

2x2 Data CAF Validation/Performance

Roberto Mandujano



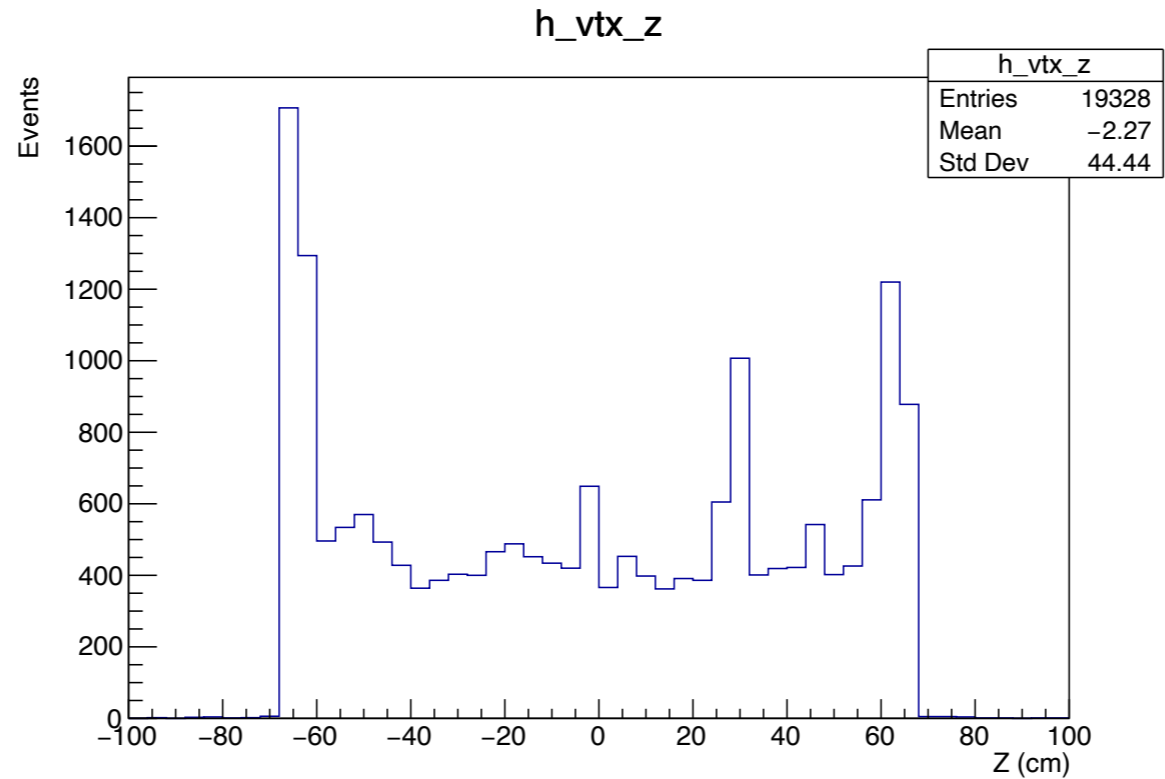
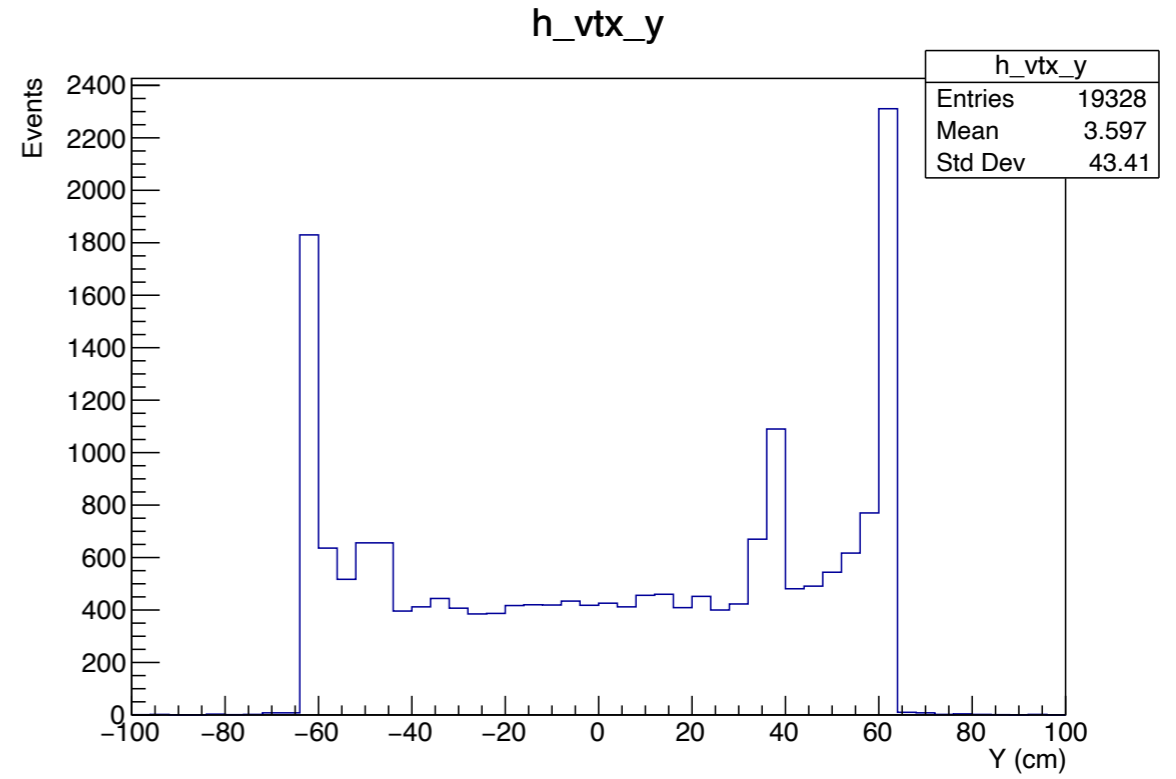
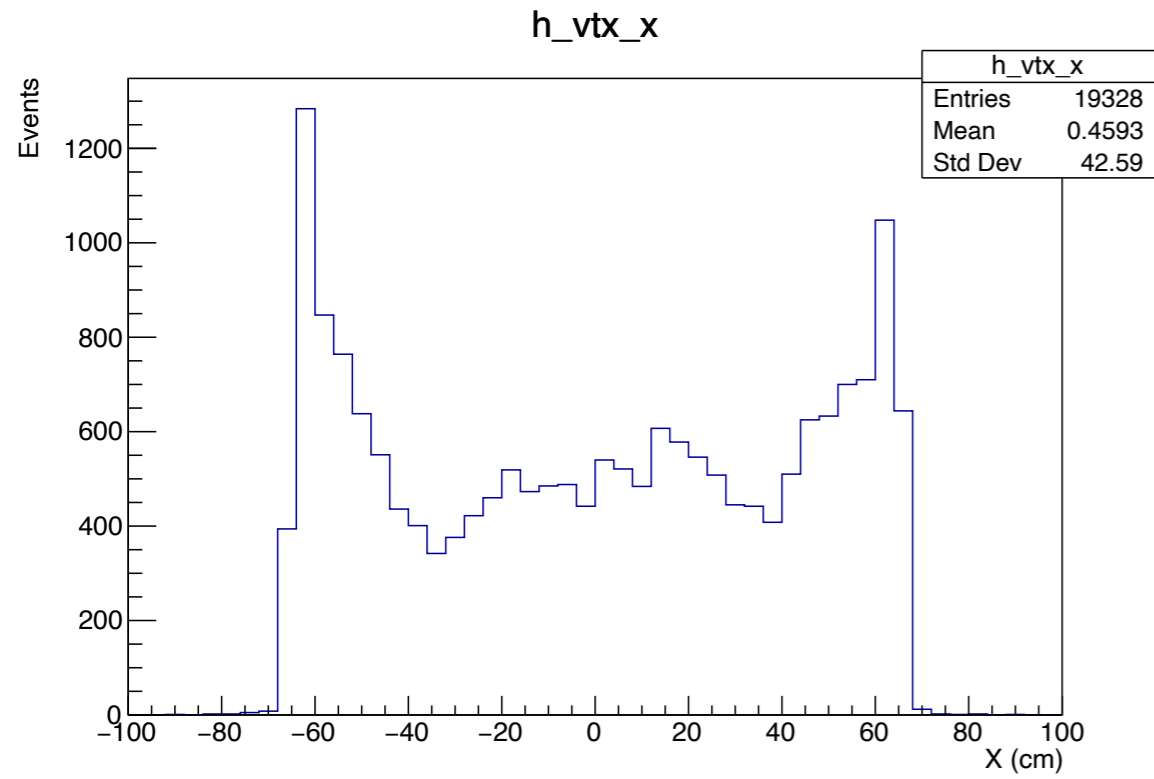


Background

- Goal: Develop a tool to validate reco performance for data CAFs
- Based on previous work for simulated CAFs by A. Cudd and E. Hinkle
 - Currently using Half-field data CAFs made by Sindhu
 - github.com/cuddandr/2x2_CAFs/tree/feature/ehinkle_reco_benchmark
- Today, simple total, reco muon and reco proton distributions



