

TB 2021: Simulations & Data Evaluation

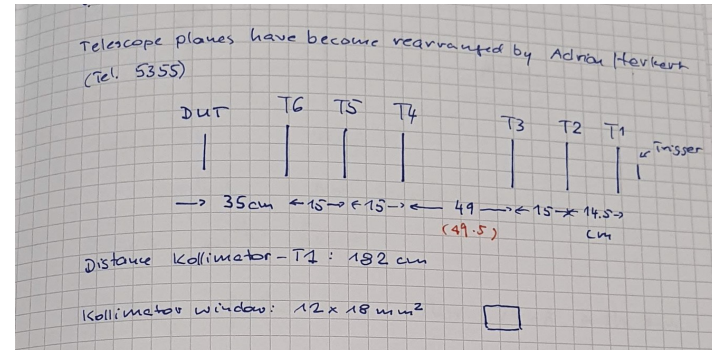
Veta Ghenescu, Alina Neagu, Mihai Potlog
Institute of Space Science, Bucharest

TB 2021: Simulations

• Geometry implementation in Geant4

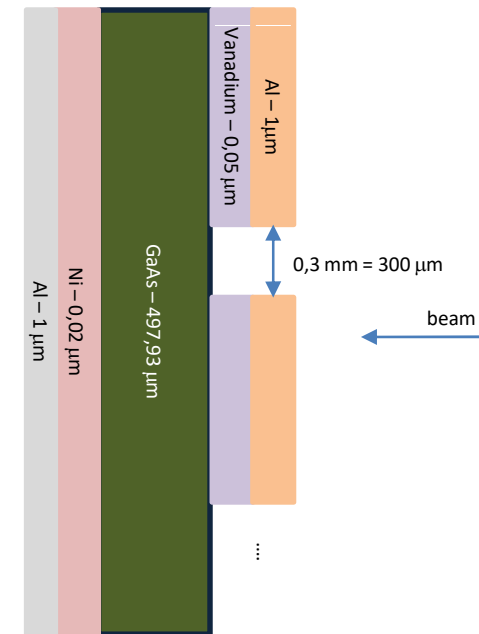
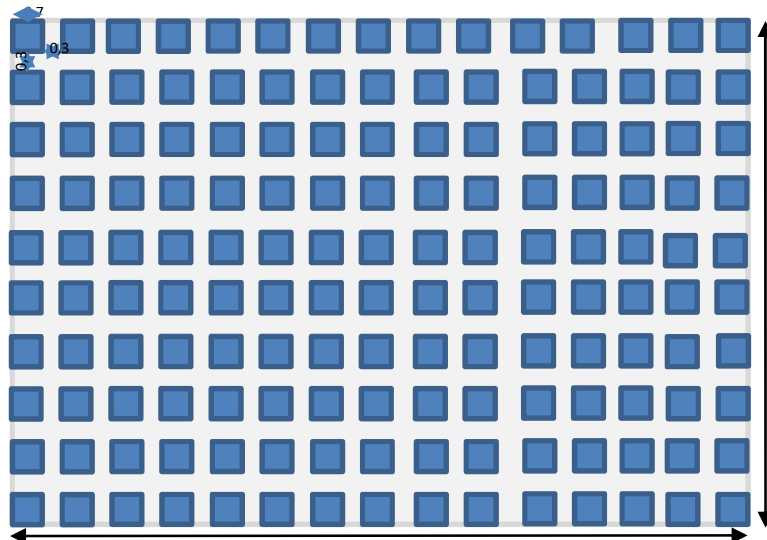
Test-beam setup

- Setup as in run 650 without W planes
- 6 telescope planes
- No trigger
- Sensor placed in 1st DUT slot



GaAs sensor aka Anton1

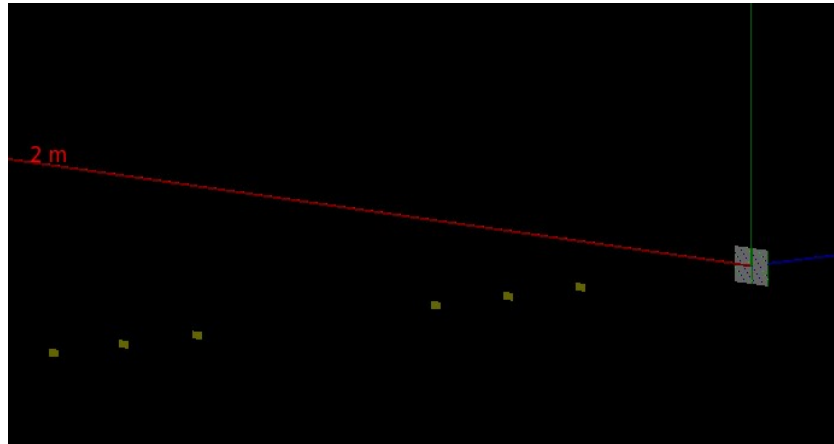
- Rectangular shape
- X dimension: $\ell = 4,7\text{mm} \cdot 15 (\text{pad}) + 0,3\text{mm} \cdot 14 (\text{gap}) = 70,5\text{mm} + 4,2\text{mm} = 74,7 \text{ mm}$
- Y dimension: $\ell = 4,7\text{mm} \cdot 10 (\text{pad}) + 0,3\text{mm} \cdot 9 (\text{gap}) = 47\text{mm} + 2,7\text{mm} = 49,7 \text{ mm}$



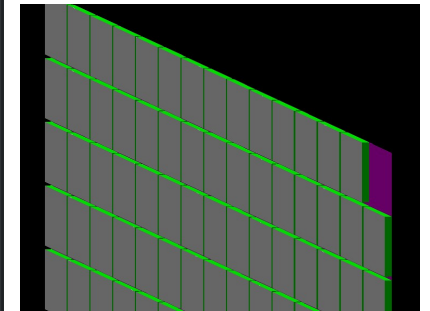
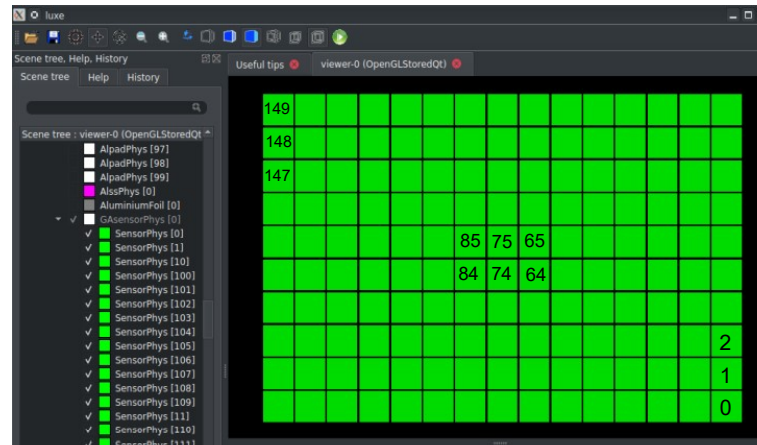
TB 2021: Simulations

