

# **March Testbeam data analysis**

**LUXE technical meeting**

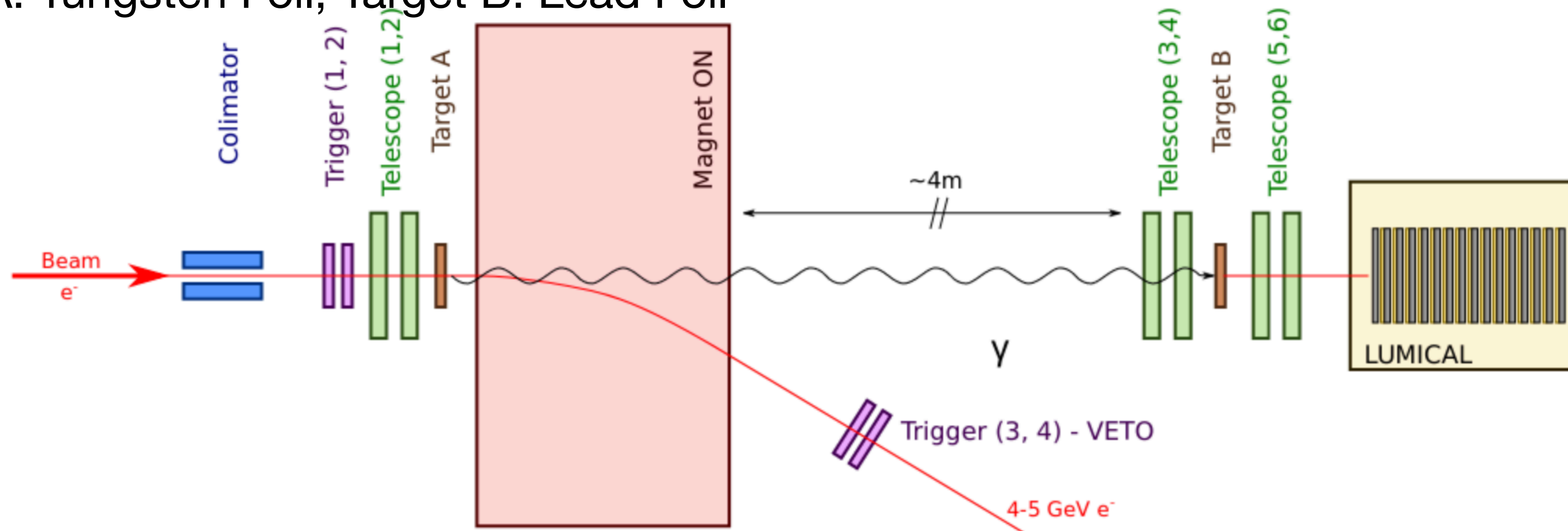
**06.08.2020**

**Marius Hoffmann**

# Data Analysis

## Status Quo

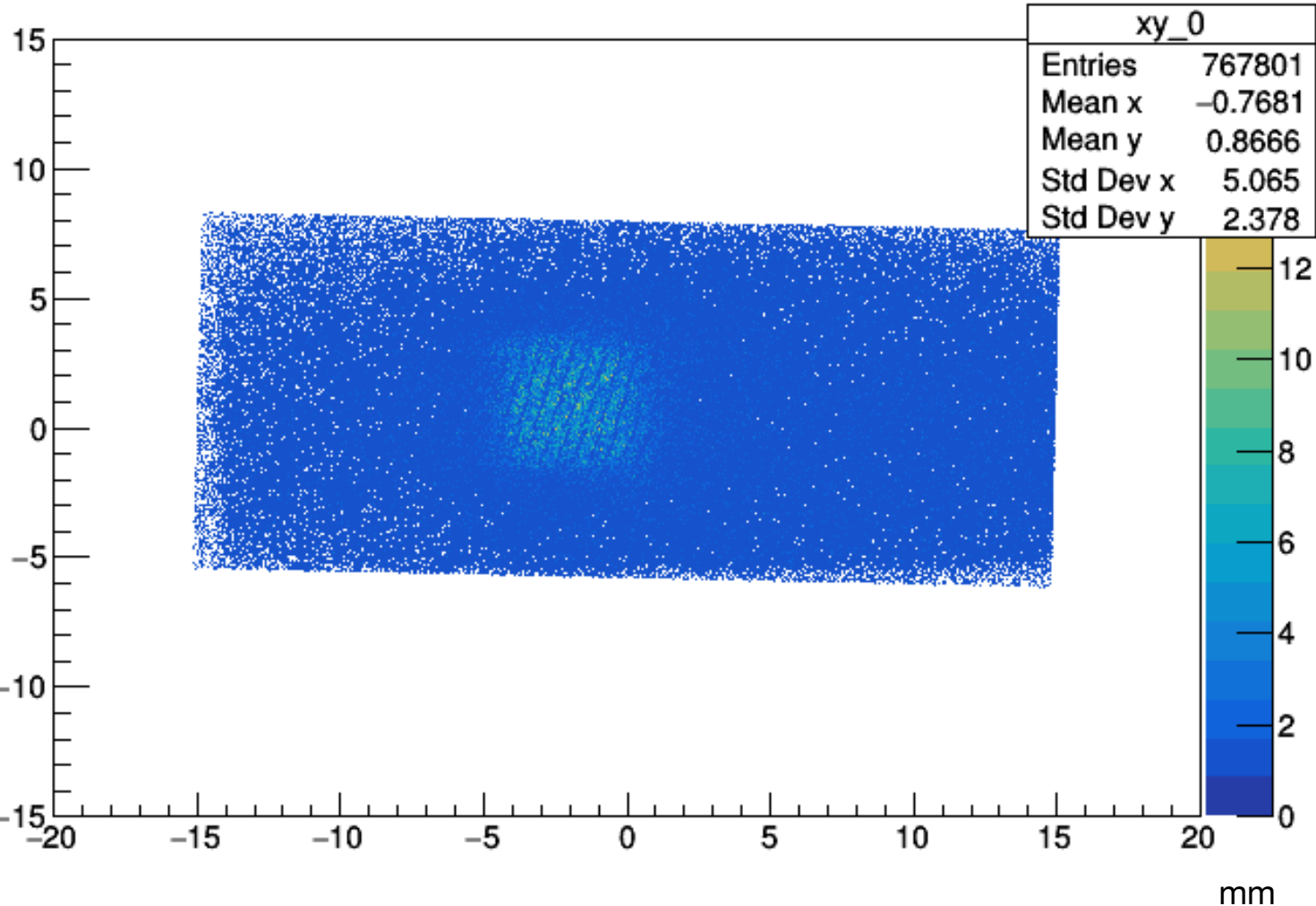
- Full data of the testbeam available
- Started with hit-based quality and consistency checks
- Target A: Tungsten Foil, Target B: Lead Foil



