Additional shielding for ECal in GEANT4 Simulation

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LUXE ECal Meeting
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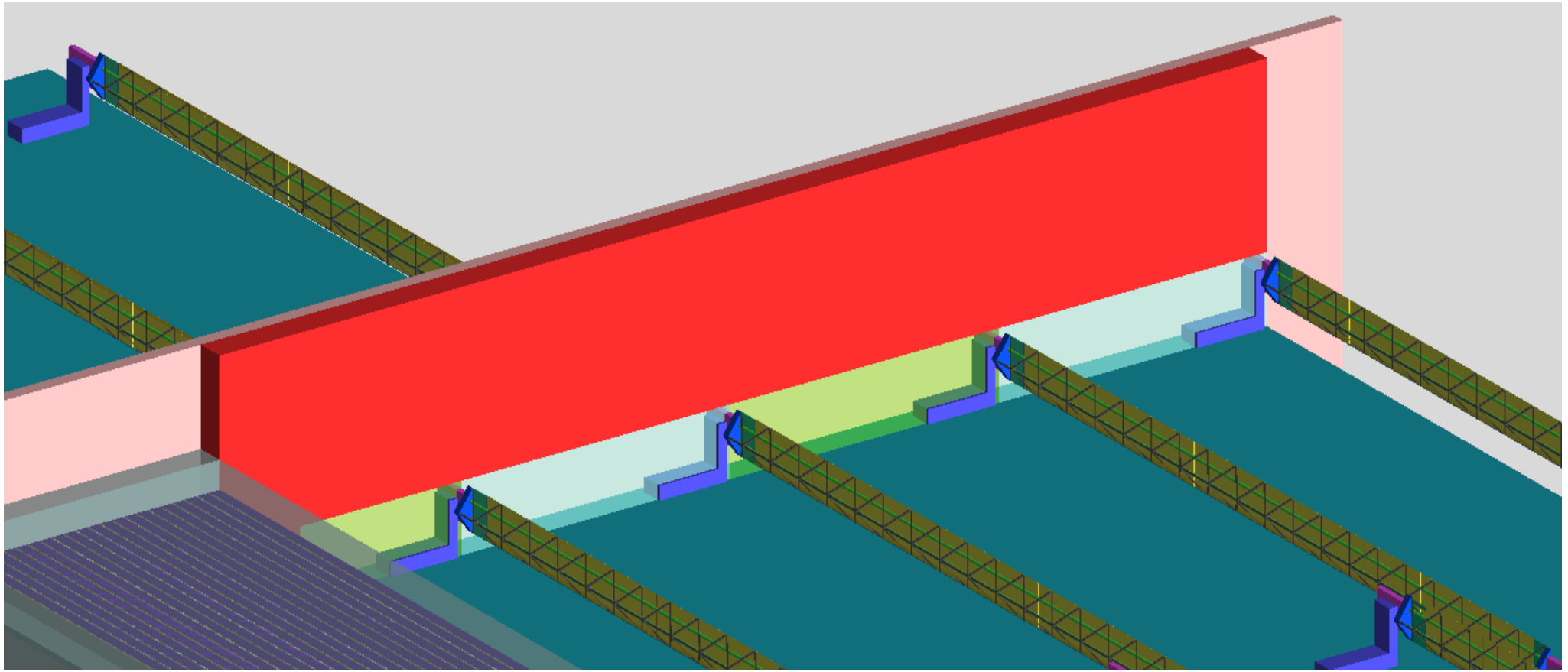
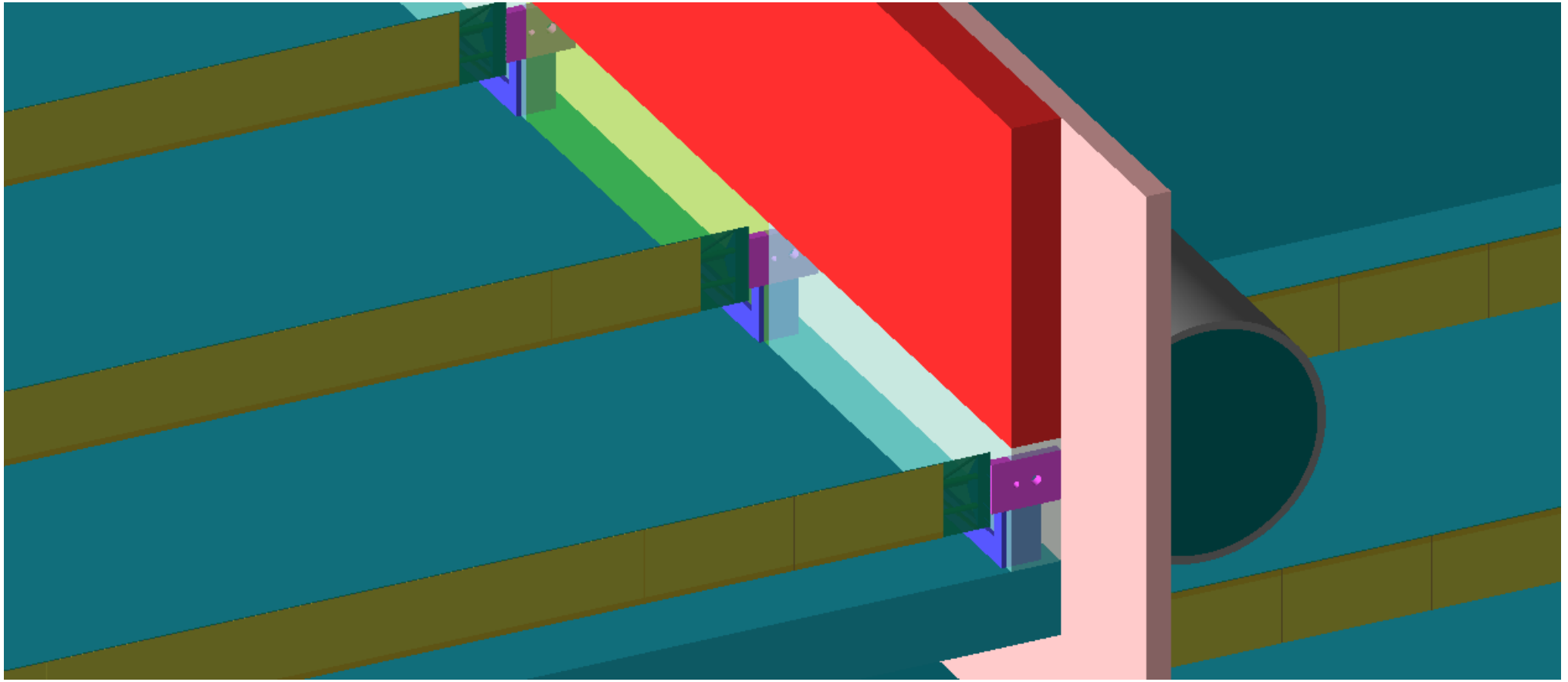
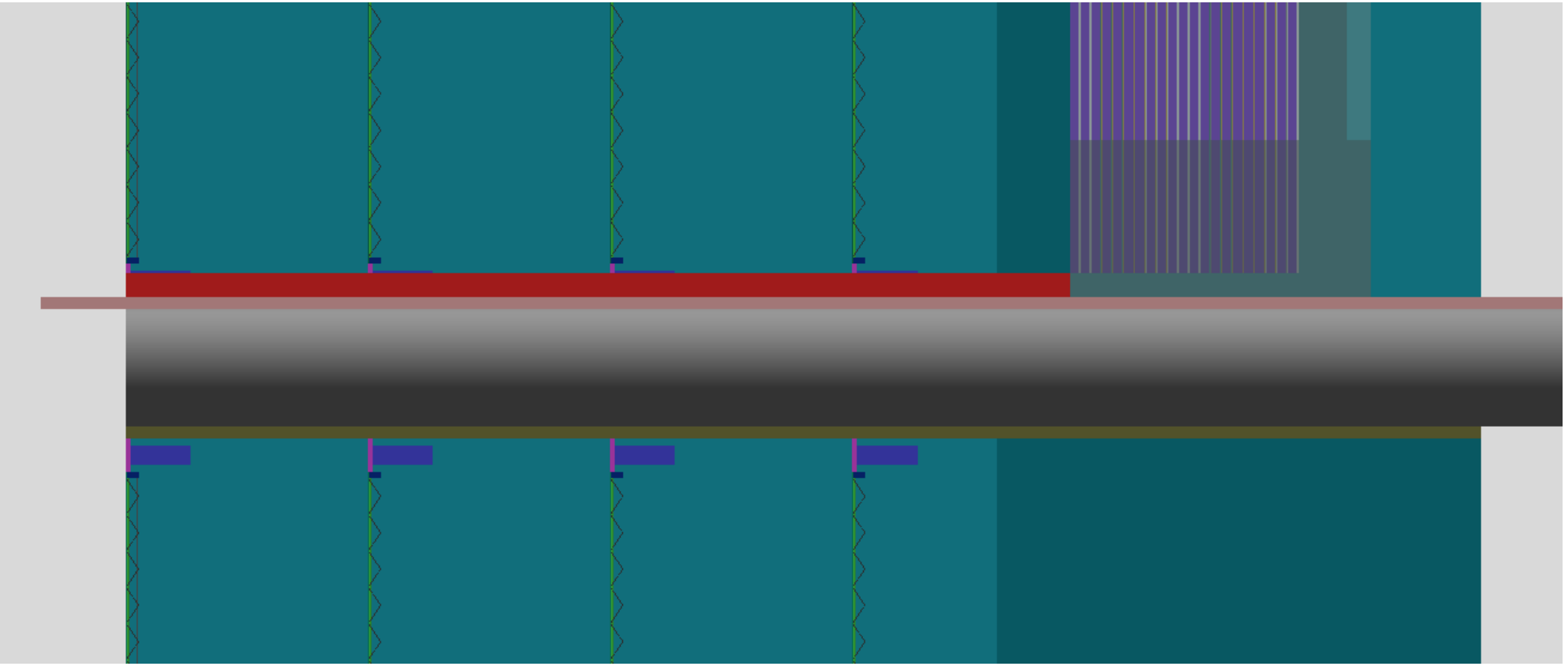
Additional shielding