- Geometry visualization in Geant4

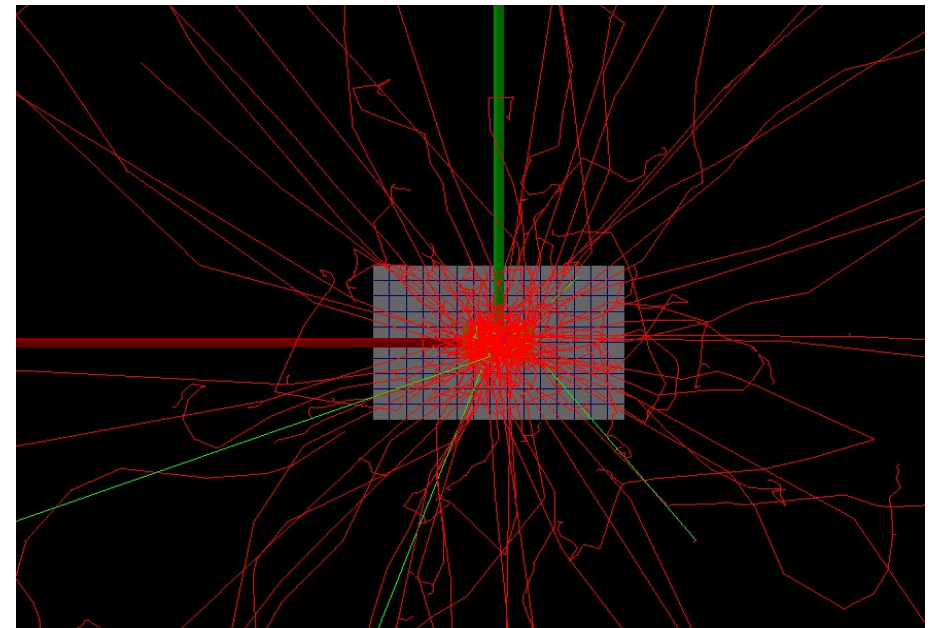
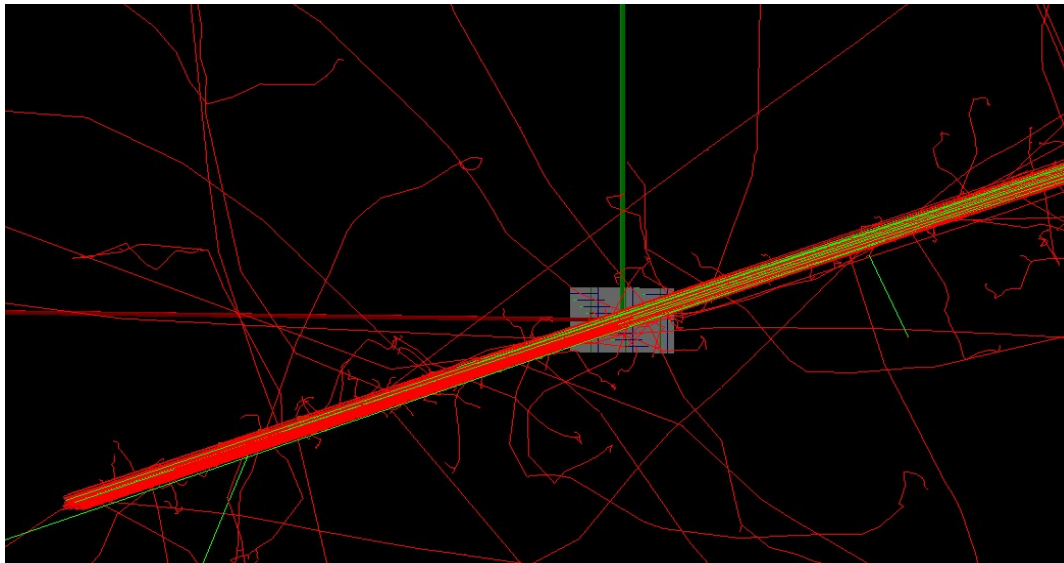
Test-beam setup