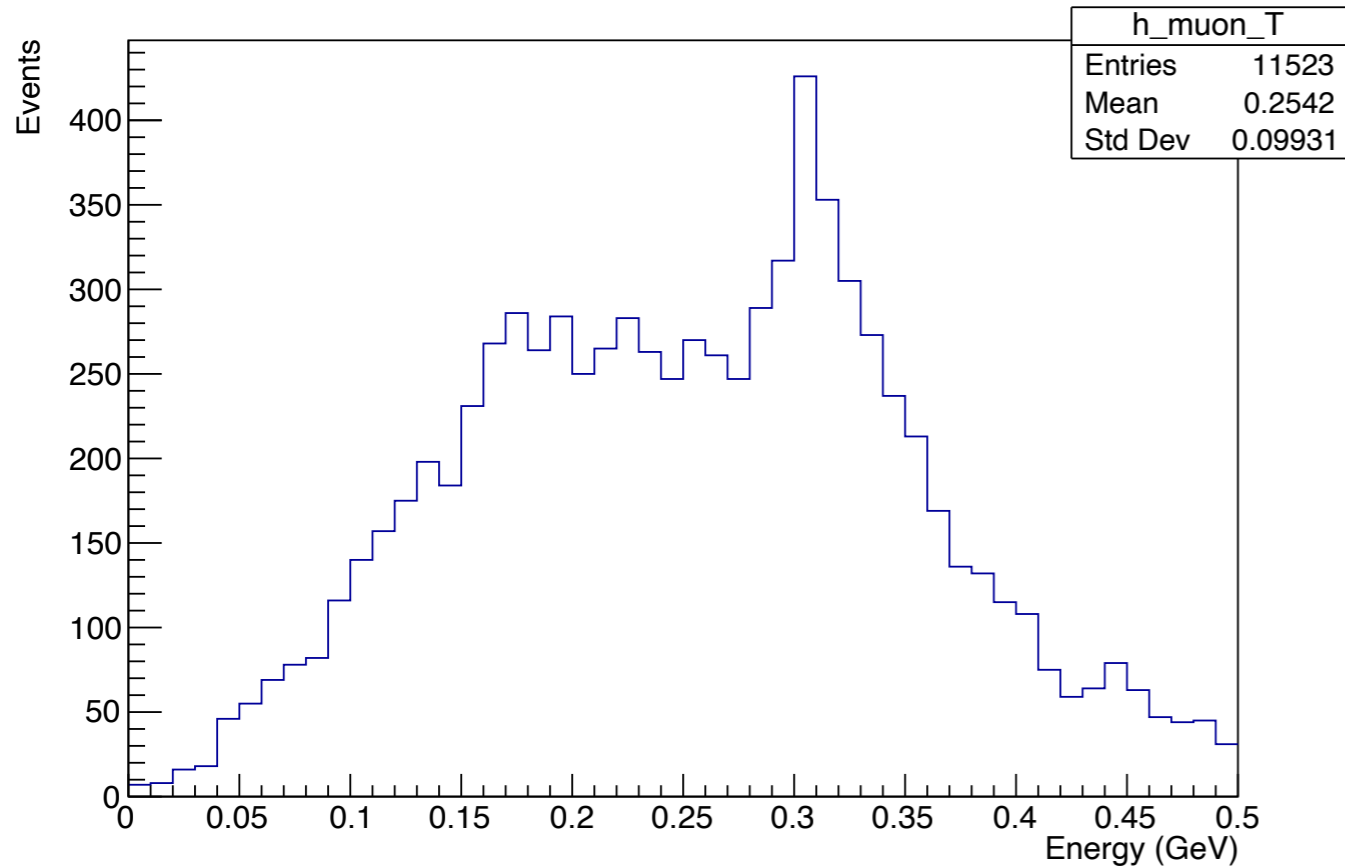
Vertices



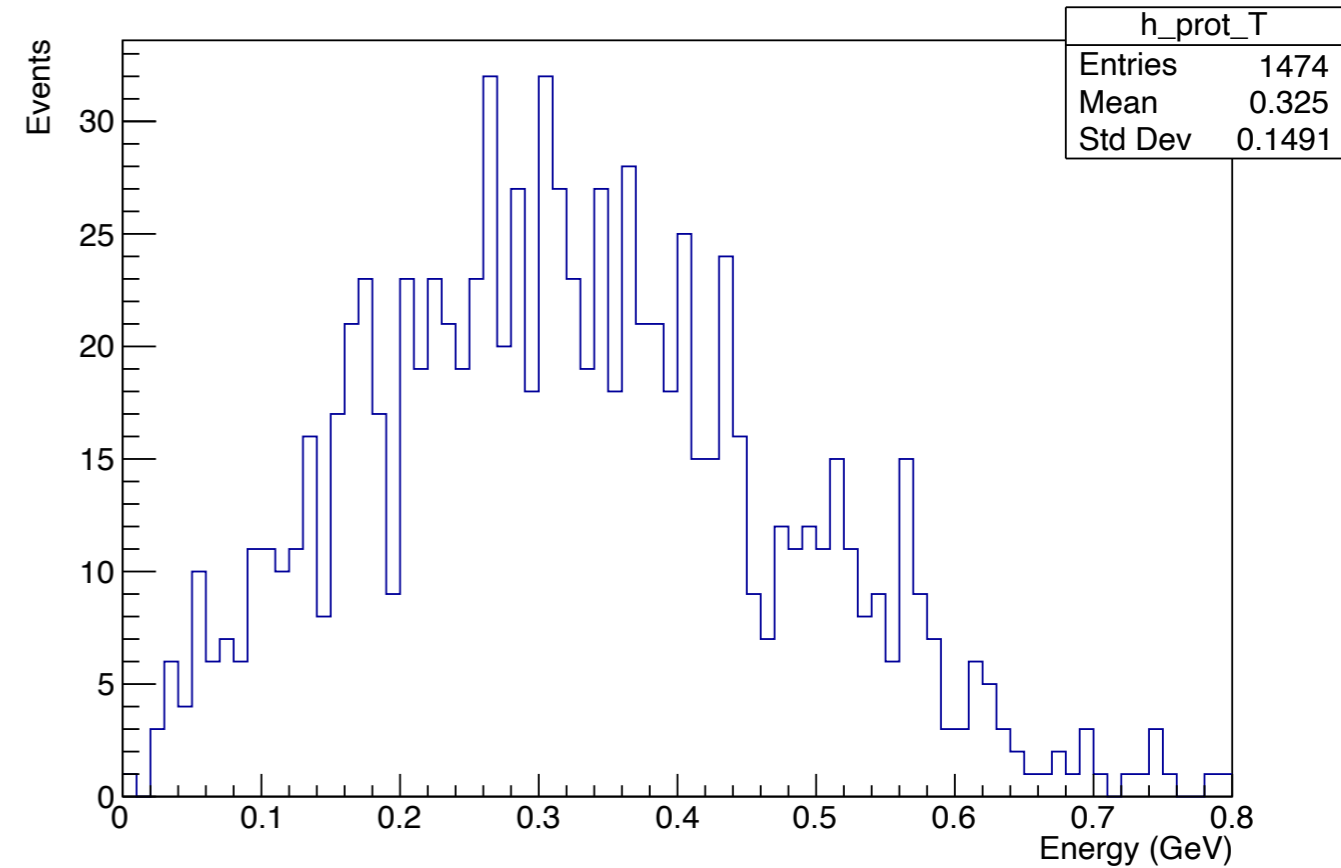


Energy

h_muon_T



h_prot_T

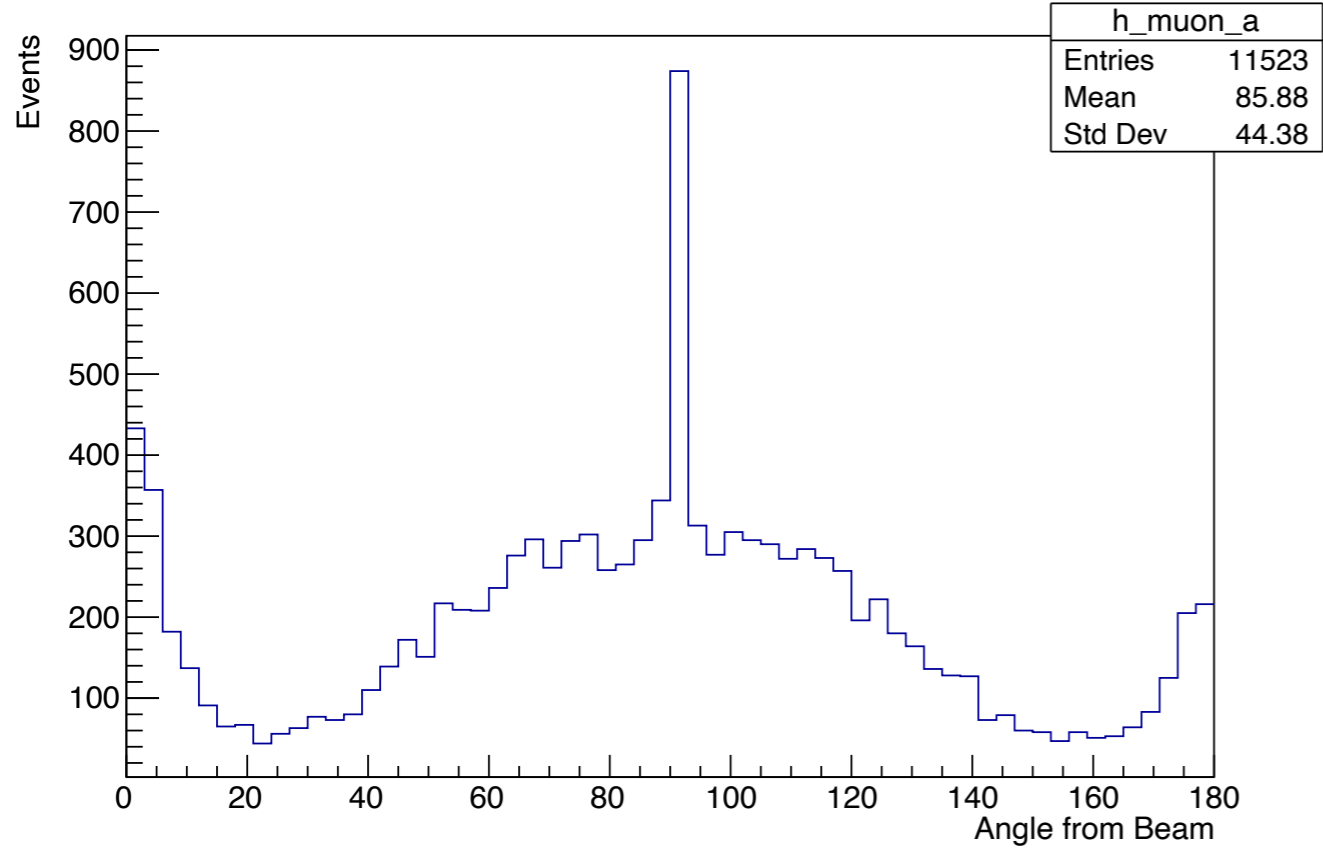


- As expected, we get higher muon statistics

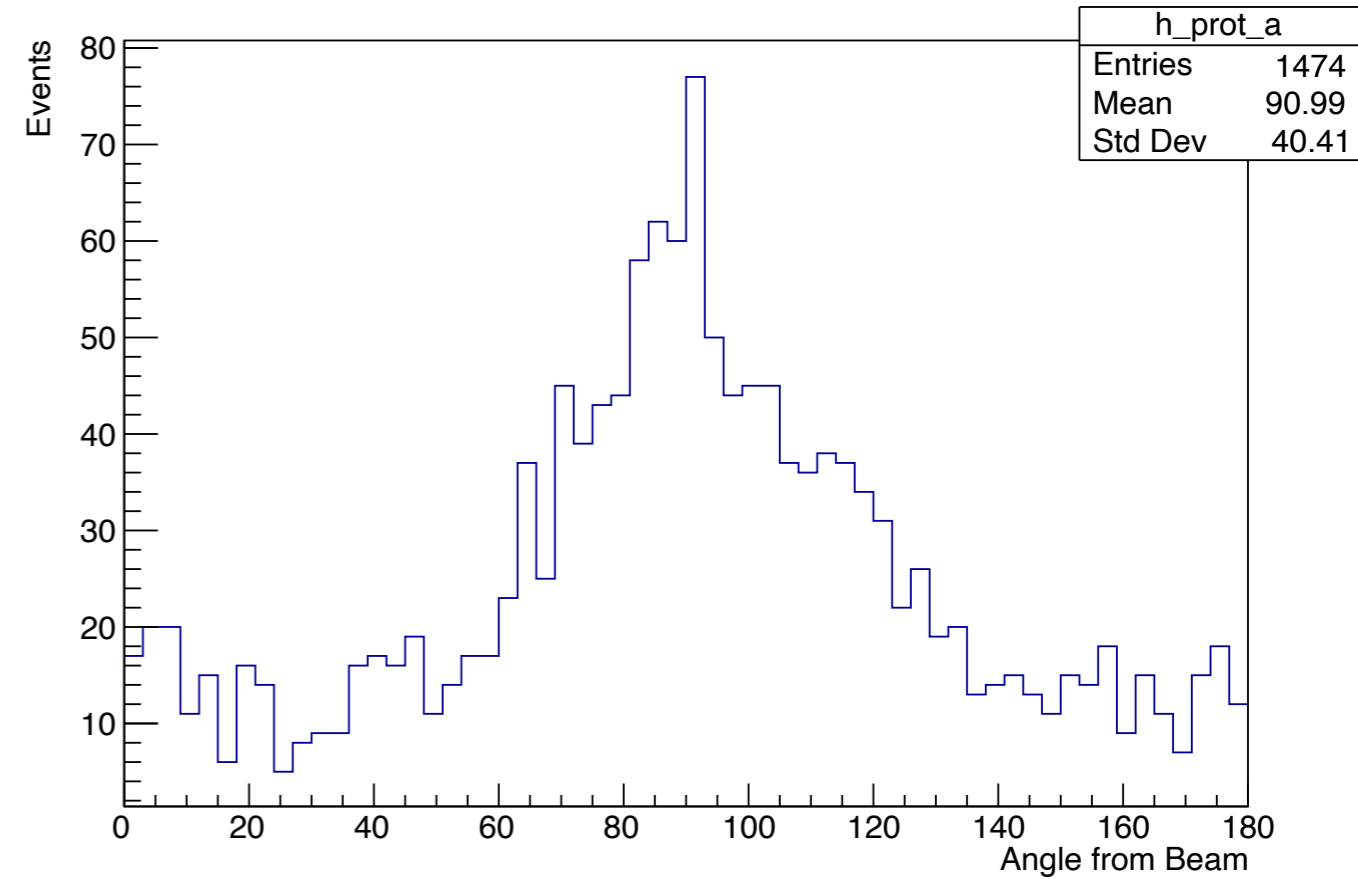


Angle w.r.t beam

h_muon_a