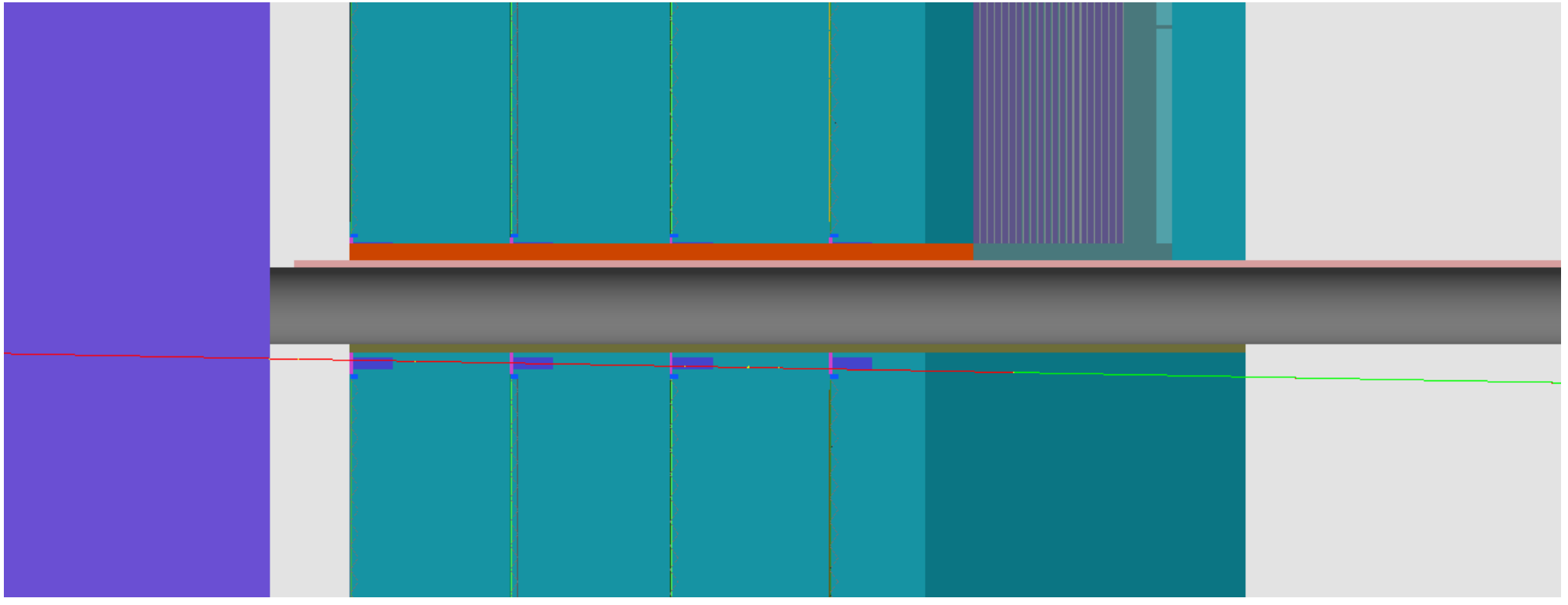
Additional shielding

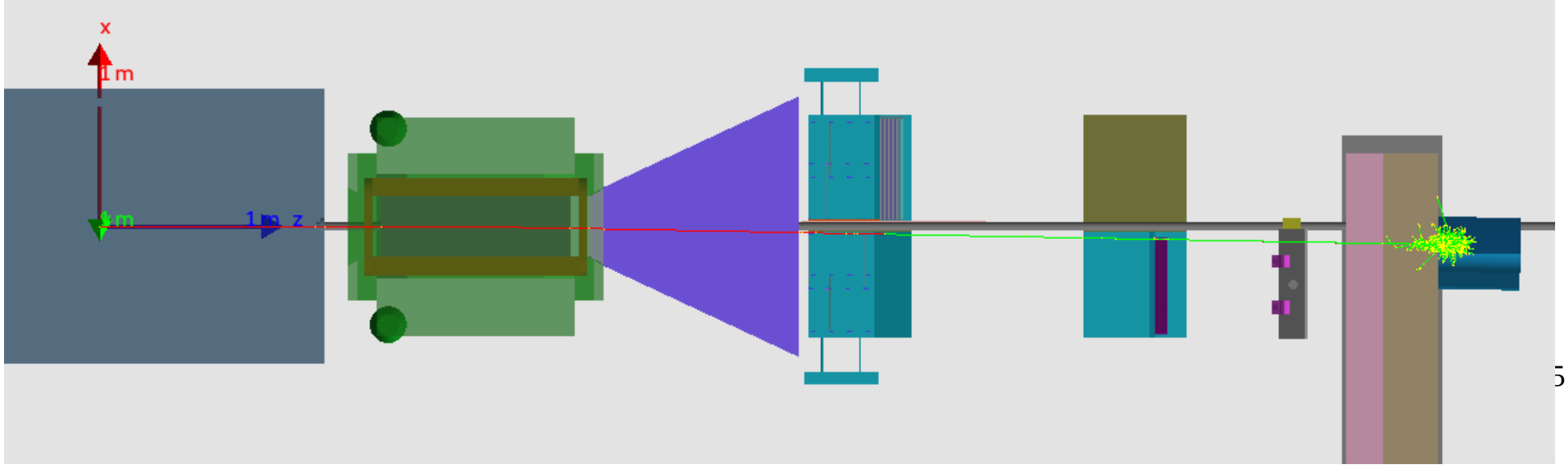


Additional shielding

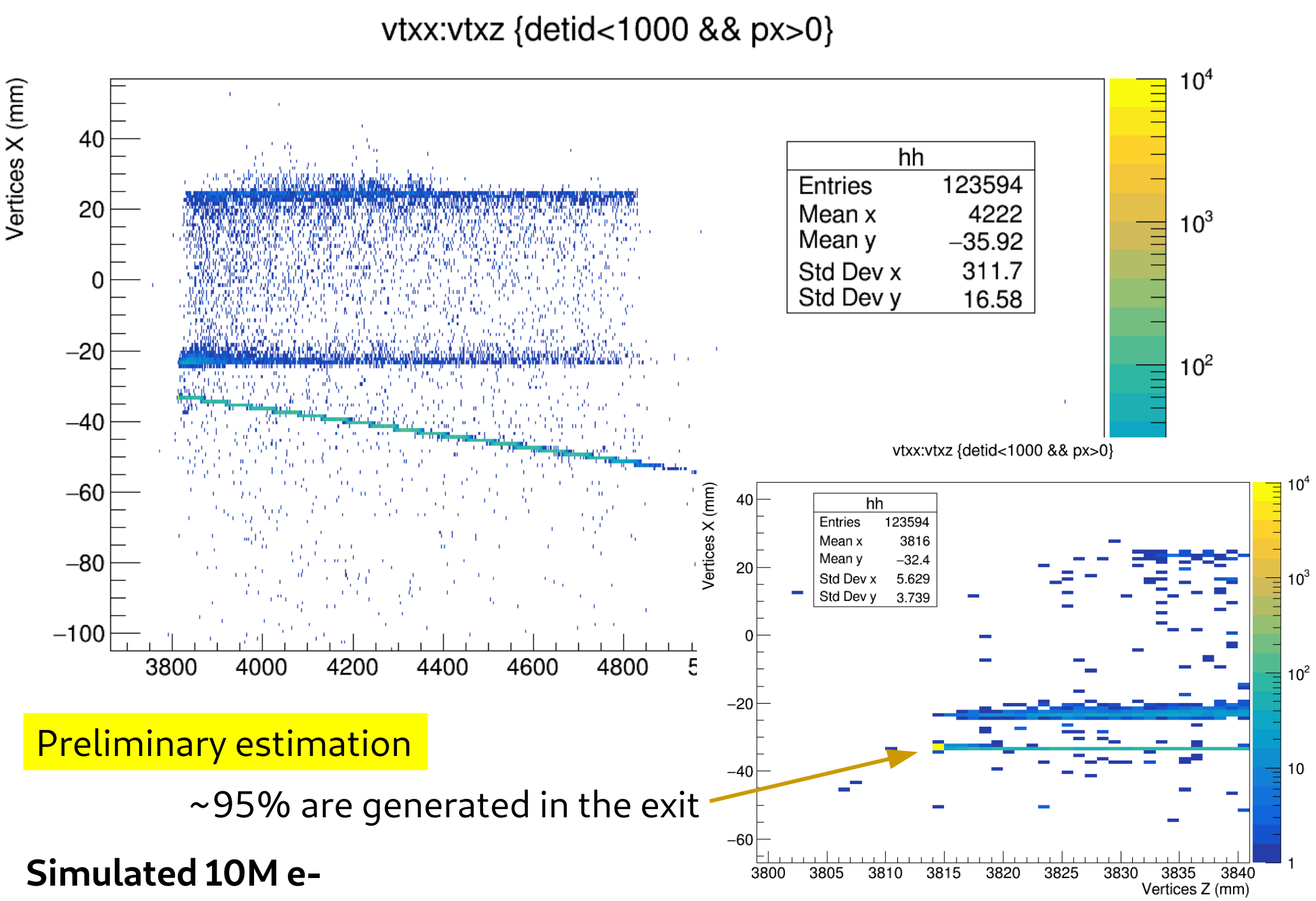