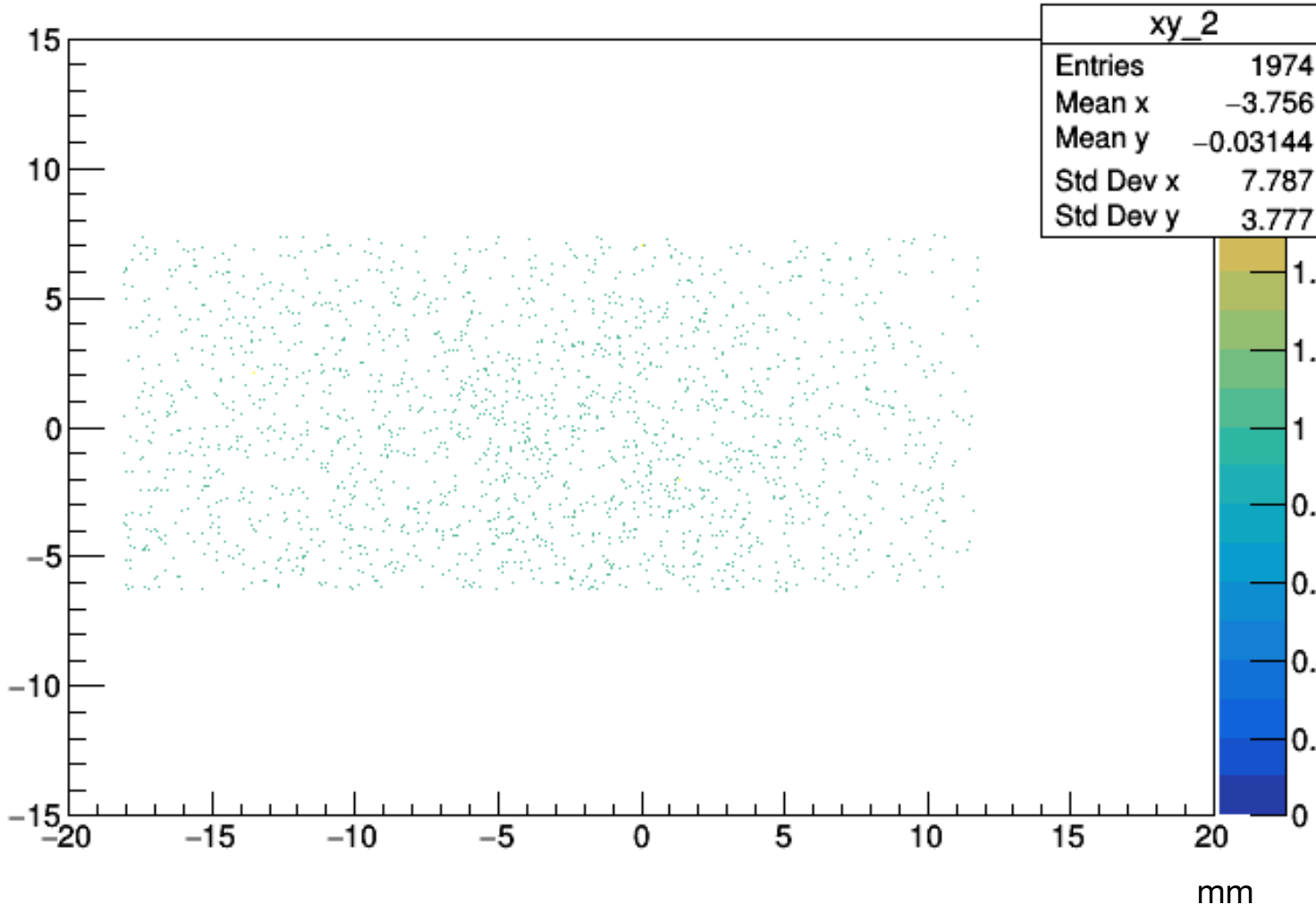
# Physics quality check

Run 1285 , Full setup with both foils, XY Hit Integral, 1.1M Events