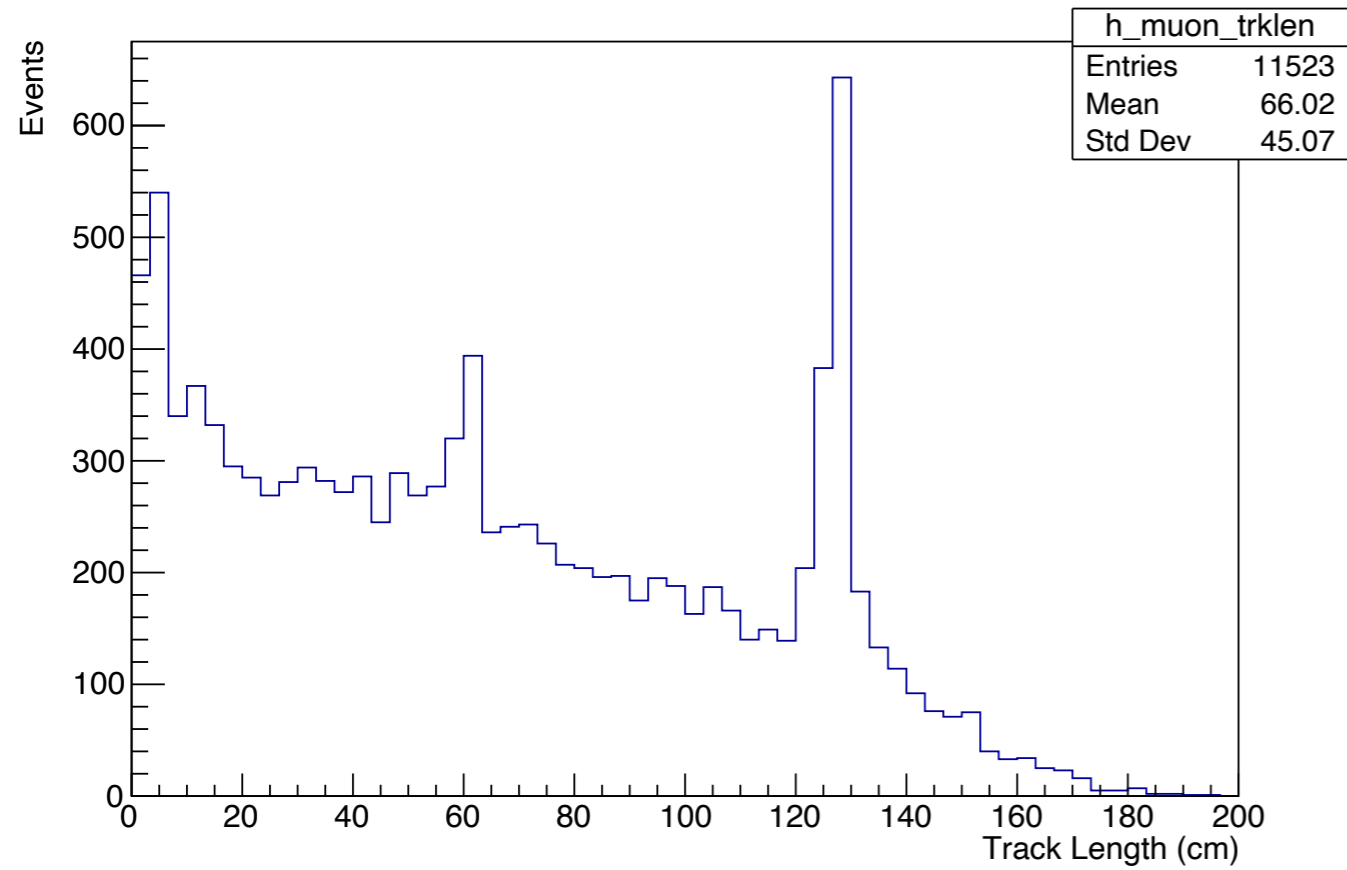
h_prot_a



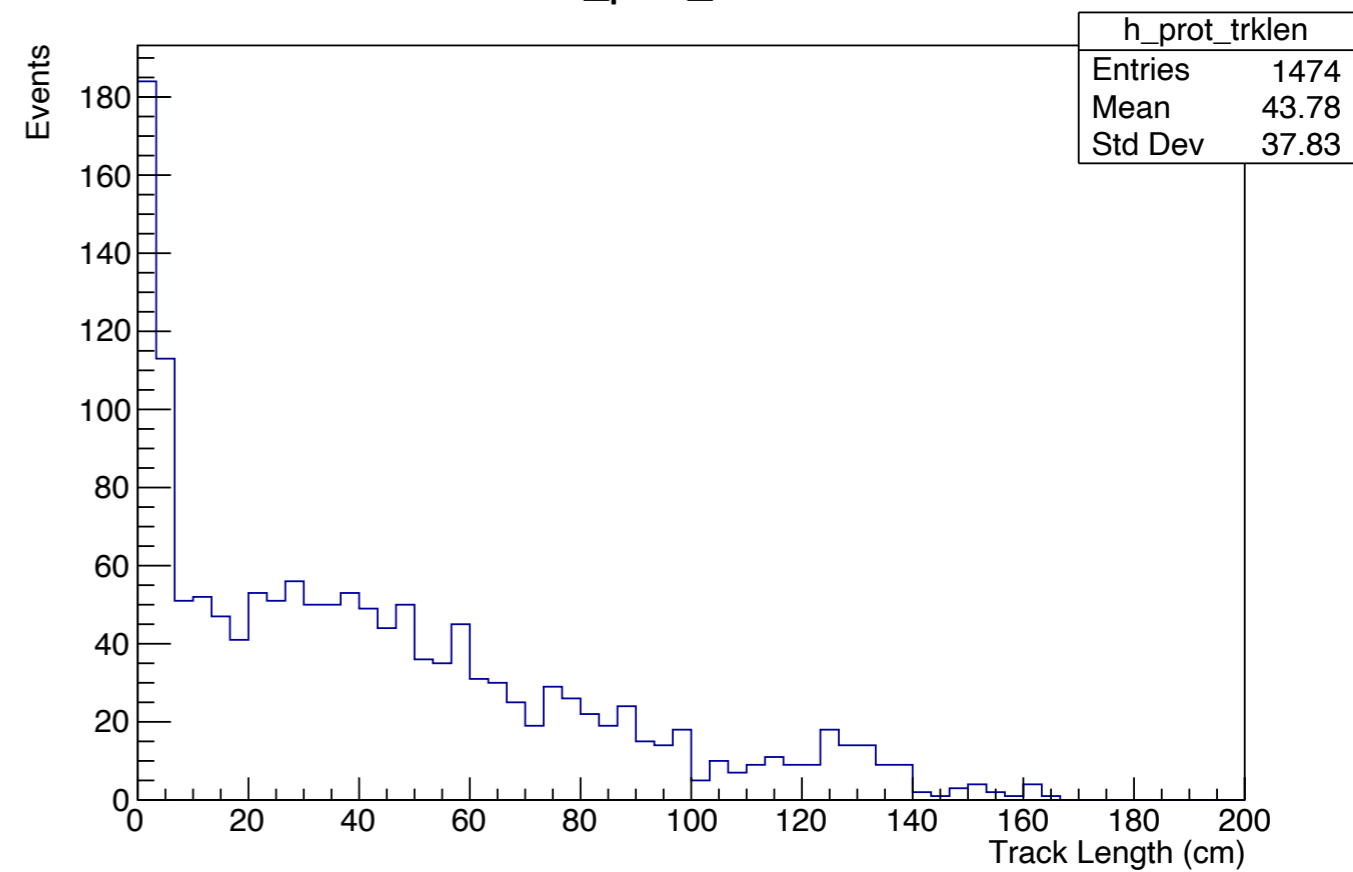


Track Length

h_muon_trklen



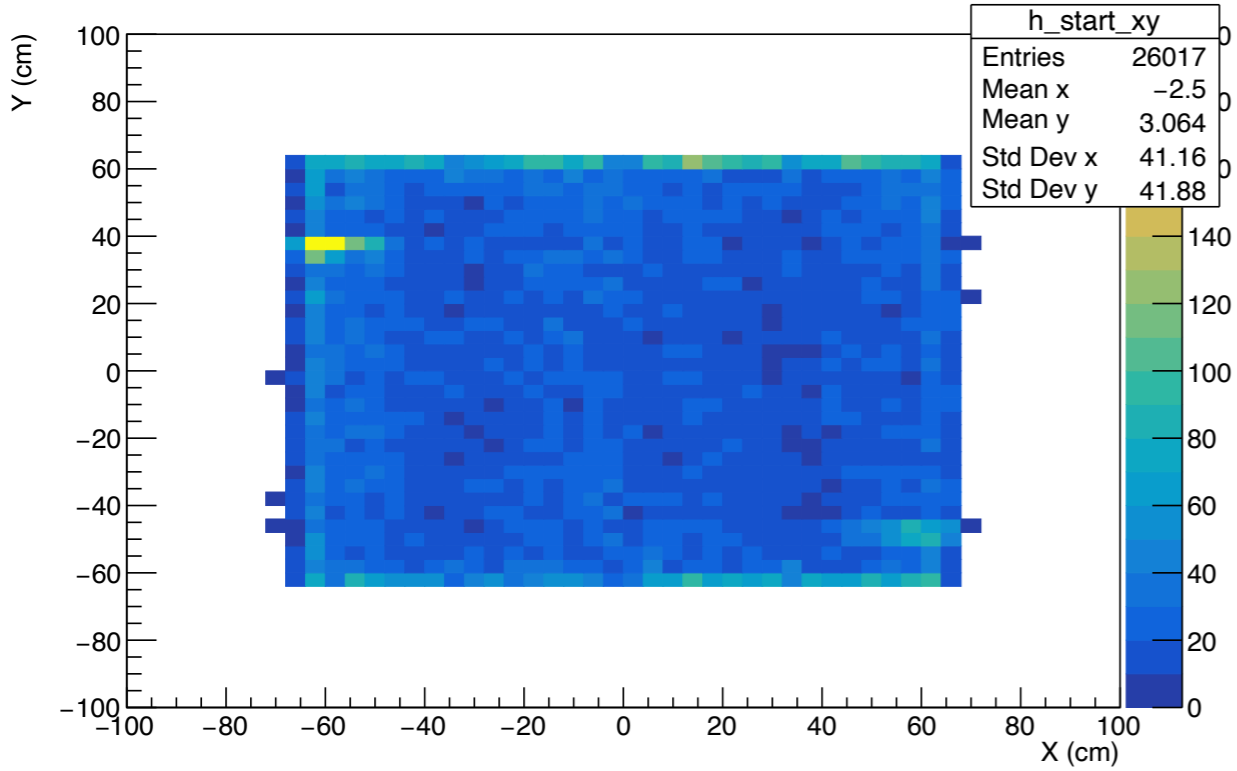
h_prot_trklen



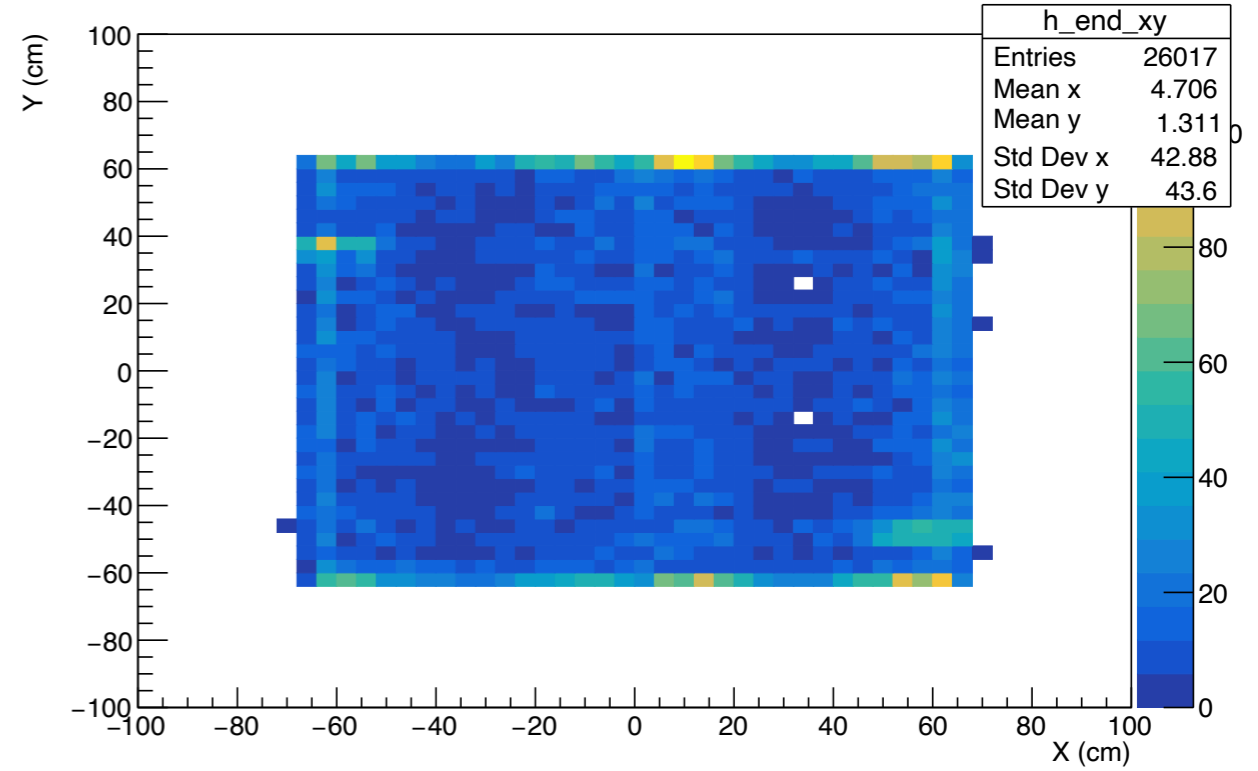


Track Endpoints XY, ZX

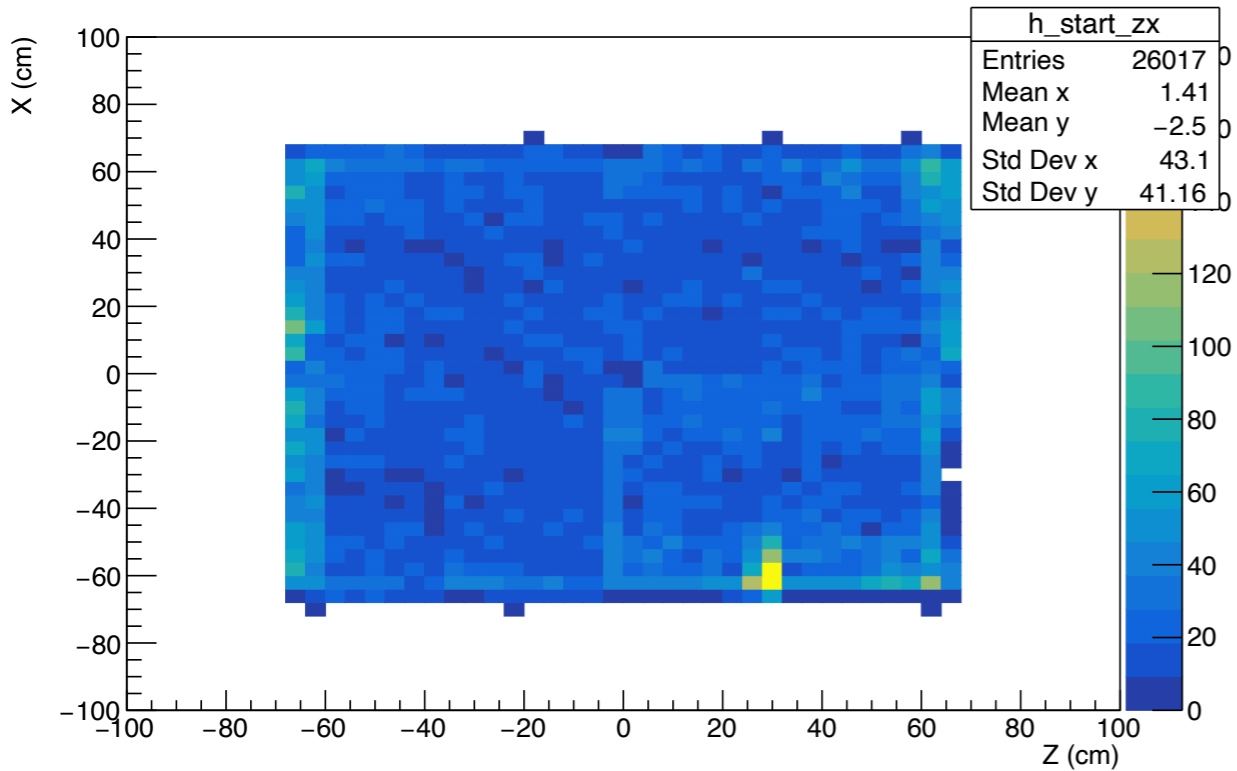
Reco Track Start X vs Y