Electron 16.5 GeV





Vertices of particles hitting shieldings with Px > 0

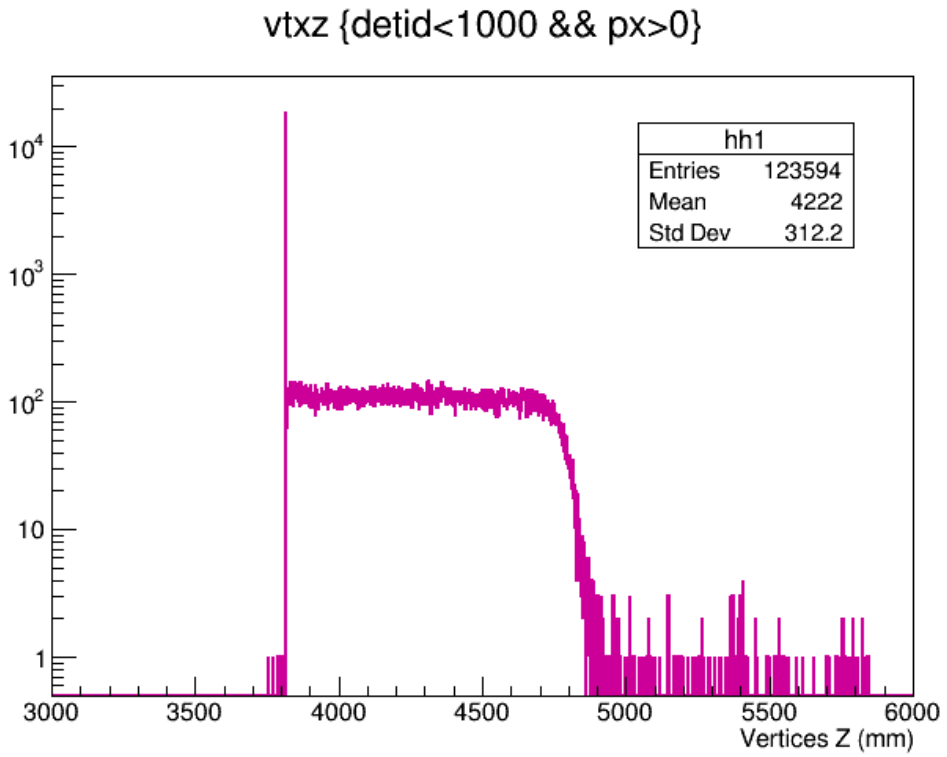


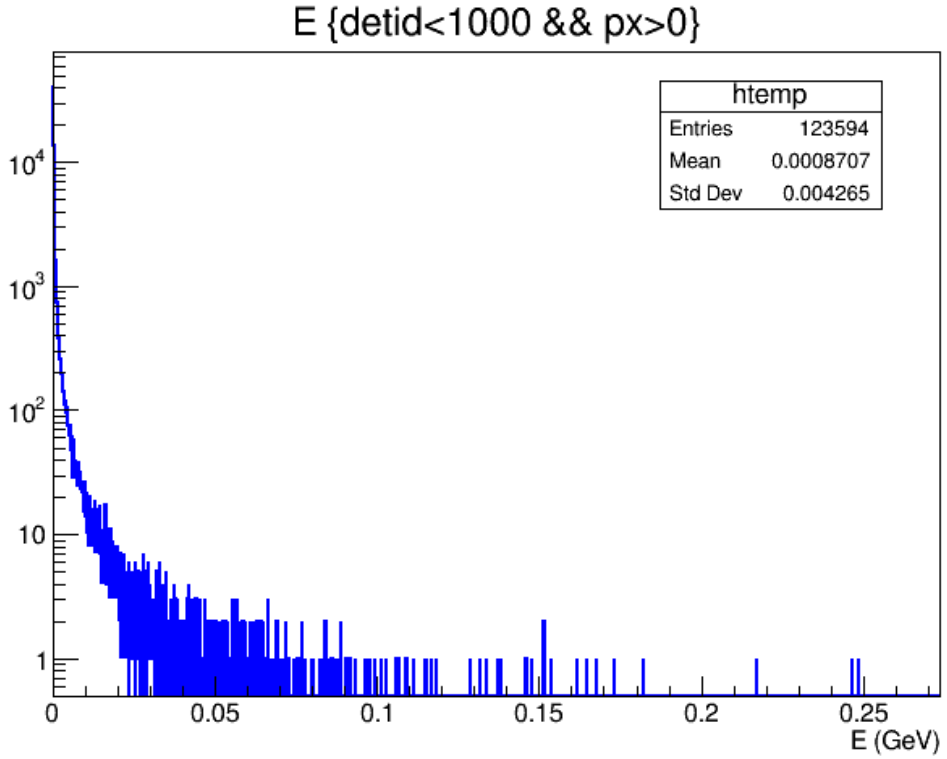
Preliminary estimation

