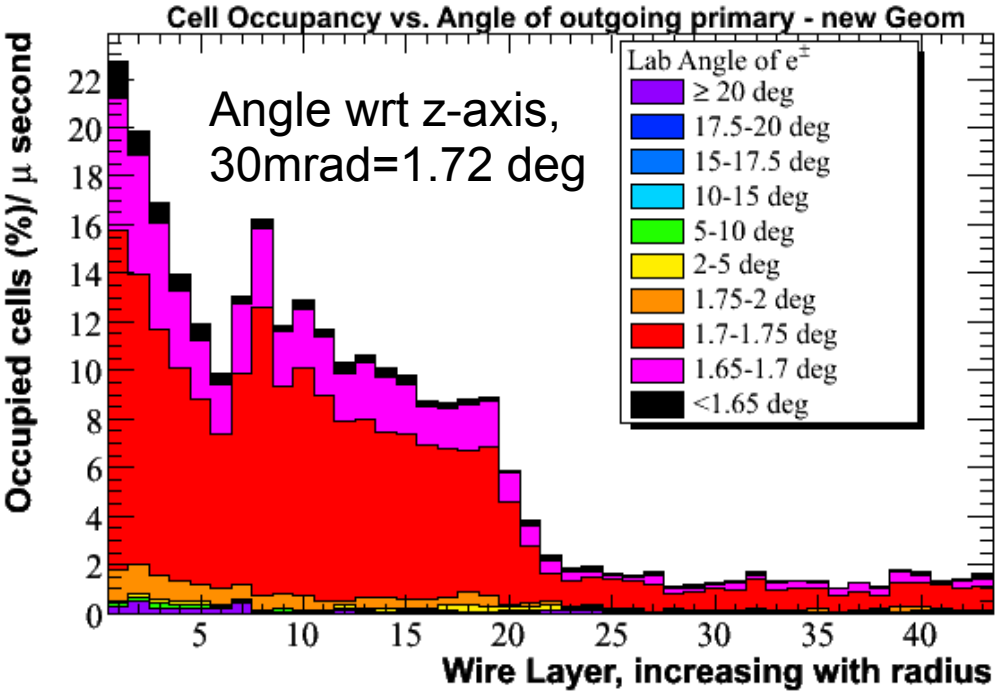
Plots overlaid but with my occupancy x2!!

My new geometry samples – Bruno only!!



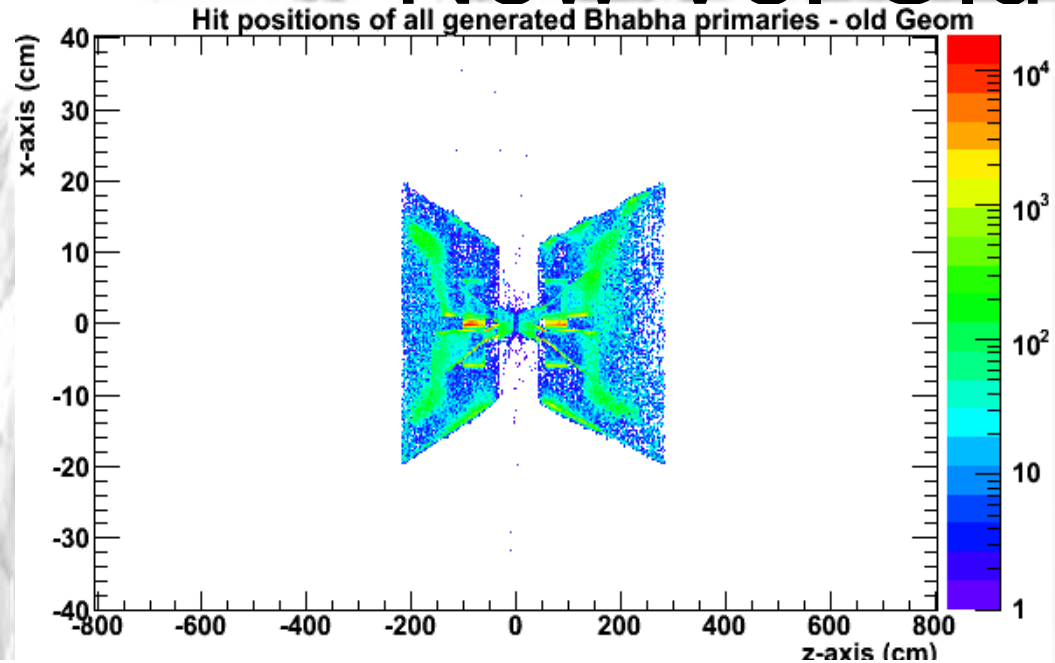
"My new geom" samples have 1mm steps (but lower stats)