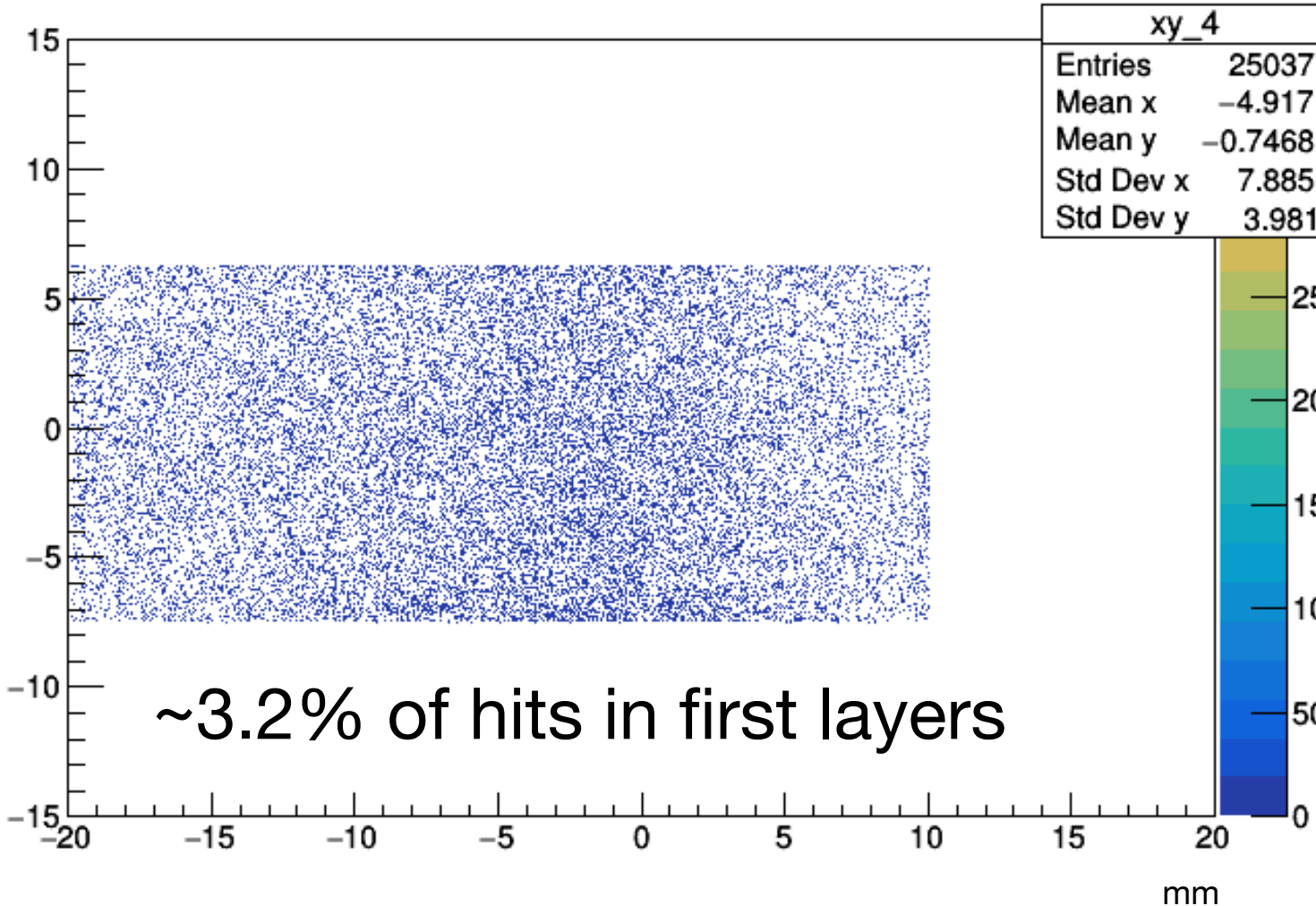
xy\_0



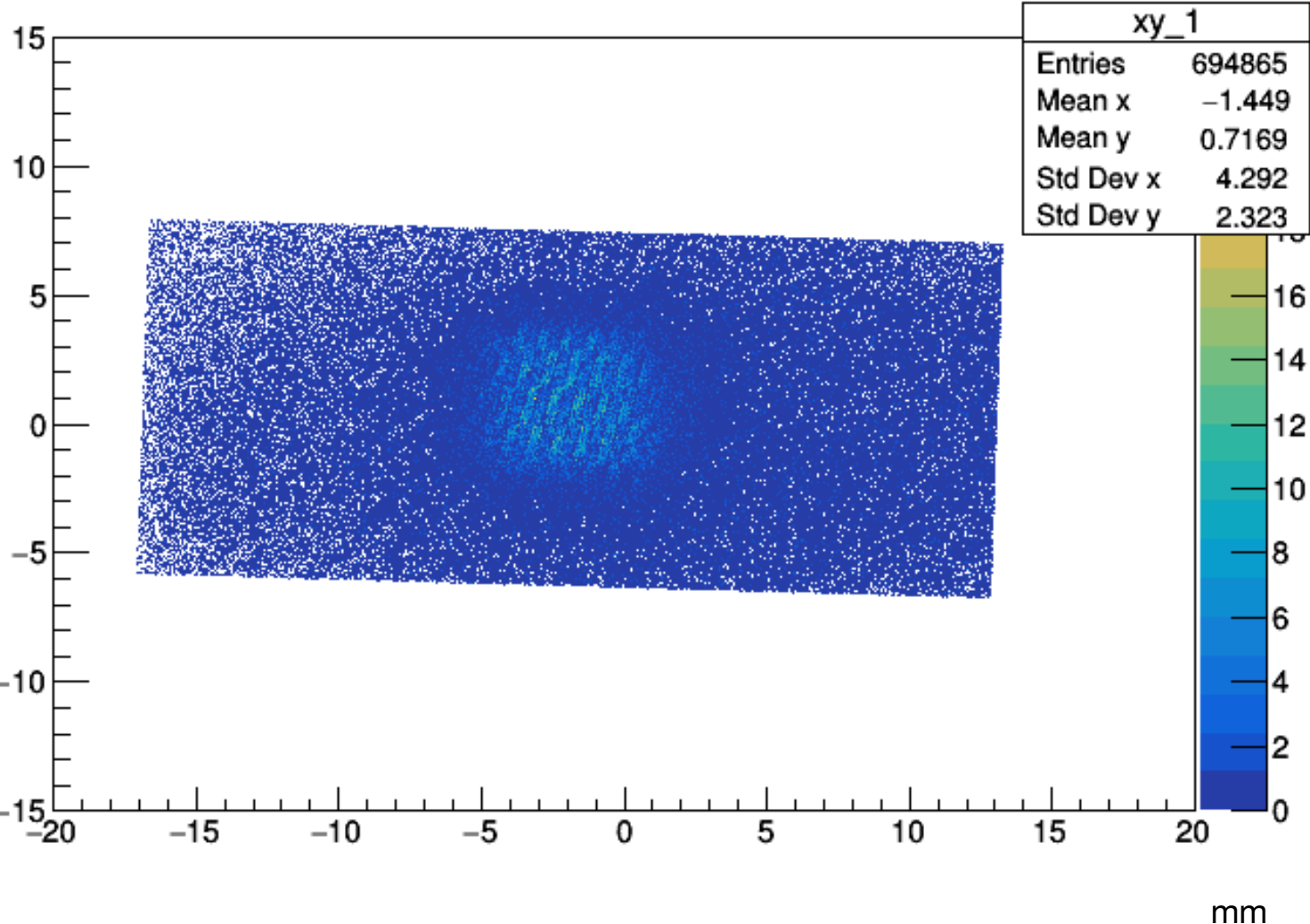
xy\_2



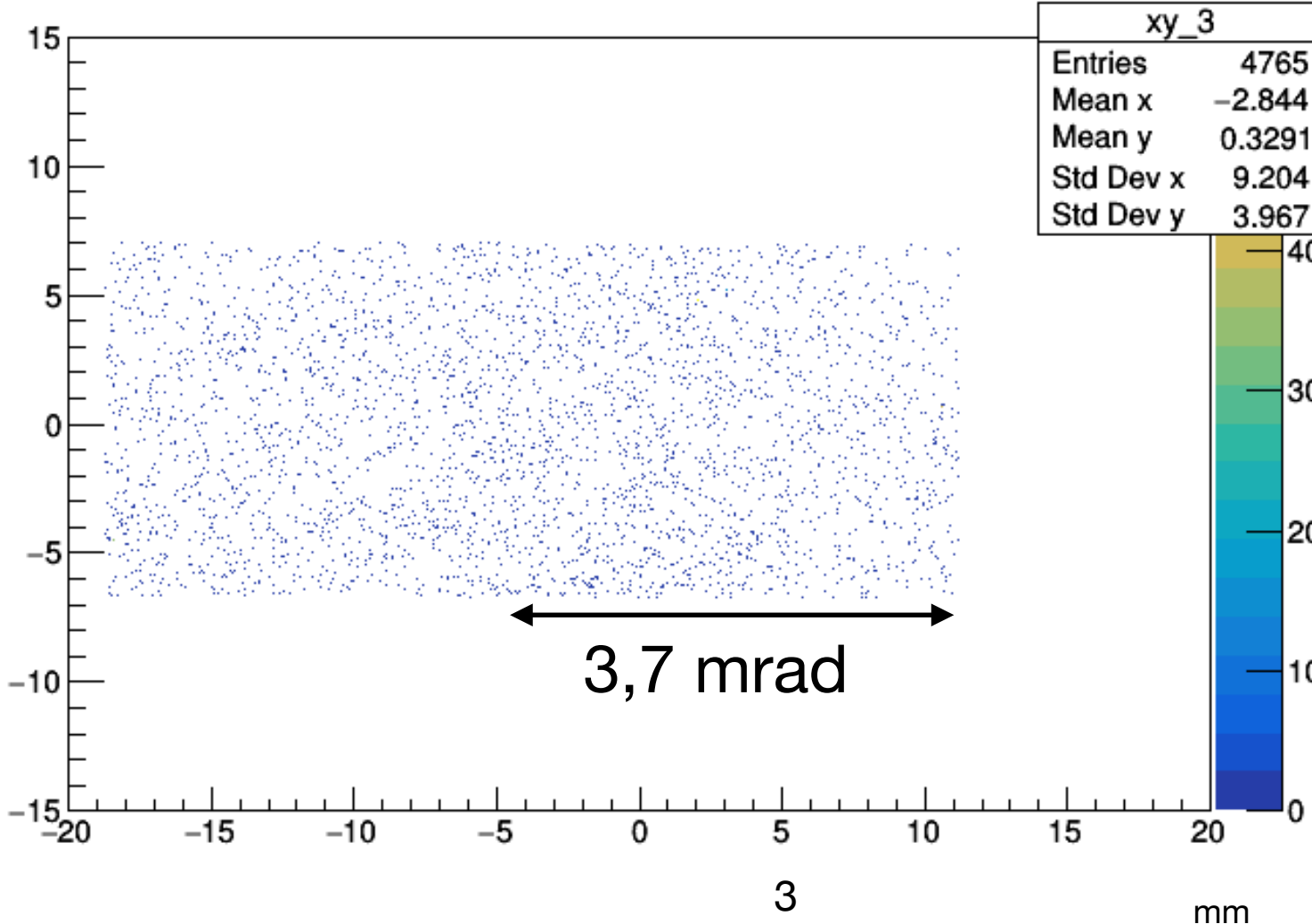
