SSRI (aka RMMS): Sim progress

"sign-selecting range indicator"

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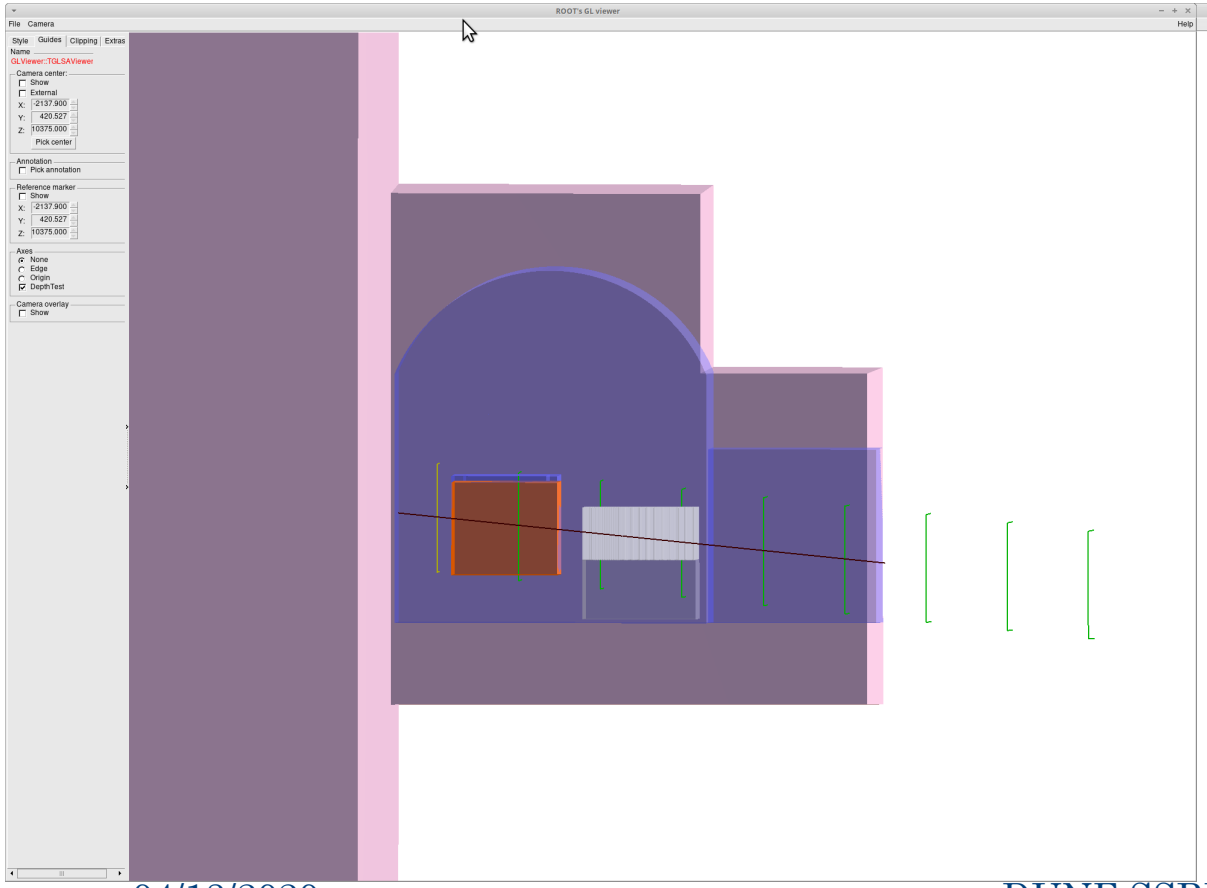
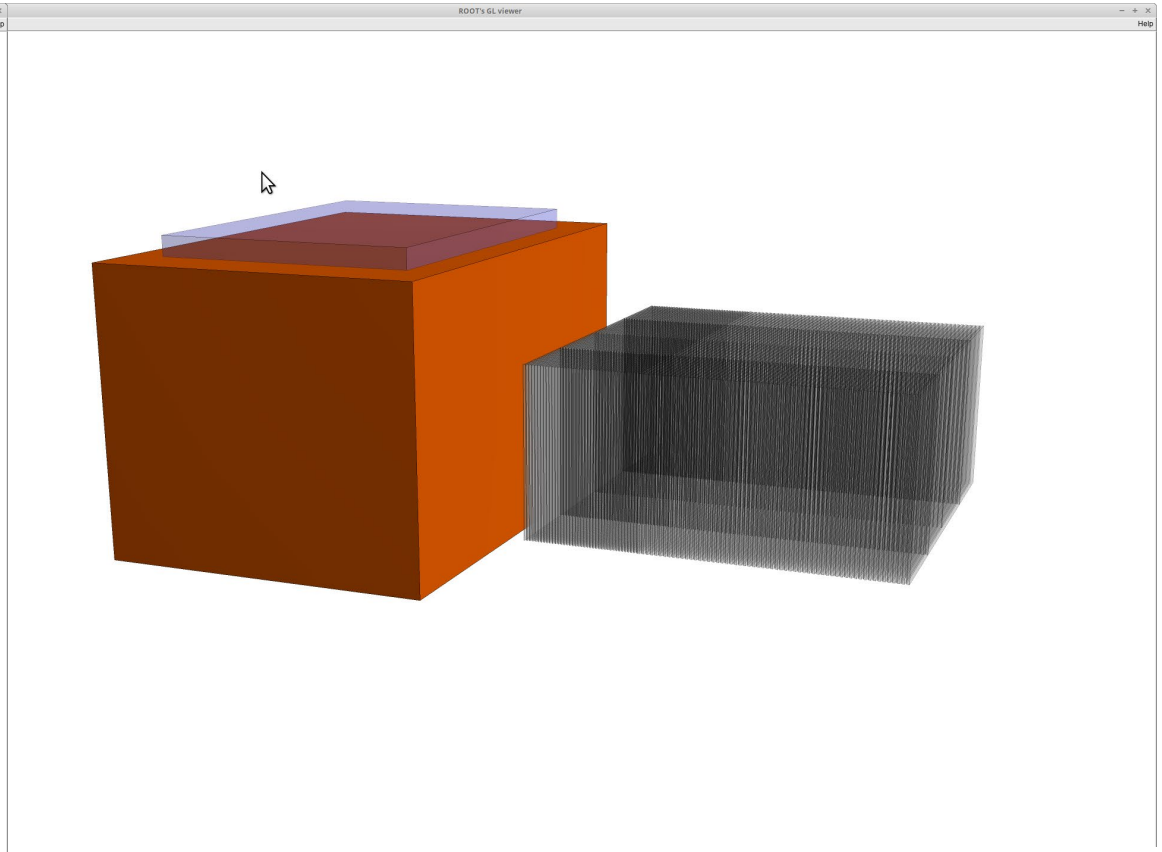
SSRI Geometry Status