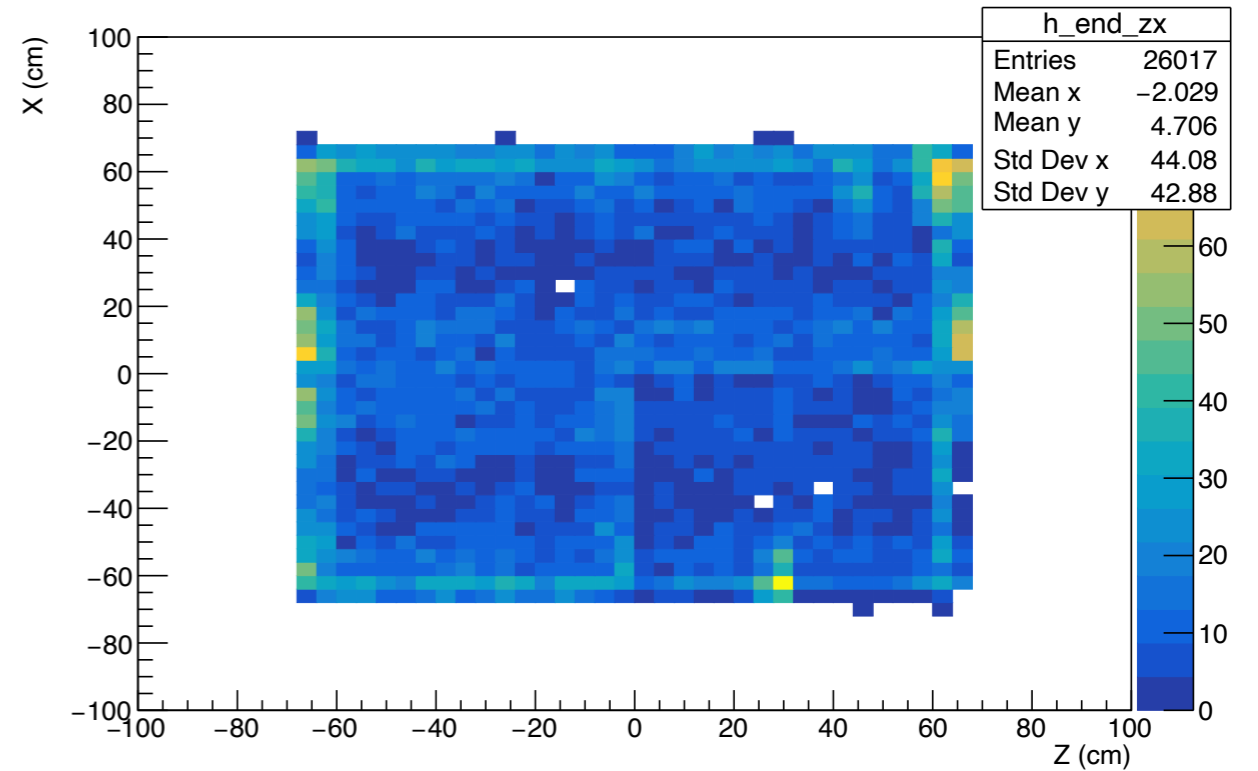
Reco Track End X vs Y



Reco Track Start Z vs X



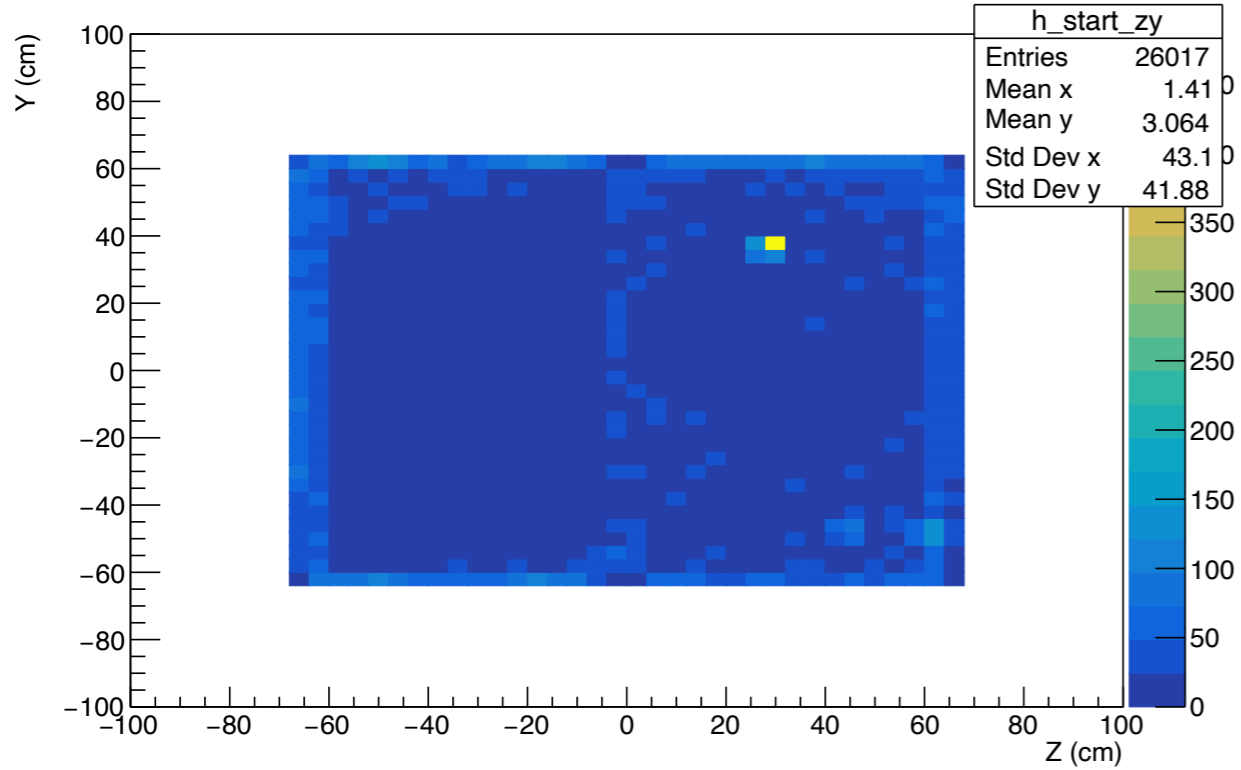
Reco Track End Z vs X



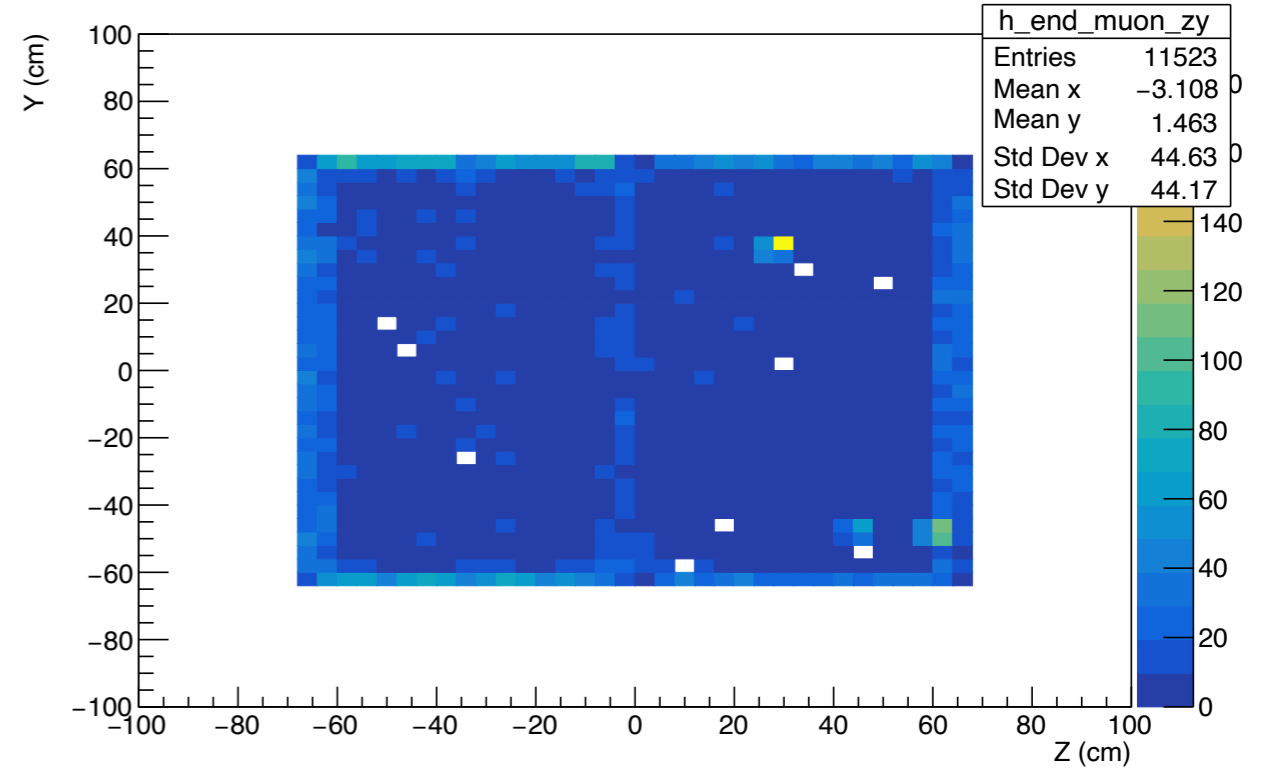


Track Endpoints ZY

Reco Track Start Z vs Y



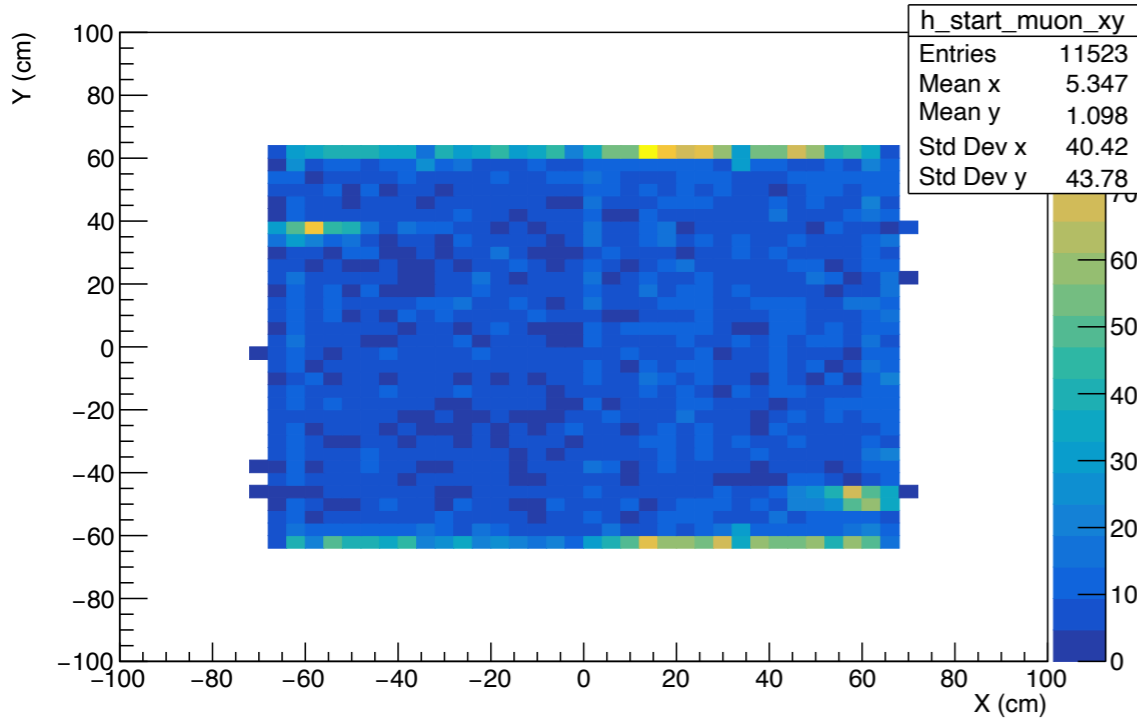
Reco Muon Track End Z vs Y