xy\_4



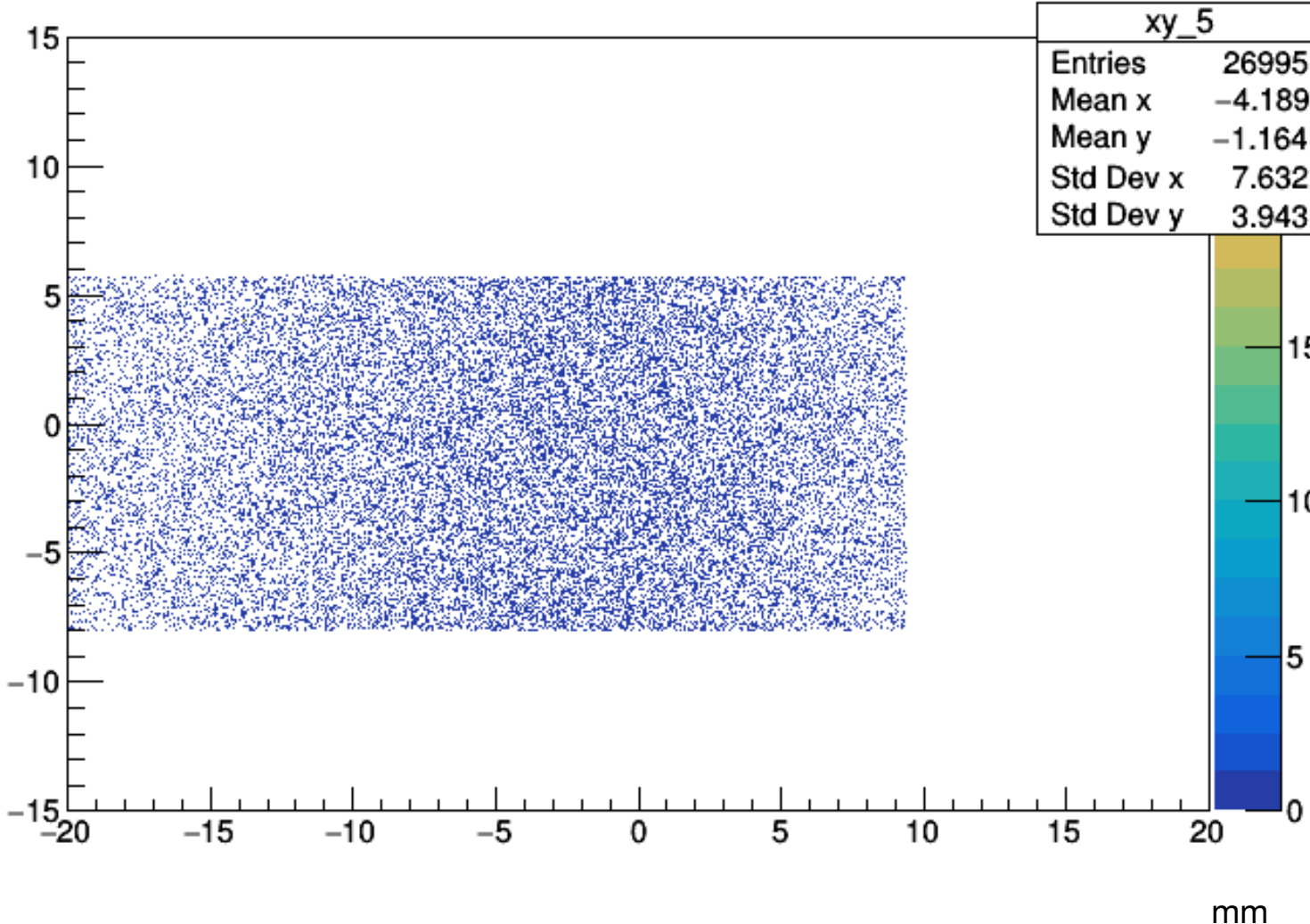
xy\_1



xy\_3



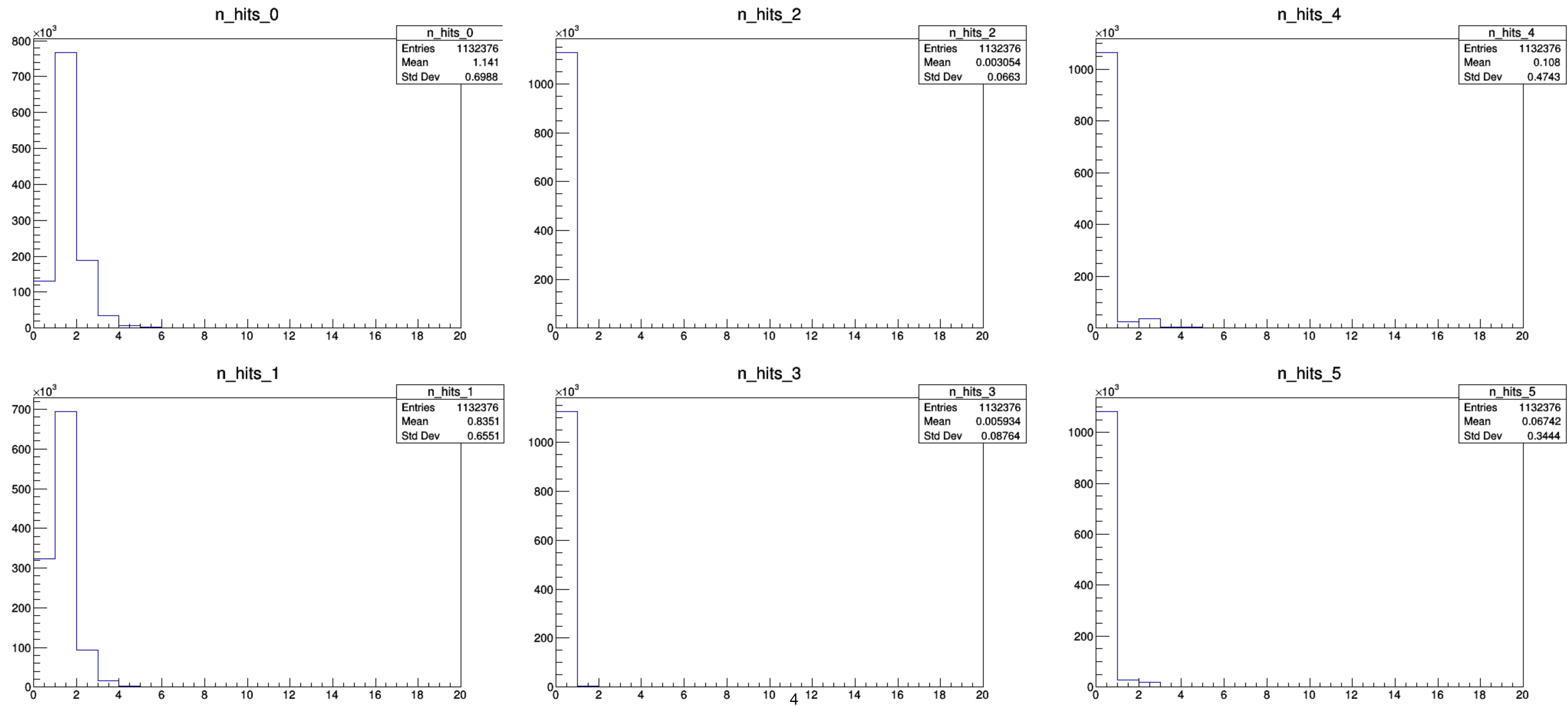
xy\_5