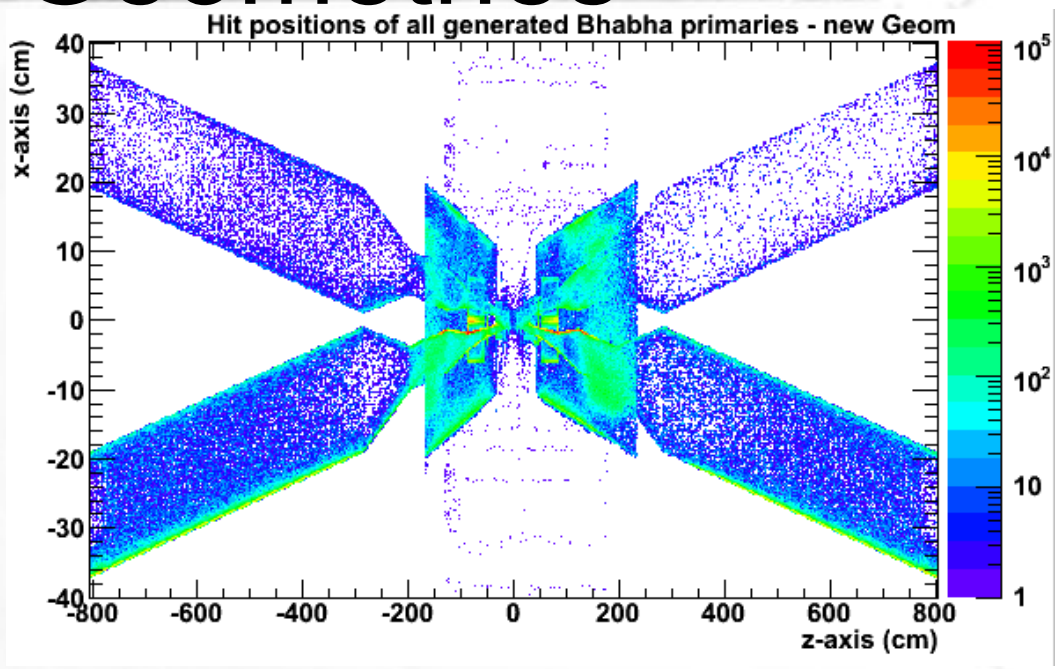


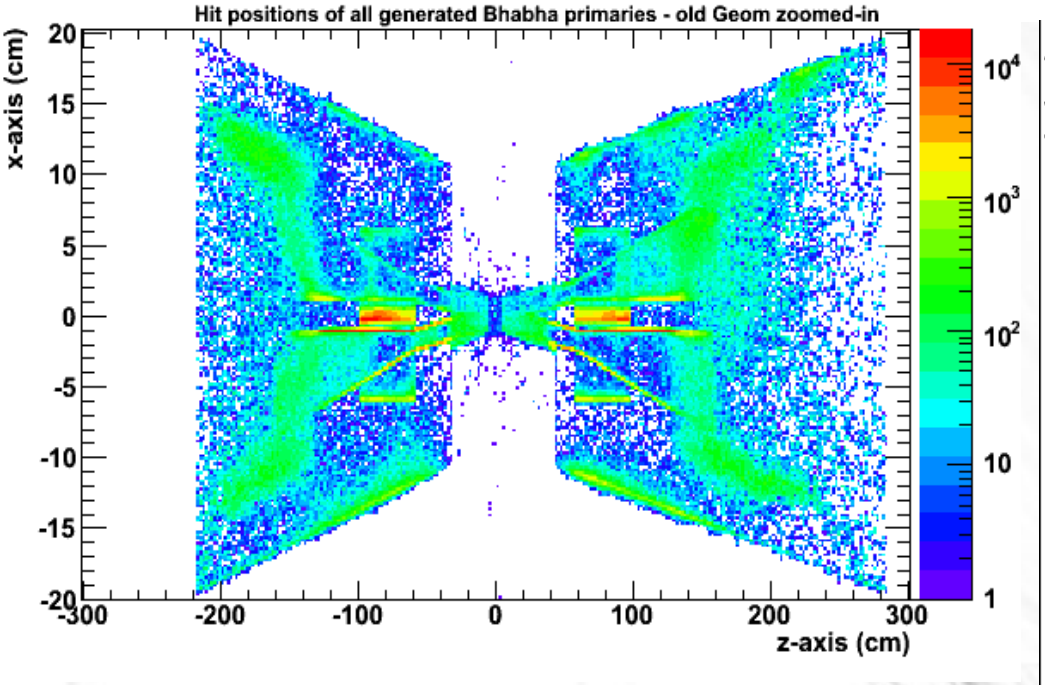


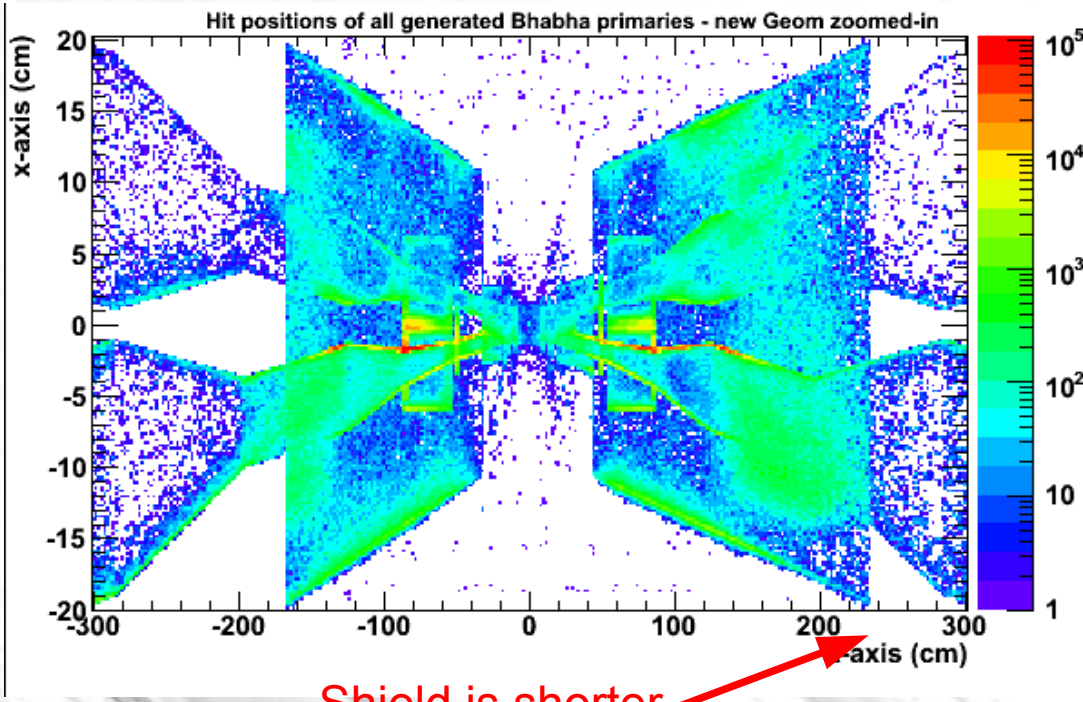
Note: Due to splitting plots into stacked colored "bins", it's possible for two tracks from the same event to double count the occupancy on a wire, resulting in falsely higher occupancies.