~95% are generated in the exit

Simulated 10M e-

Vertices and spectra

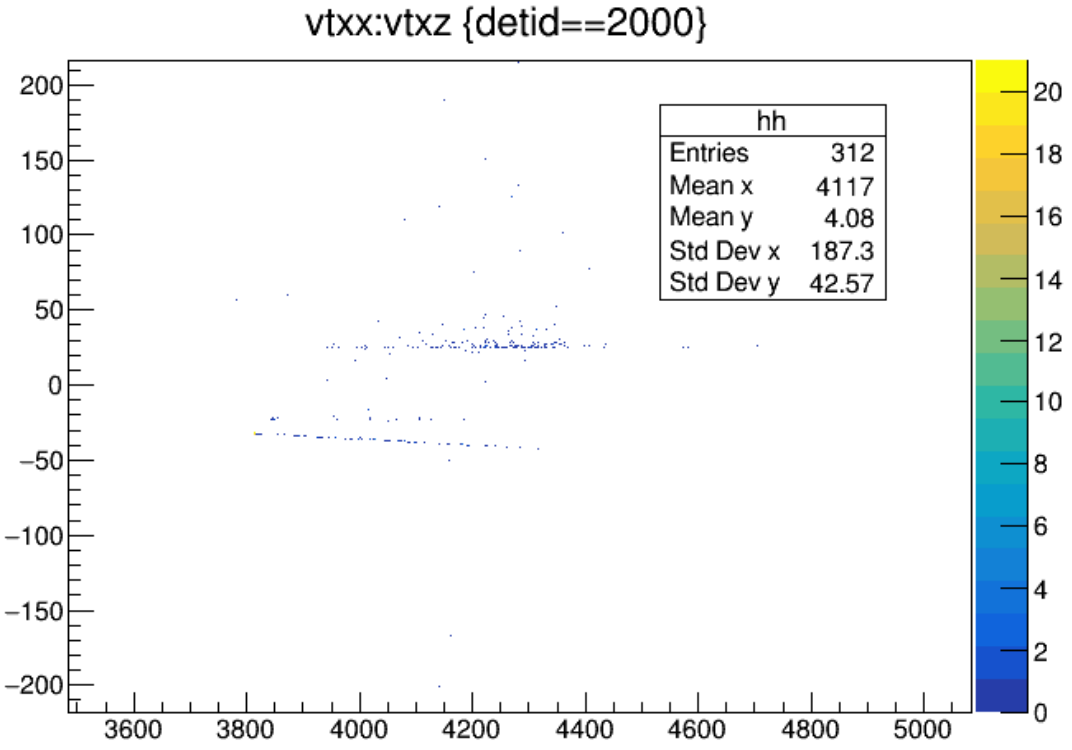


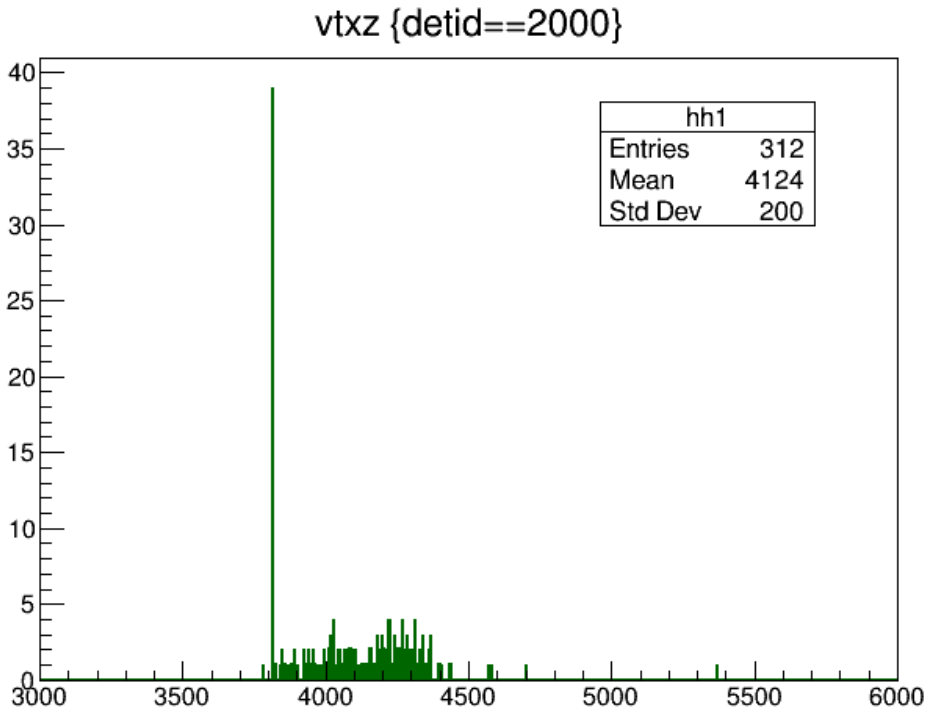