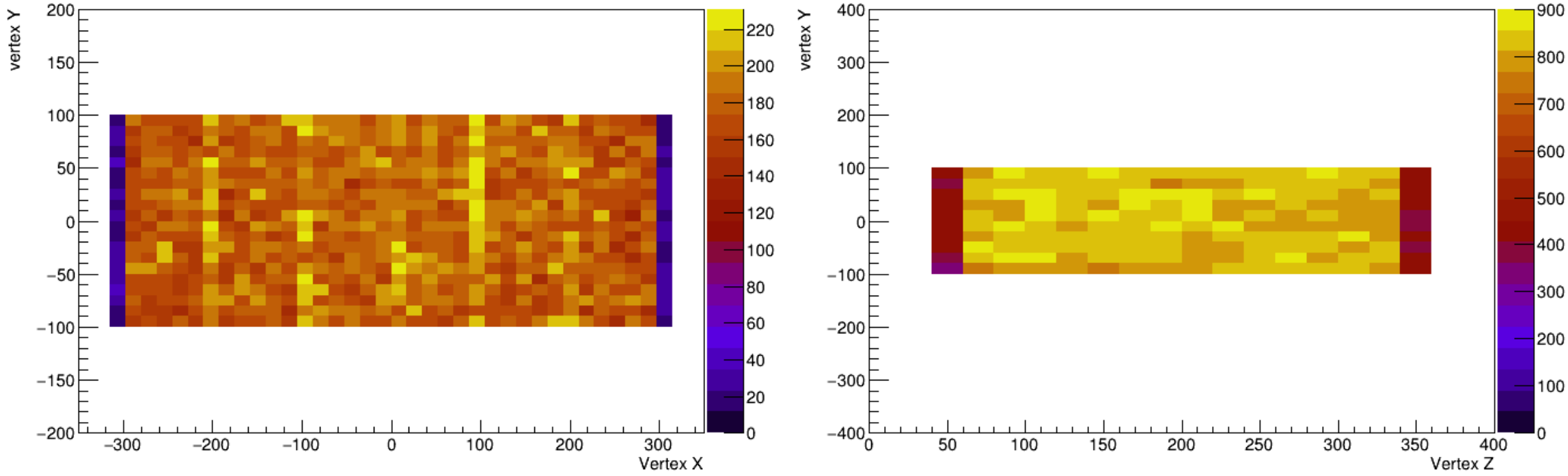
Geometry gdml file produced by Palash R. /Mat M.
/dune/app/users/pkroy/dunendggd/nd_rmms_sens_scint_w_mag_field.gdml
Includes B-field and RMMS as active





