Update on LUXE GEANT4 Simulation

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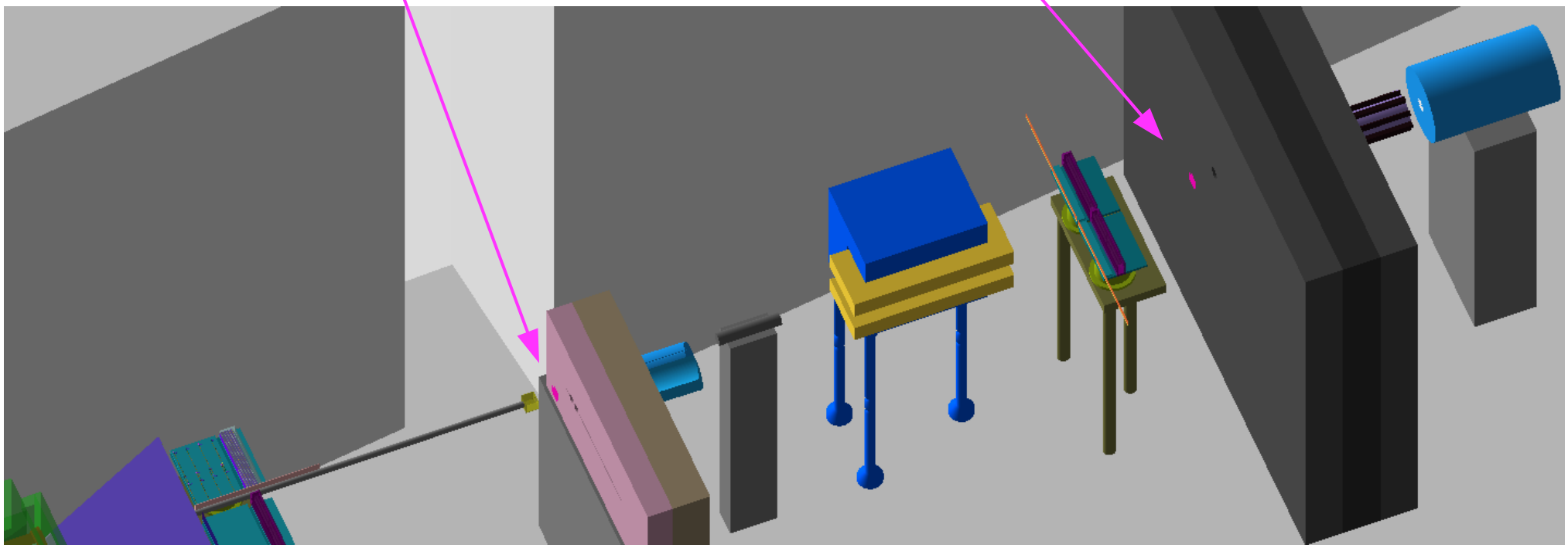
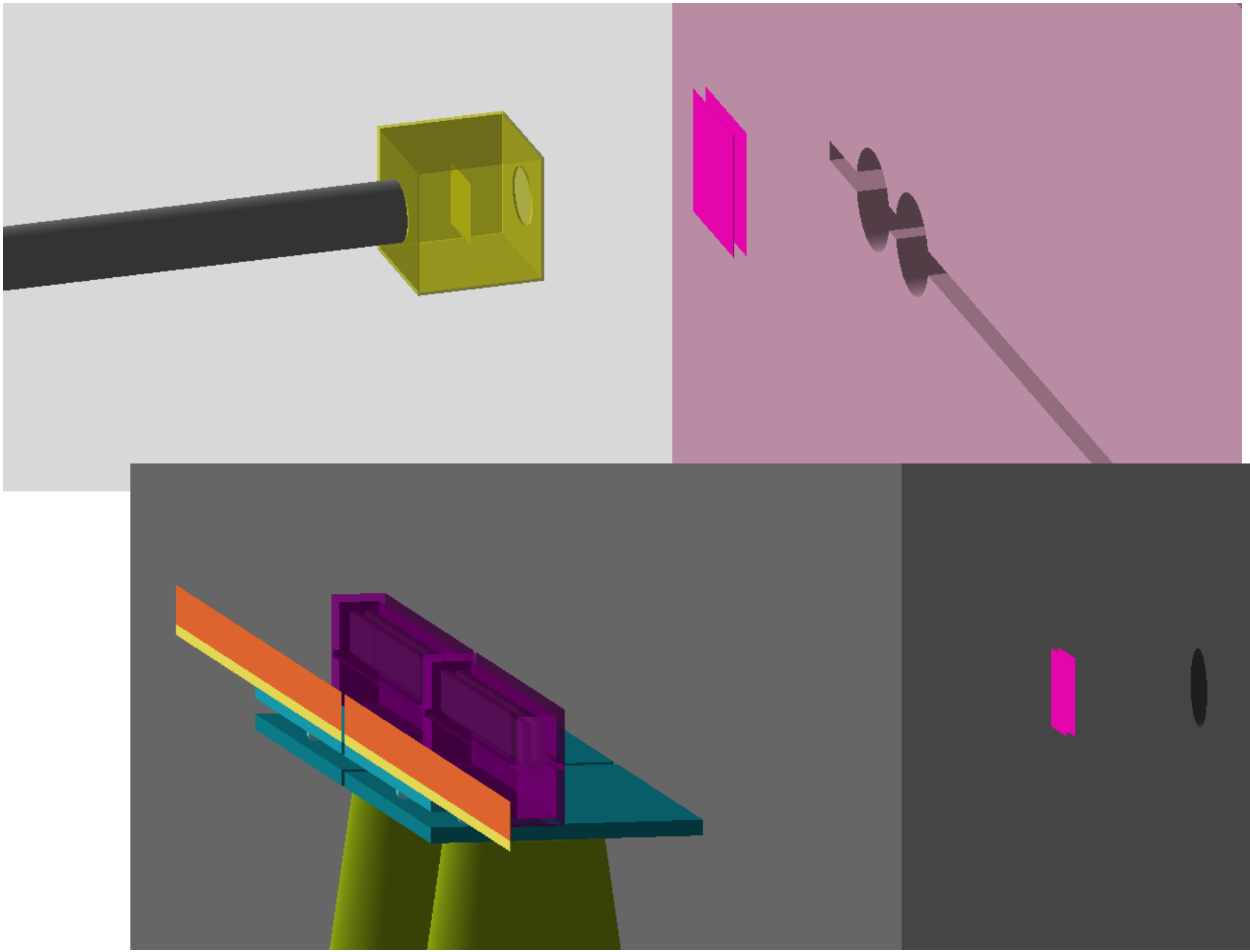
LUXE DESY technical Meeting
February 4, 2021