New Vs. Old Geometries

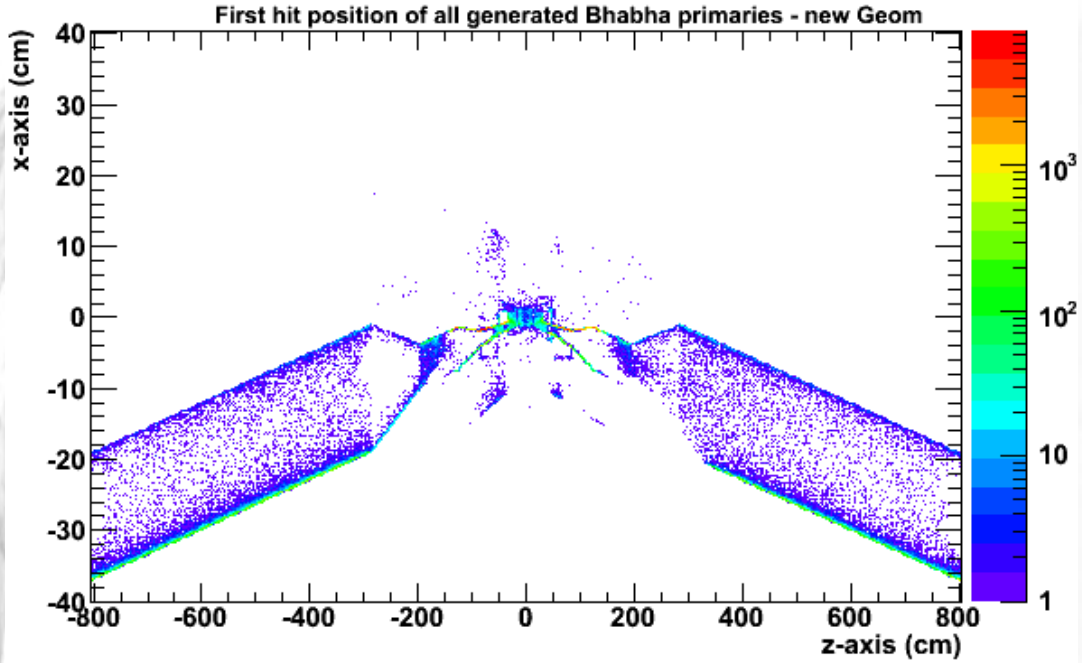


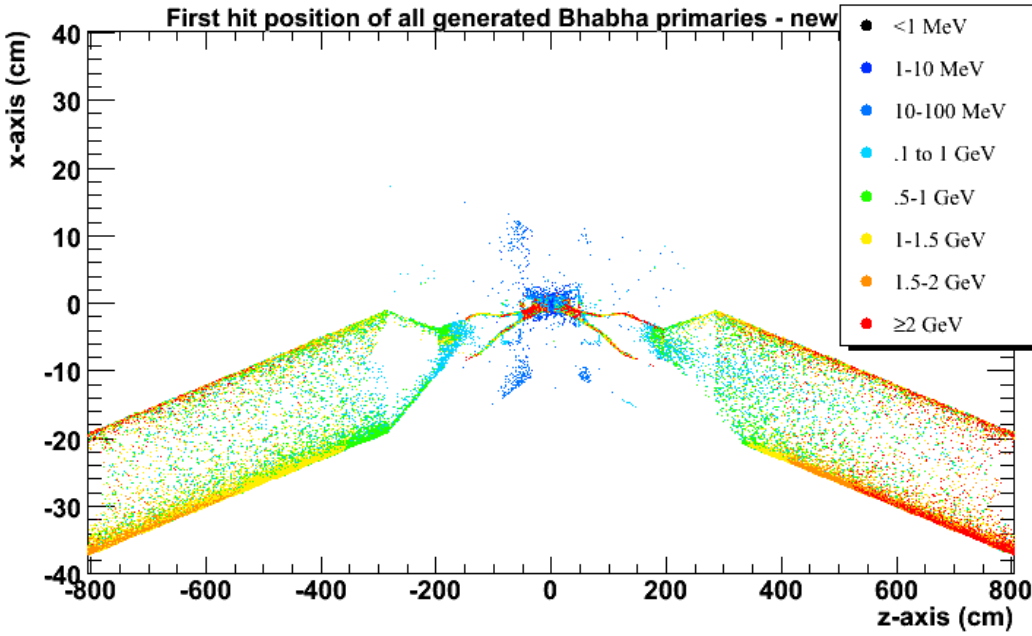


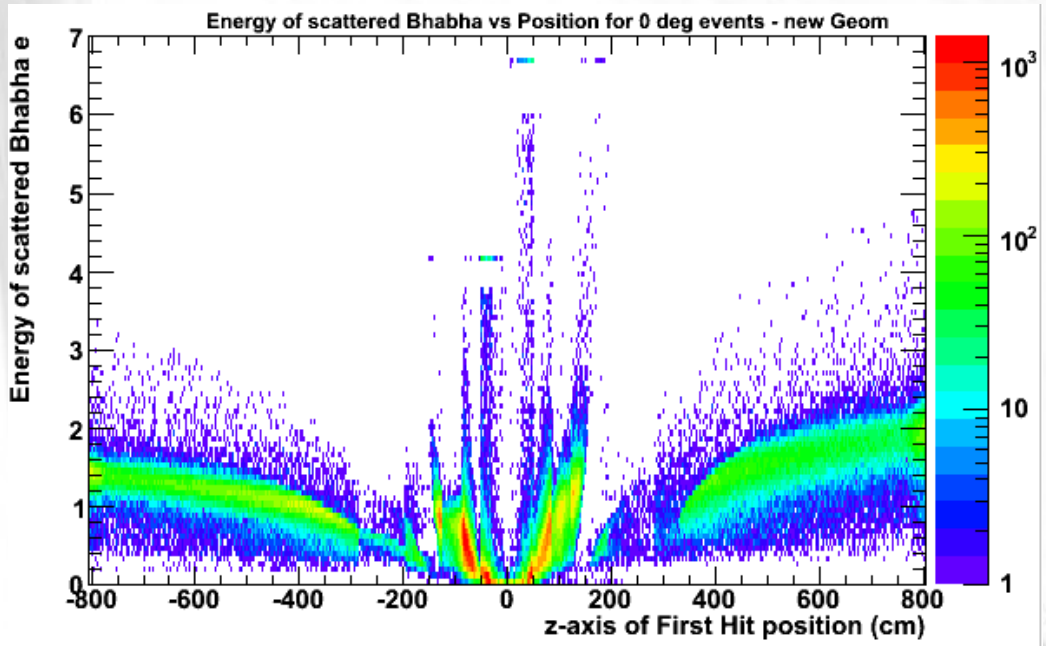