- 500k events
  - 220k pass fiducial volume cut and isnumucc

- Vertices (in fiducial volume: ArgonCube)

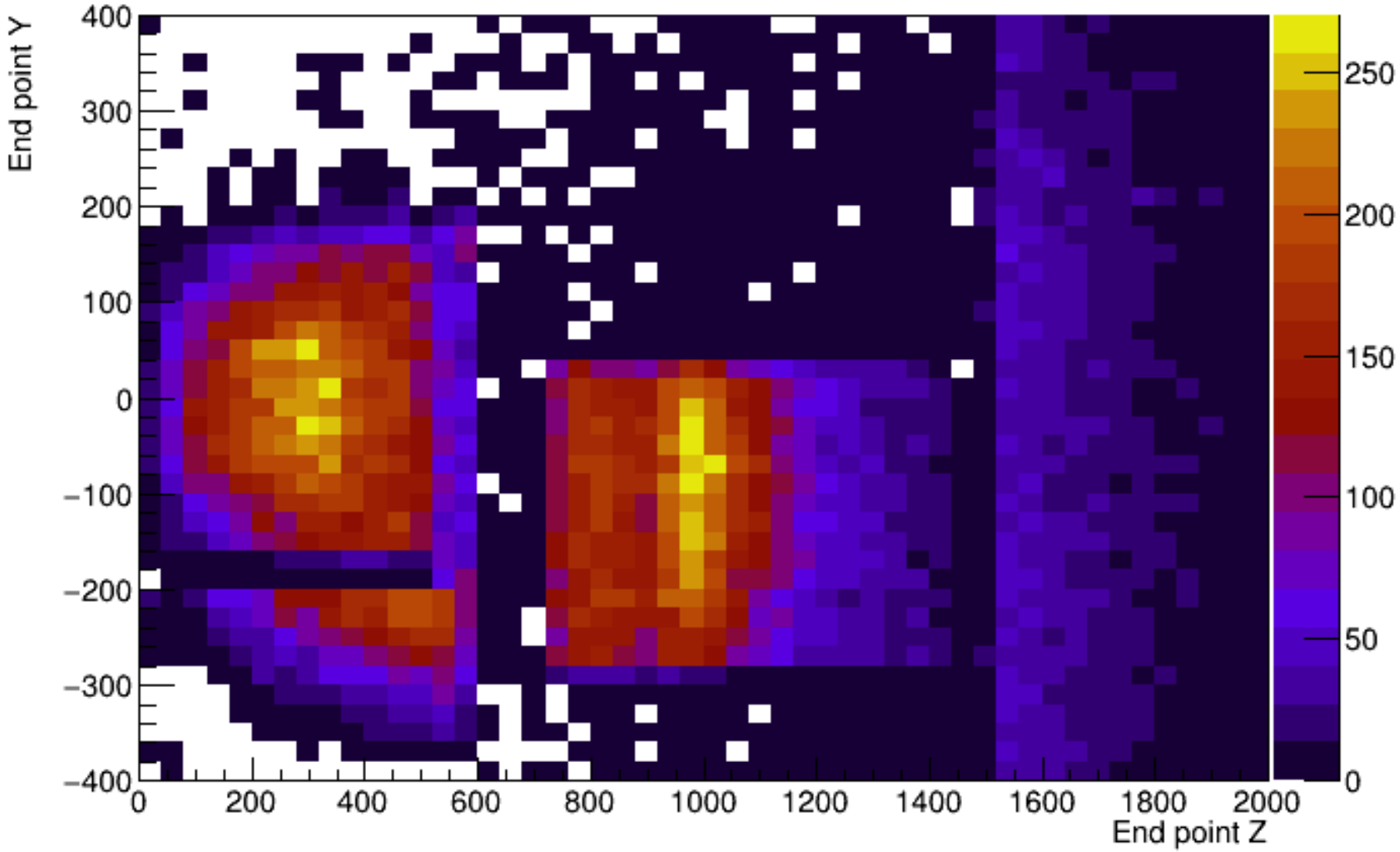


Track all muon end points

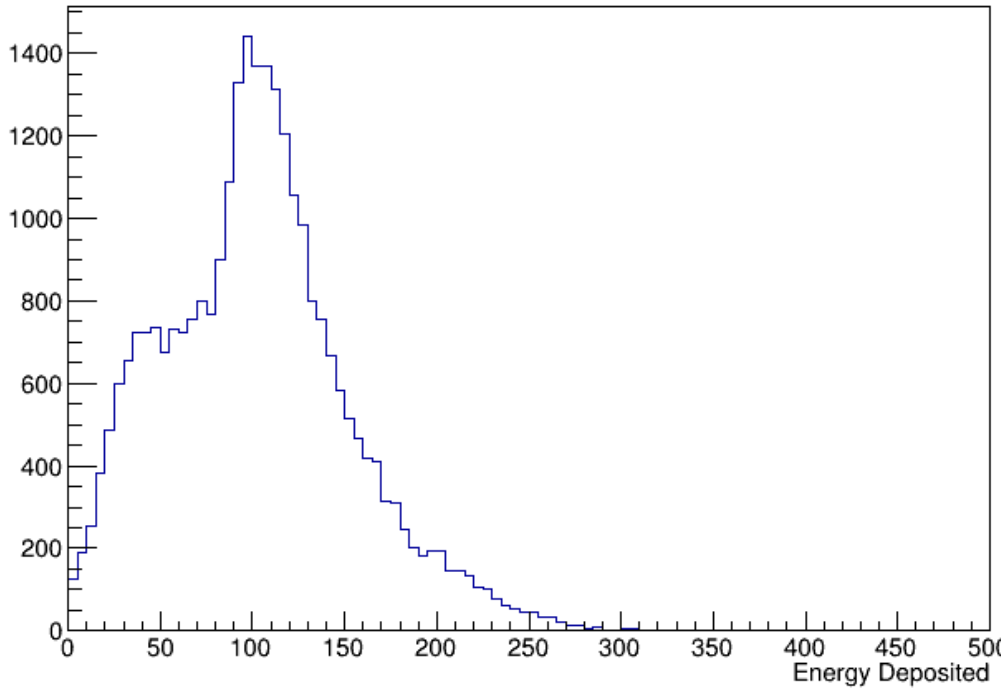
