Additional shielding for ECal in GEANT4 Simulation

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LUXE S&A Meeting
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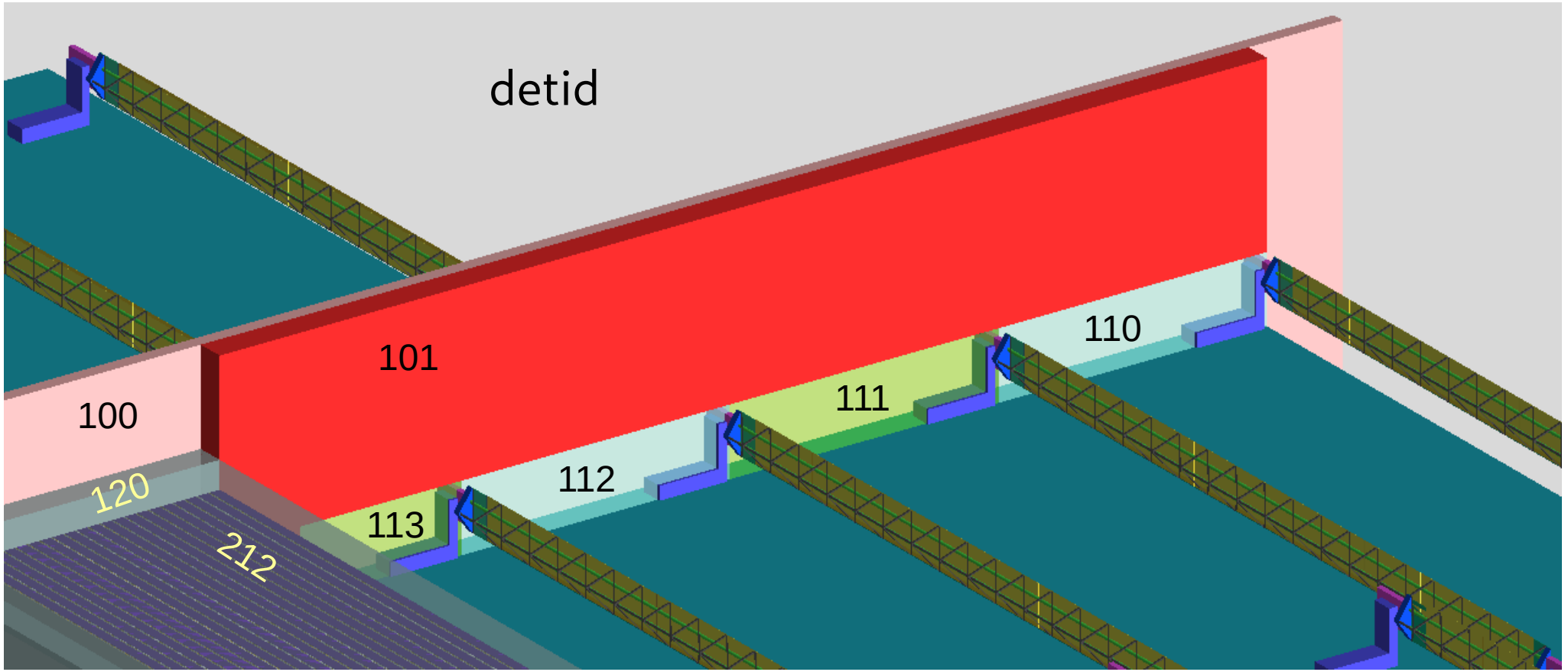
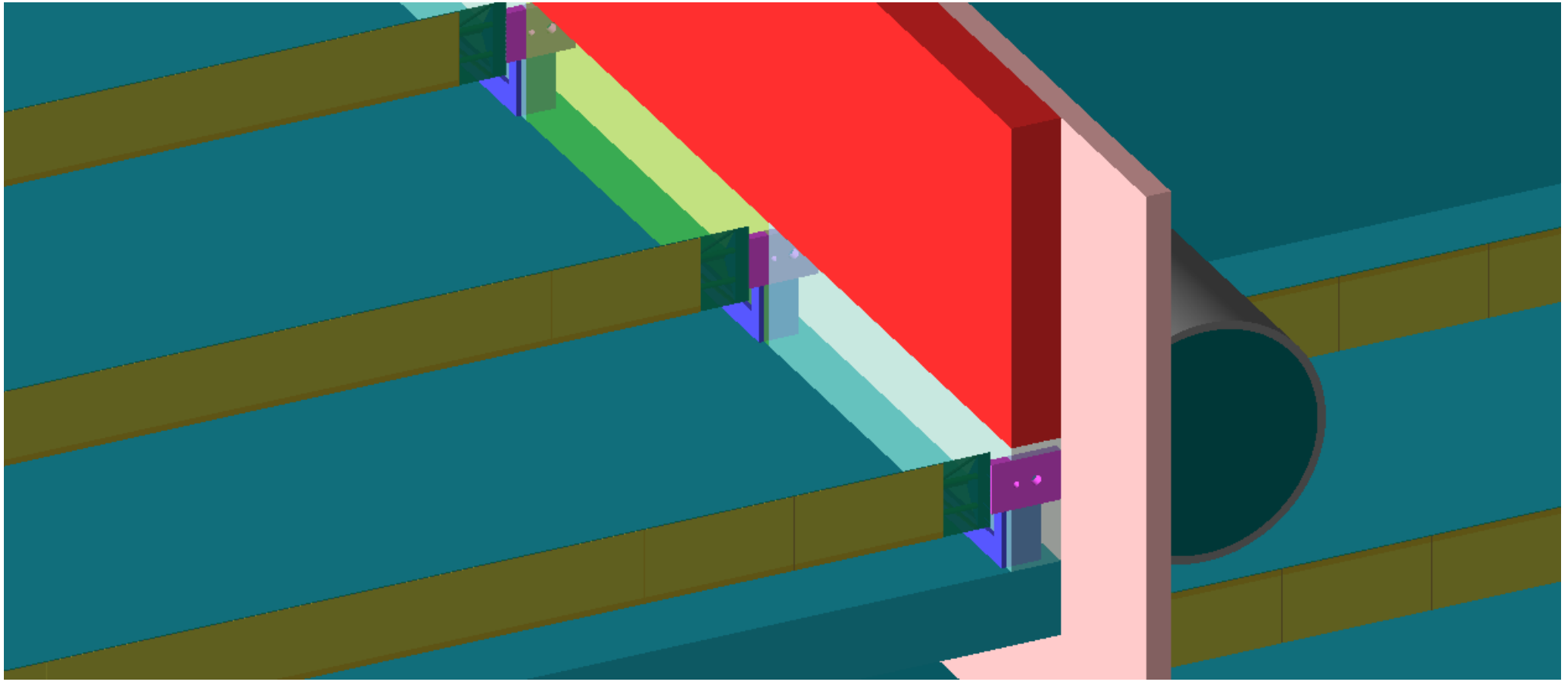
Additional shielding