Sapphire planes of beam profiler

Beam profiler 11.8m from IP

Beam profiler 6.7m from IP

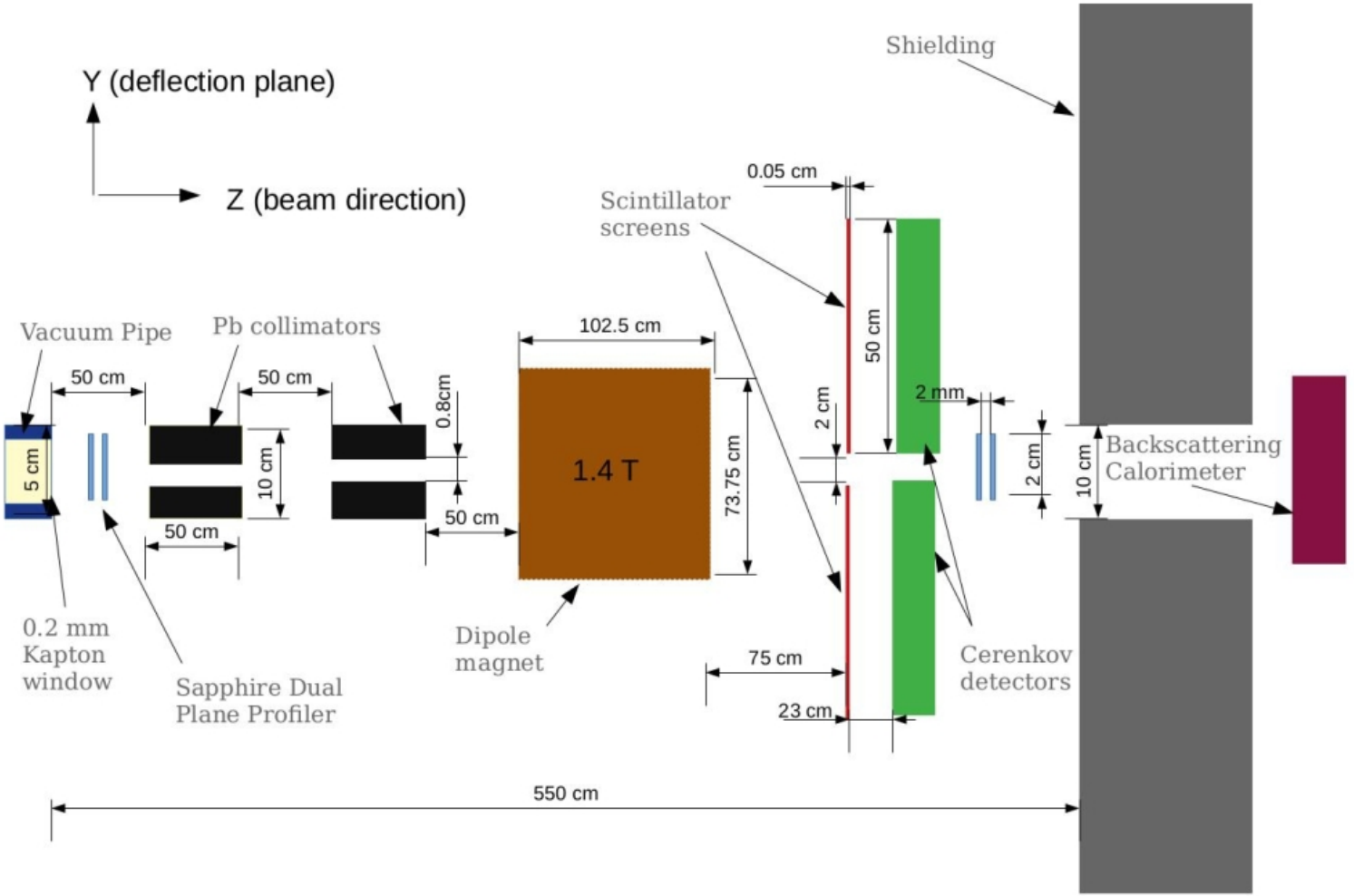




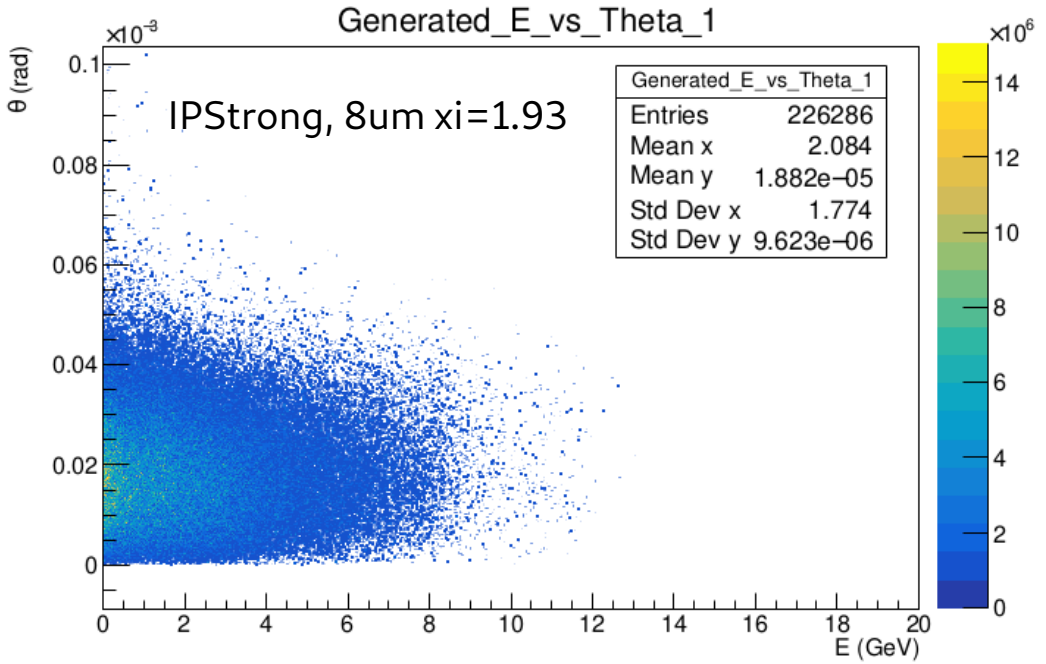
Gamma Ray Profiler Simulation Status

Dr. Gianluca Sarri, Kyle Fleck and Niall Cavanagh