Anton1 sensor

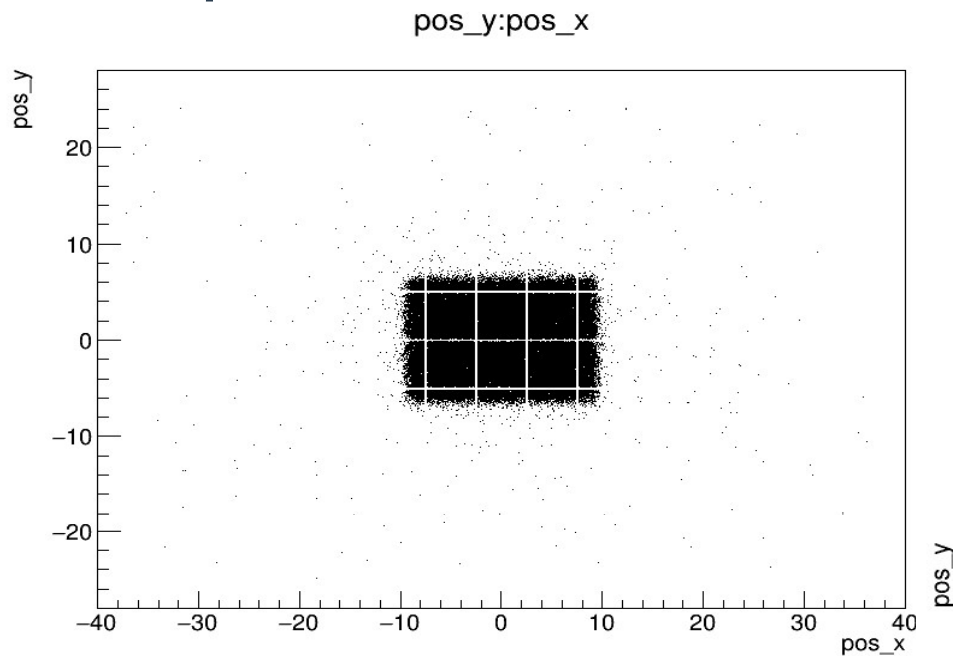


beamOn 100 events



TB 2021: Simulations

- Hit map

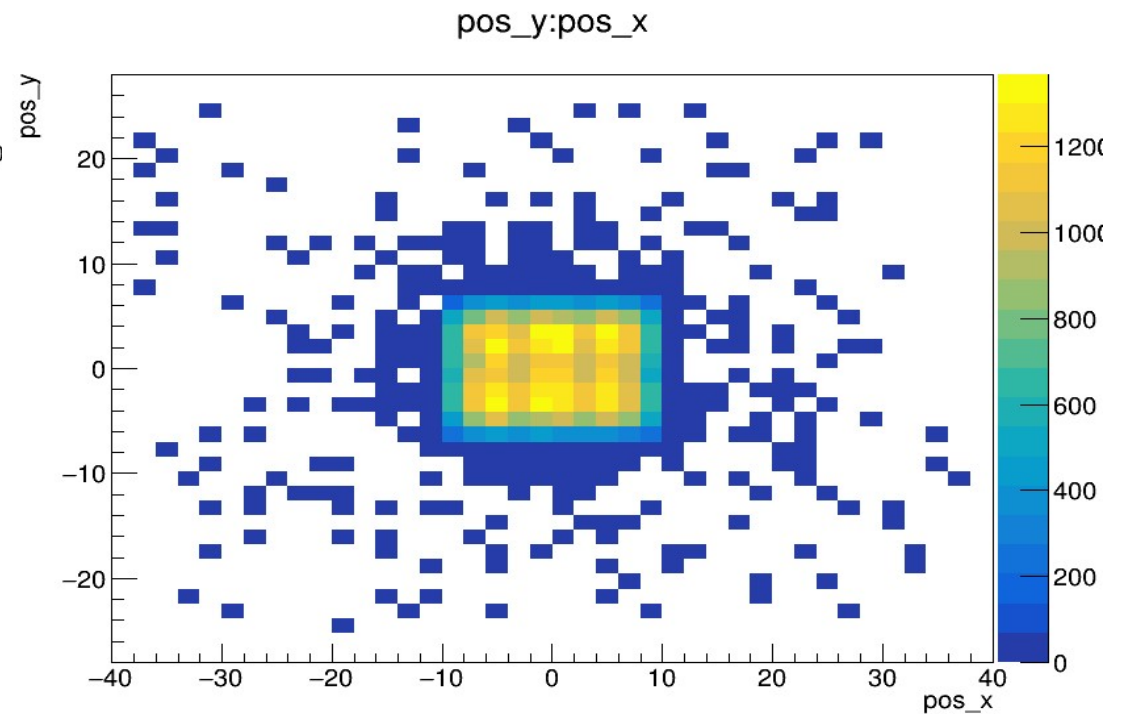


Hits registered position

- Rectangular shape

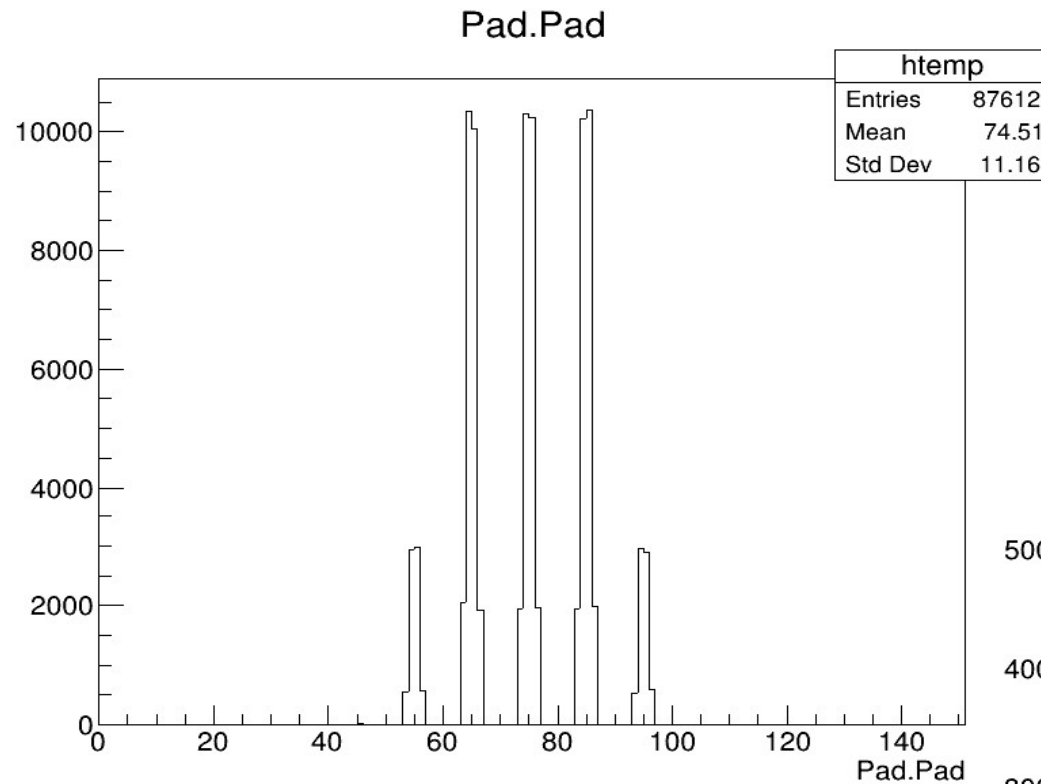
Simulation setup

- Primary particle: electron
- Primary particle energy: 5GeV
- Source type: rectangular, 18 mm x 12 mm
- Number of simulated events: 100.000