# Physics quality check

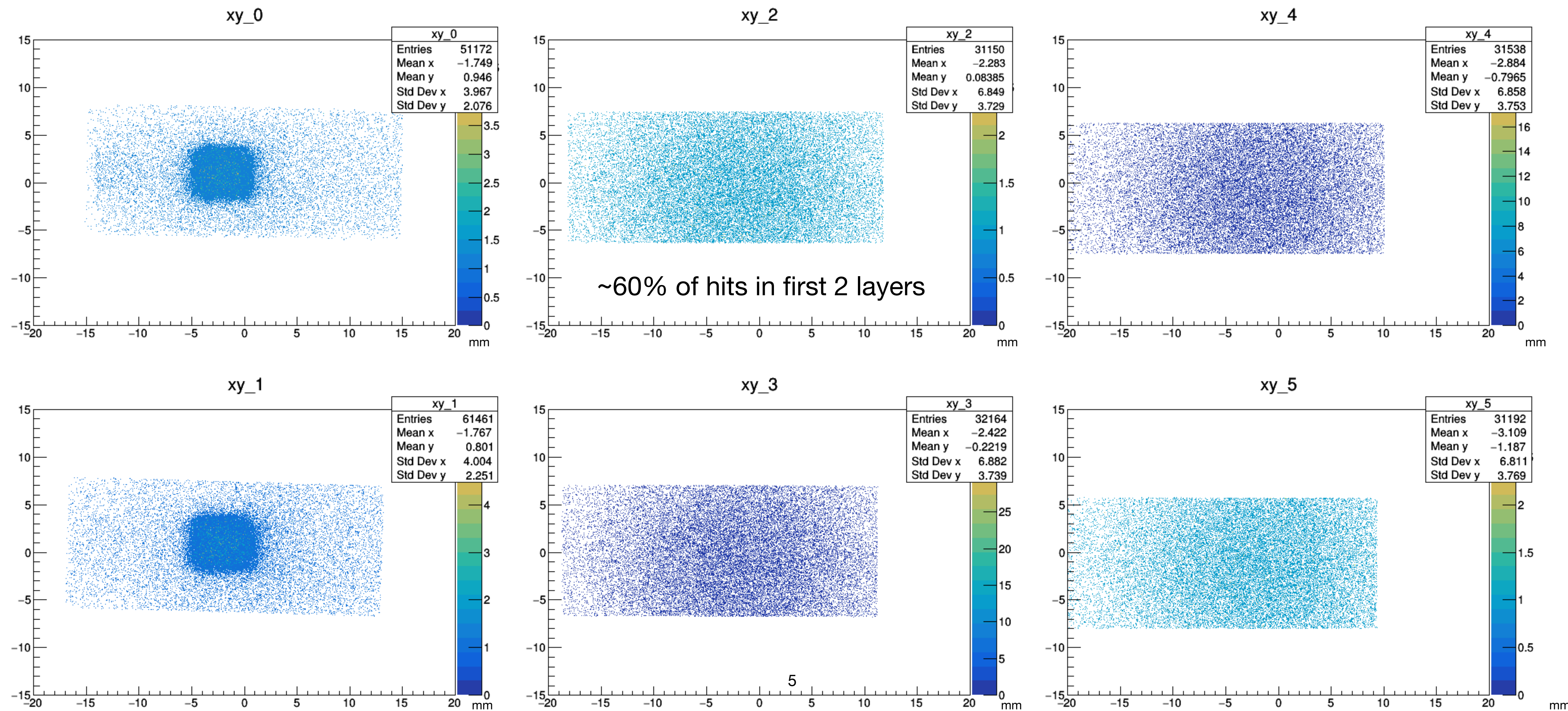
## Run 1285 , Full setup with both foils, Number Hits/Event