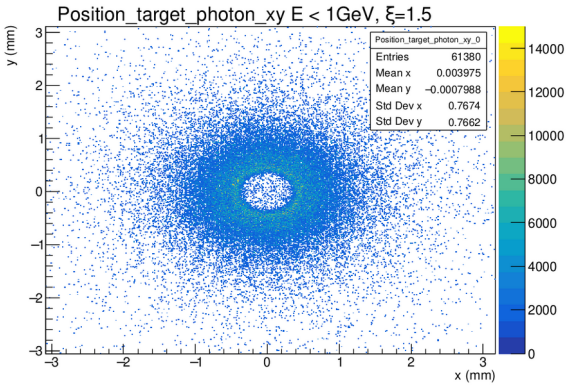
Geometry Diagram

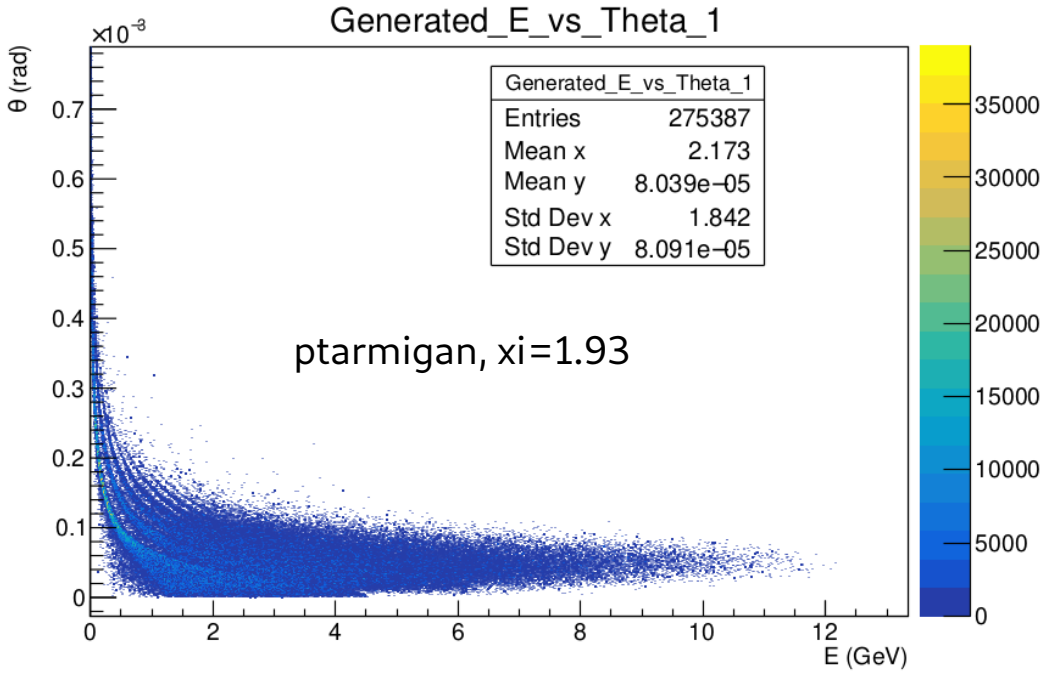


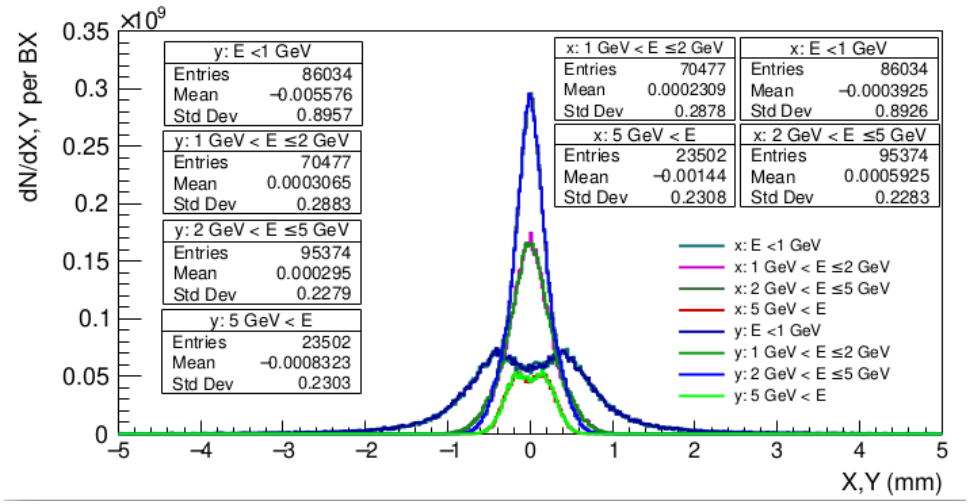
Compton photons



IPStrong and Ptarmigan



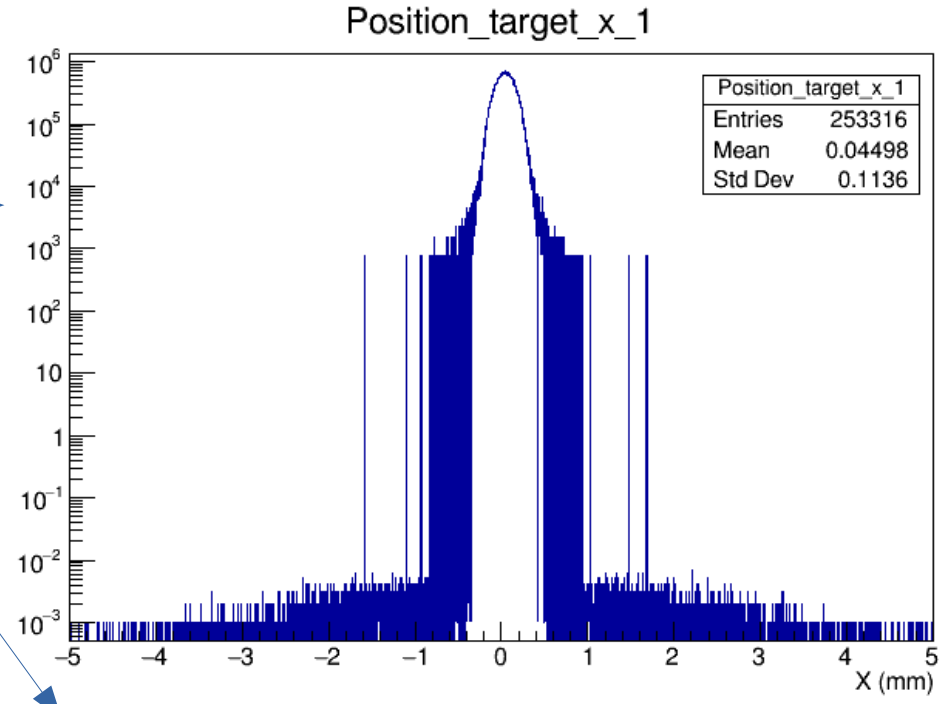




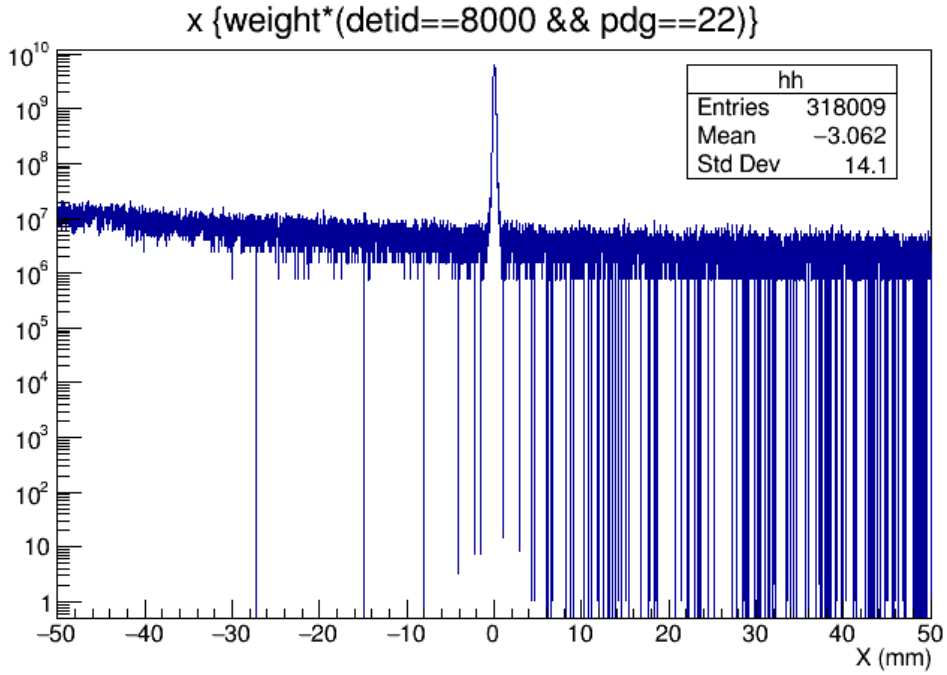