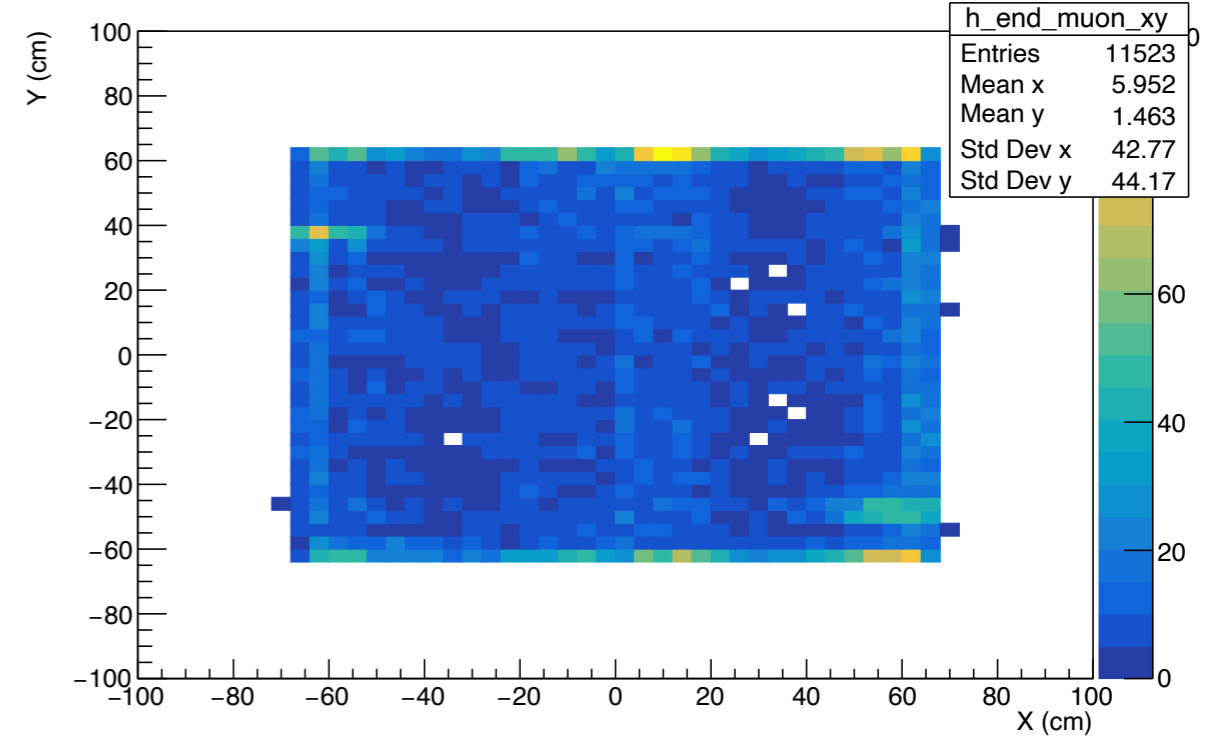


Muon Endpoints XY, ZX

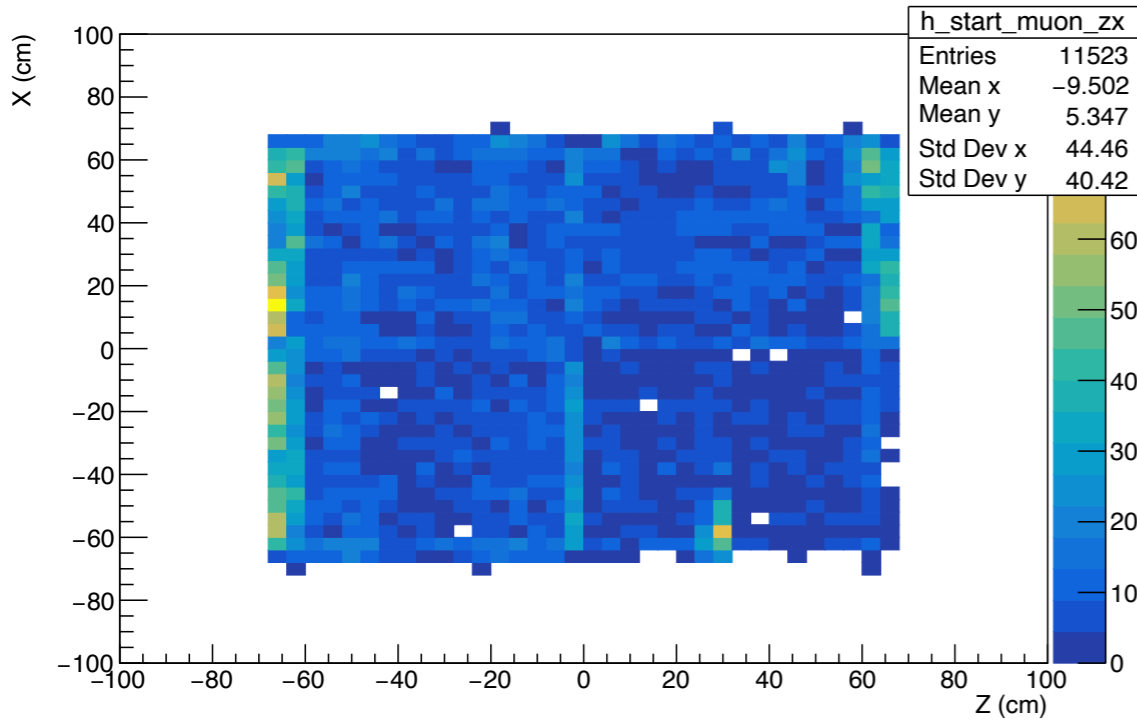
Reco Muon Track Start X vs Y



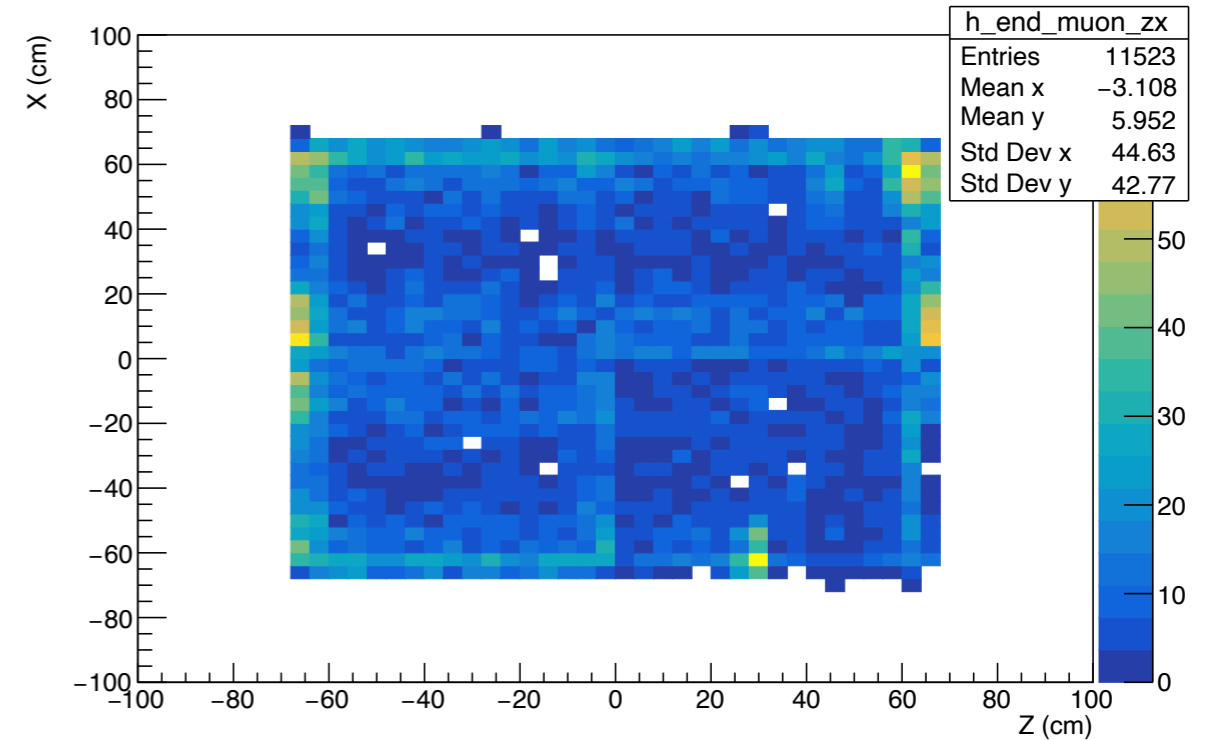
Reco Muon Track End X vs Y



Reco Muon Track Start Z vs X



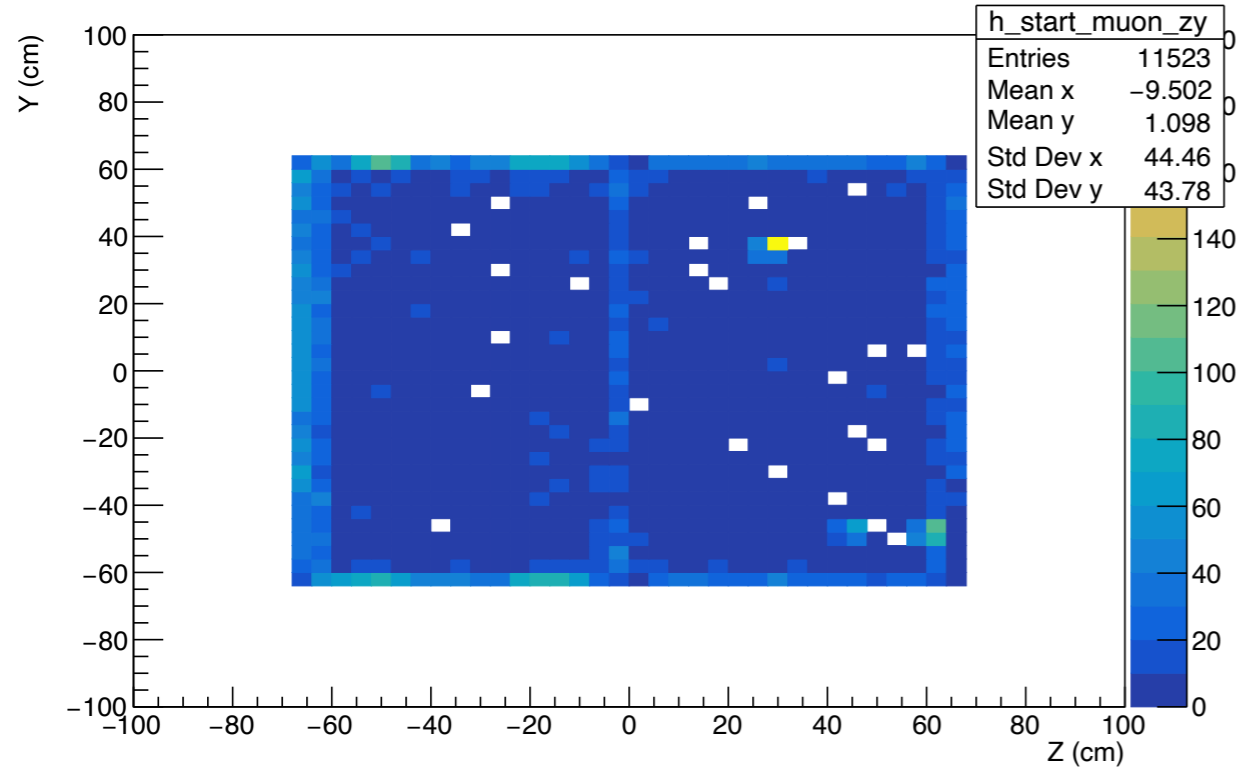
Reco Muon Track End Z vs X