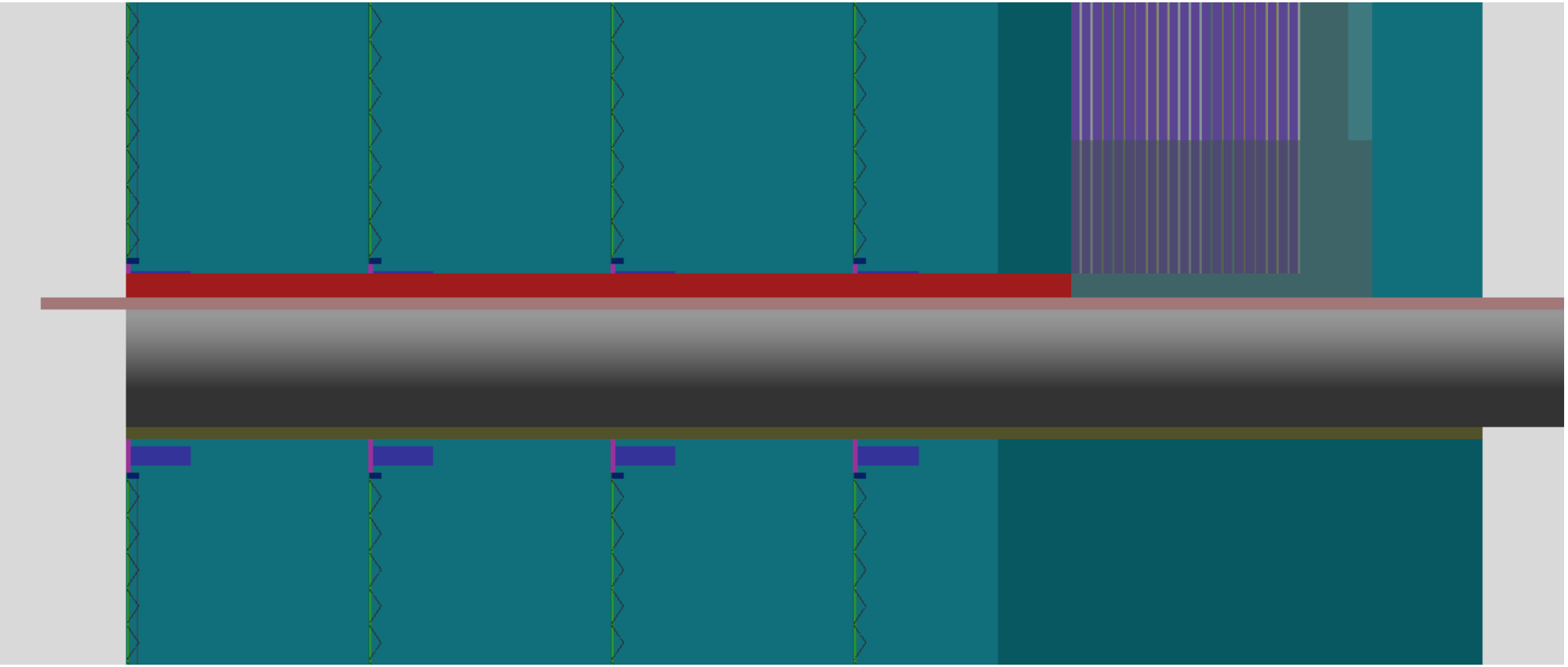
All shielding material is changed to tungsten including ECal casing