TB 2021: Simulations

- Pad hits



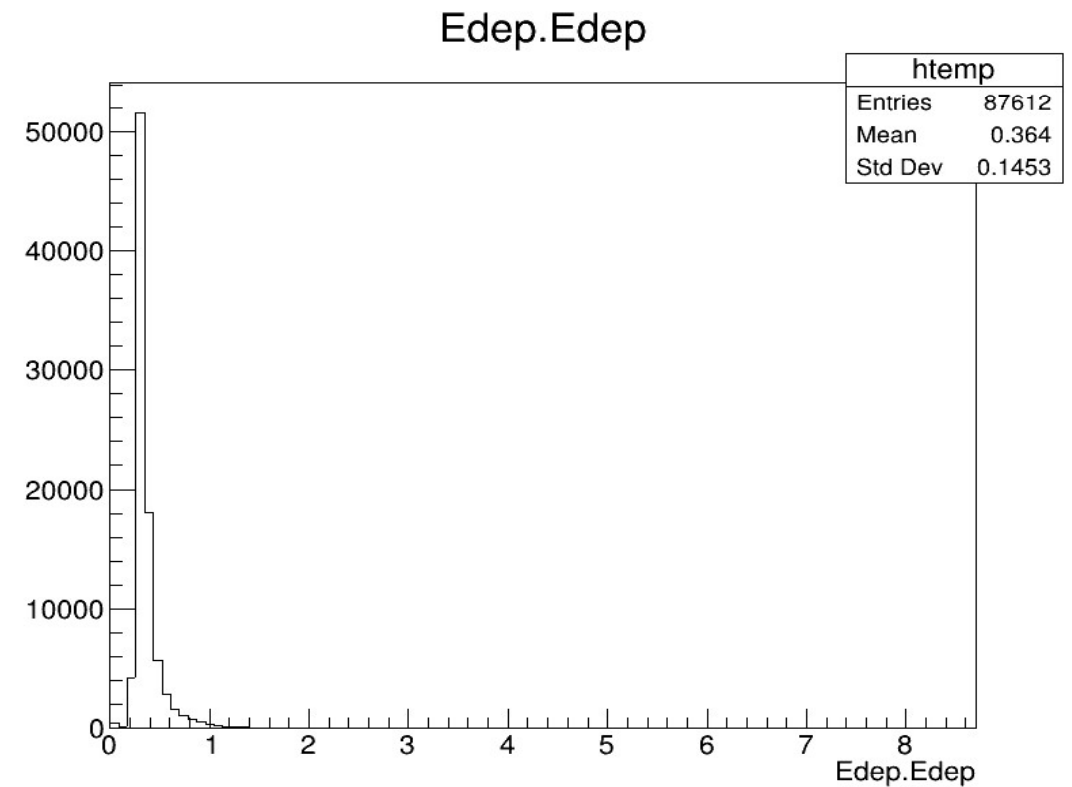
Hits registered position

- Rectangular shape

Simulation setup

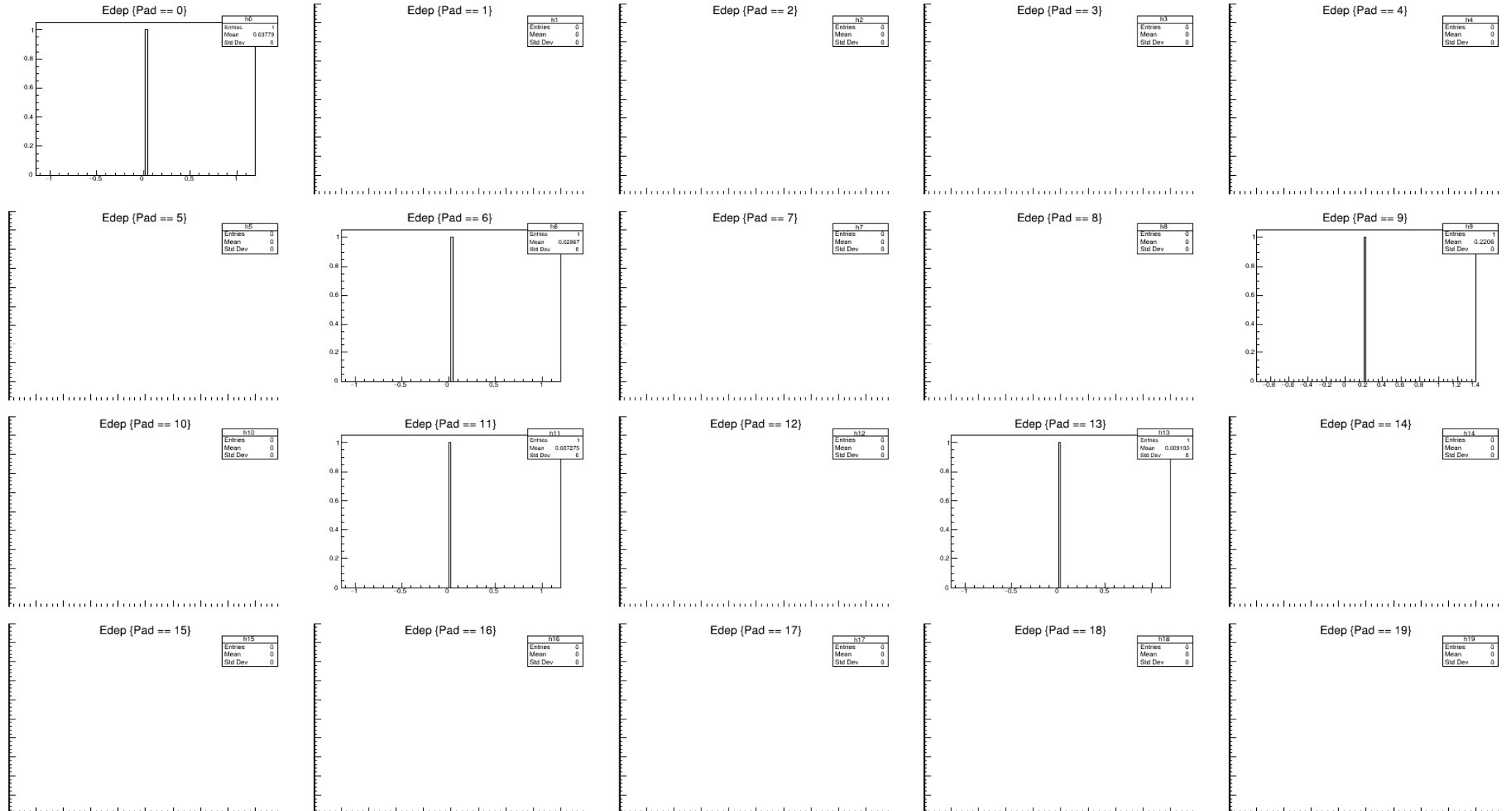
- Primary particle: electron
- Primary particle energy: 5GeV
- Number of simulated events: 100.000

