

What I Am Doing

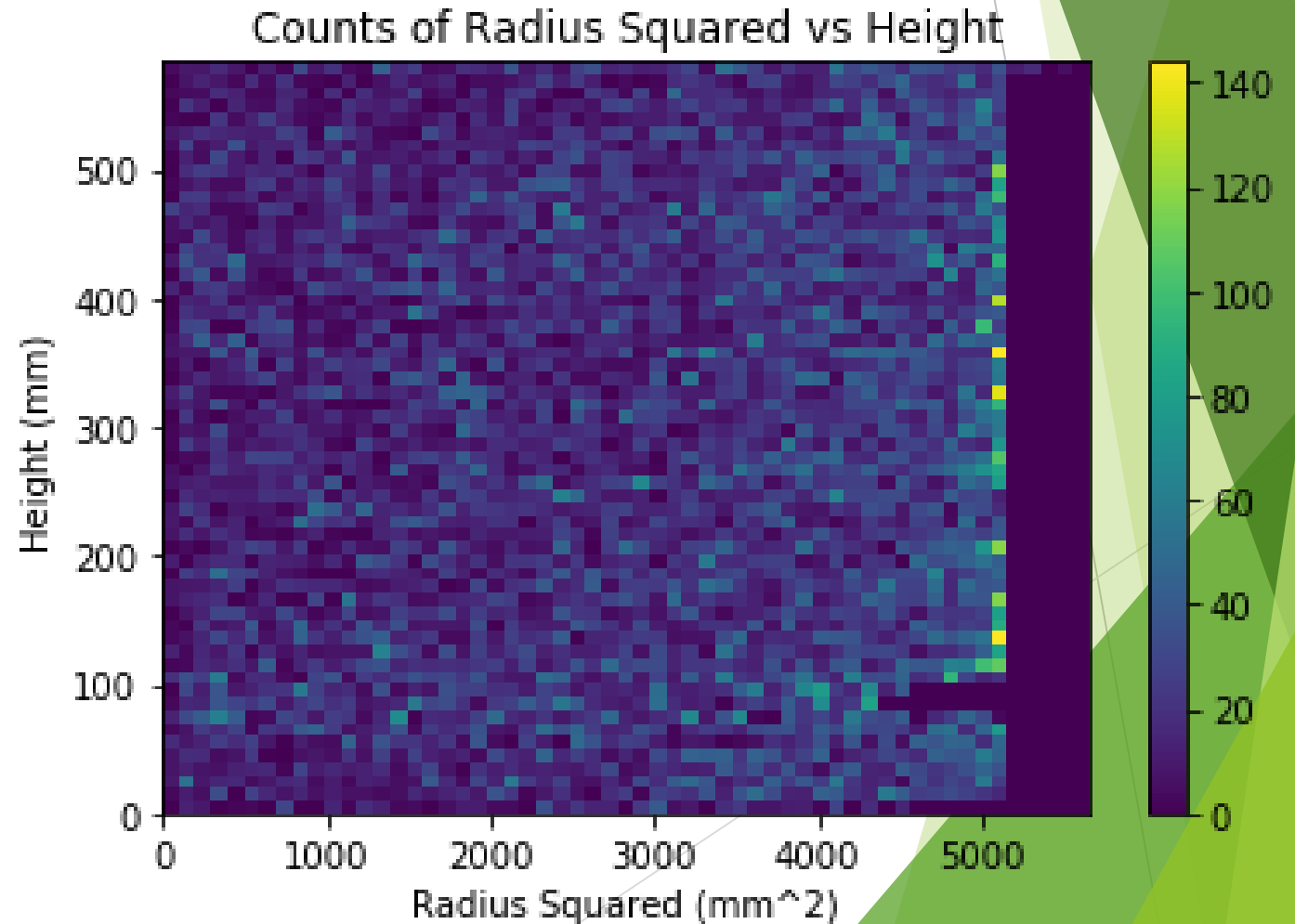
Simulating Background Decays in the Phase 1 Detector

Today's Slide is [Here](#)

Plots!