Primary MC photons

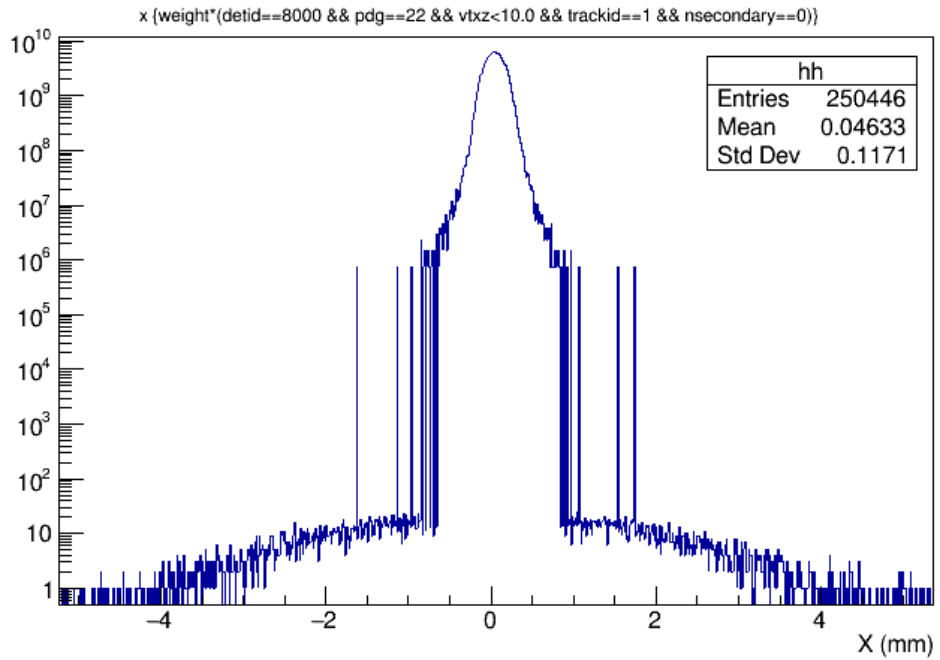
MC: X = X0 + px/pz * (Z-Z0)

Primary photons as they cross the firs profiler plane

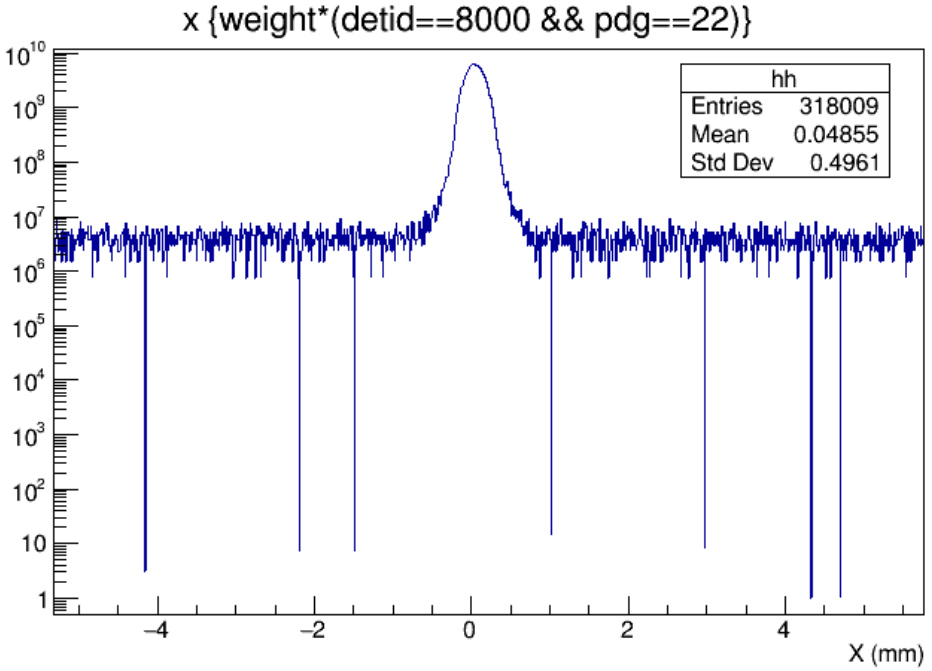


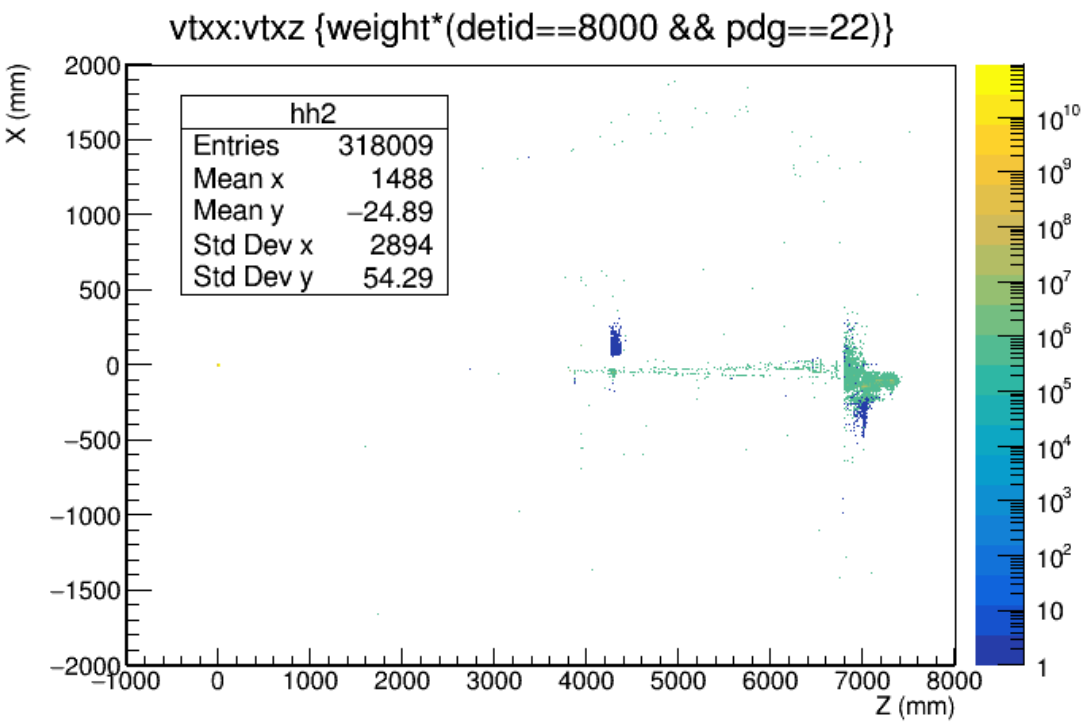
All photons crossing the firs profiler plane