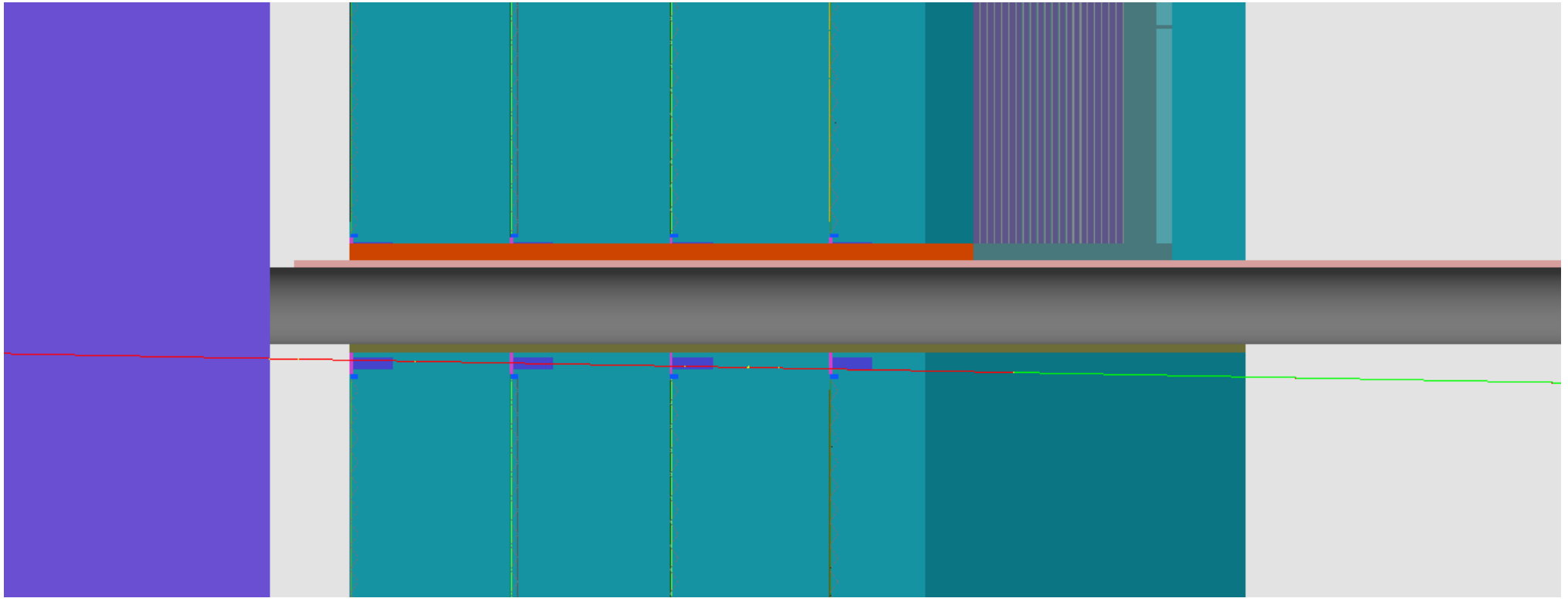
Additional shielding

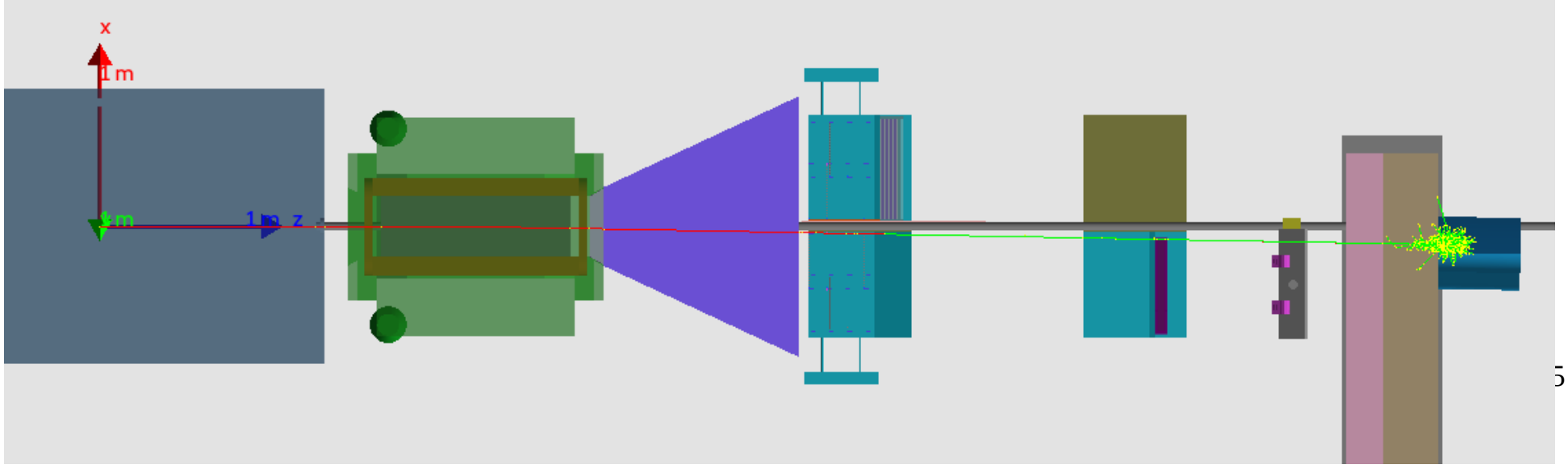


Additional shielding

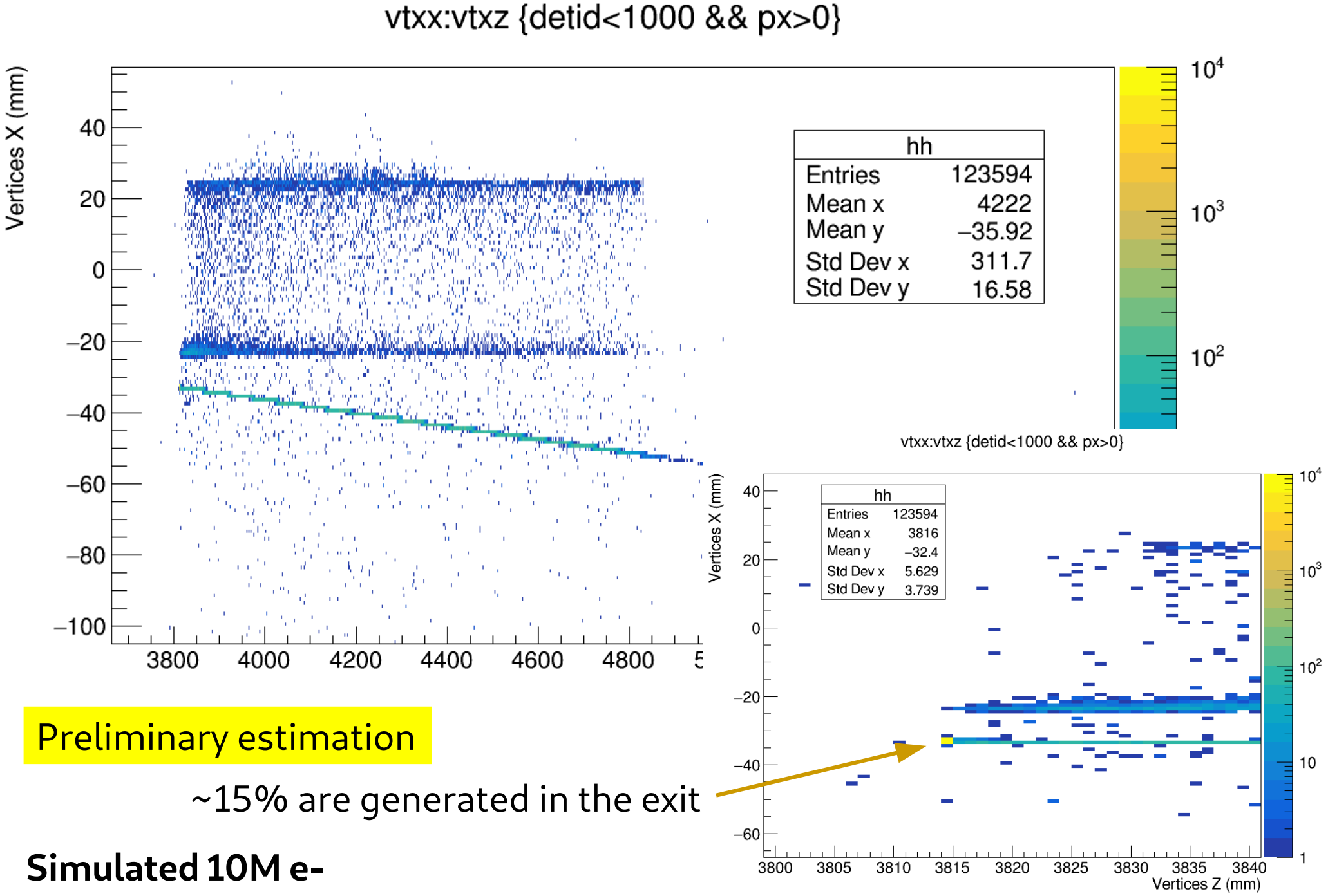


Electron 16.5 GeV





Vertices of particles hitting shieldings with Px > 0