- Energy deposition



TB 2021: Simulations

- Energy deposition on pads 0 - 19



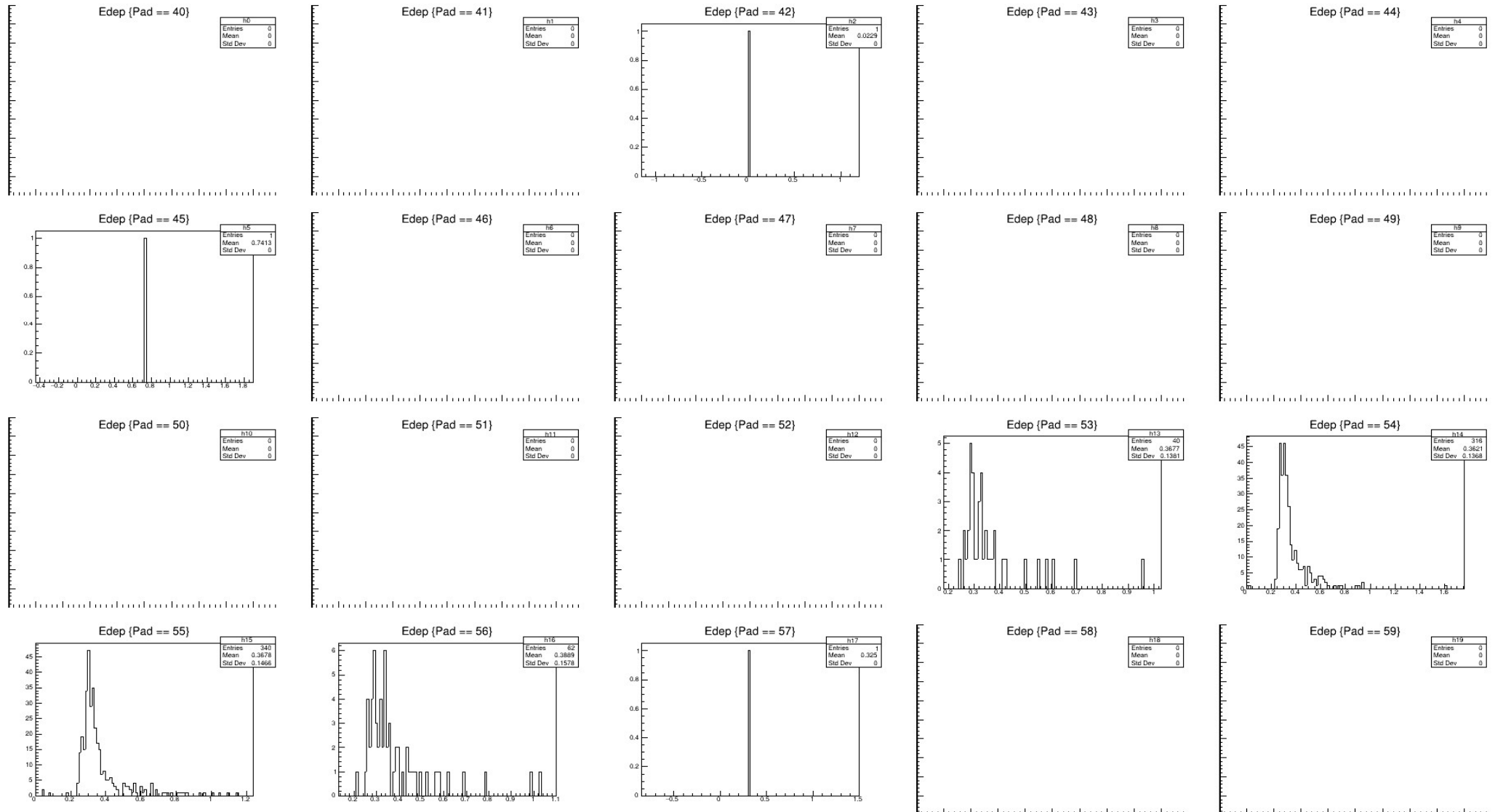
TB 2021: Simulations

- Energy deposition on pads 20 - 39



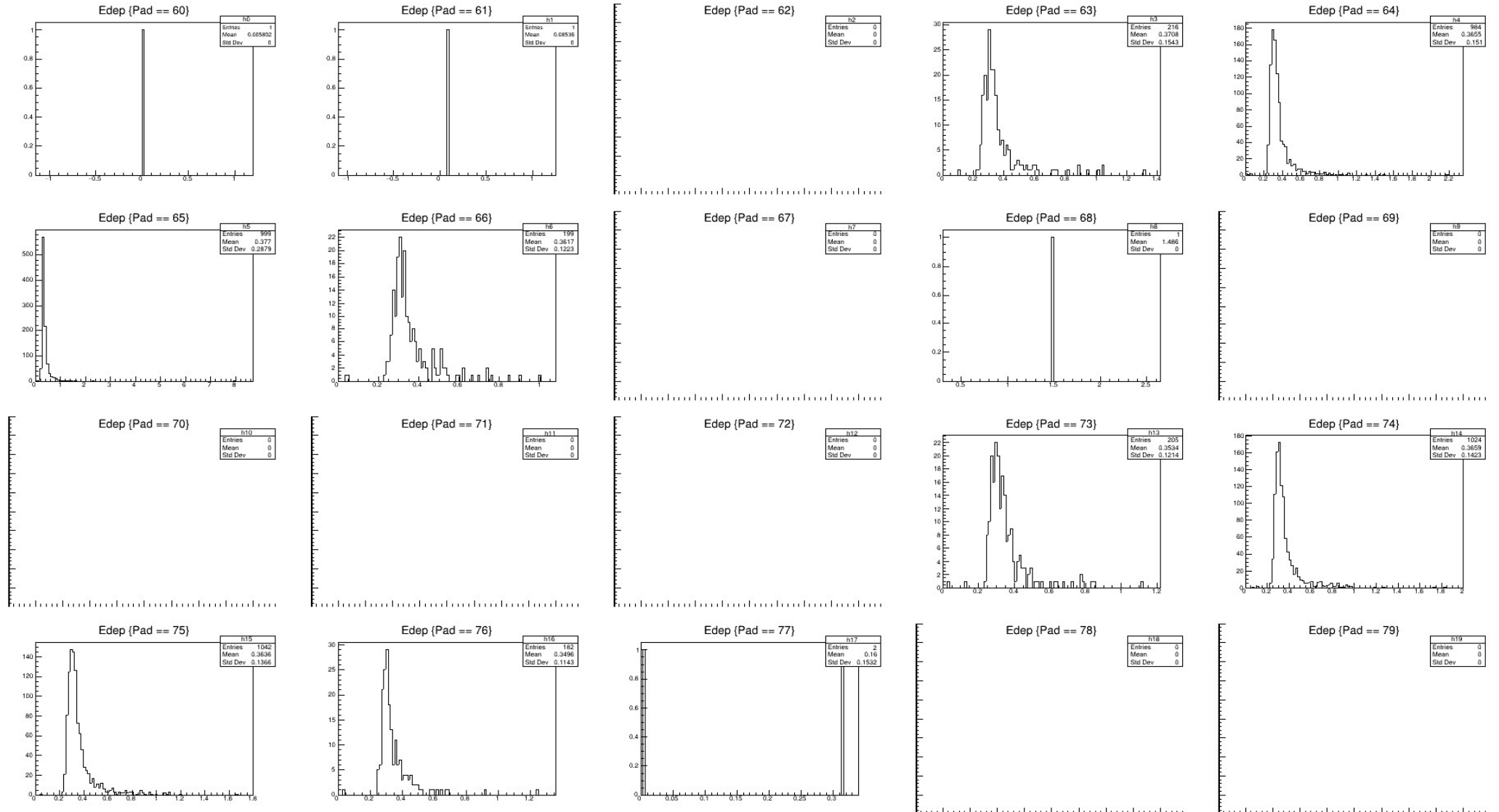
TB 2021: Simulations

- Energy deposition on pads 40 - 59



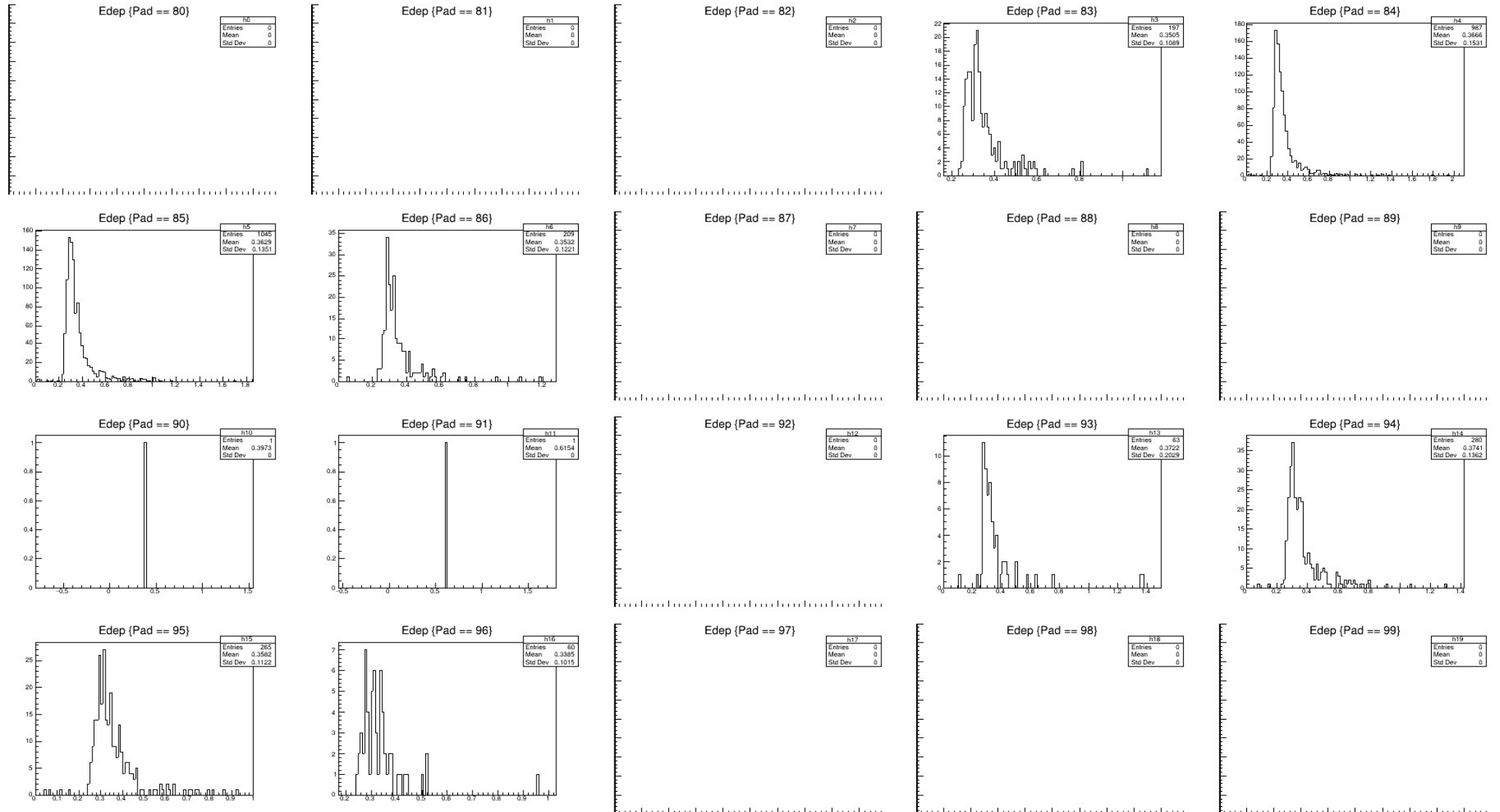