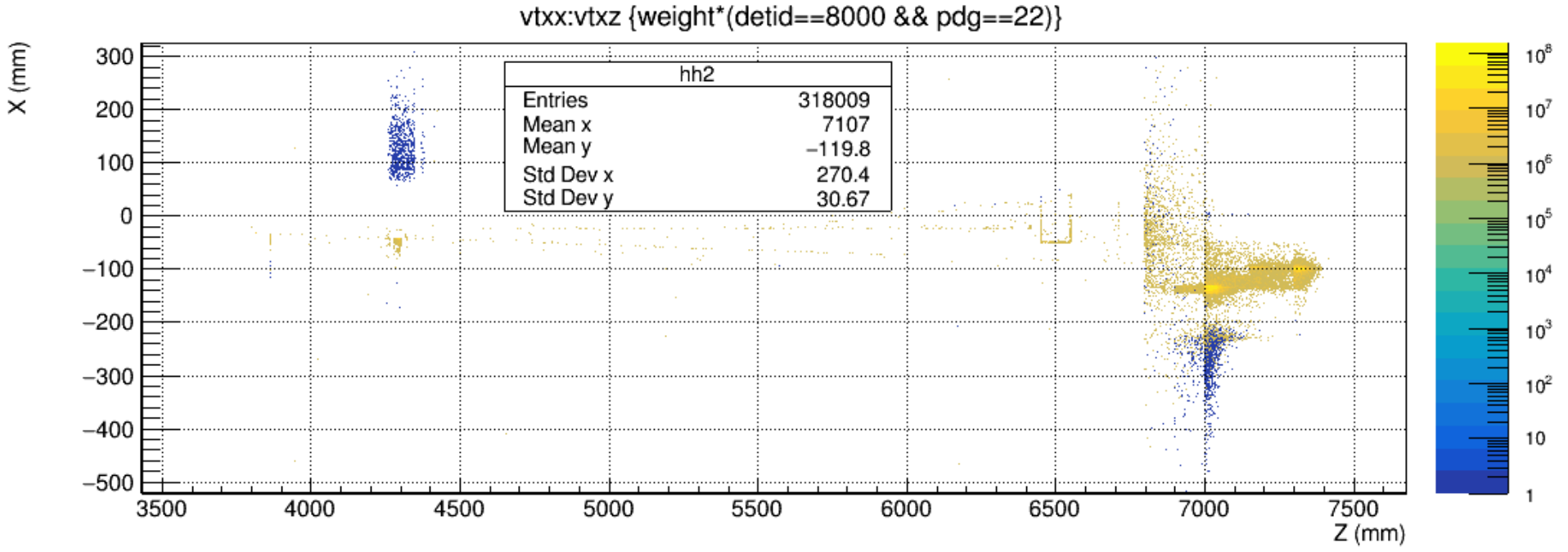




Vertex X,Z distribution of photons crossing first profiler plane

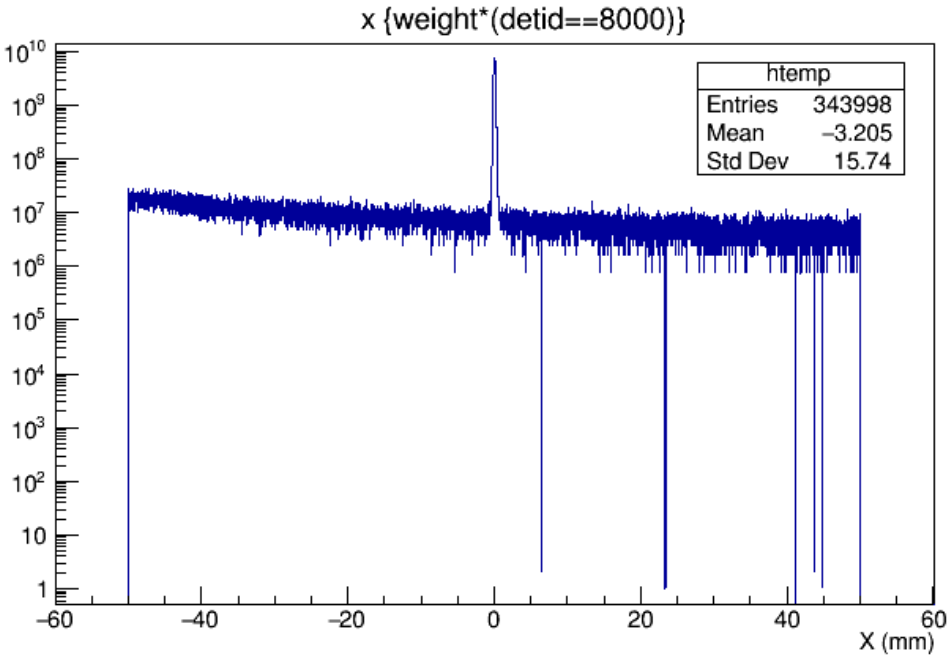


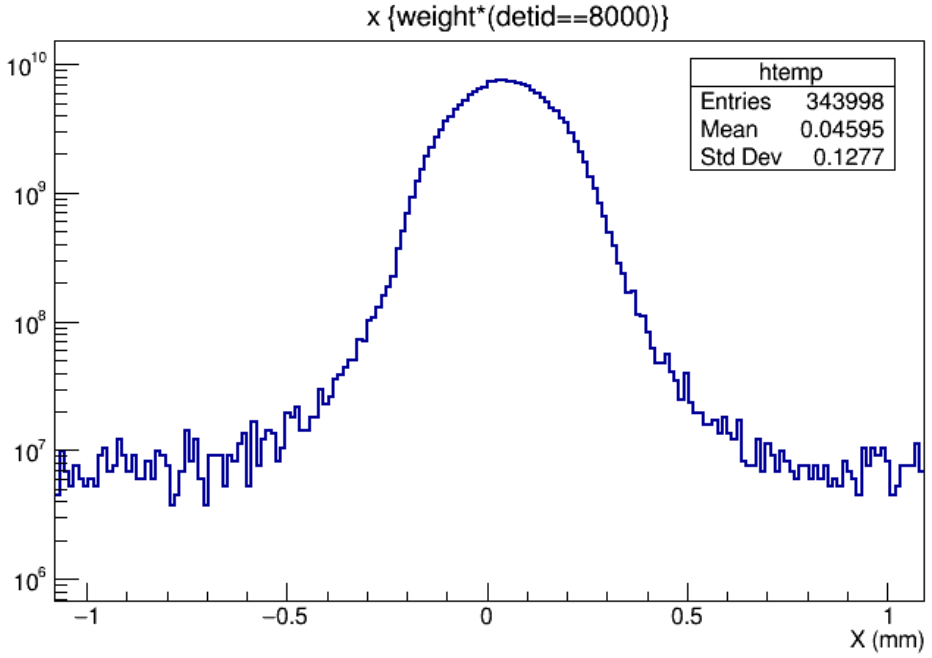


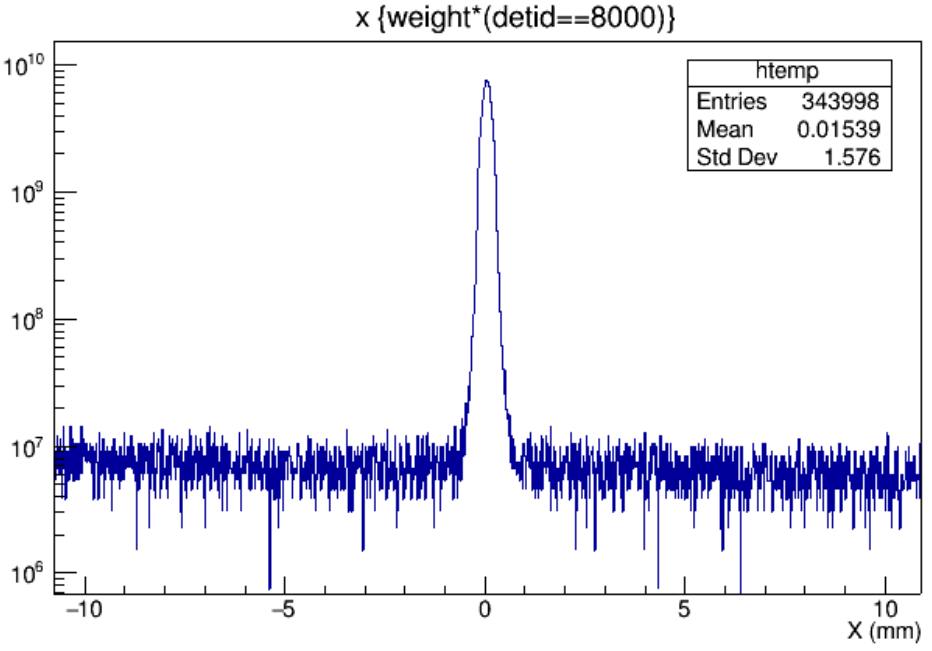


All particles crossing the surface of the first profiler plane