Clearly see support structure for ArgonCube, the SSRI position and where they hit final volume at the back

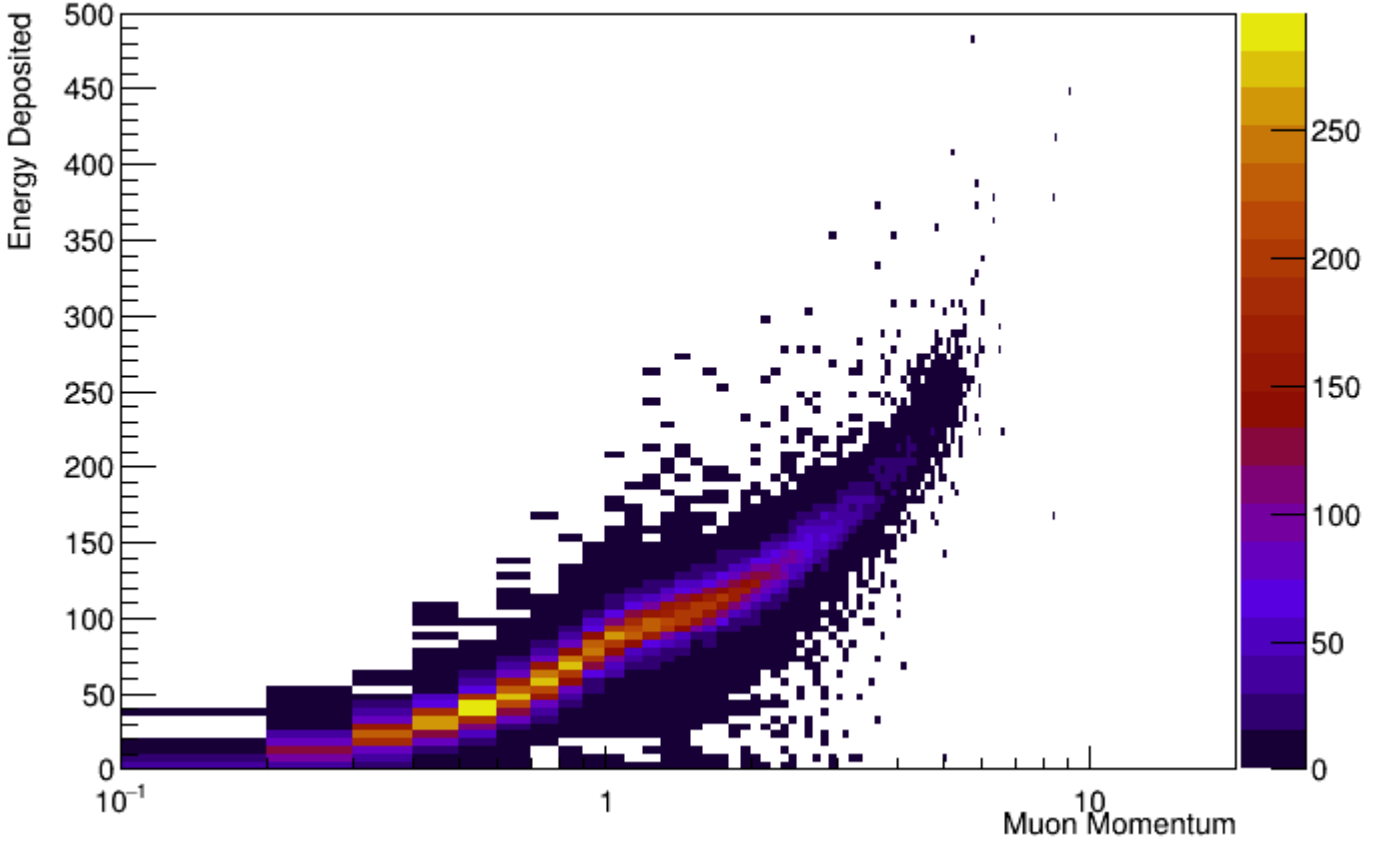
Noted that we should move SSRI up 0.5m to capture more of the event.

