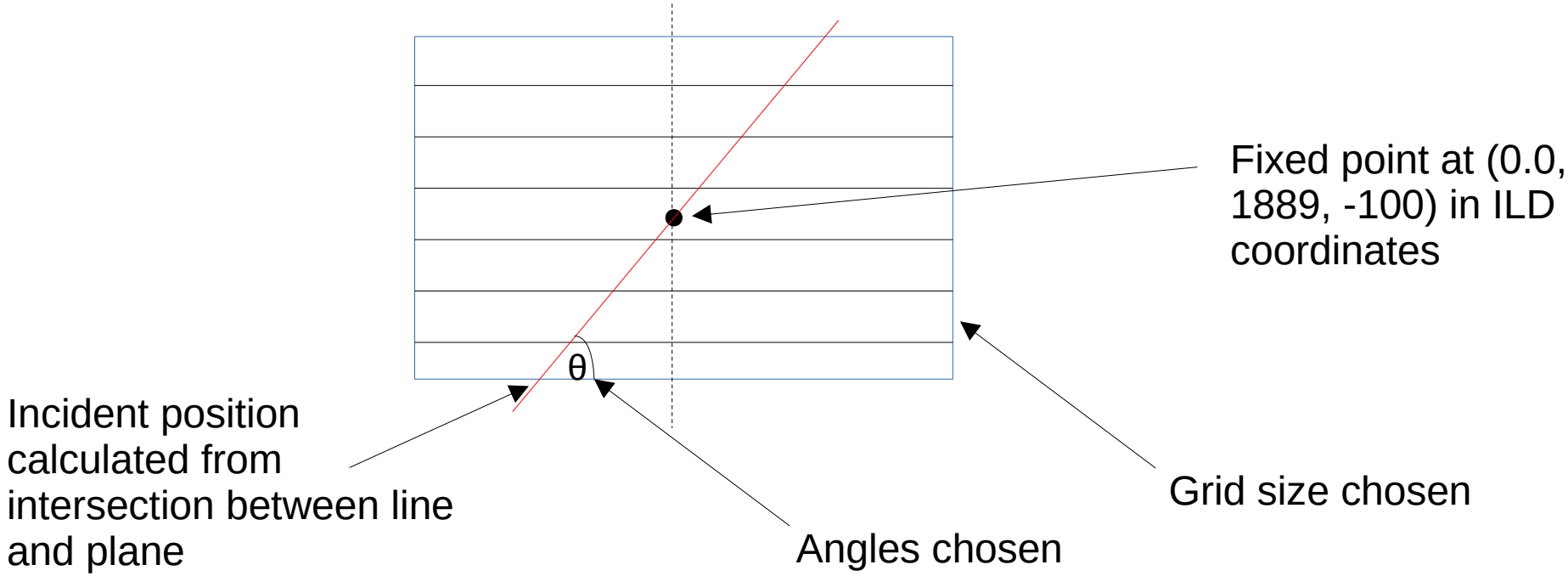
Two Angle Dataset Grid Selection

29.06.2023

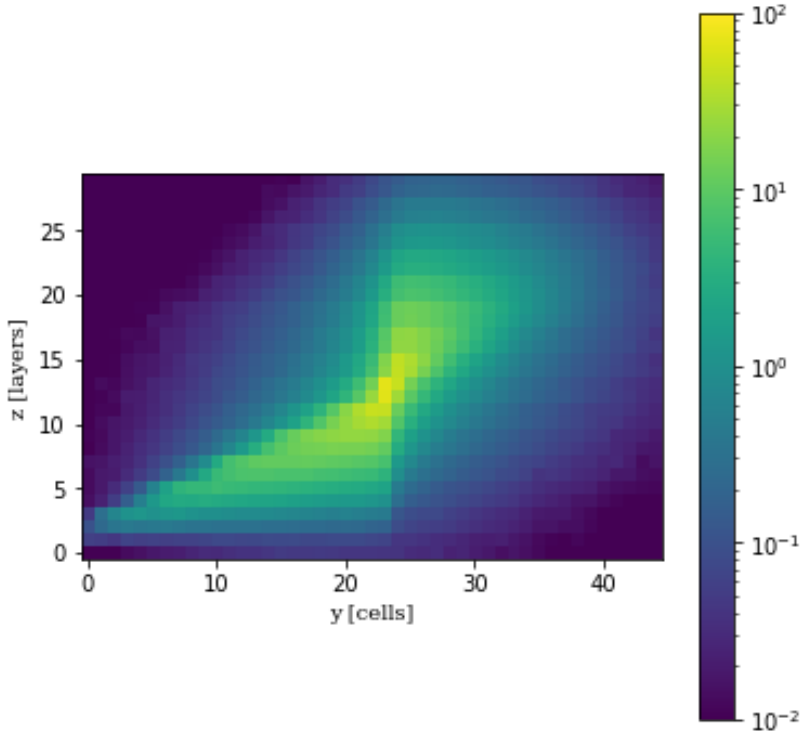
Plan for dataset creation

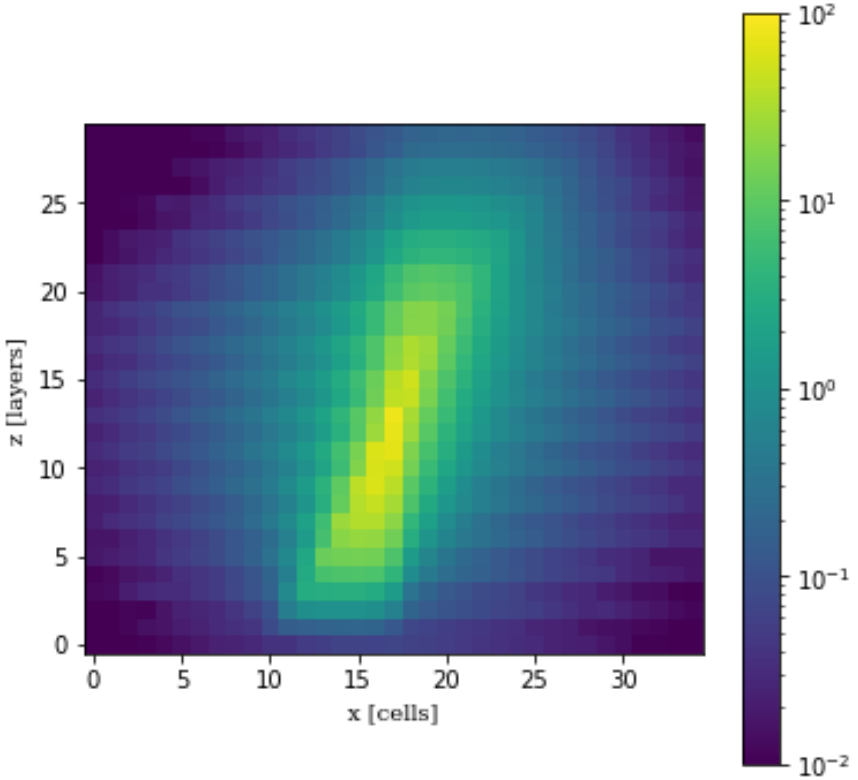
- Current data setup:
  - Photons
  - Energy: 5-126 GeV, Theta: 30-91 degrees, Phi: 65-91 degrees (octogonal barrel)

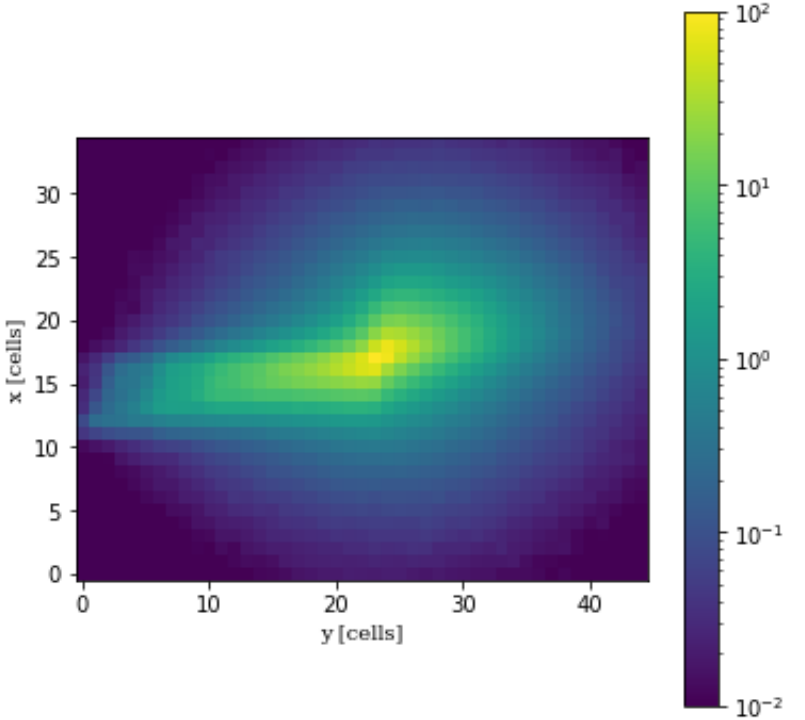


Some initial overlays

- Initial grid size: (z,x,y) = (30, 35, 45)