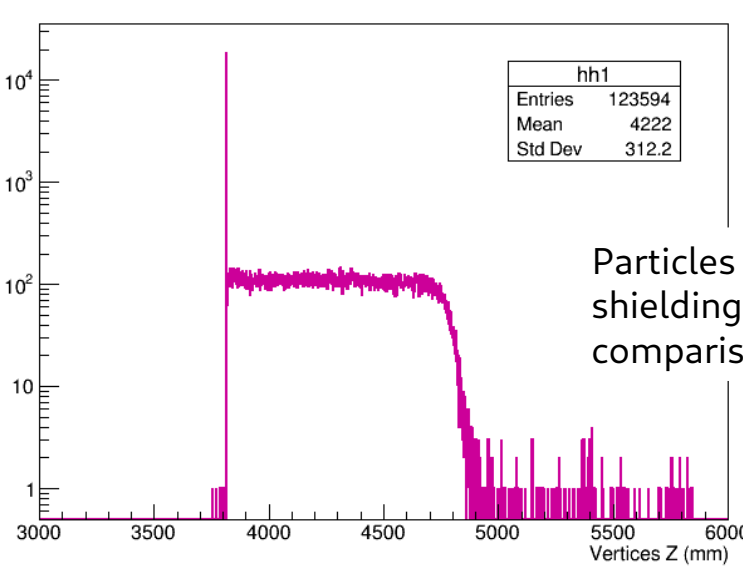
Vertices of particles hitting ECal volume

Preliminary estimation

~10^3 suppression factor







Particles hitting shielding (for comparison)