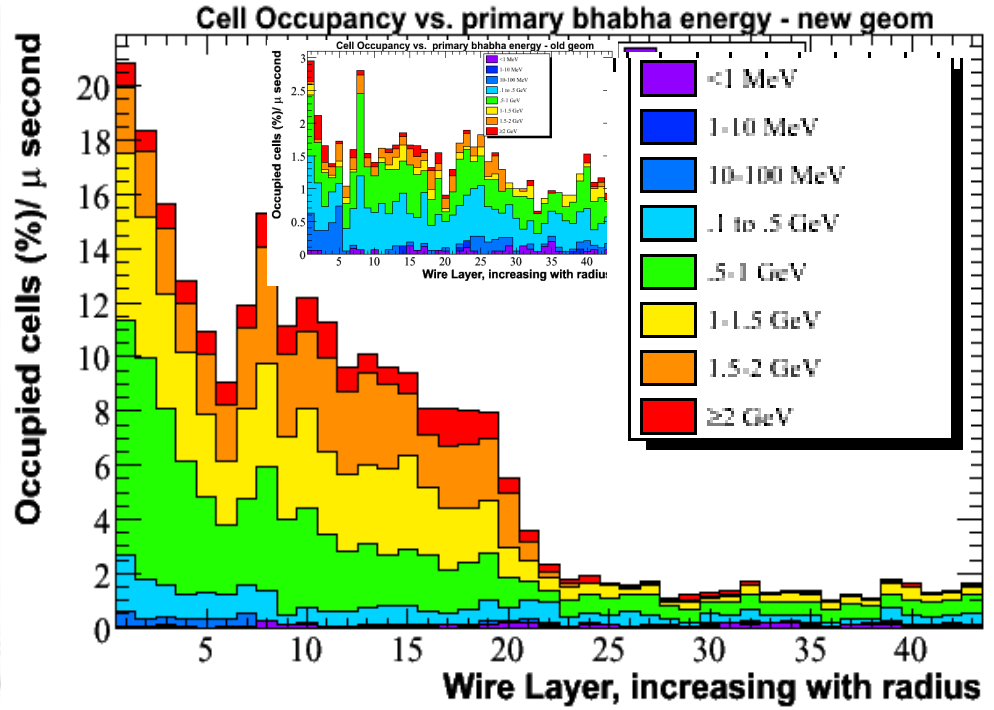


First Hit positions of Bhabhas

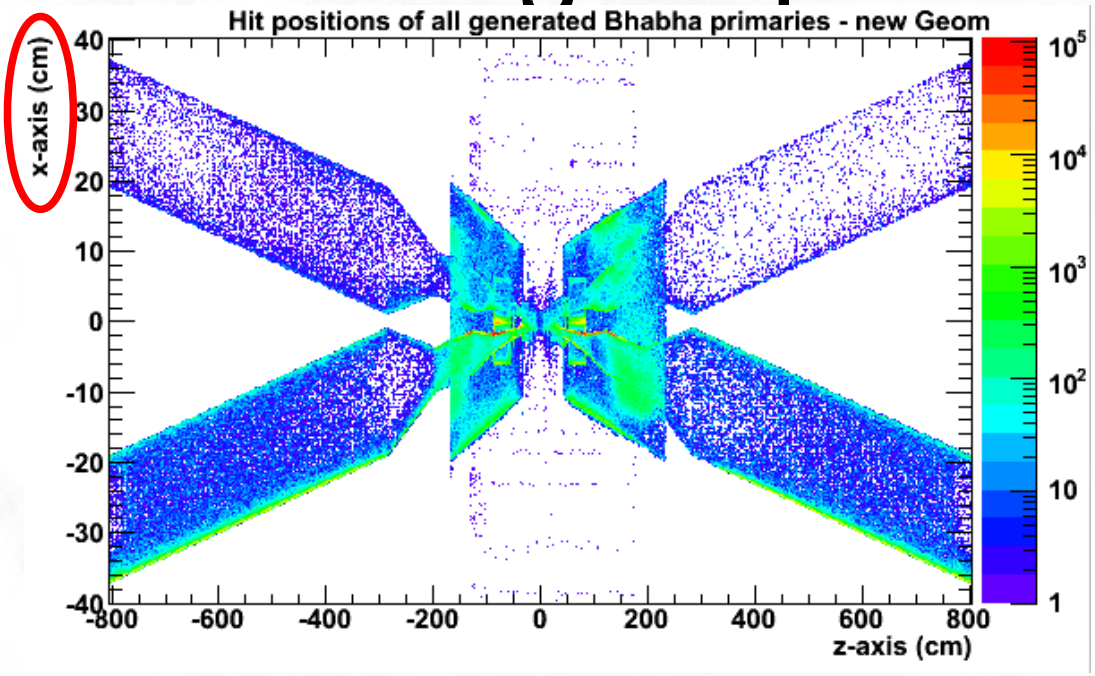


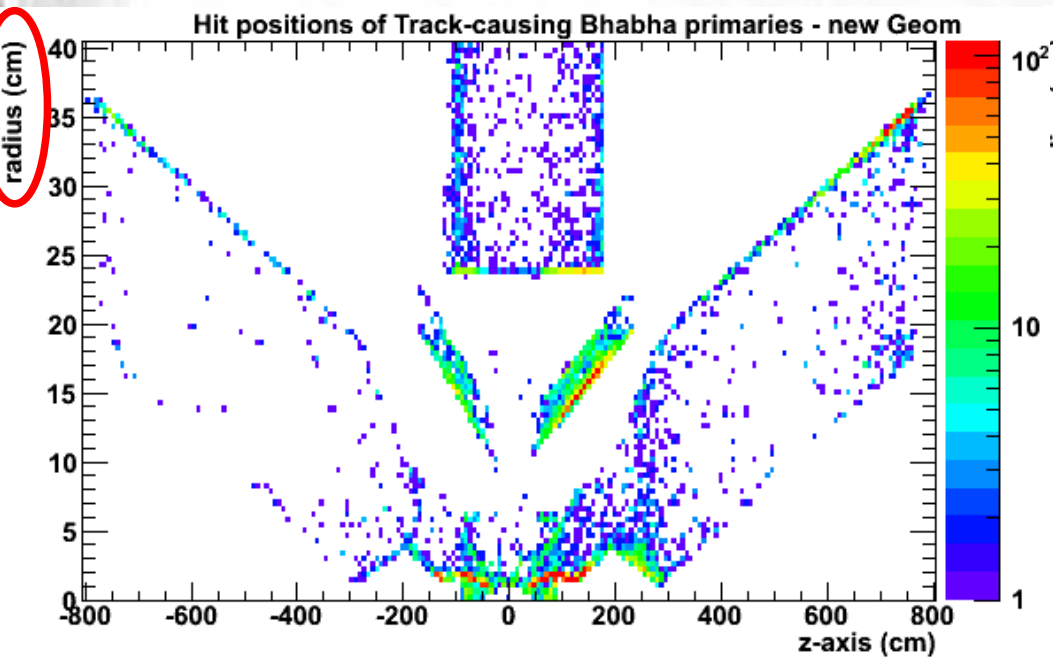