TB 2021: Simulations

- Energy deposition on pads 60 - 79



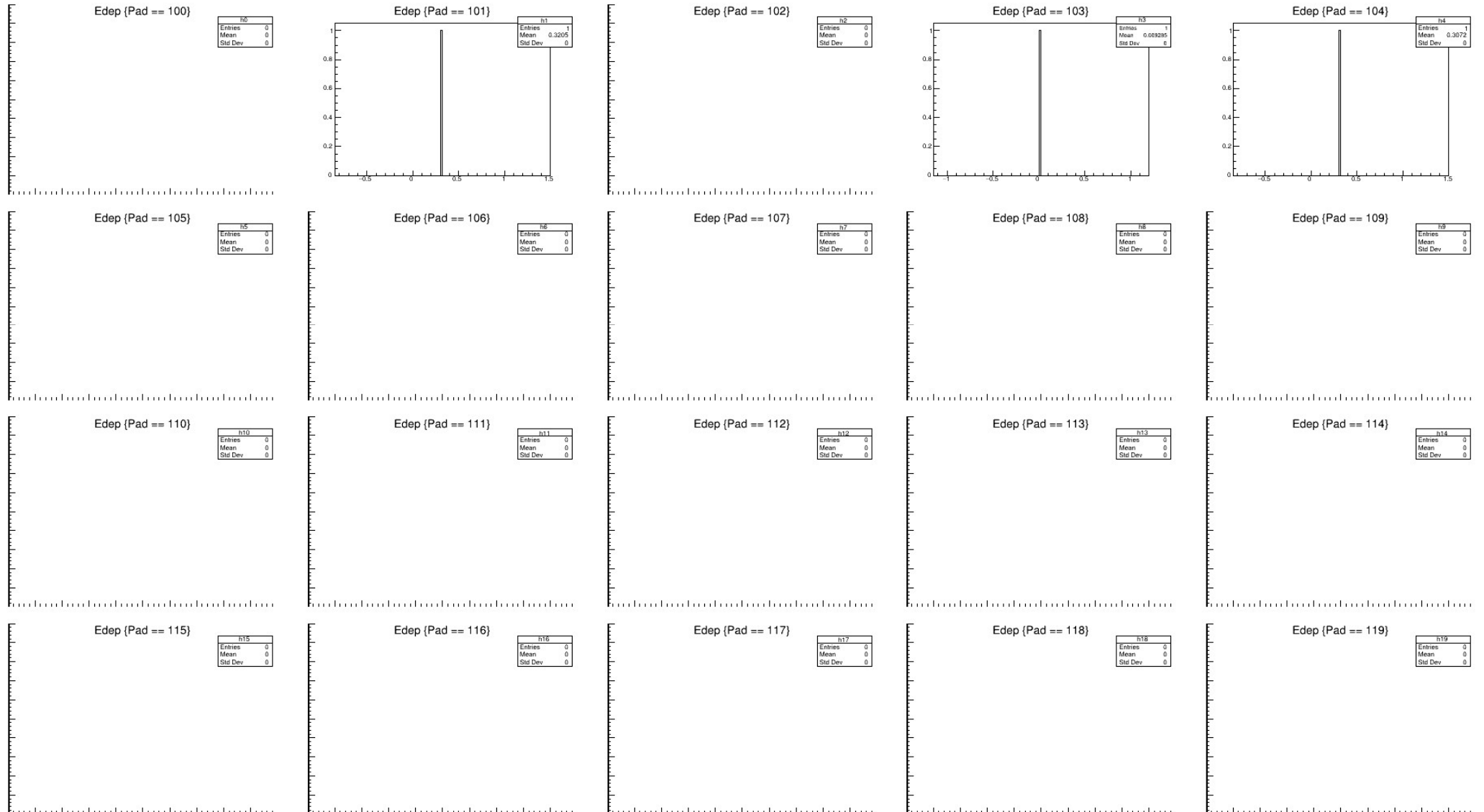
TB 2021: Simulations

- Energy deposition on pads 80 - 99



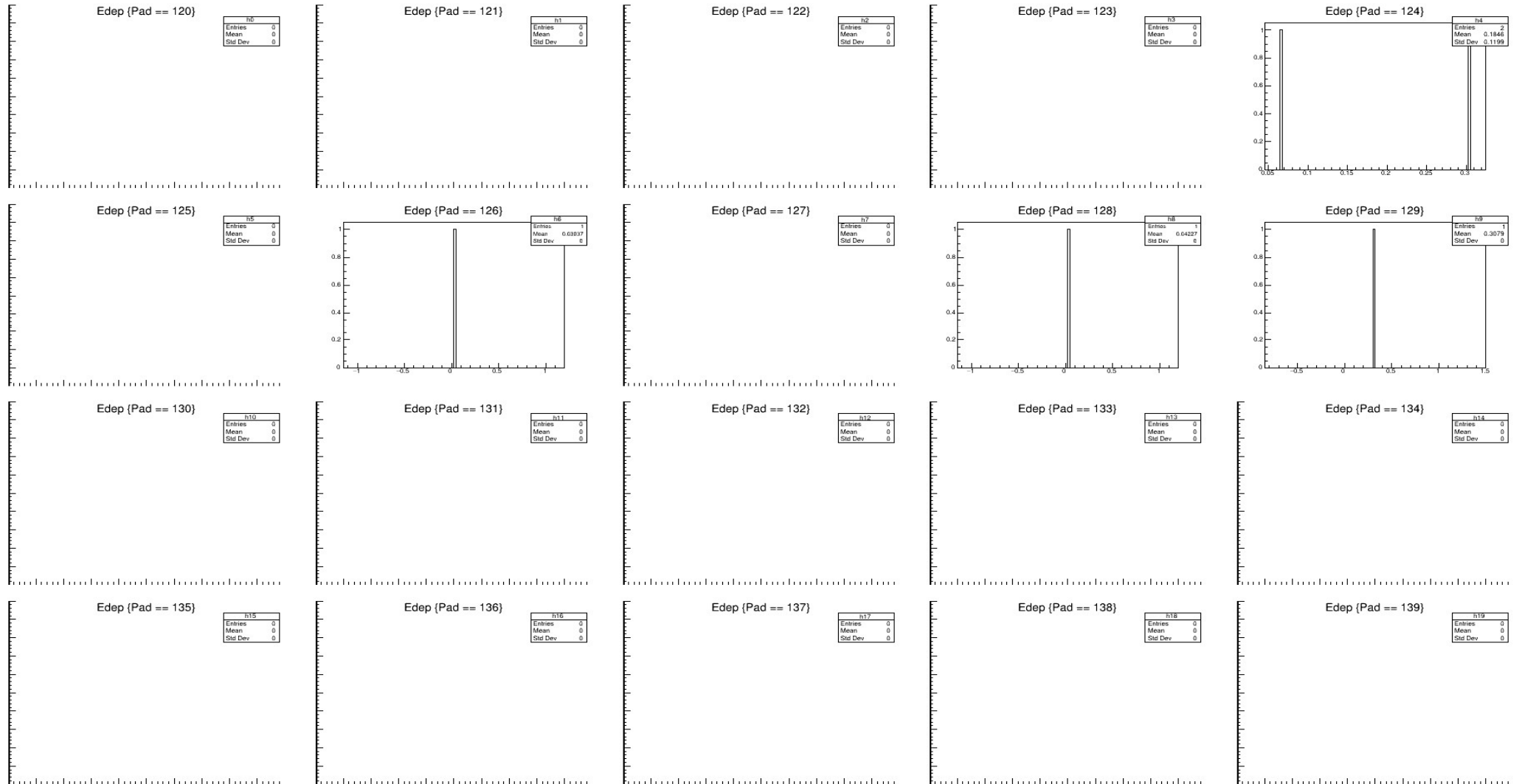
TB 2021: Simulations

- Energy deposition on pads 100 - 119



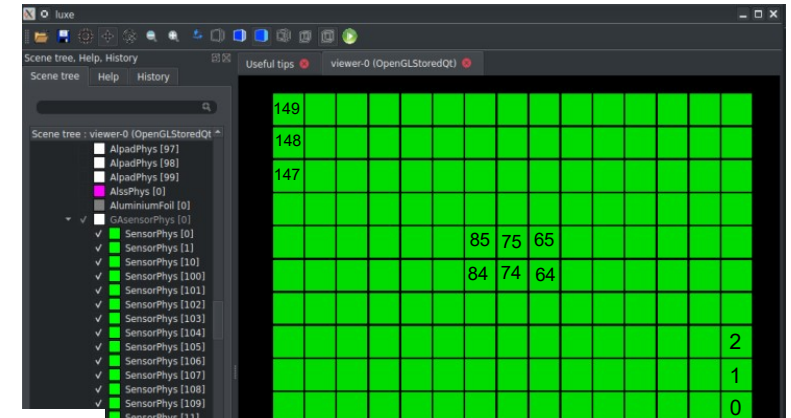