# Physics quality check

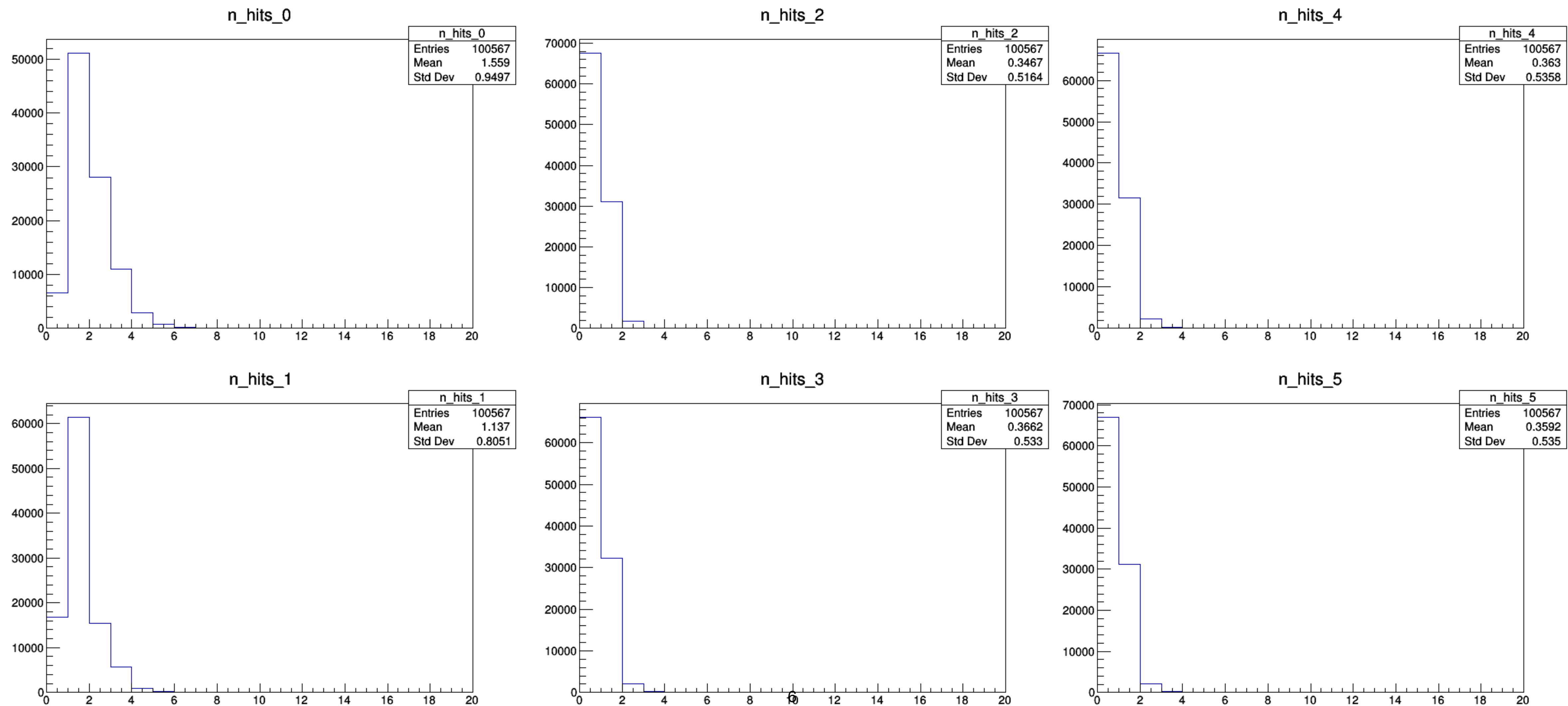
Run 1131 , Full setup with Target A only, XY Hit Integral, 100k events





# Physics quality check

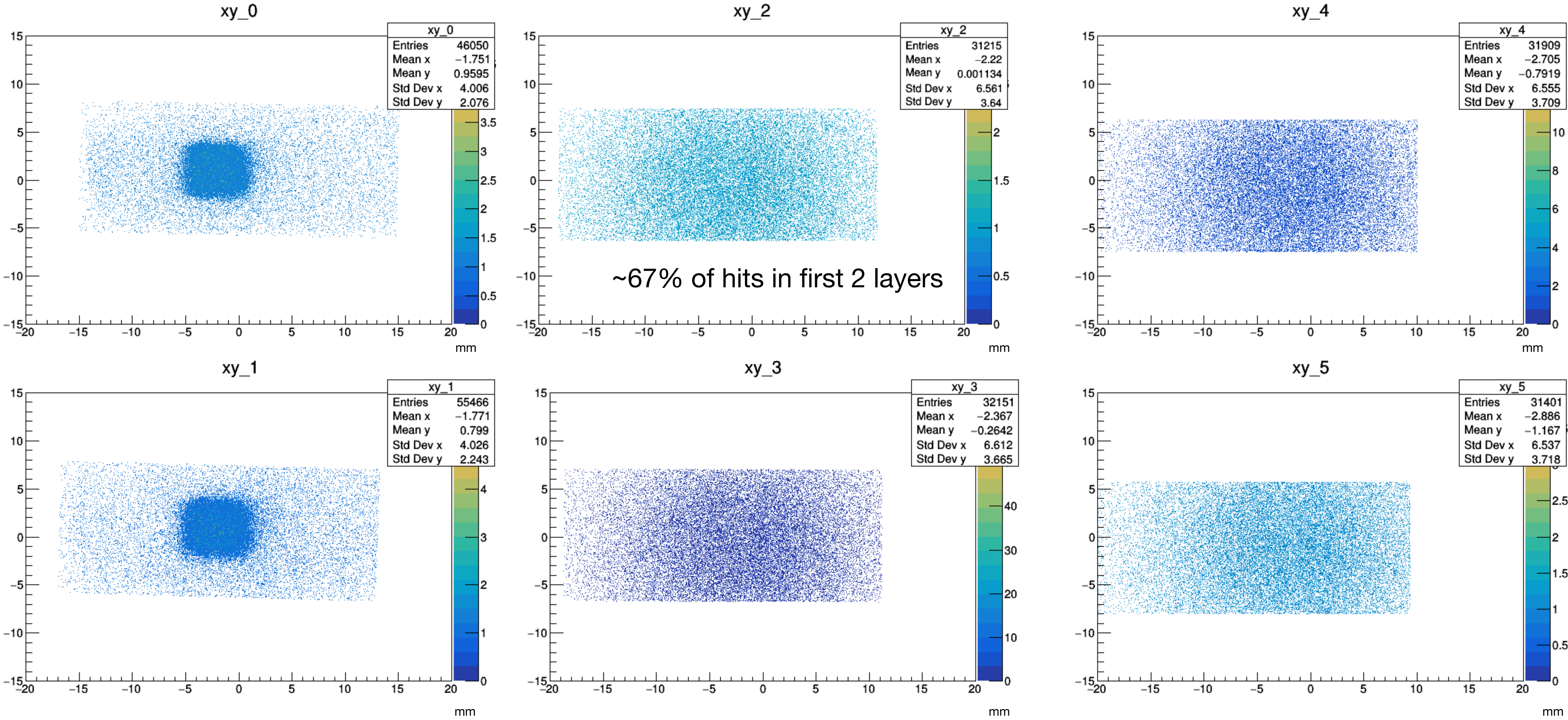
Run 1131 , Full setup with Target A only, XY Hit Integral, 100k events