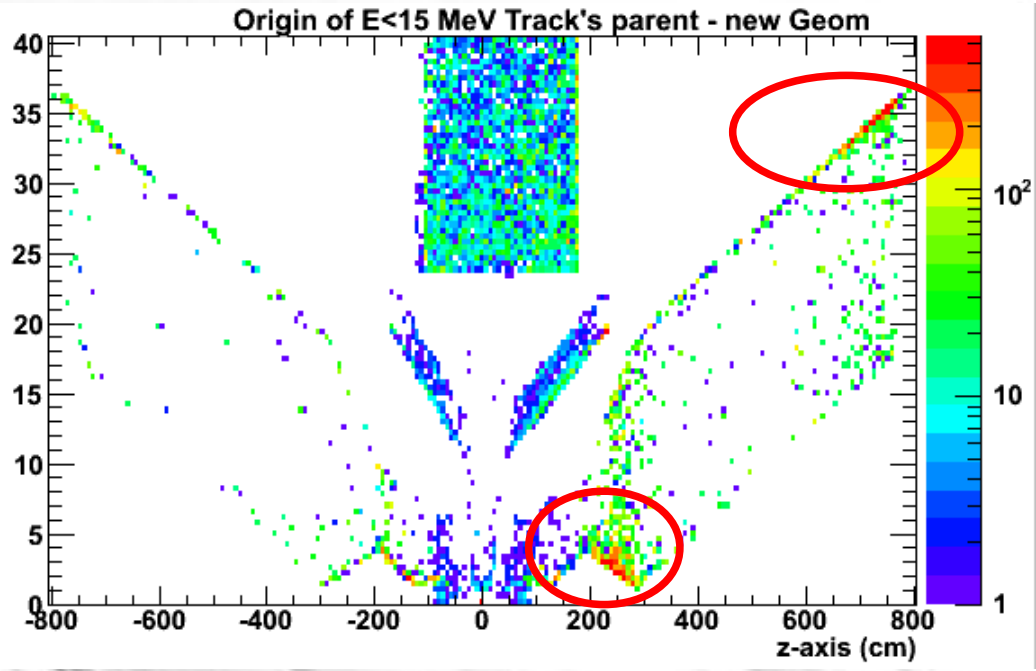




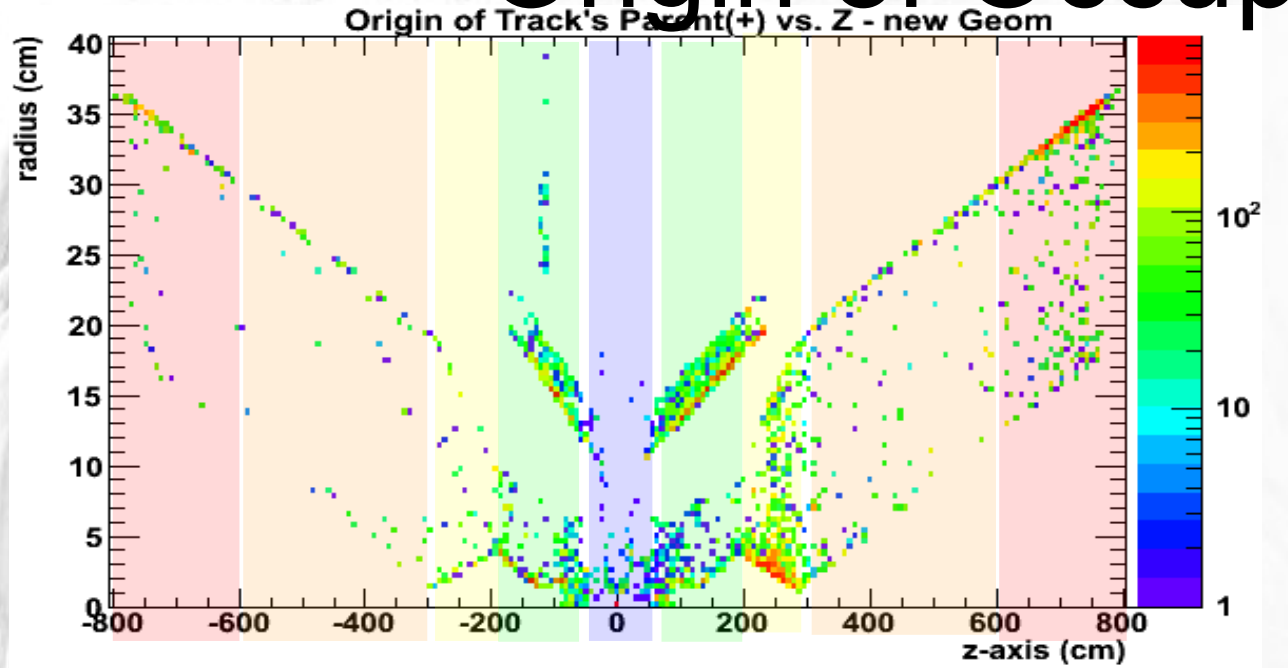
Track-causing hit positions

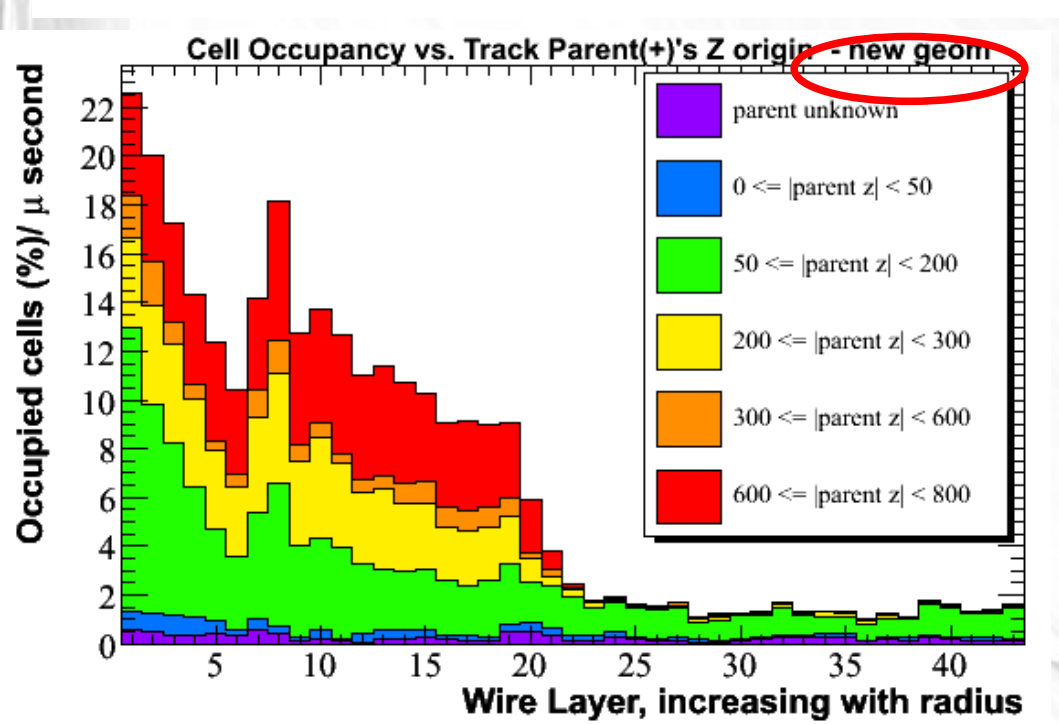