Concerns

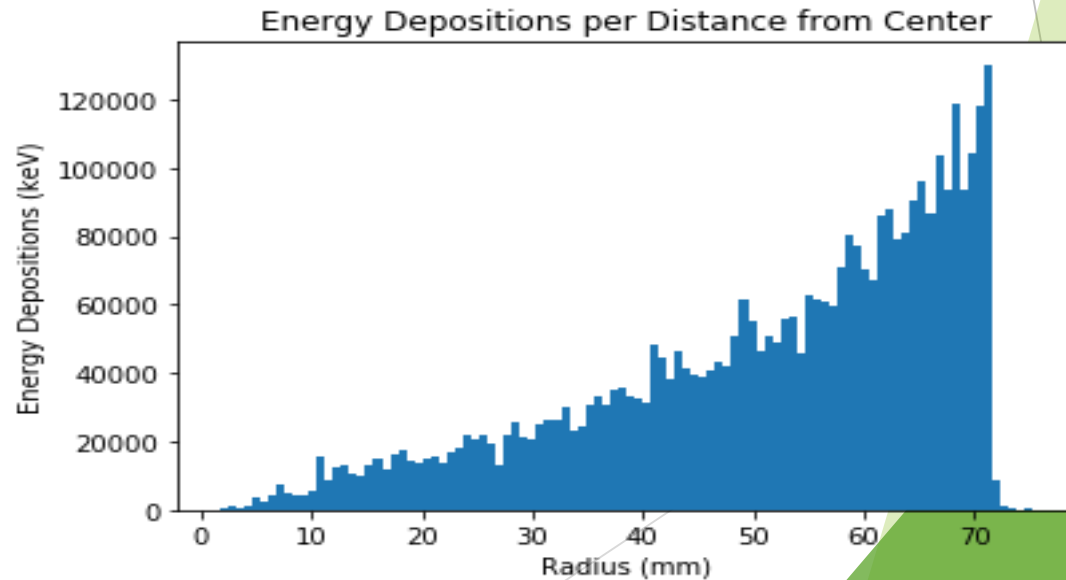
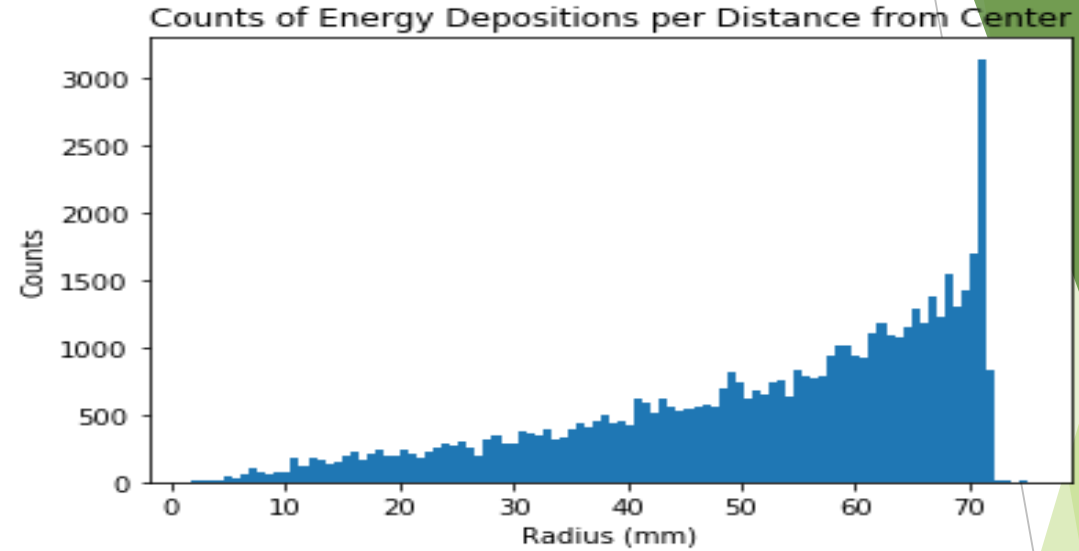
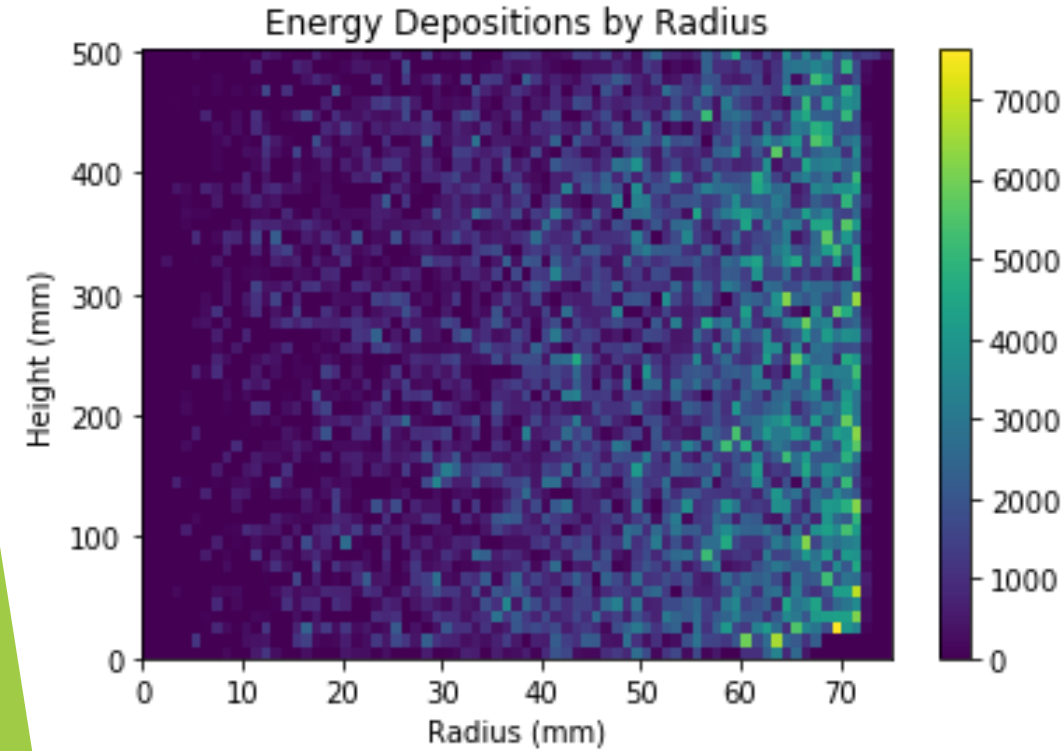
- ▶ Time threshold?
- ▶ Does not line up exactly with parameters (especially height)
- ▶ Gap at 100mm height