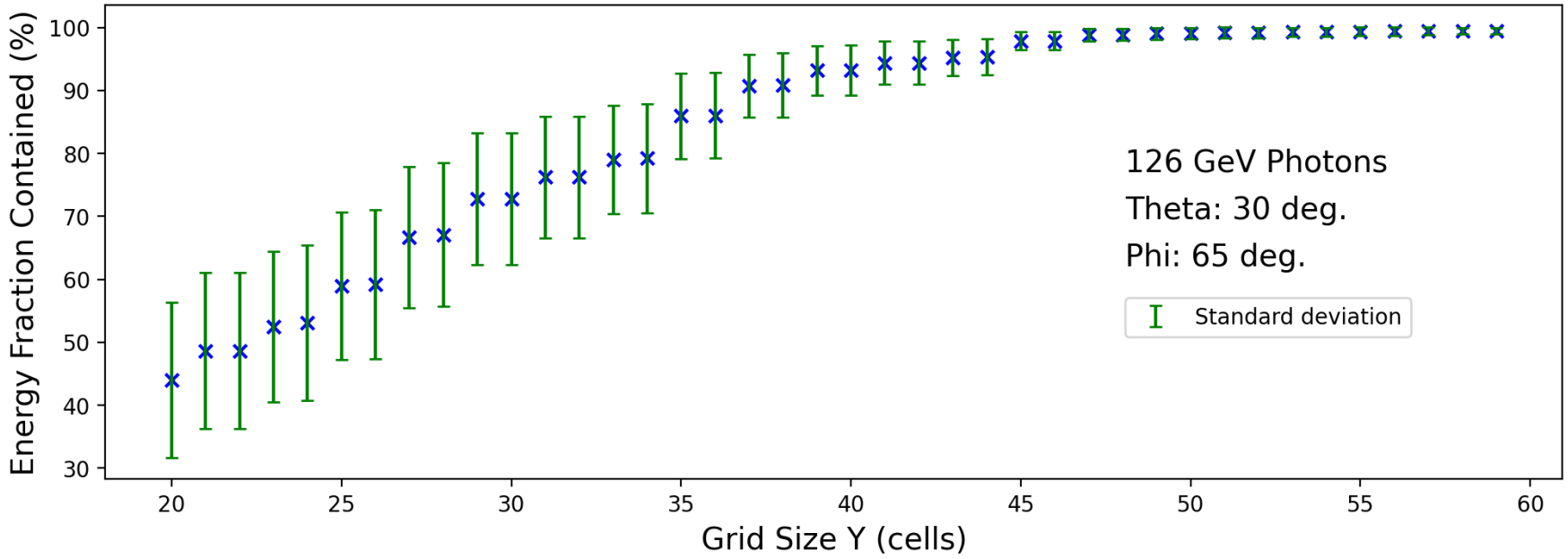


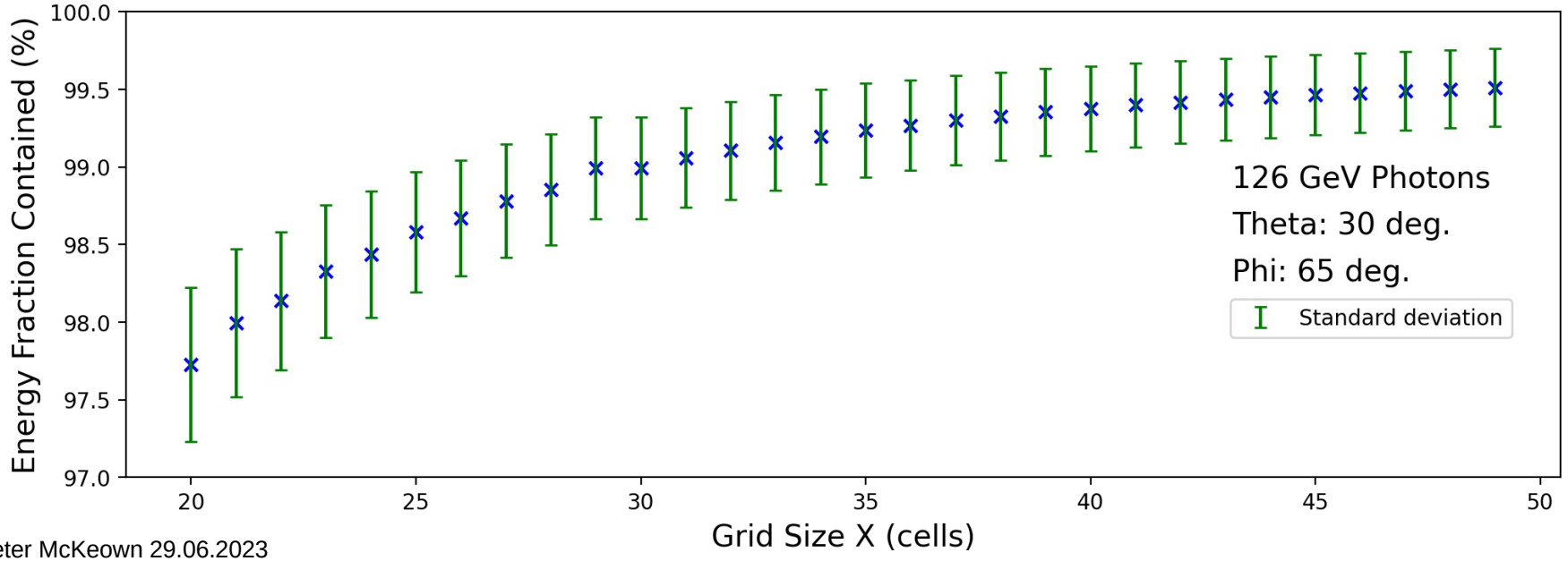


Grid Selection

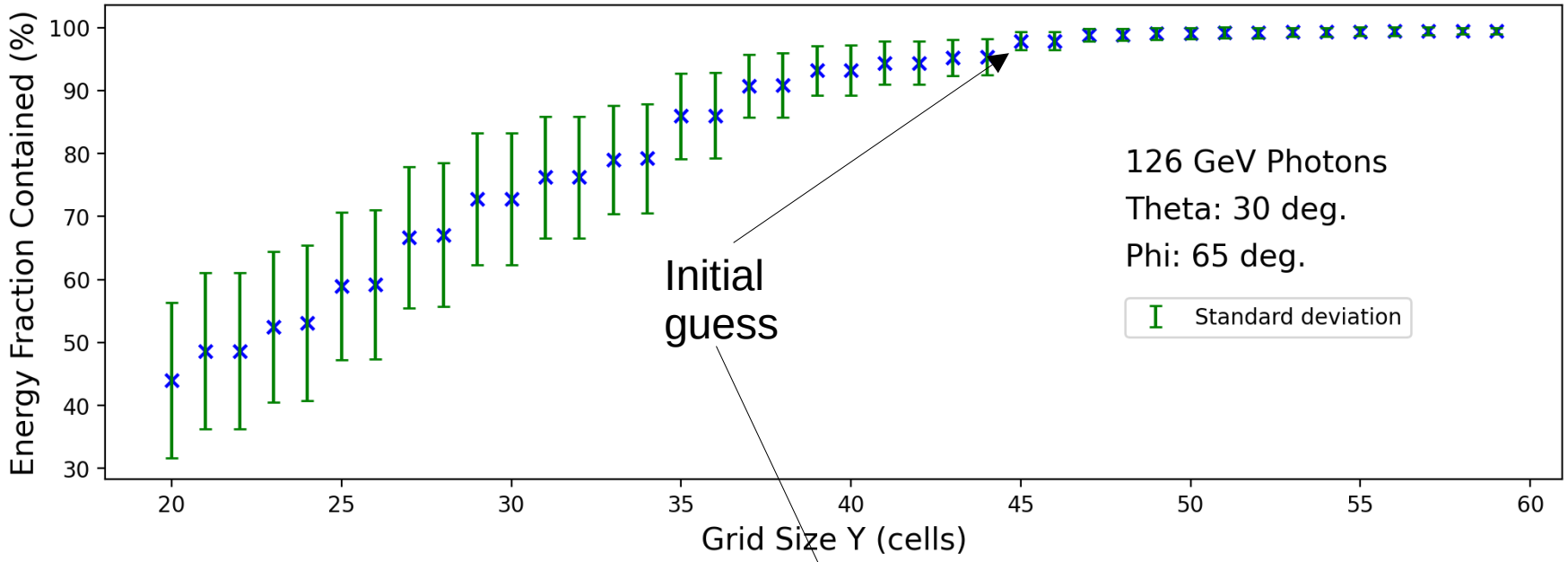
- 3000 showers
- Fixed energy and angles:
  - Energy: 126 GeV
  - Theta: 30 degrees
  - Phi: 65 degrees
- Scan grid size in X and Y (calorimeter coords.) and calculate energy fraction contained...