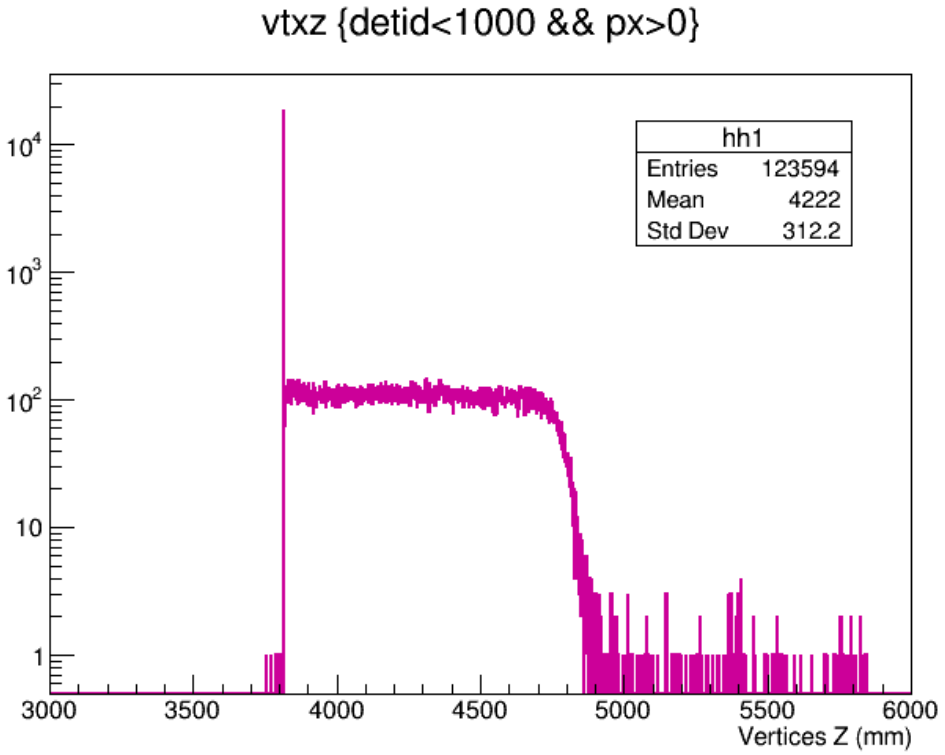


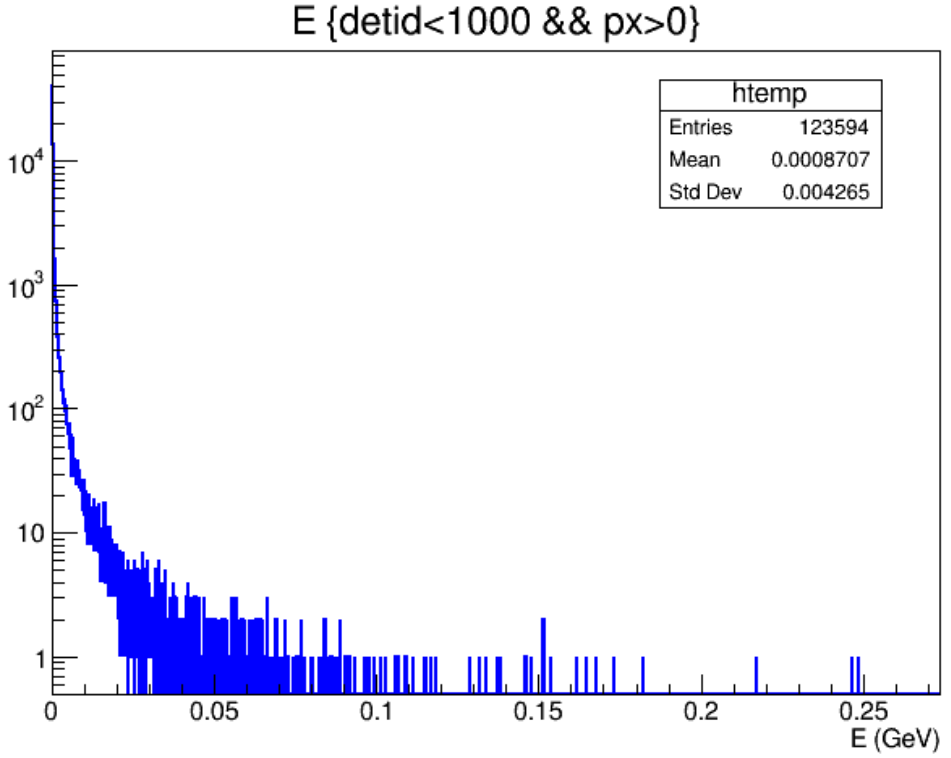
Preliminary estimation

~15% are generated in the exit

Simulated 10M e-

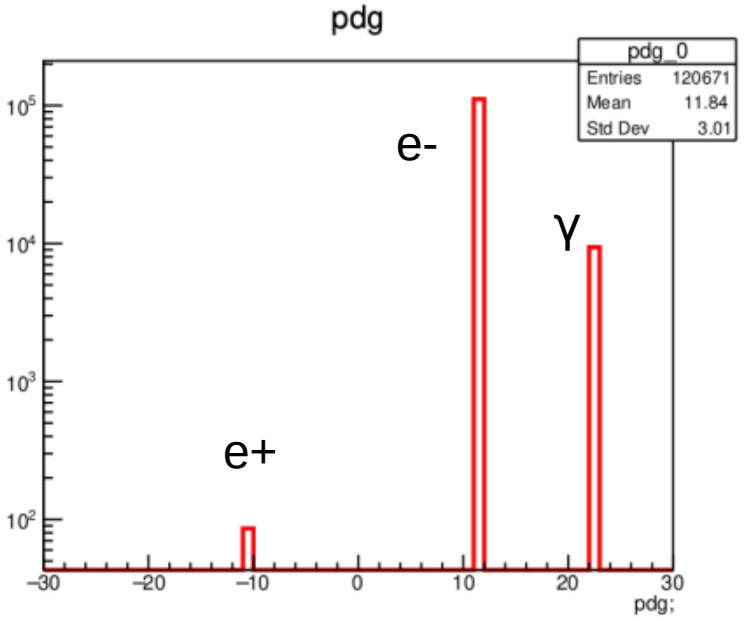
Vertices and spectra