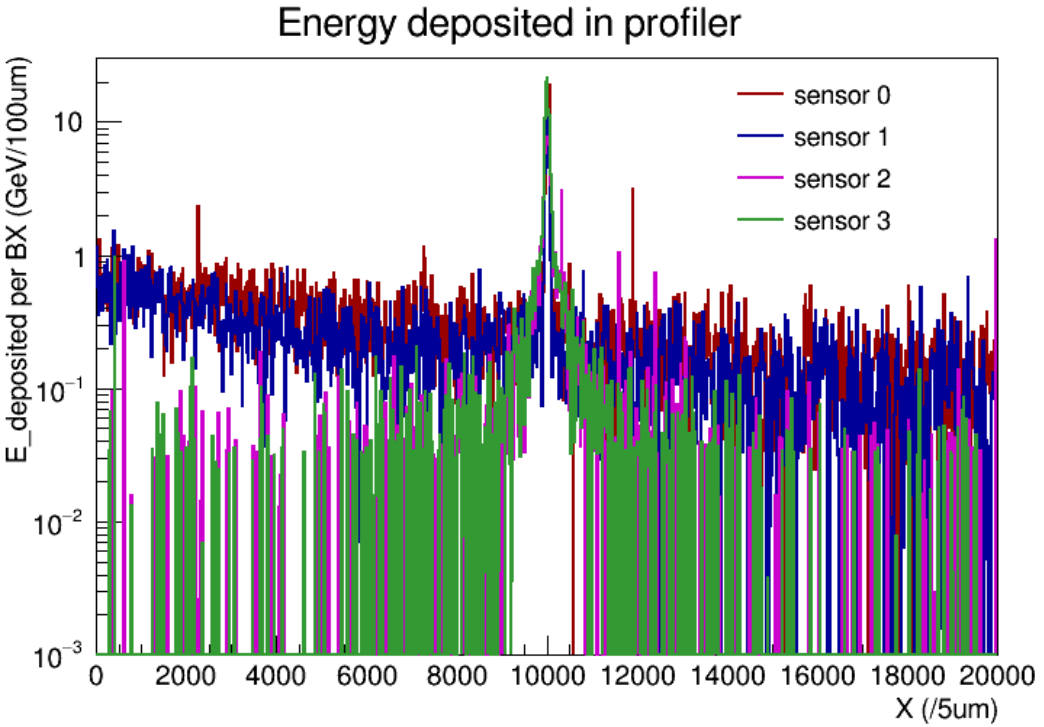
Zoom on X

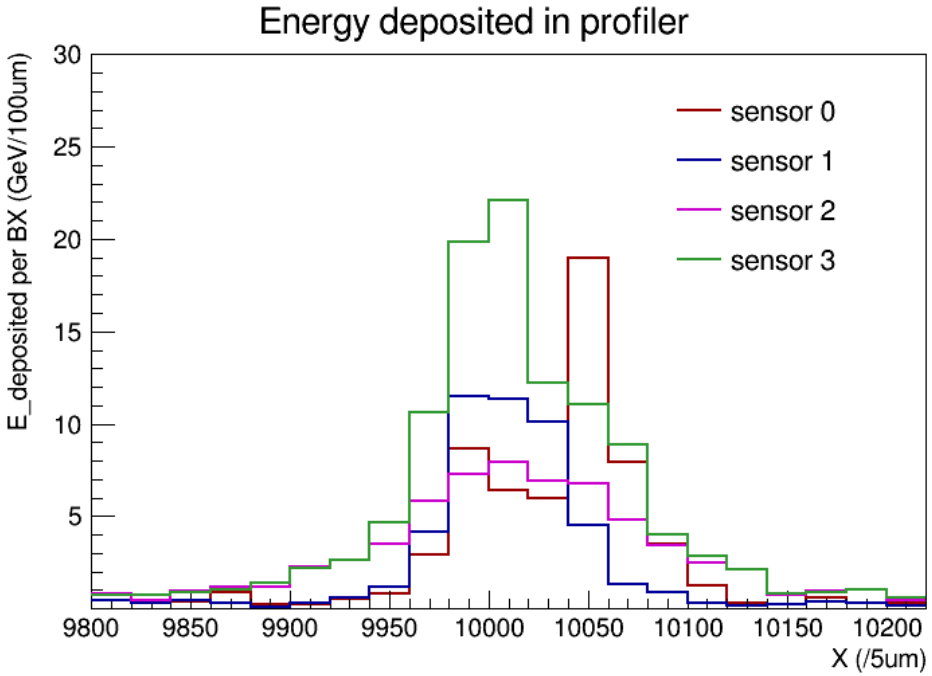


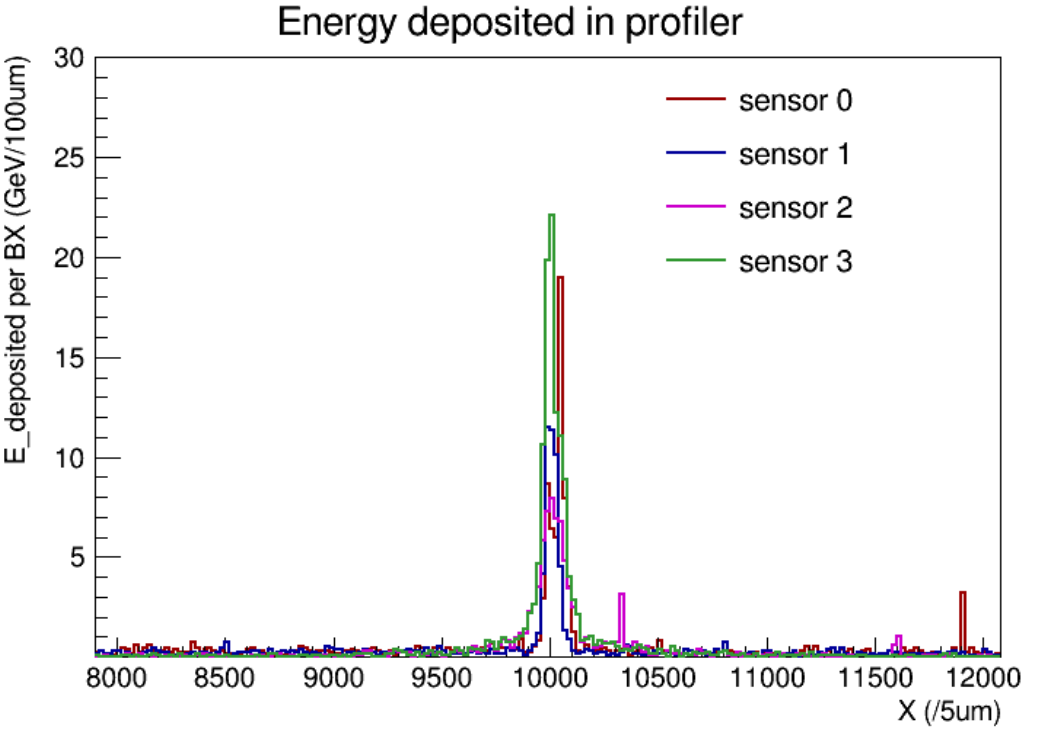




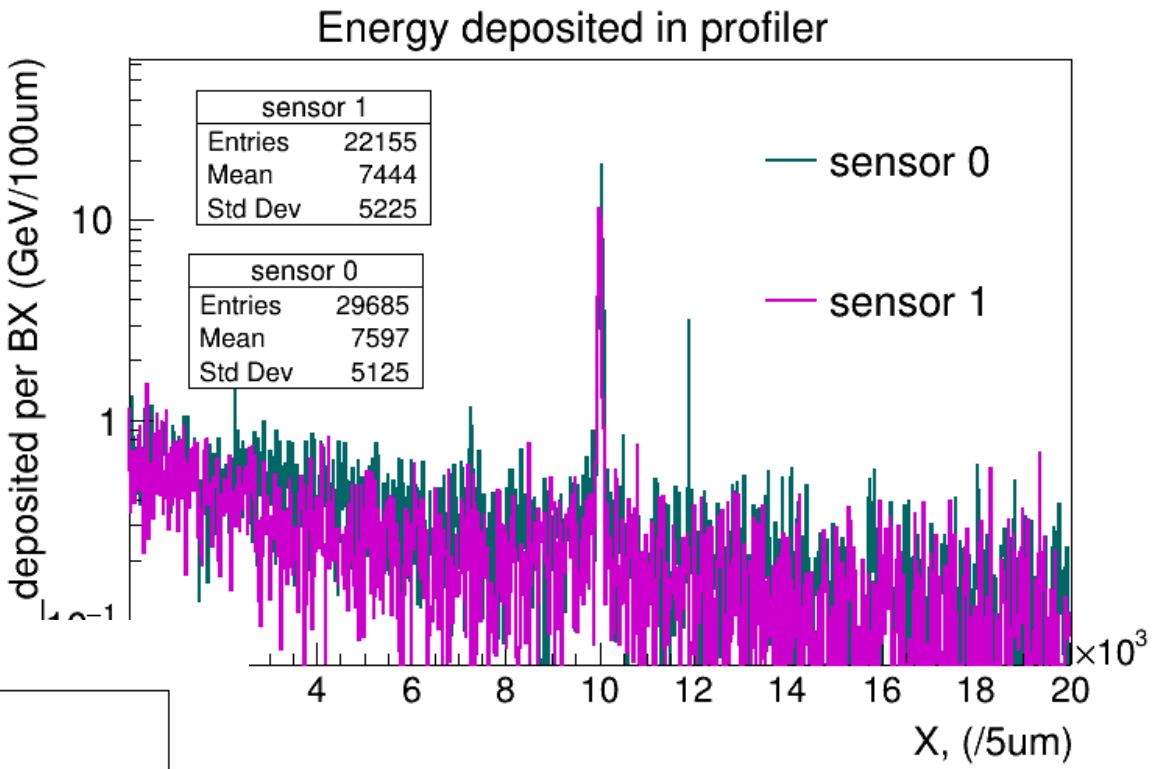
Deposited energy X distribution

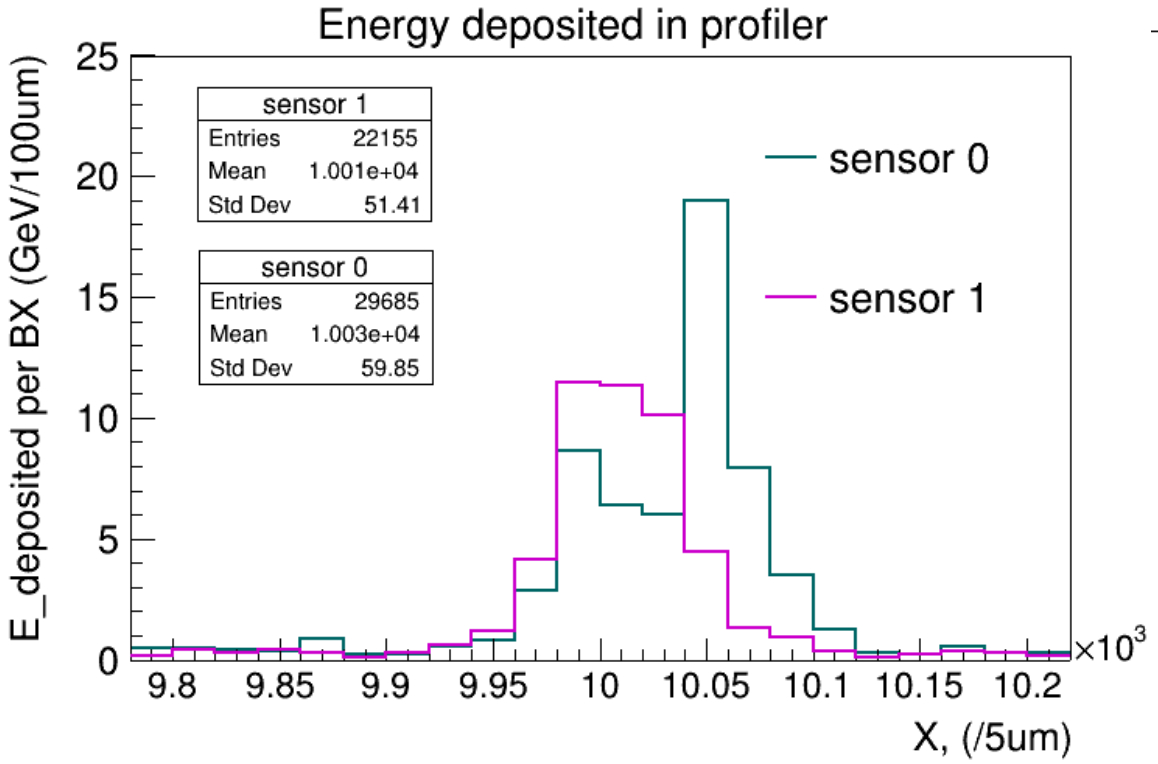