Still To Do

- ▶ Fix Current Issues
- ▶ Use Energy Values Instead of Counts
- ▶ Try Simulating Decays from Bottom
- ▶ Possibly other Materials?

Energy Depositions and Correct Dimensions



Still To Do

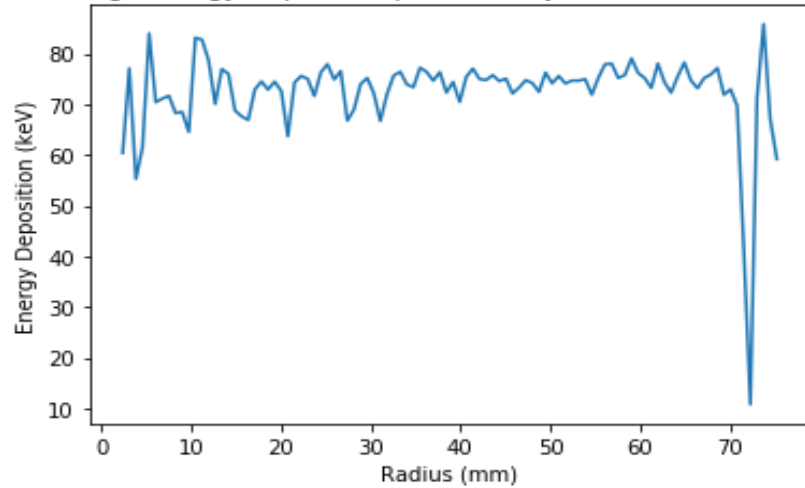
- ▶ Find decay rates in area
- ▶ Fix geometry problems
- ▶ Other materials?

Thermal Neutron Scattering

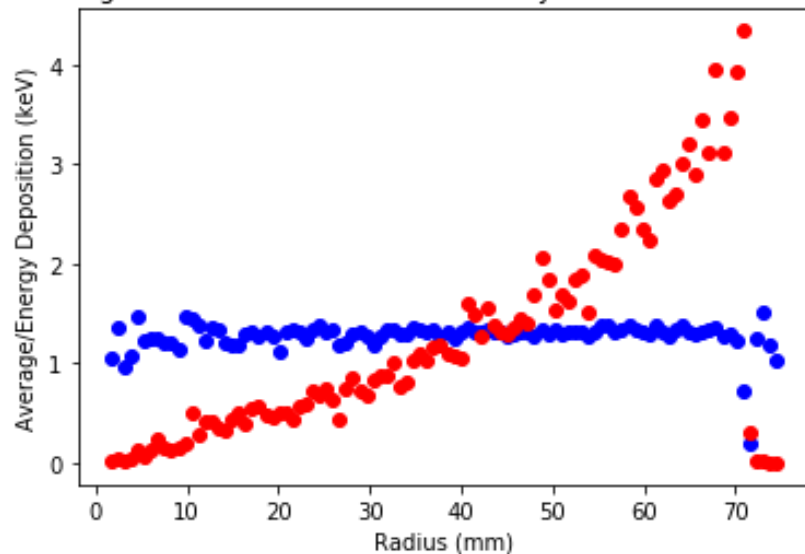
- ▶ https://indico.cern.ch/event/245281/contributions/1564676/attachments/420136/583408/thermal_physics_validation_argarcia.pdf
- ▶ <http://pubs.cnl.ca/doi/pdf/10.12943/CNR.2017.00002>