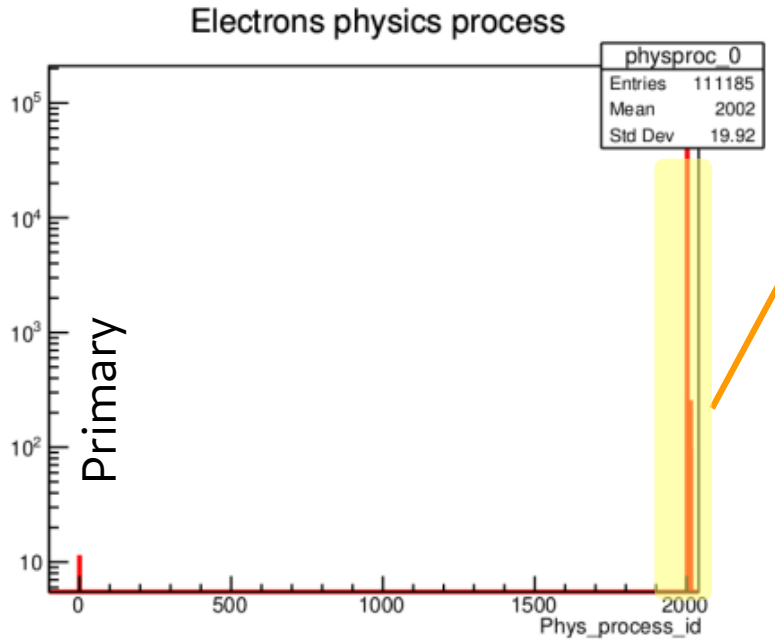


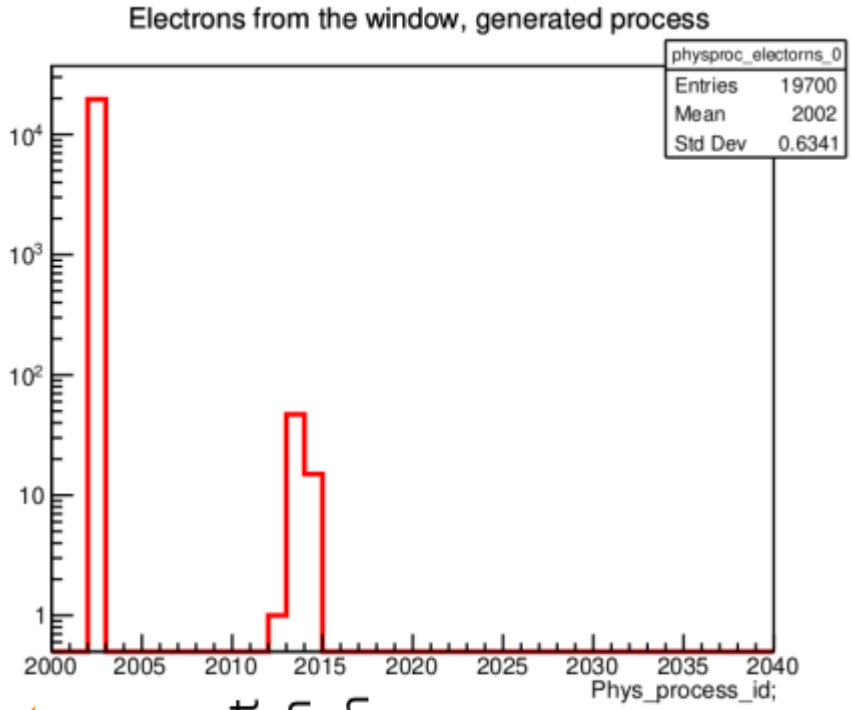


Particle types and generated processes

detid==100 && px>0.0



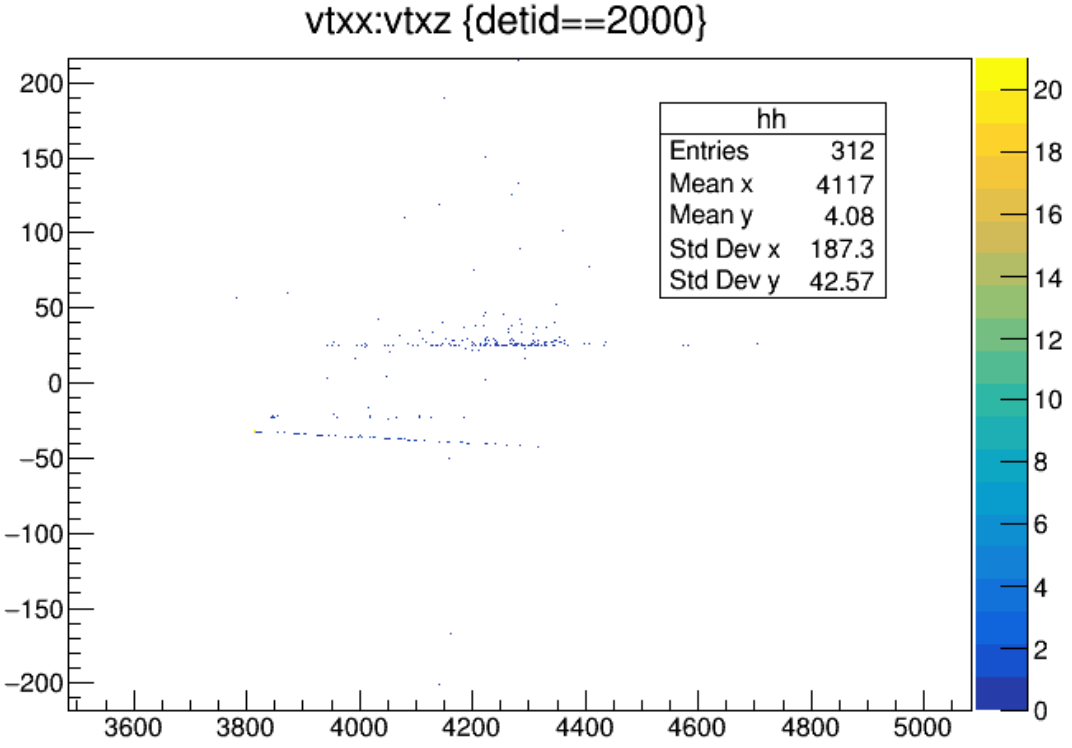


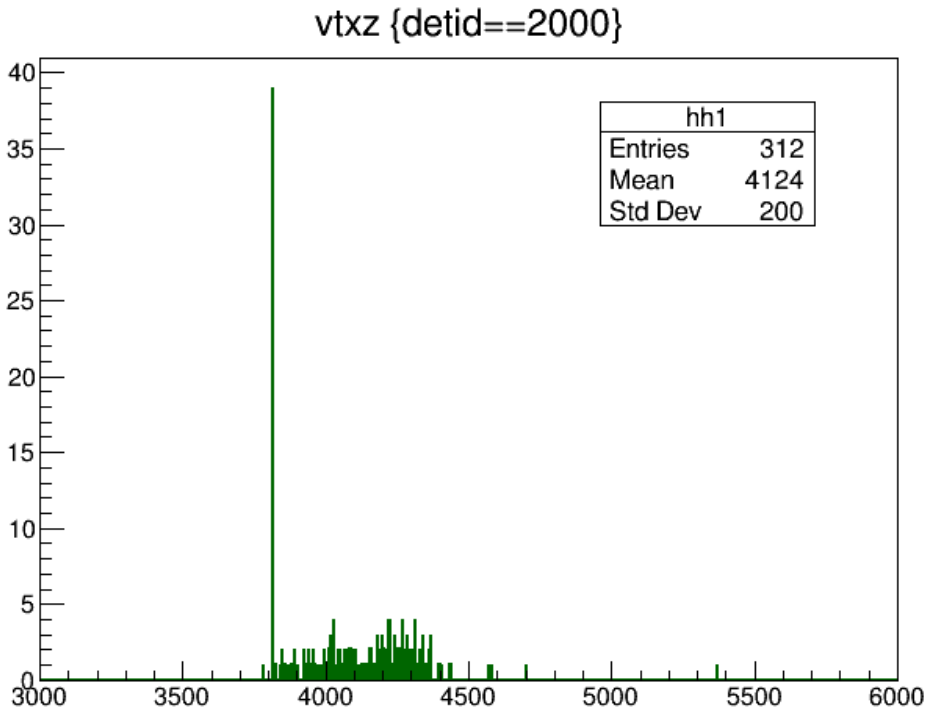