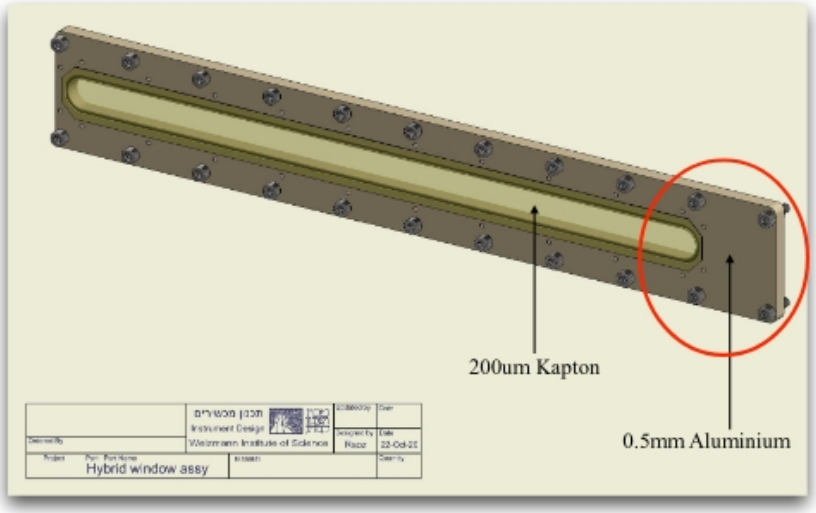
Aluminum vs Kapton window

- 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;
- Kapton would melt probably under the focused electron beam.