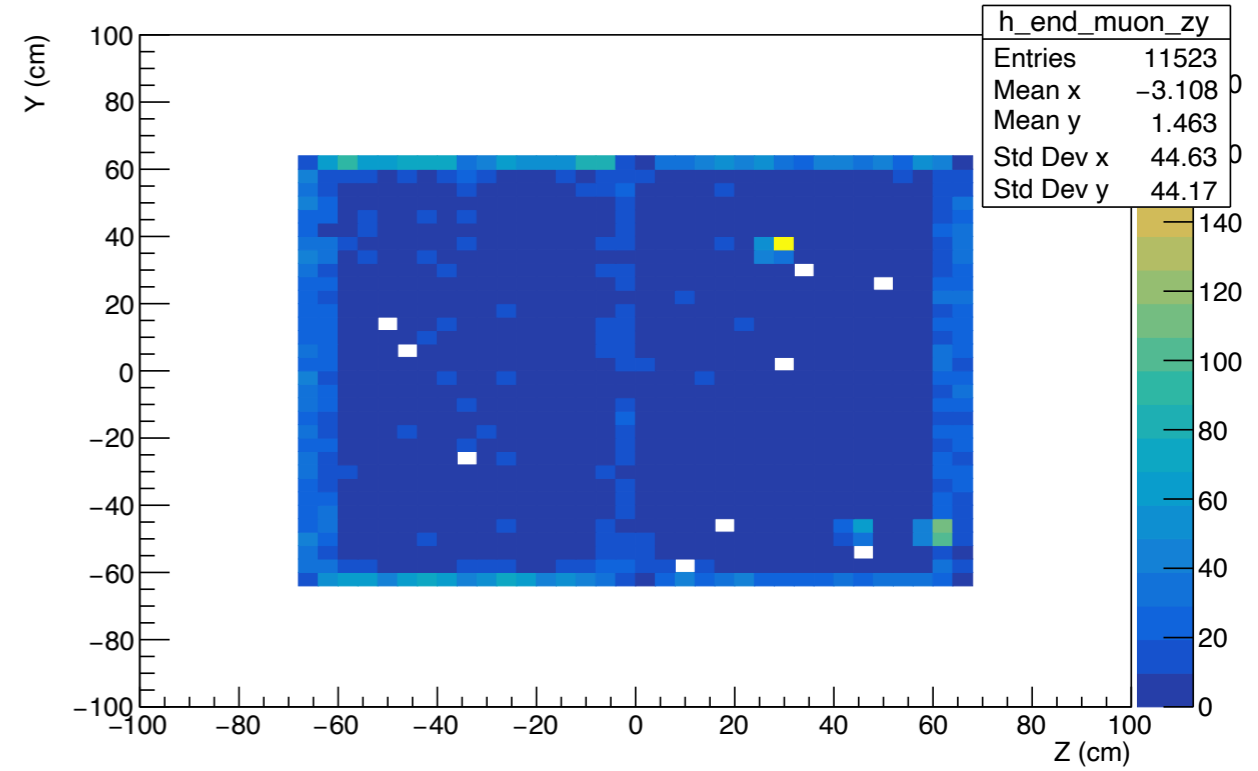


Muon Endpoints ZY

Reco Muon Track Start Z vs Y



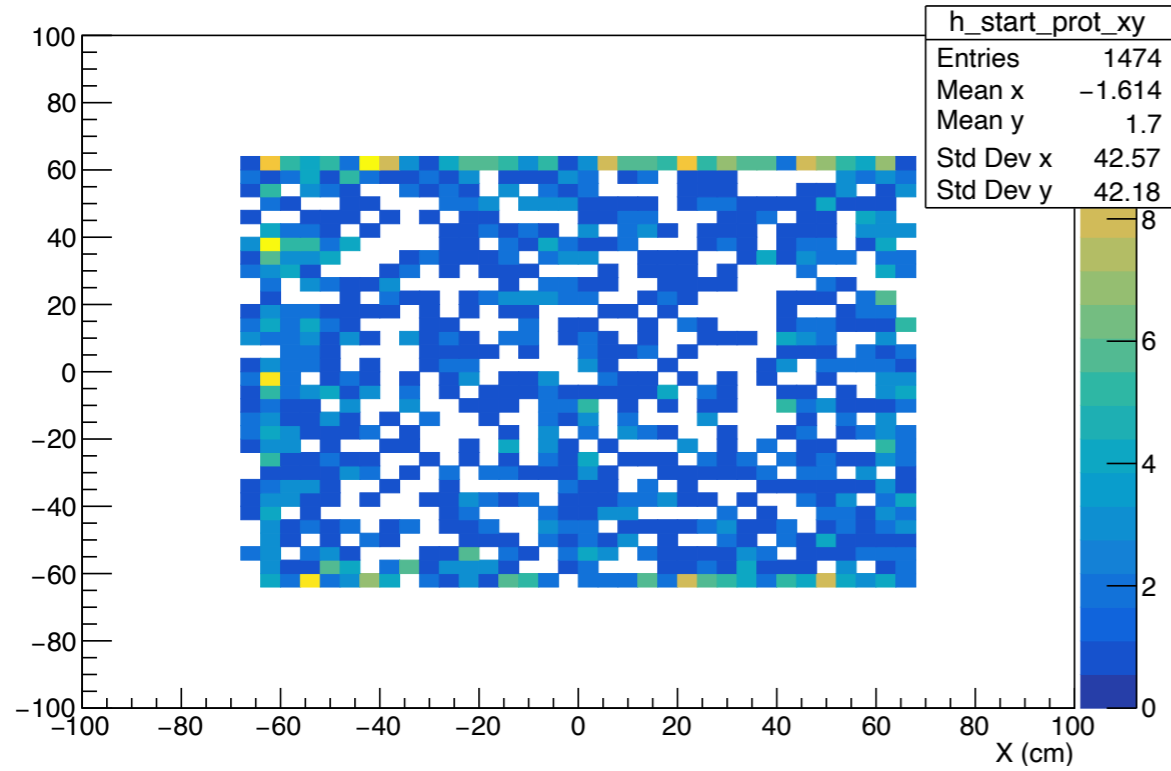
Reco Muon Track End Z vs Y



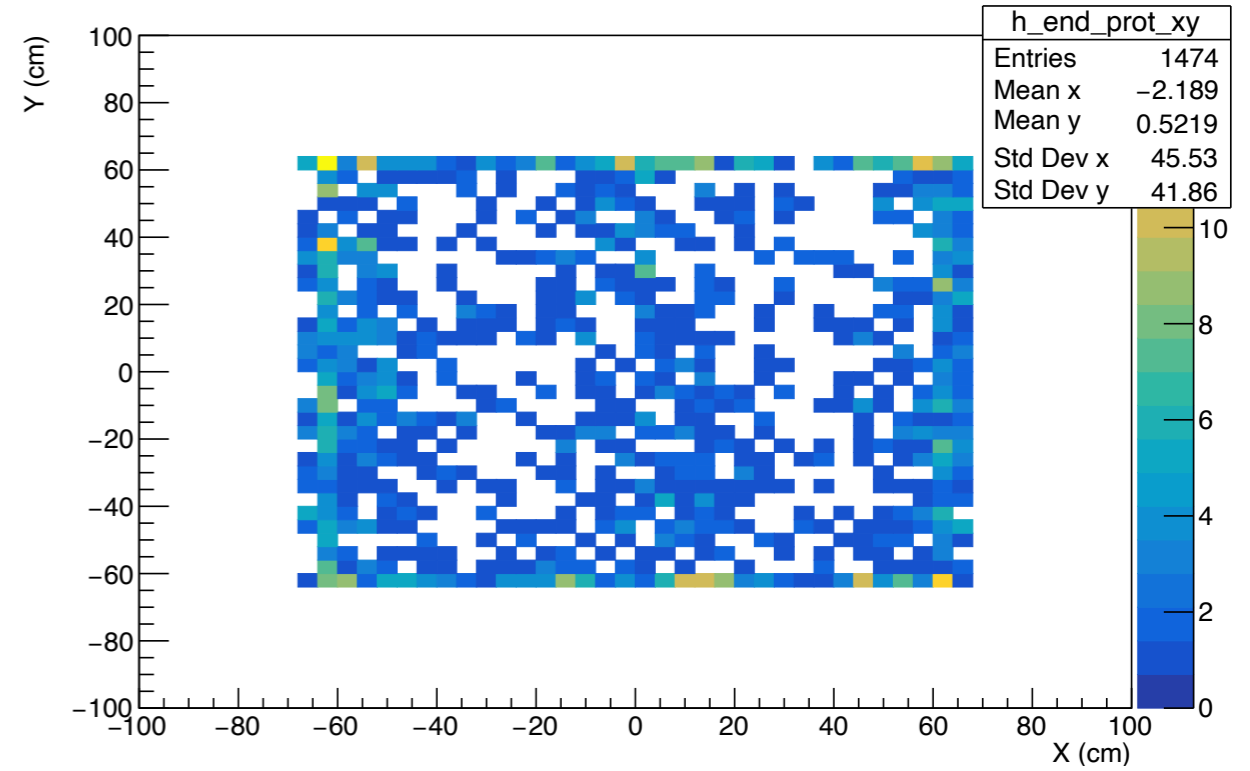


Proton Endpoints XY, ZX

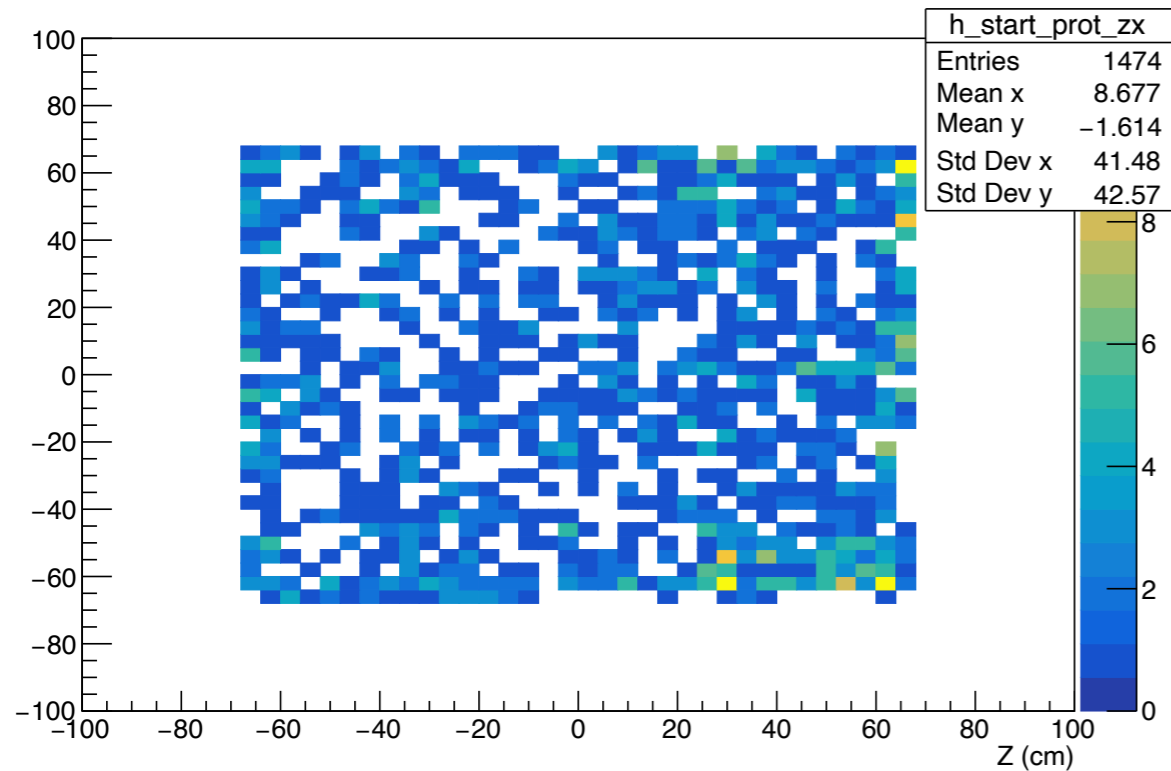
Reco Proton Track Start X vs Y