New geometry available – provided by Palash.
Simulated 1 million events – analysis in progress



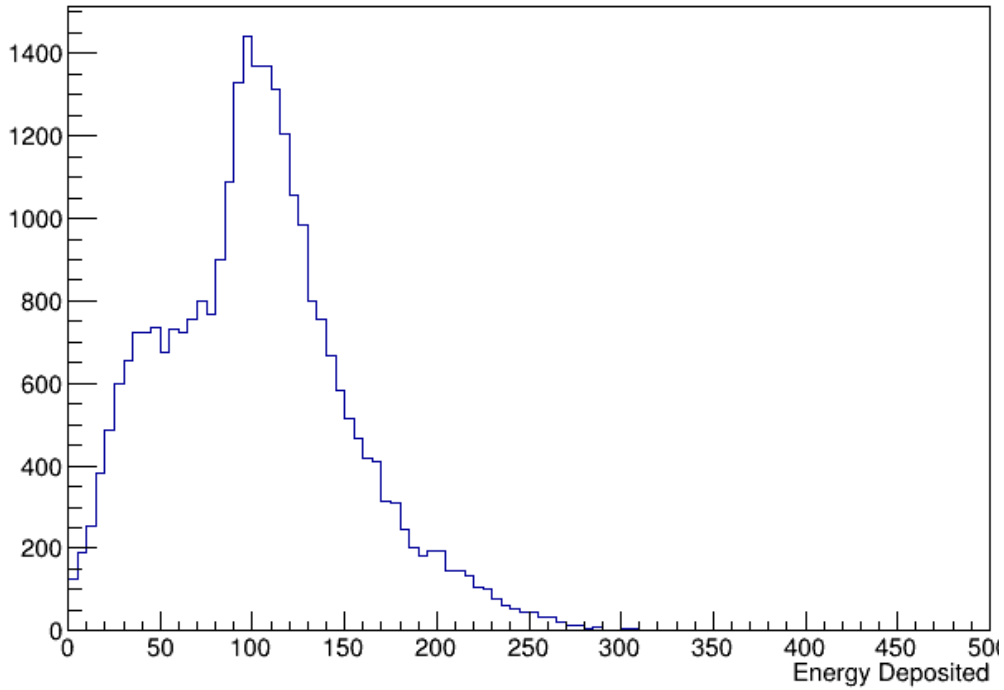
Energy deposited (in SSRI)
Needs to be per unit length!
May describe the first peak