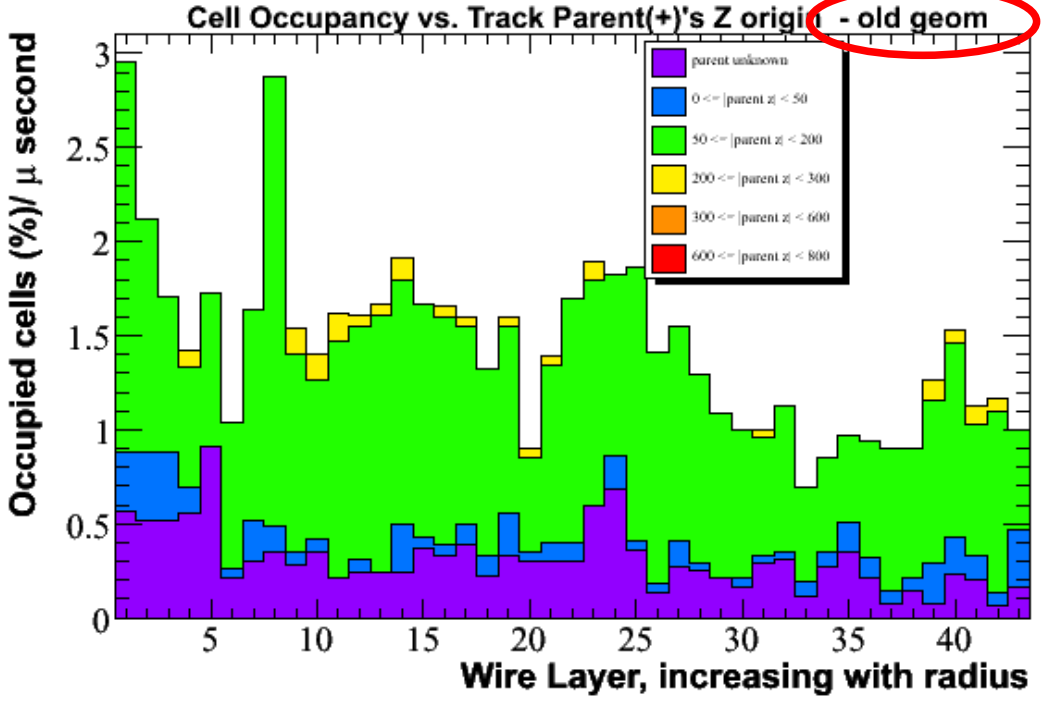




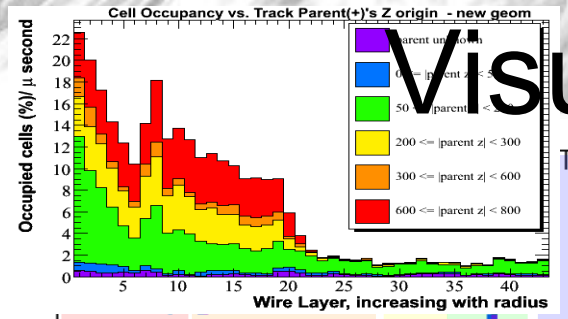
Origin of Occupancy

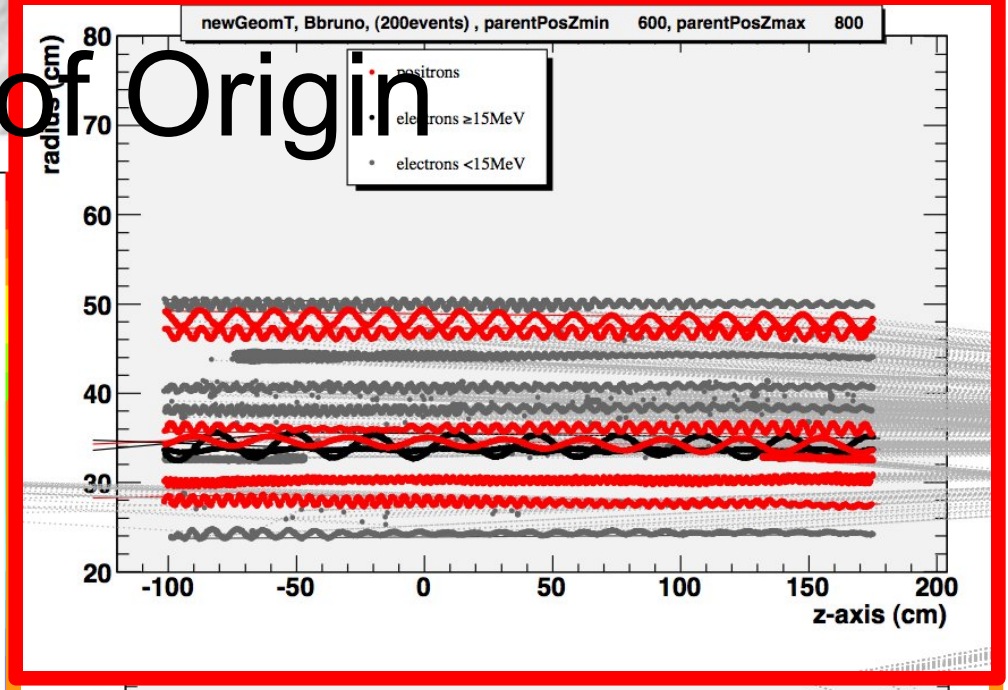