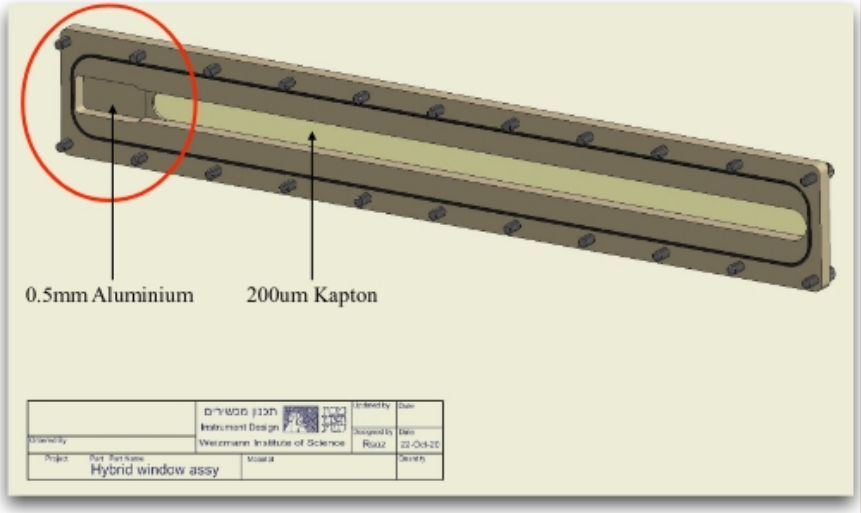
Switching to continues Al window might affect signal and less the background.

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)