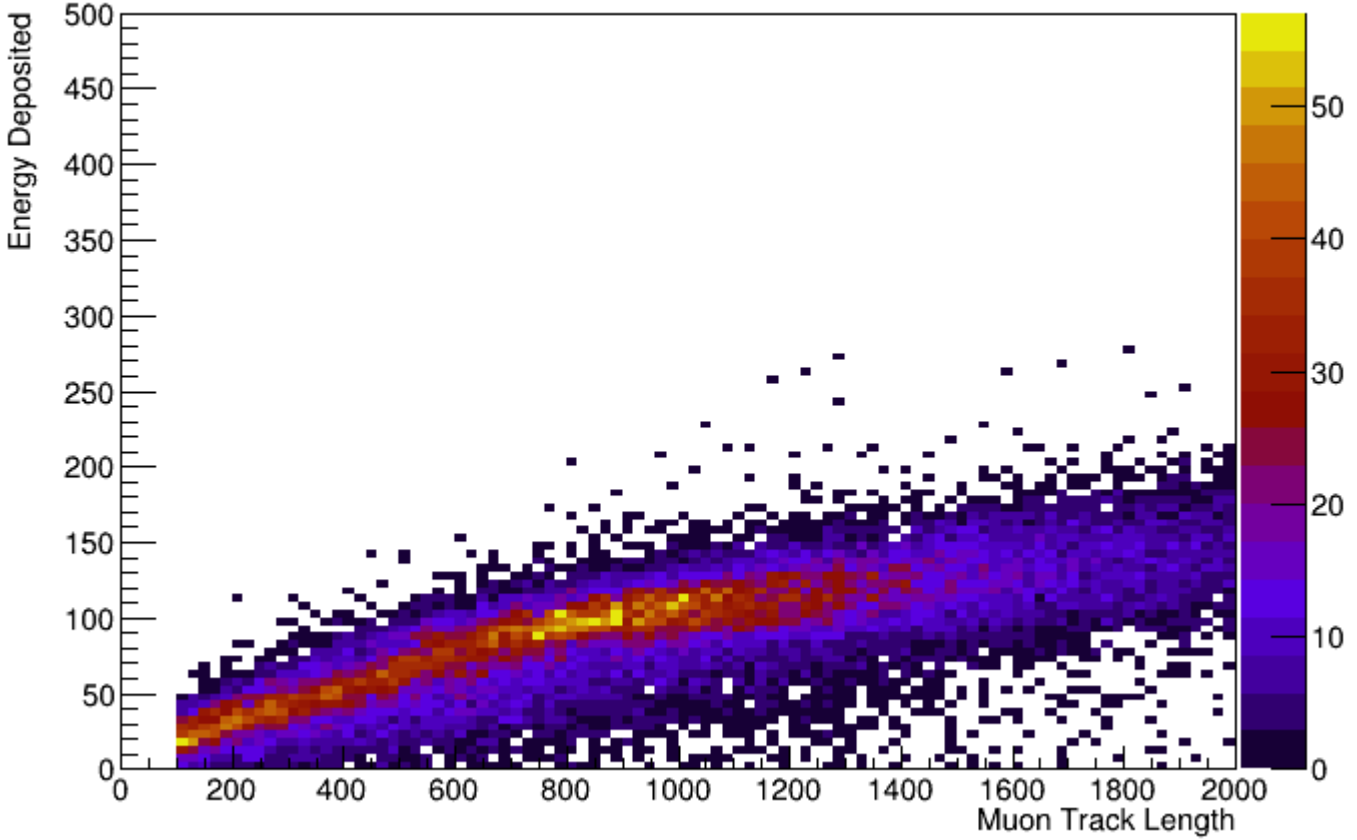




Vs. muon momentum here

Energy deposited (in SSRI)
Needs to be per unit length!
May describe the first peak





Vs. muon track length here (cut > 100 cm)
Note track length accounts for the steel