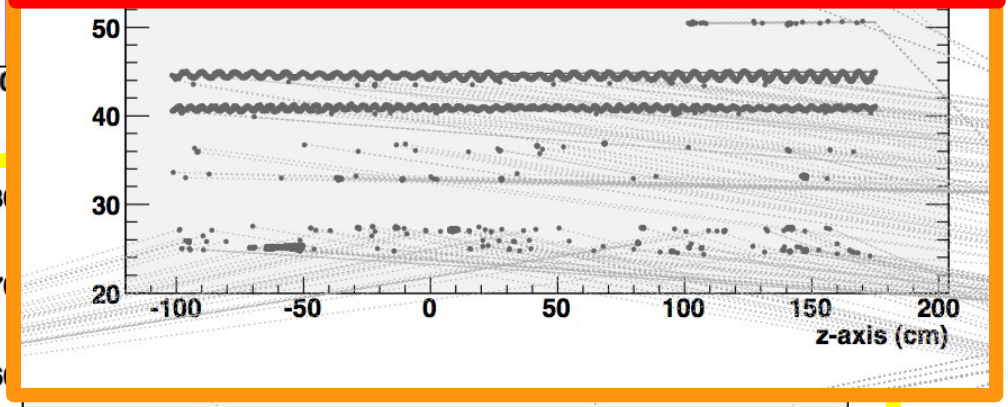


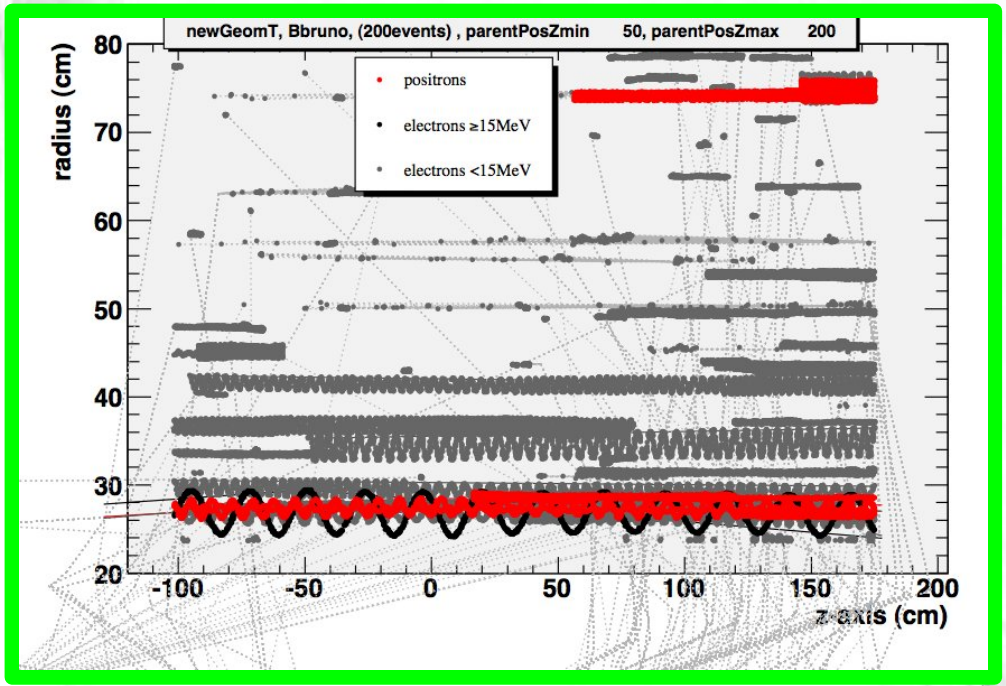


Visualization of Origin









Conclusion

- More shielding is necessary further down the beam pipe to prevent particles from entering side of DCH!
- Can the shielding be extended to 3 m again?