TB 2021: Simulations

- Energy deposition on pads 120 - 139

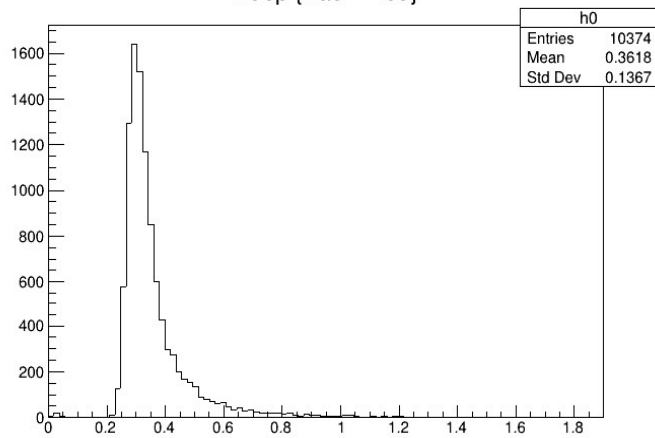


TB 2021: Simulations

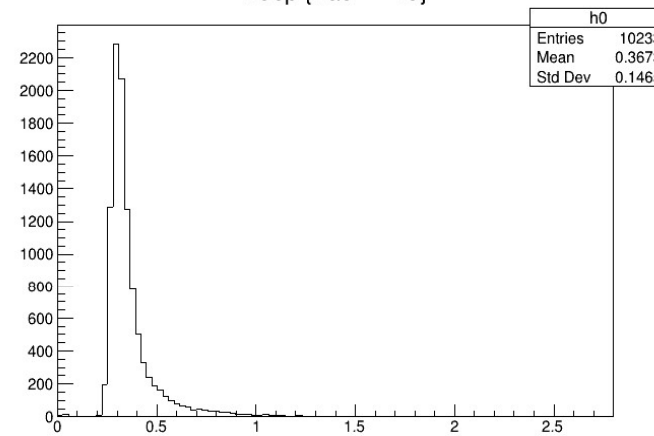
- Energy deposition on pads



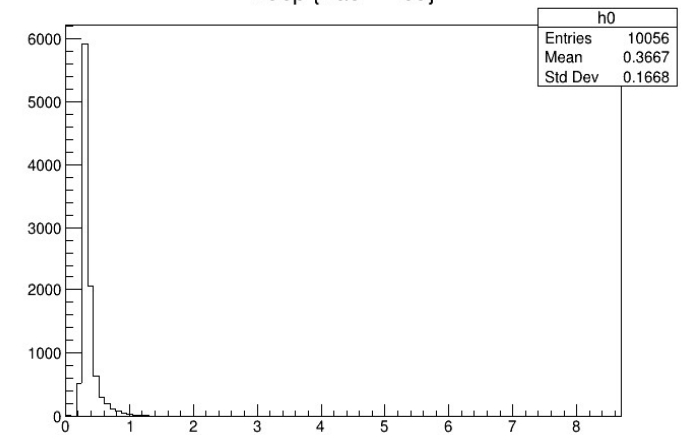
Edep {Pad == 85}



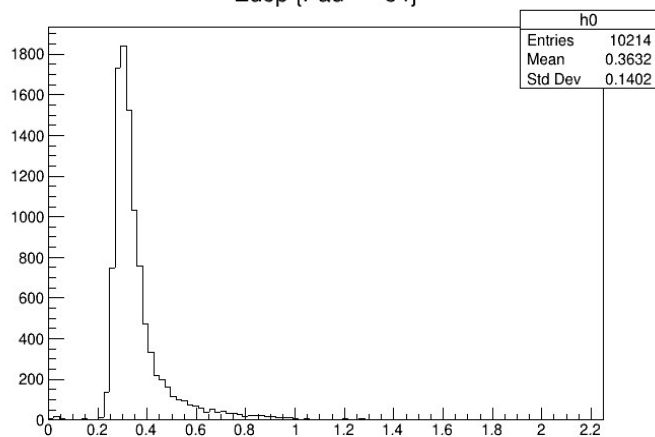
Edep {Pad == 75}