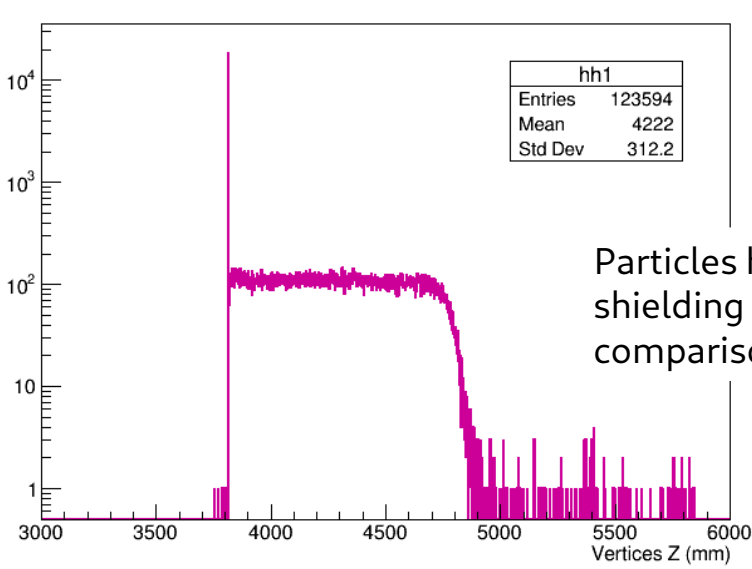
Vertices of particles hitting ECal volume

Preliminary estimation

~10^3 suppression factor







Particles hitting shielding (for comparison)

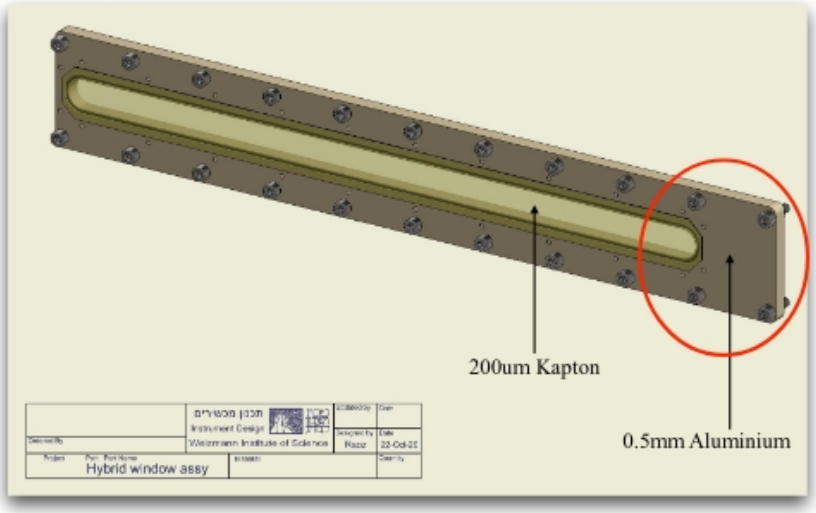