Average Energy Deposition

Average Energy Deposition per Event by Radius (Pre-Clustering)

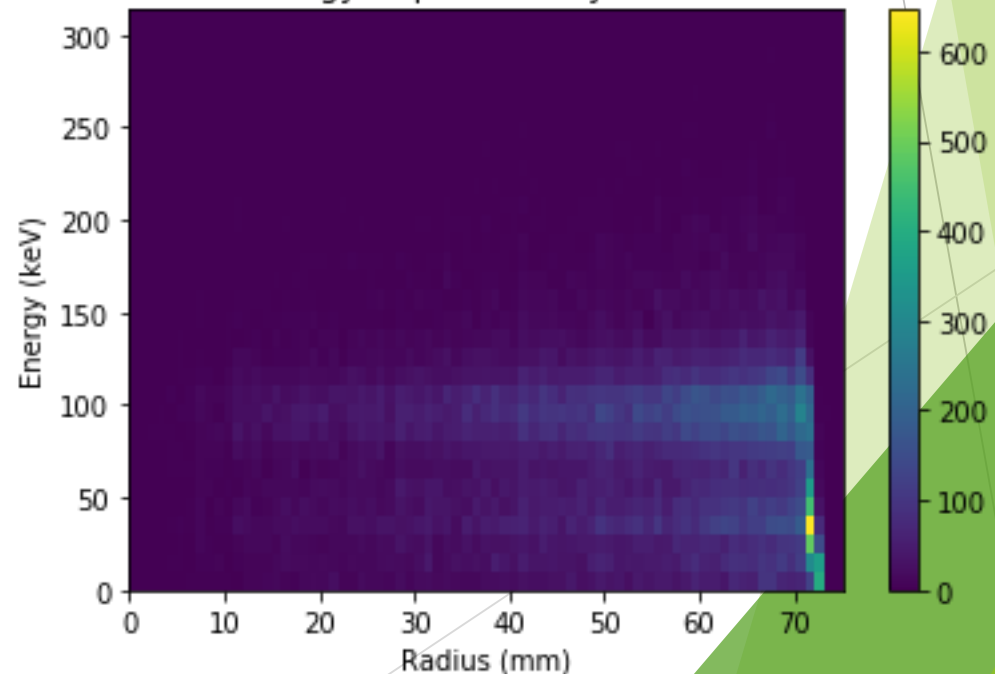


Average ED (Blue) and Total ED (Red) by Radius (Pre-Clustering)



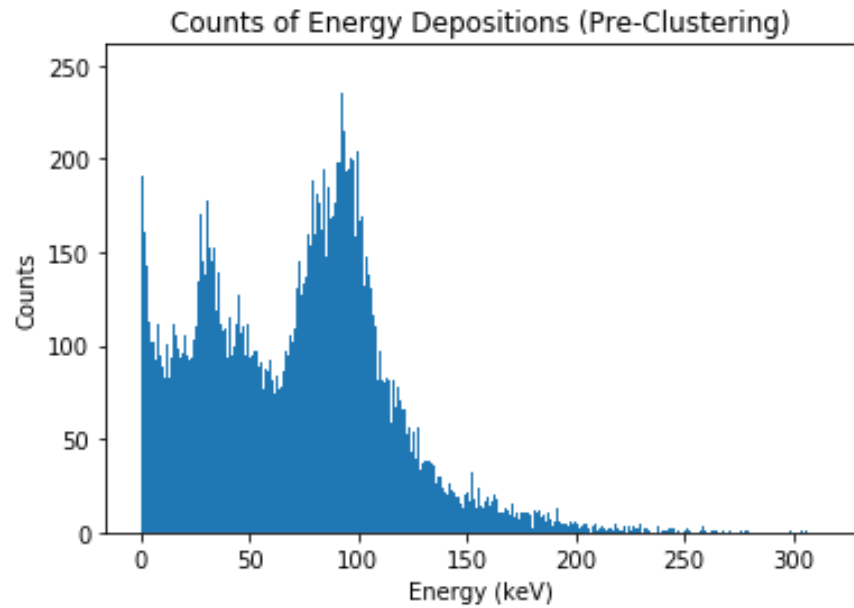
- Why is there so little energy degradation until it is close to the center?
- Why is there a sudden drop at the edge, but regular events past it?
- Why are there so many small-energy events at the edge, but fewer later on?

Energy Depositions by Radius



Energy Histogram Very Far Off

Mine



Jonathan's