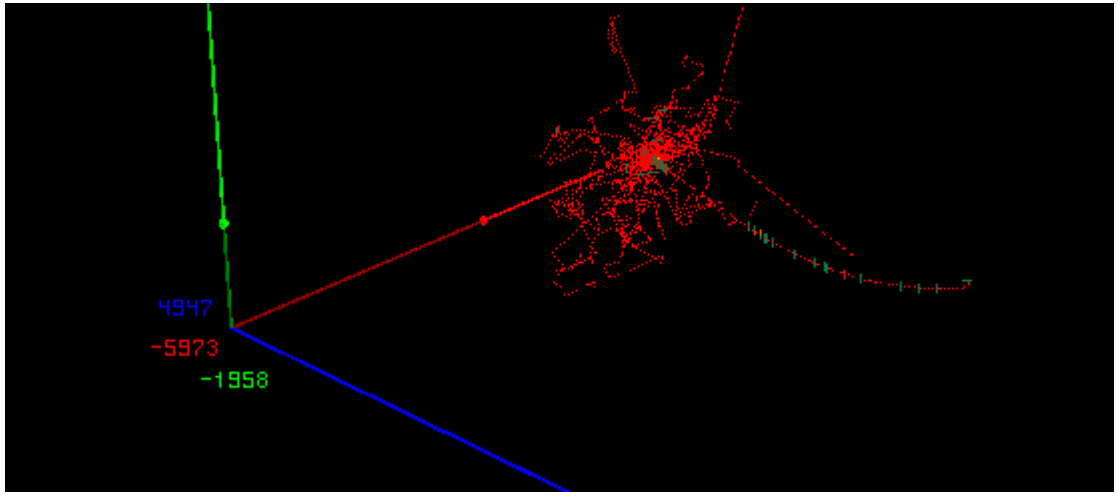
Summary

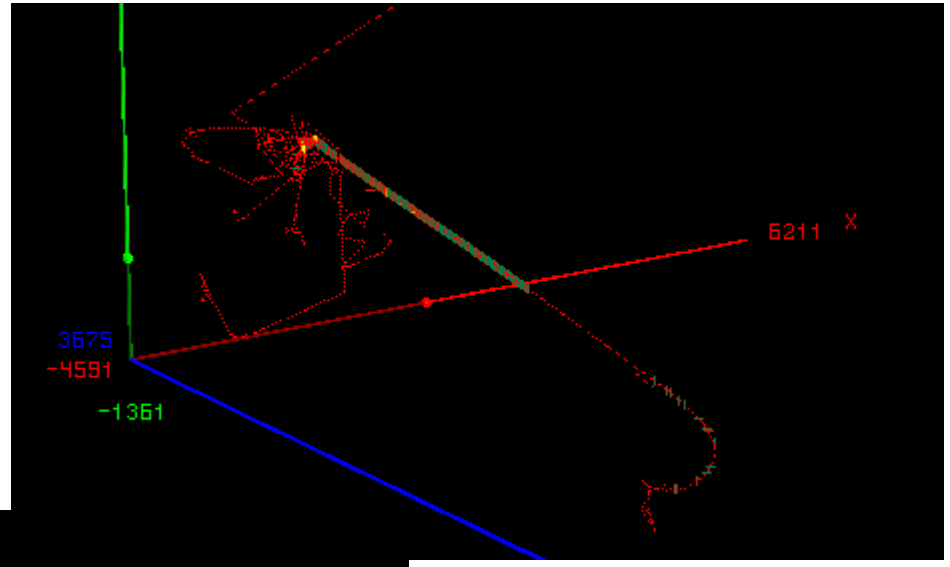
- Should have first look at effect of moving up SSRI 0.5 m in short order
  - Simulation is complete – just need to run analysis scripts over the output
- Need to add dx (per unit length) to energy deposited plots
  - Work towards muon resolution
- Charge ID is my biggest headache.
  - I must be doing something stupid
  - Attempted a simple geometry manipulation using angle of vertex/exit point(ArgonCube) vs. ssri entry/exit
  - Missing something obvious – will ask offline
- More in progress – this is overdue update.
- What's priority?