# Physics quality check

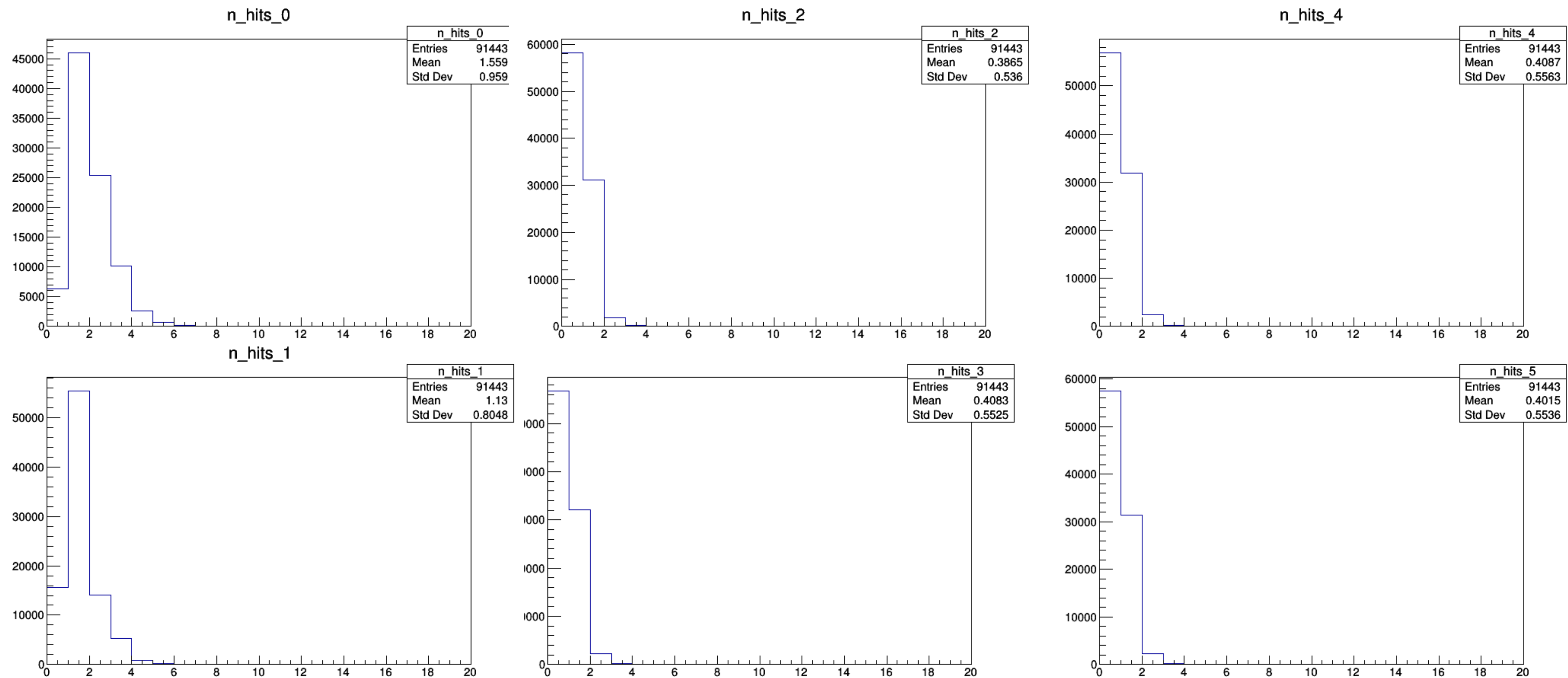
Run 1132 , Full setup with no Target, XY Hit Integral, 91k events





# Physics quality check

## Run 1132 , Full setup with no Target, XY Hit Integral, 91k0k events





# Wrap up

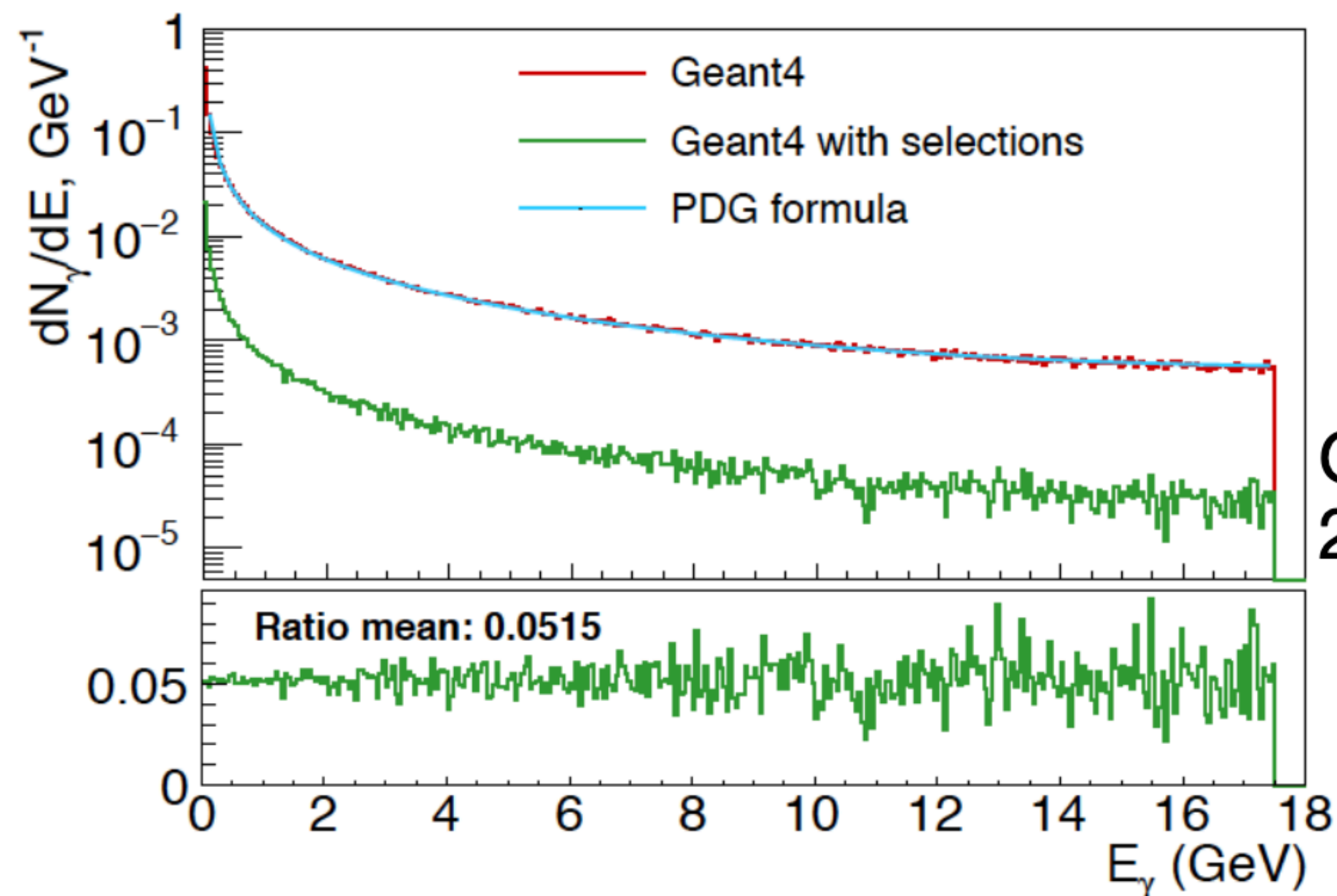
- Data files seem consistent in data integrity and physics wise
- Next steps:
  - Alignment
  - Tracking
  - Angular Distribution
  - Simulation

