

JULY 27TH
UPDATE

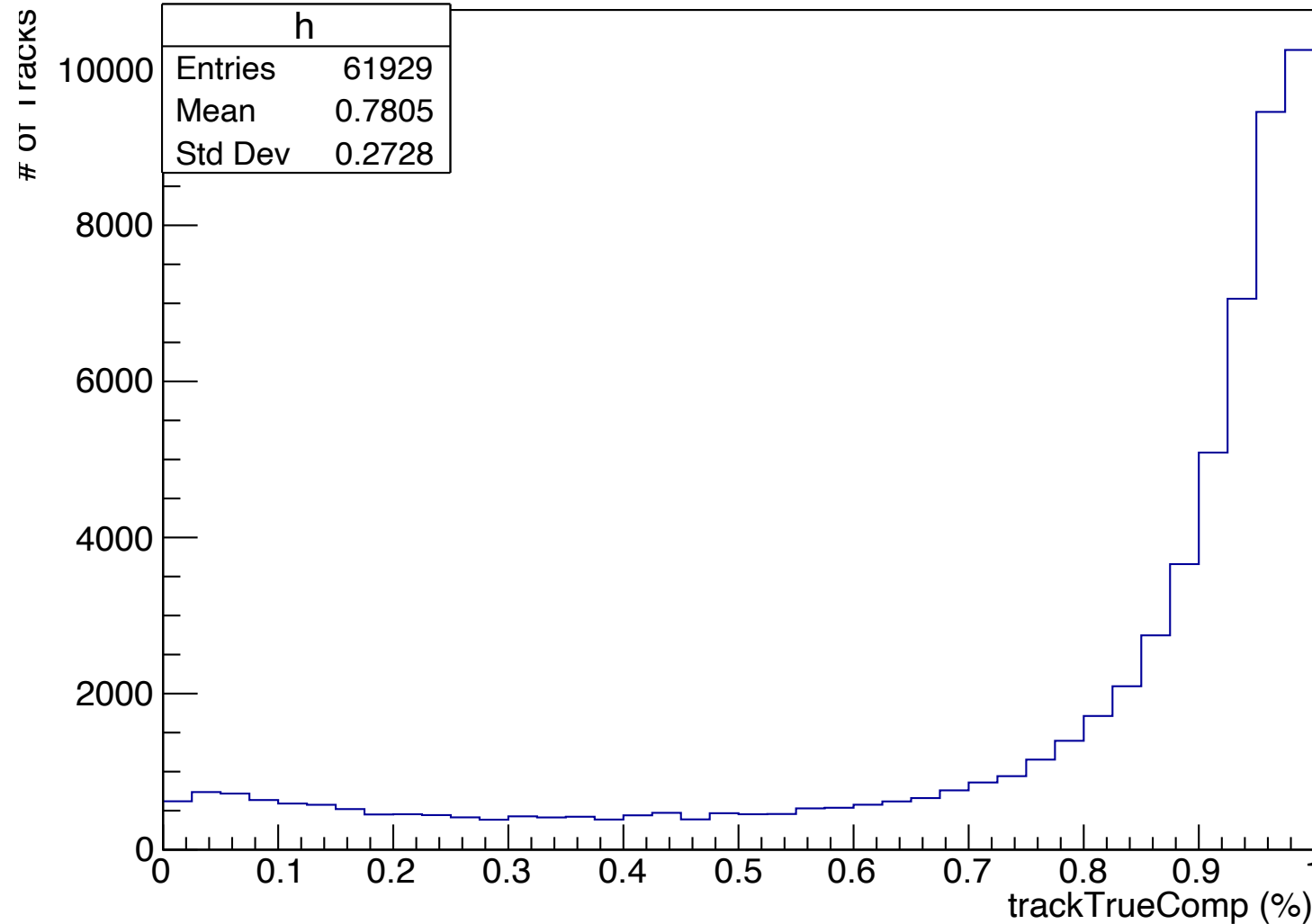


Particle Reconstruction for Simulated Pions

	True Pion	Pion	Proton	Muon	Electron	Cosmic Background
Total	35077	25882	690	1852	169	6406
Percentage	N/A	73.8%	2.0%	5.3%	0.5%	18.2%