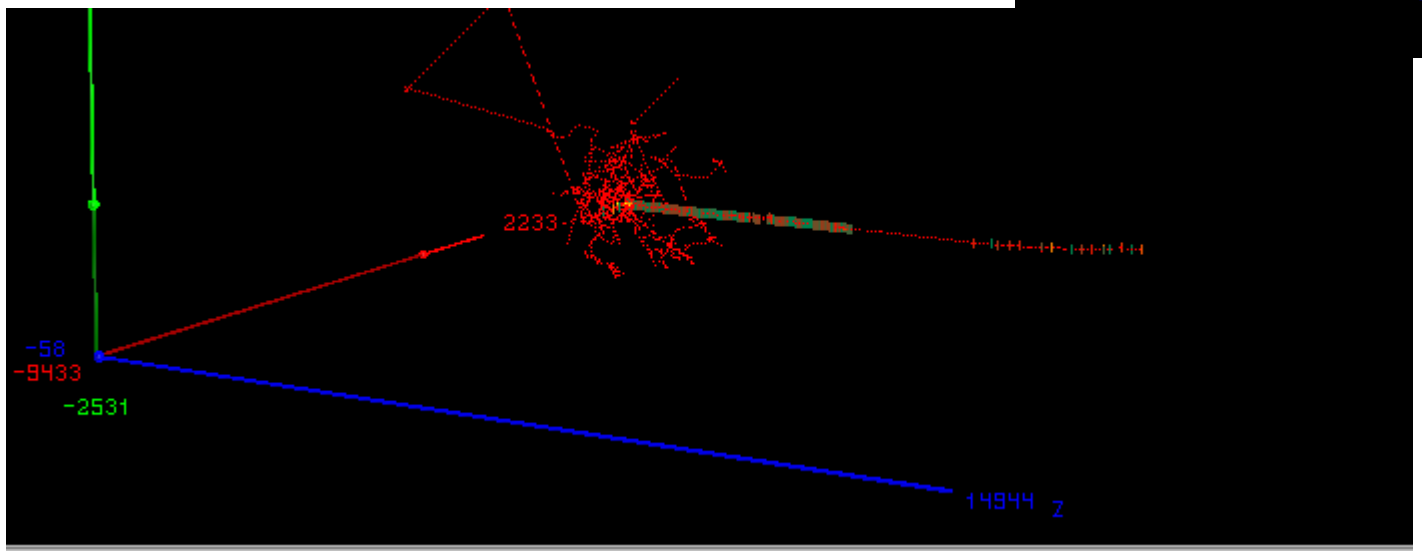
SSRI Sim status

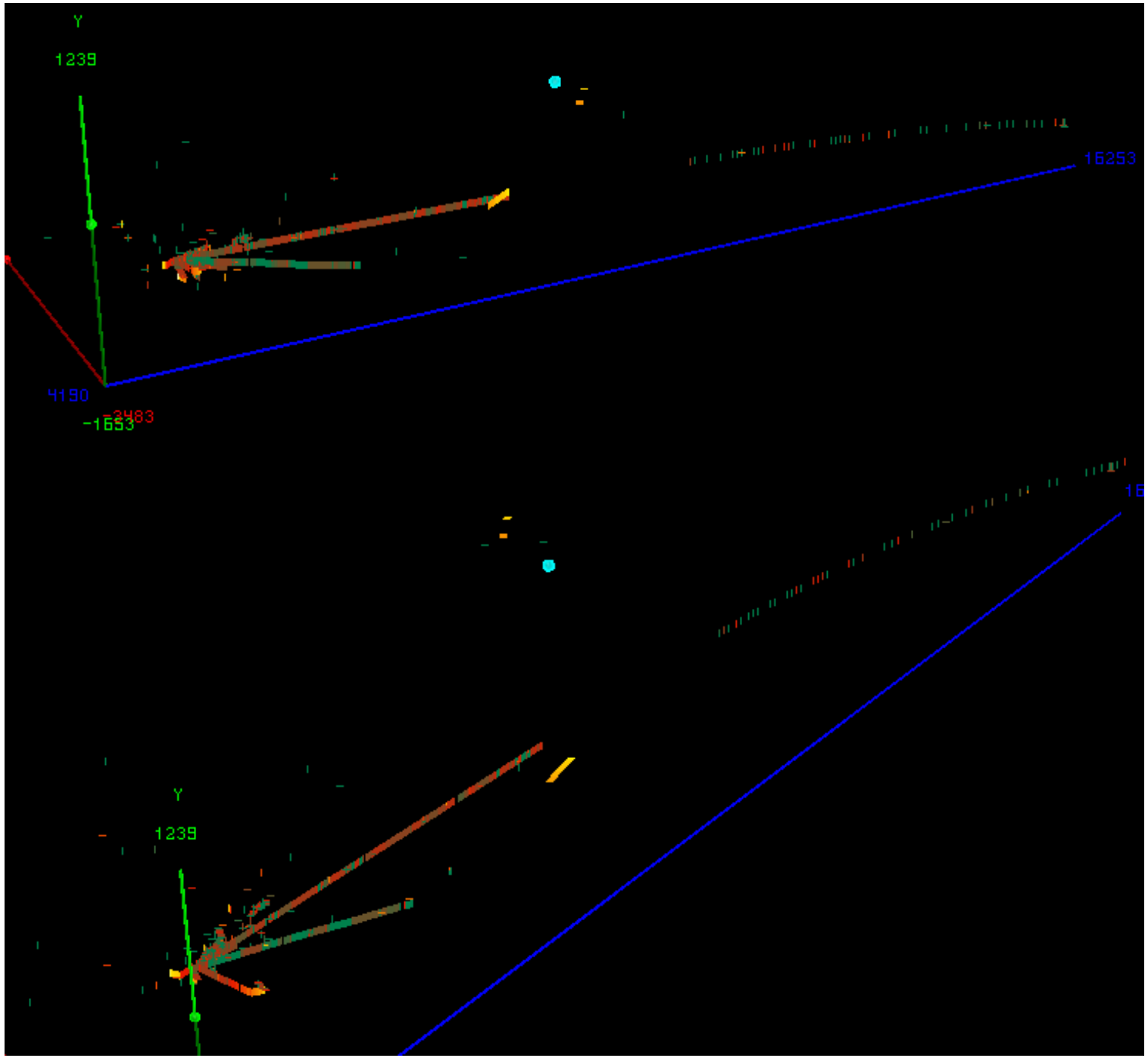
Starting from analysis scripts that run *edep-sim* from Chris M.

edep-disp allows for some simple event displays – albeit very, very slow





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