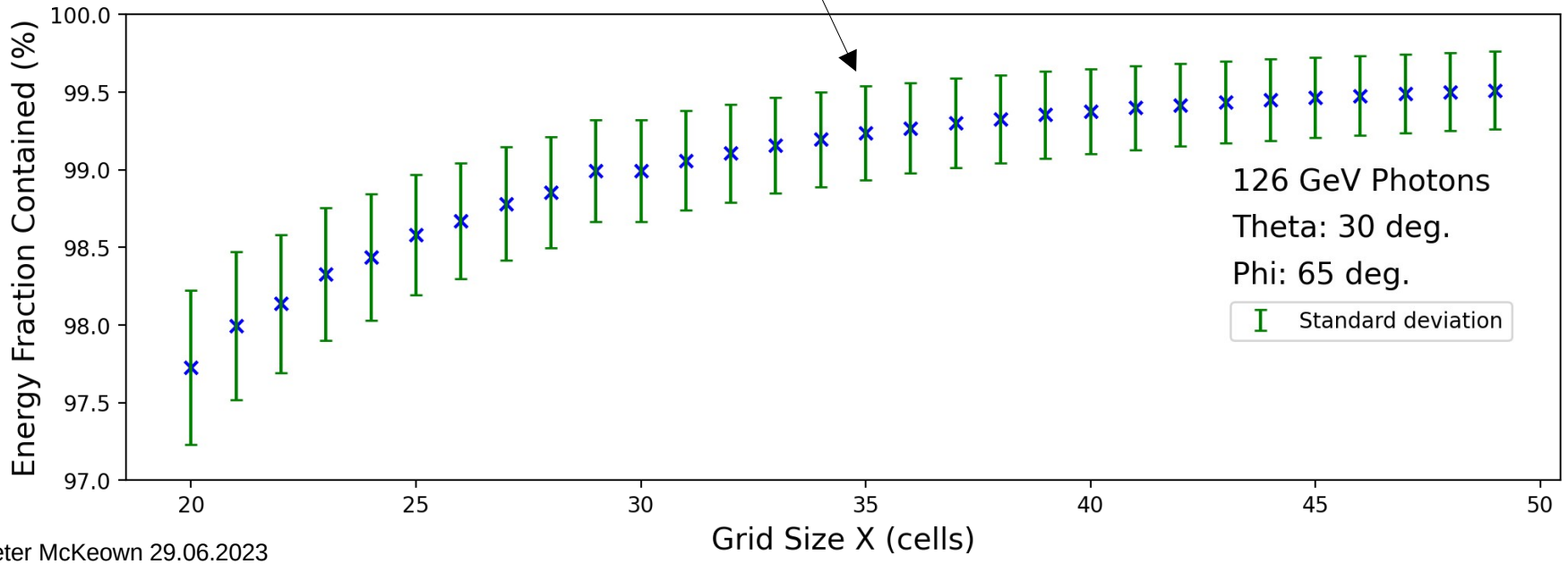
Grid Size Scans





Grid Size Scans





Conclusions and Next Steps

- 45 seems like a reasonable grid size in y
- Is it worth going to 35 in x? Only avg. 0.2% more E contained vs 30 and add 6750 voxels...
- Produce datasets!
- Full spectrum: aim for about 500k showers again:
  - 5-126 GeV, Theta: 30-91 degrees, Phi: 65-91 degrees
- Suggested test points: go from 9 (one angle) -> 27 (two angles) datasets, aim for 2k test, 2k validation
  - E: 10, 50, 100 GeV
  - Theta: 40, 60, 90 degrees
  - Phi: 70, 80, 90 degrees <- could reduce to 70, 90

Backup

Grid Size Scans