# Where are we at?

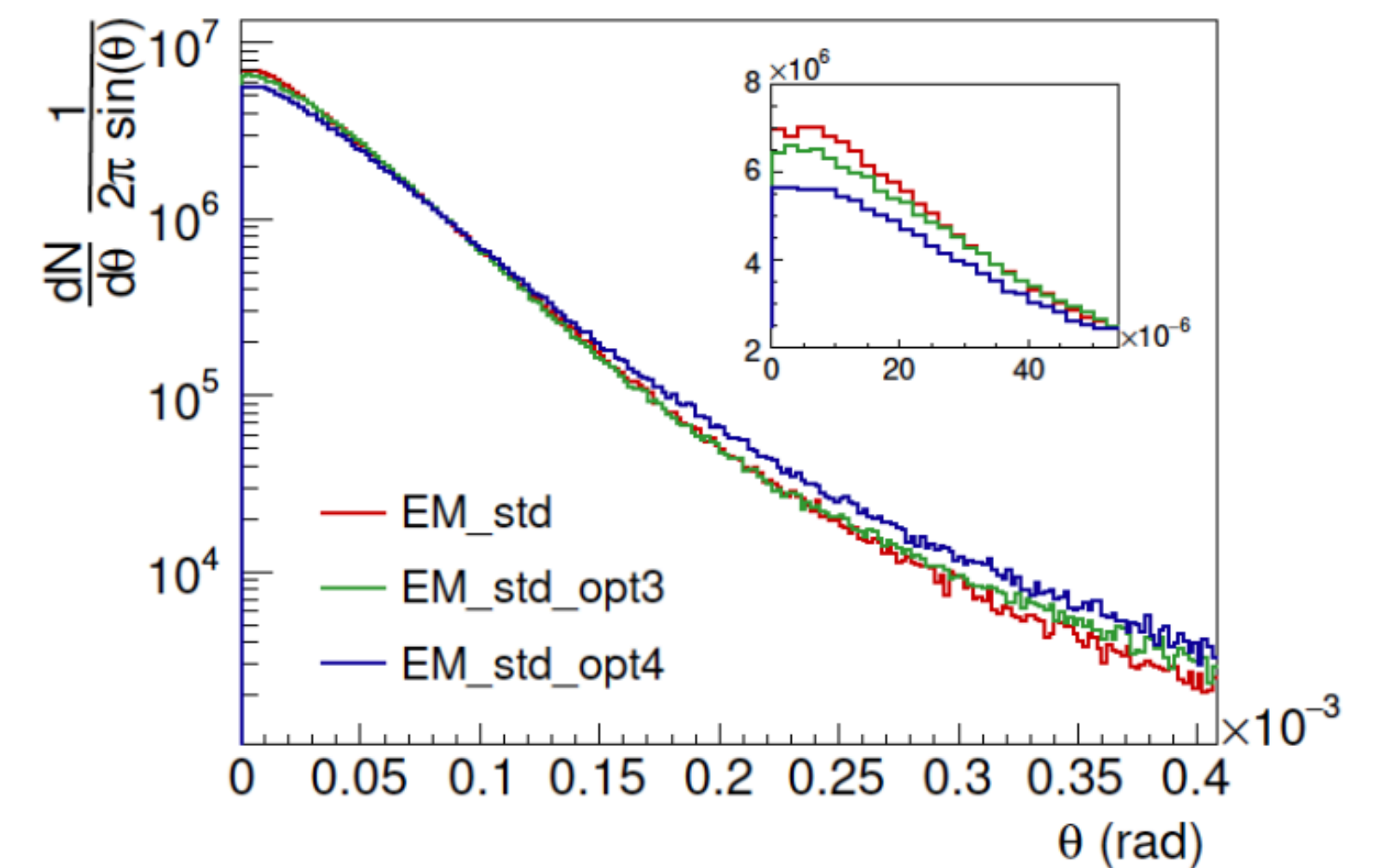
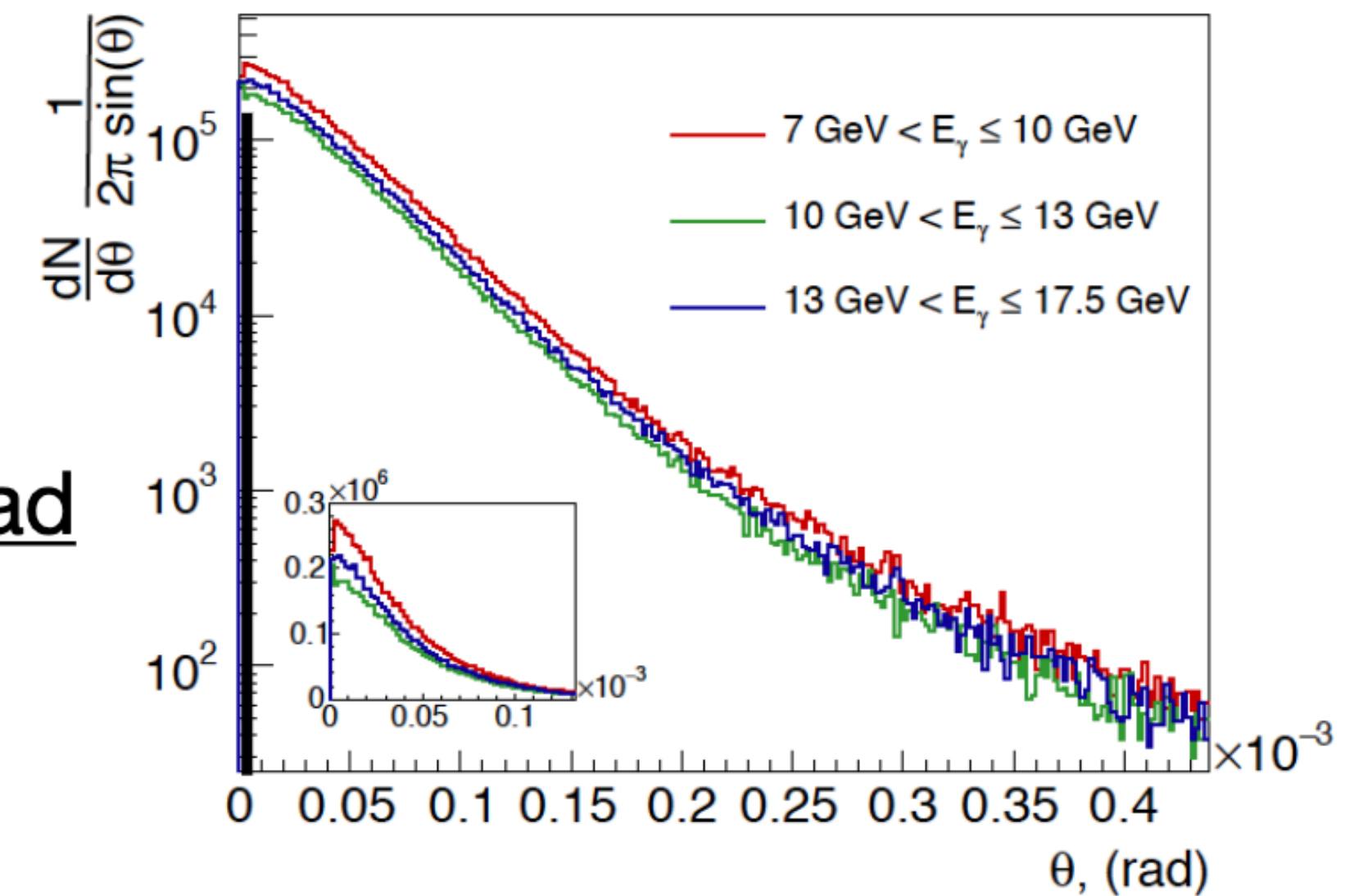
GEANT4 simulation

17.5 GeV Electrons + Tungsten Target

Angular IP width:  $3.3 \times 10^{-7}$  rad  
(12m foil to IP, 8  $\mu$ m laser spot)



Green =  
25um laser spot



Experimental Situation?