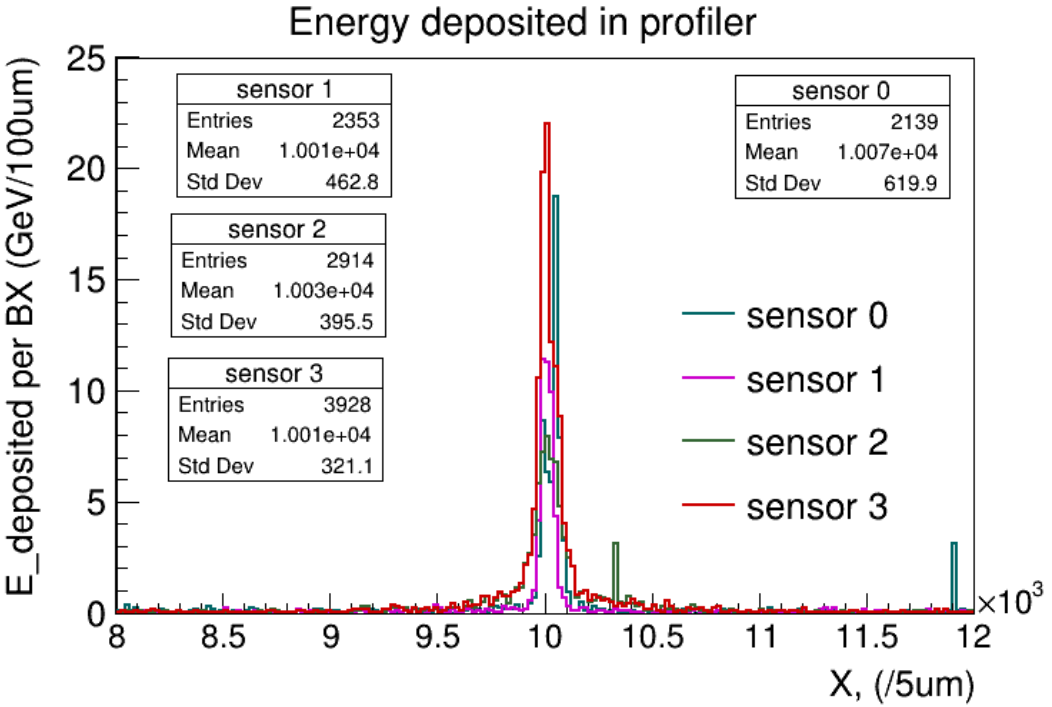


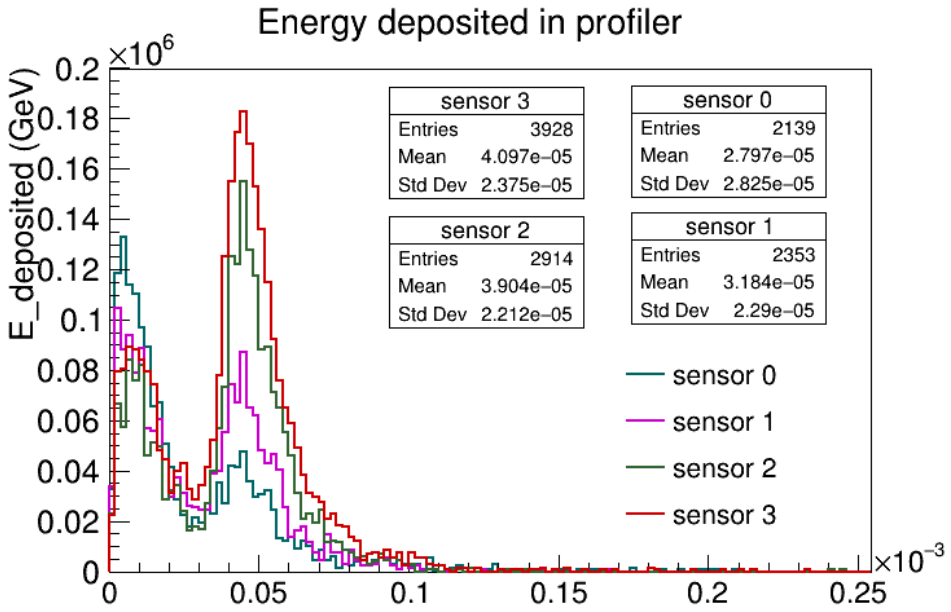
Deposited energy X distribution

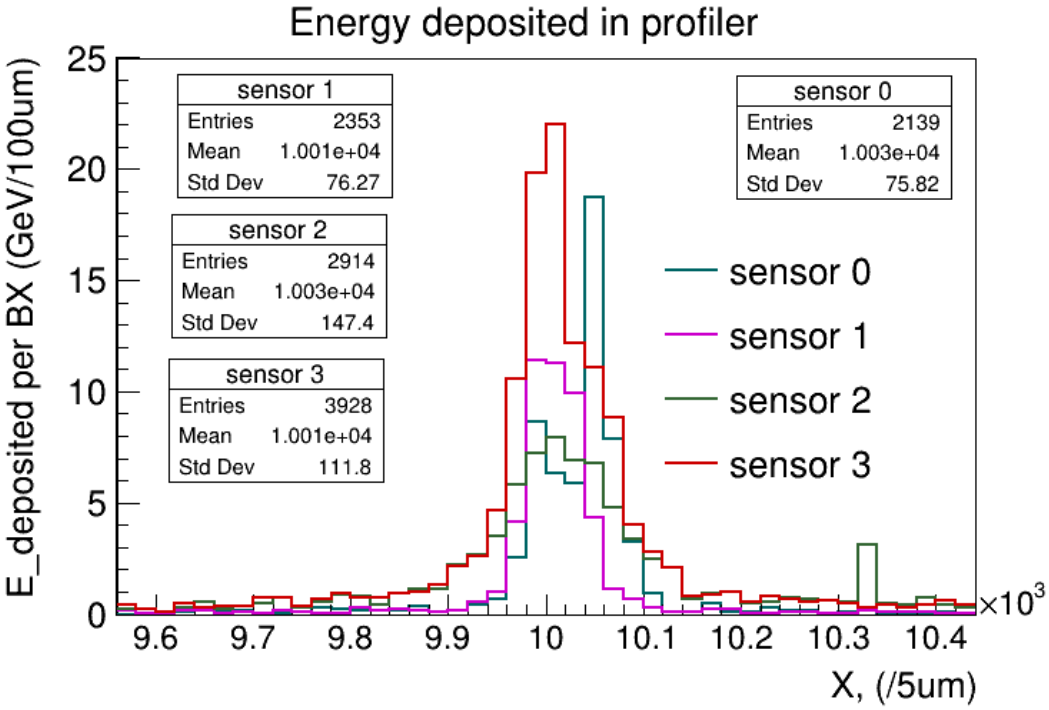




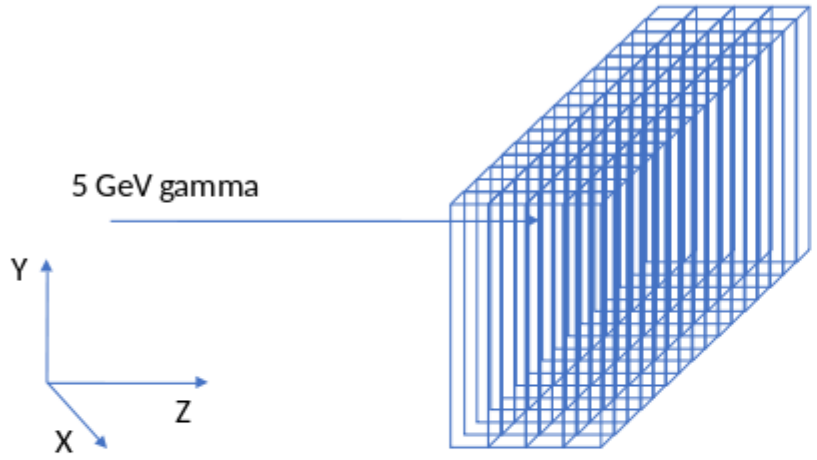
Deposited energy X distribution |x,y| < 1cm

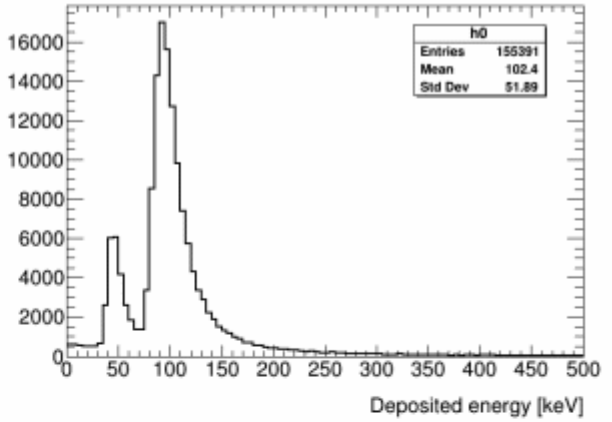


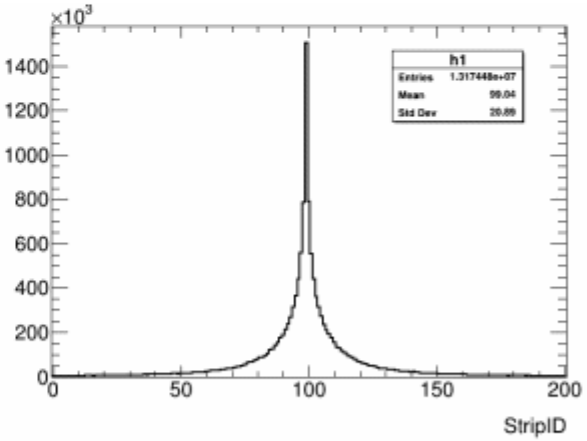




MC Standalone







- A standalone Geant4 MC simulation of the detector is being developed to study systematic effects
- First tests performed with a pencil beam of 5 GeV and 6m of air show a non negligible beam width spread