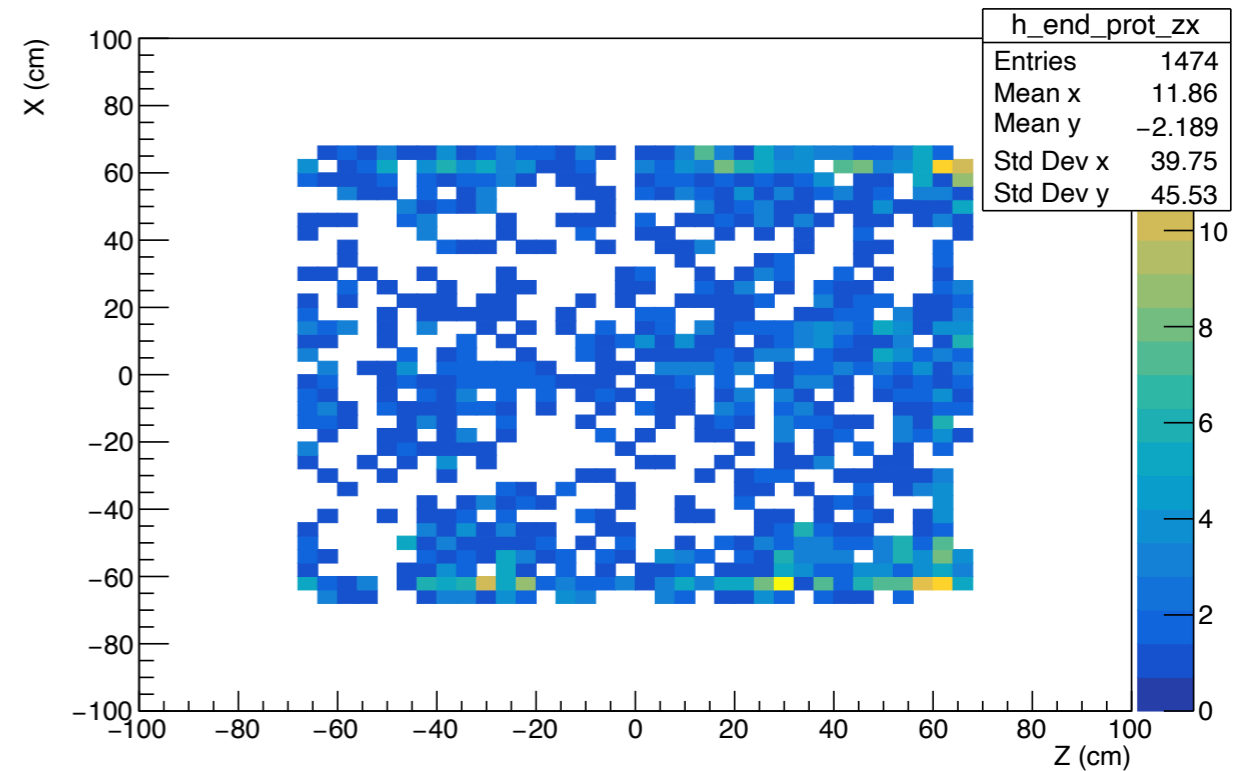
Reco Proton Track End X vs Y



Reco Proton Track Start Z vs X



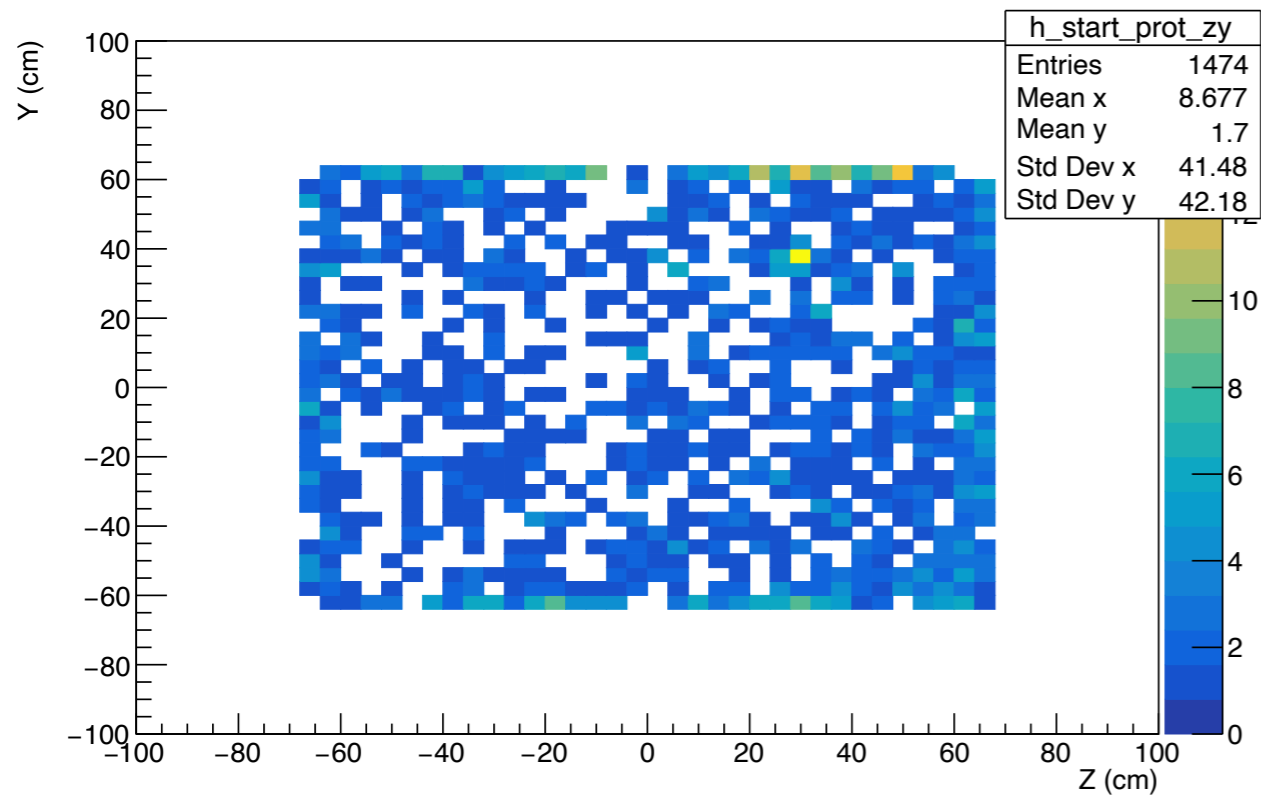
Reco Proton Track End Z vs X



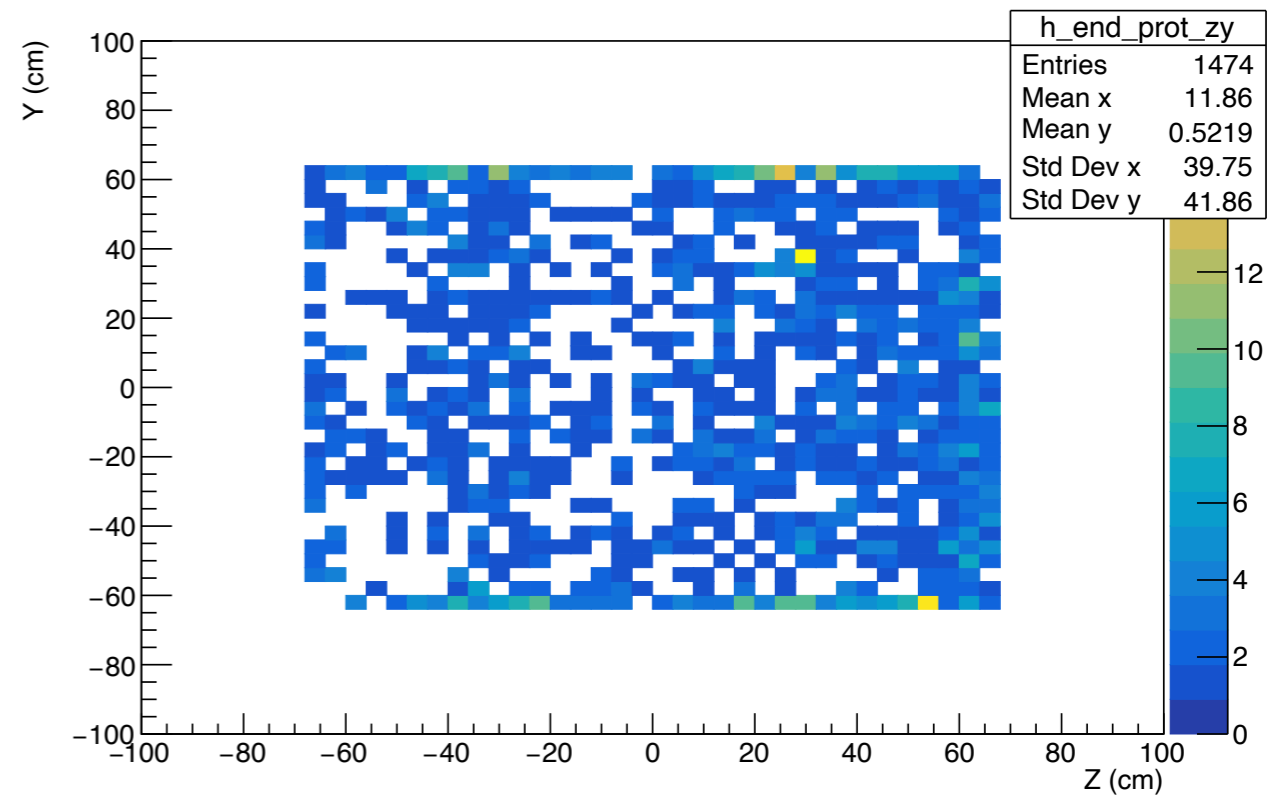


Proton Endpoints ZY

Reco Proton Track Start Z vs Y



Reco Proton Track End Z vs Y





Conclusions

- **Validation tool not in final form at all**
 - Taking any suggestions on plots of interest!
 - Elise had developed some nicer plotting, merge style
 - Determine some “goal” distributions to overlay over data
- Run on sandbox when available as CAF



Total Distributions