Aluminum vs Kapton window

- Kapton was considered only to cover the area which corresponds to signal particles;
- For the exit of non-interacting electron beam of 16.5 GeV the only option considered was Al.

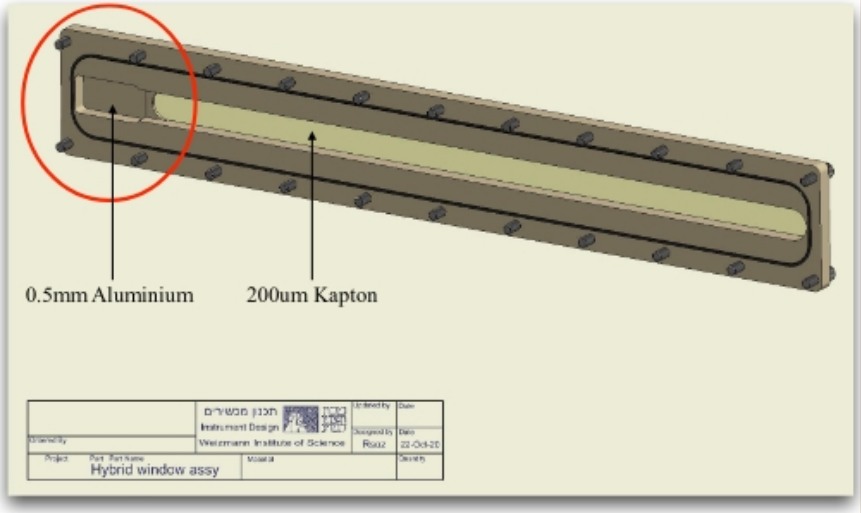
Switching to continues Al window might affect signal and less the background.

The window bar

front view



back view



- Not shown here is the part which attaches the Kapton to the Aluminium (but you can see the threads for that)