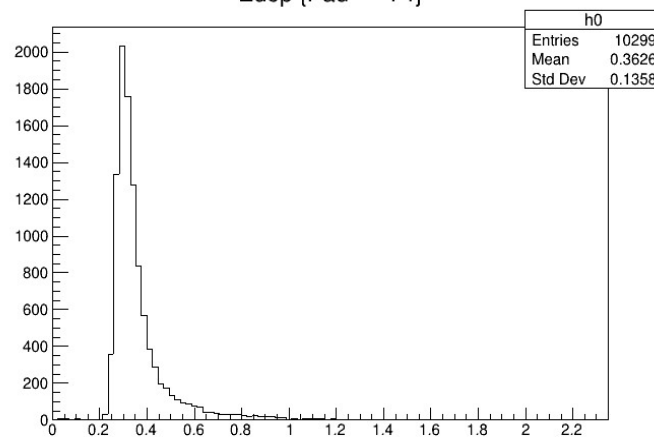
Edep {Pad == 65}



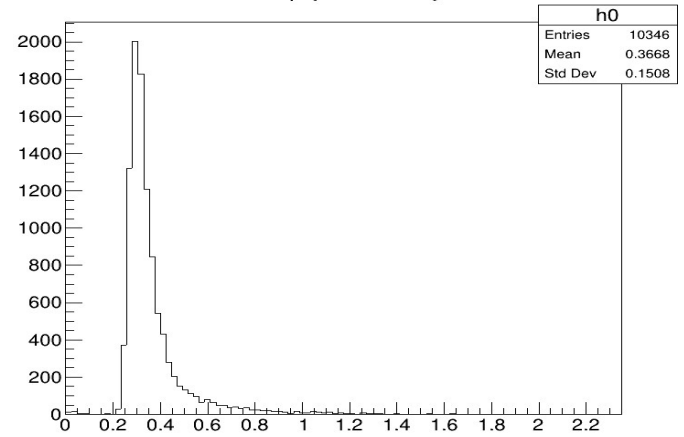
Edep {Pad == 84}



Edep {Pad == 74}

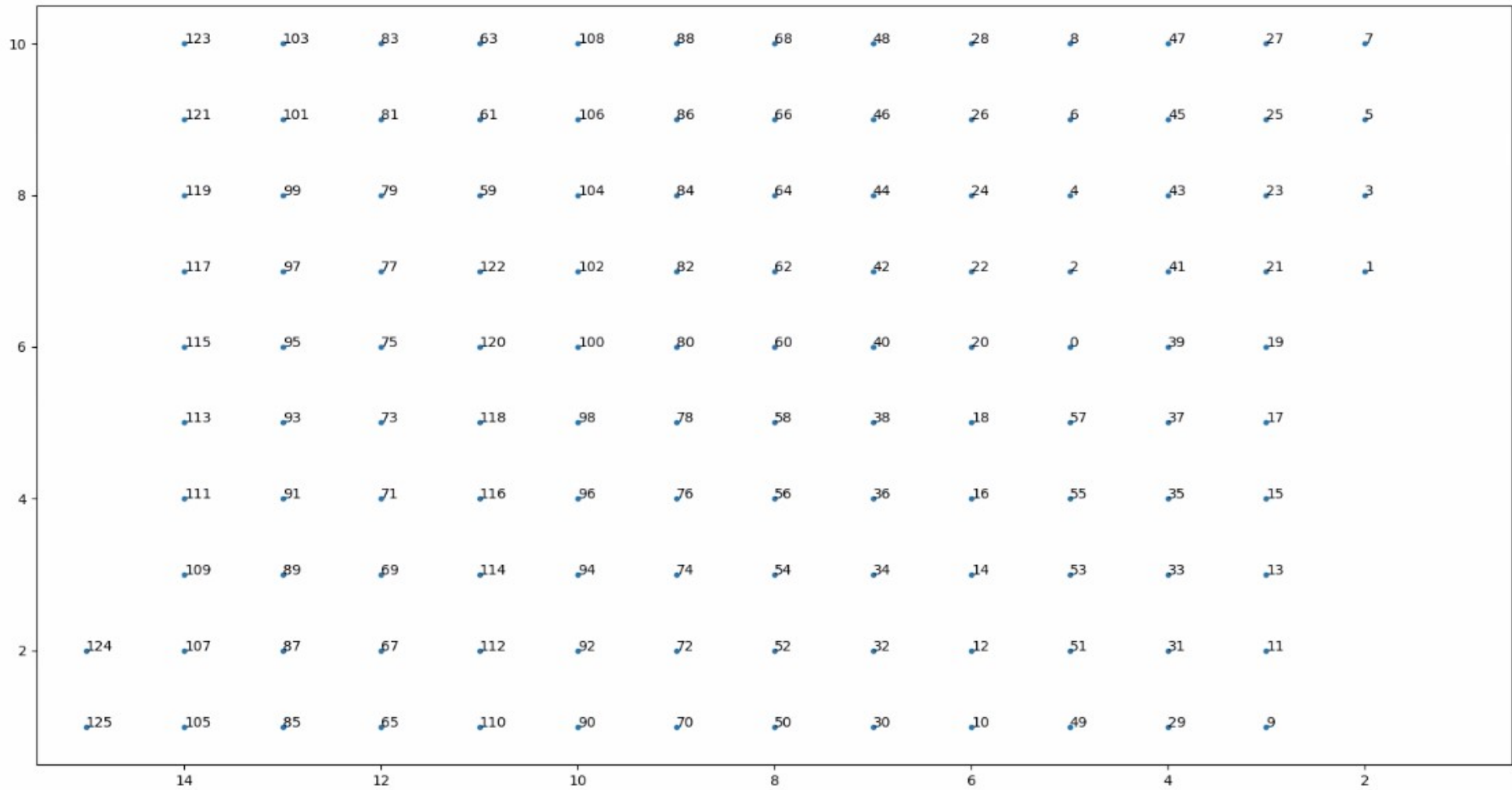


Edep {Pad == 64}



TB 2021: Sensor data

- Michal map



TB 2021: Sensor data

- Center pads

pads where the beam hit the sensor