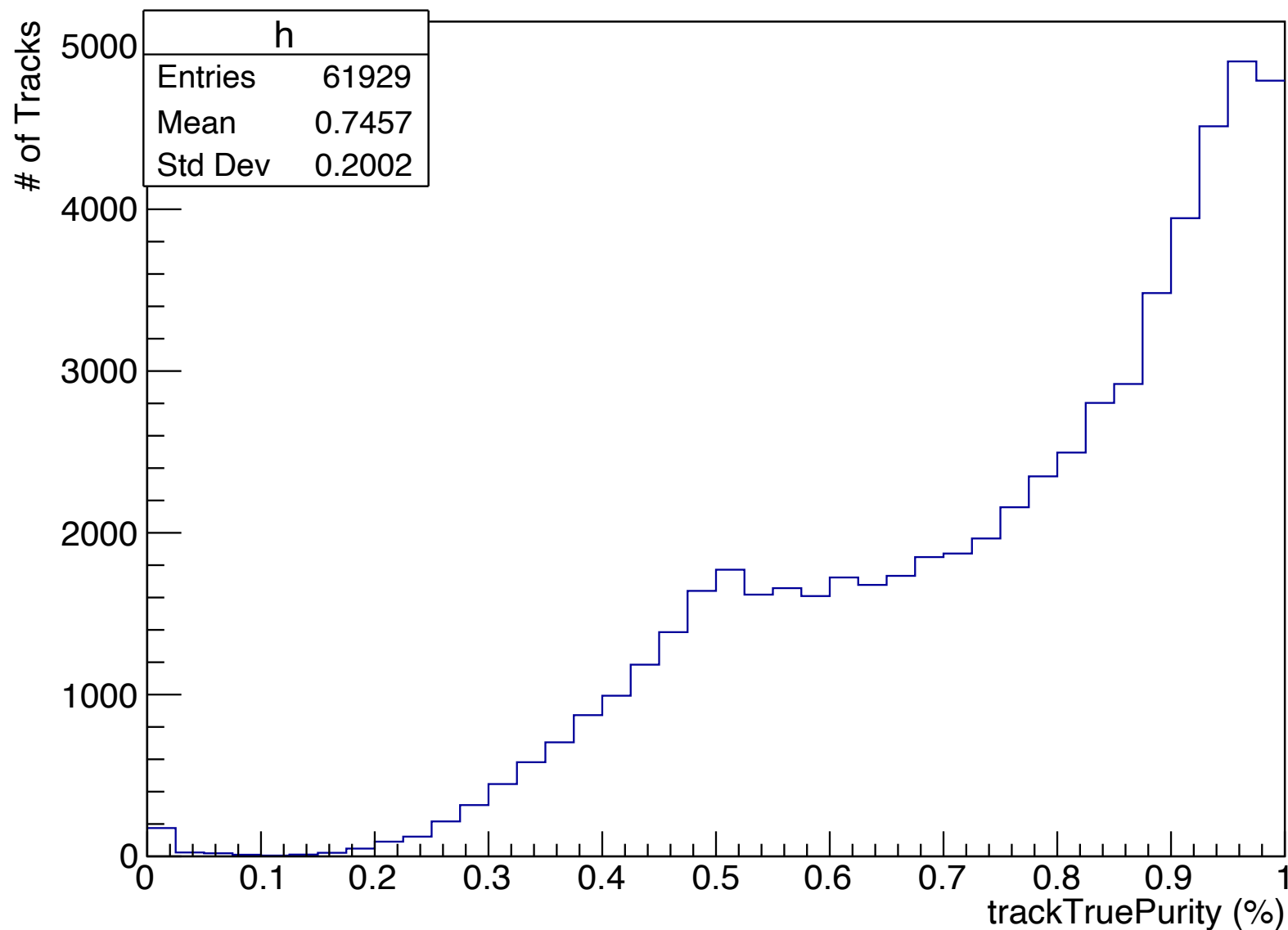
- Data file of gen2 simulated events, trying to test reconstruction's accuracy in identifying pions
- Filtered for Pion TruePID (211), and categorized by reconstructed PID.
- pion truth-matched 73.8% of the time. Remaining is mostly misidentified as cosmic background or protons

TrackTrueComp for Truth-Matched Pions



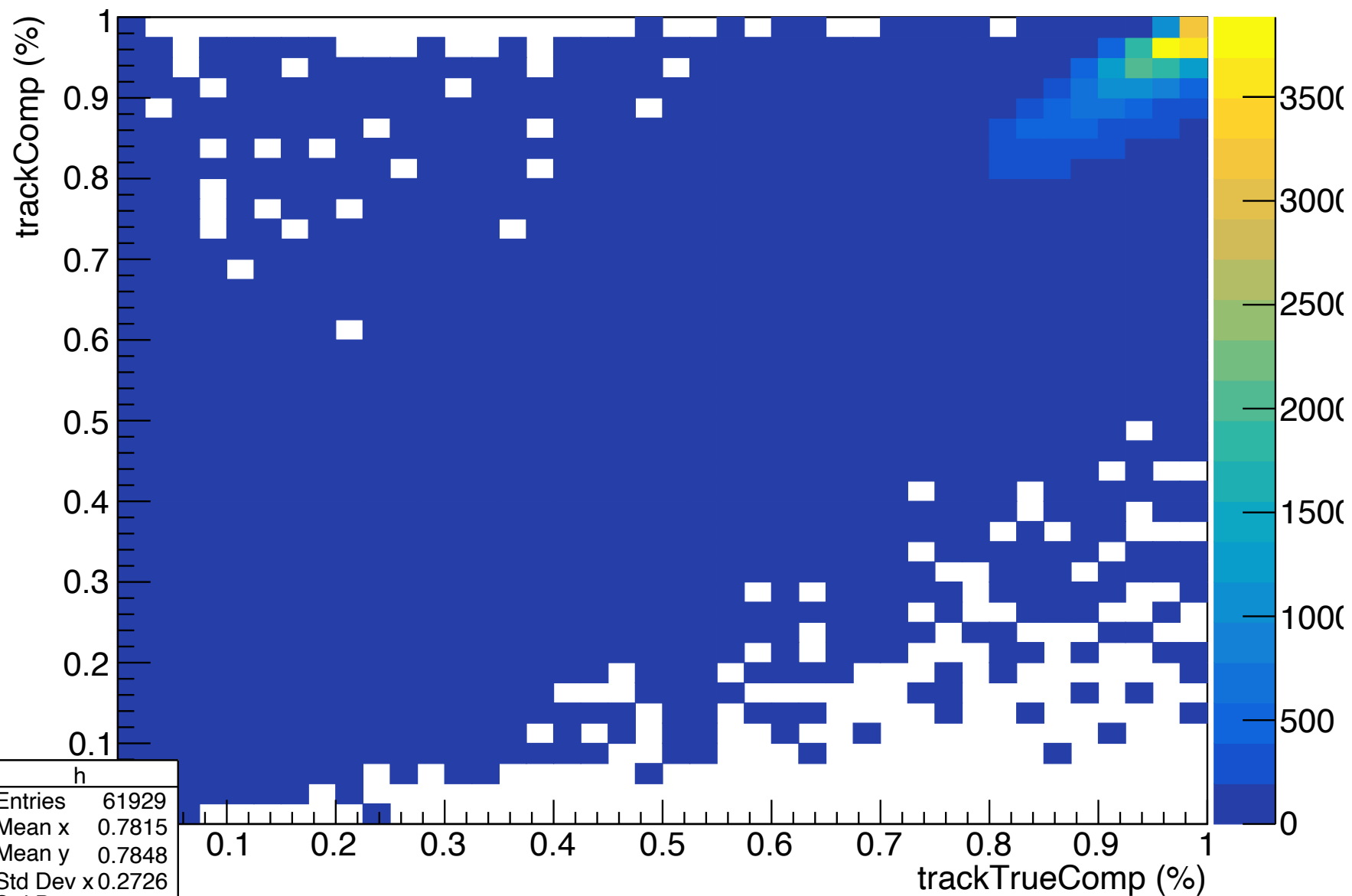
- True Completeness of all correctly reconstructed pions
- Process: Filter for all tracks where True and Reco identify pions
- "Tail" of low completeness reconstructions
- 16.1% of truth matched pions have True Completeness less than 50%

TrackTruePurity for Truth-Matched Pions



- True Purity of all correctly reconstructed pions
- Process: Filter for all tracks where True and Reco identify pions

Comp vs. True Comp of Truth-Matched Pions



- Comparison of reconstructed completeness vs. true Comp of correctly reconstructed pions
- Very poor reconstructed completeness for events with <0.8 True Completeness
- Excellent reconstruction with high True Completeness ($>90\%$)

Purity vs. True Purity of Truth-Matched Pions

