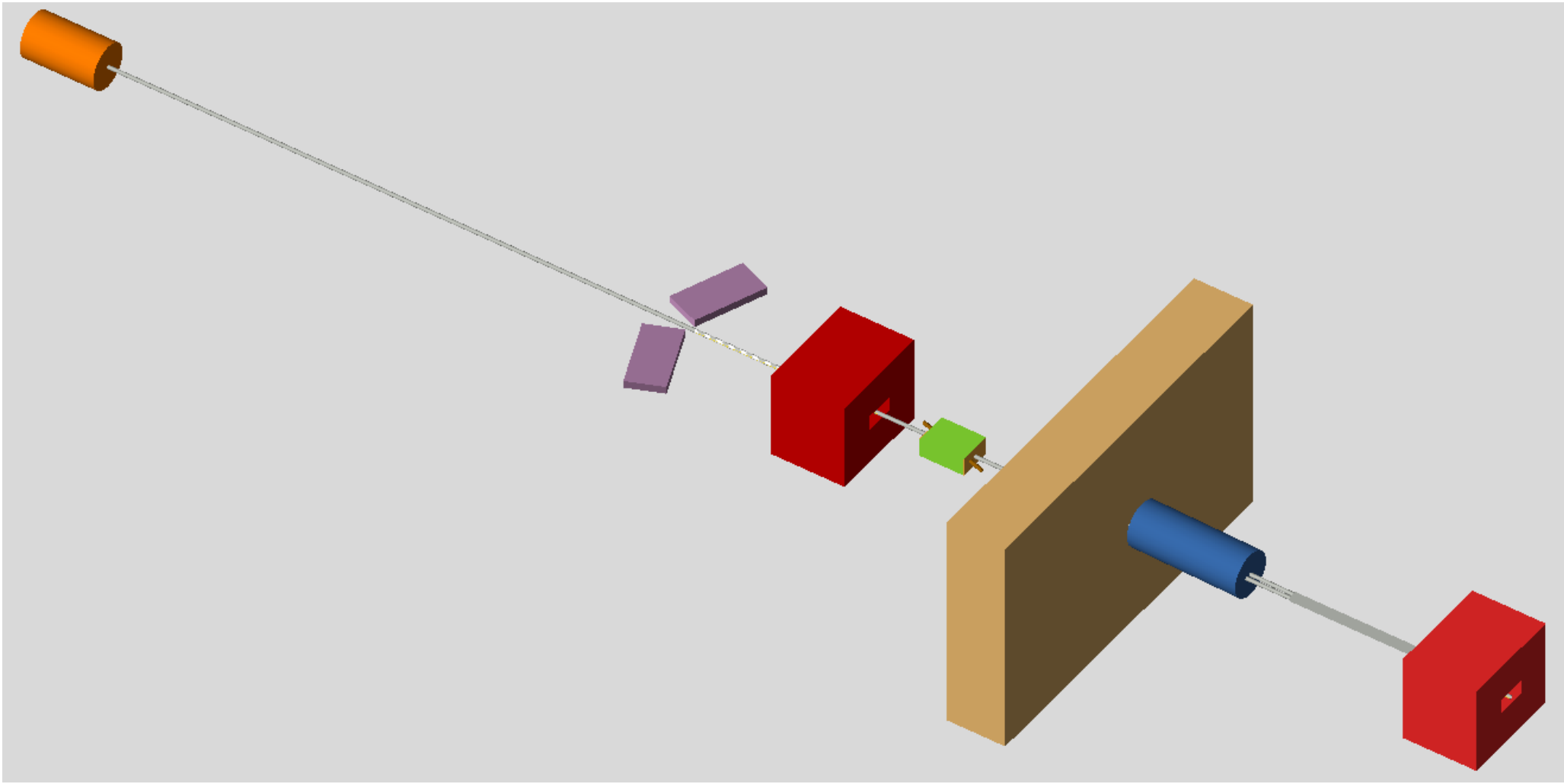
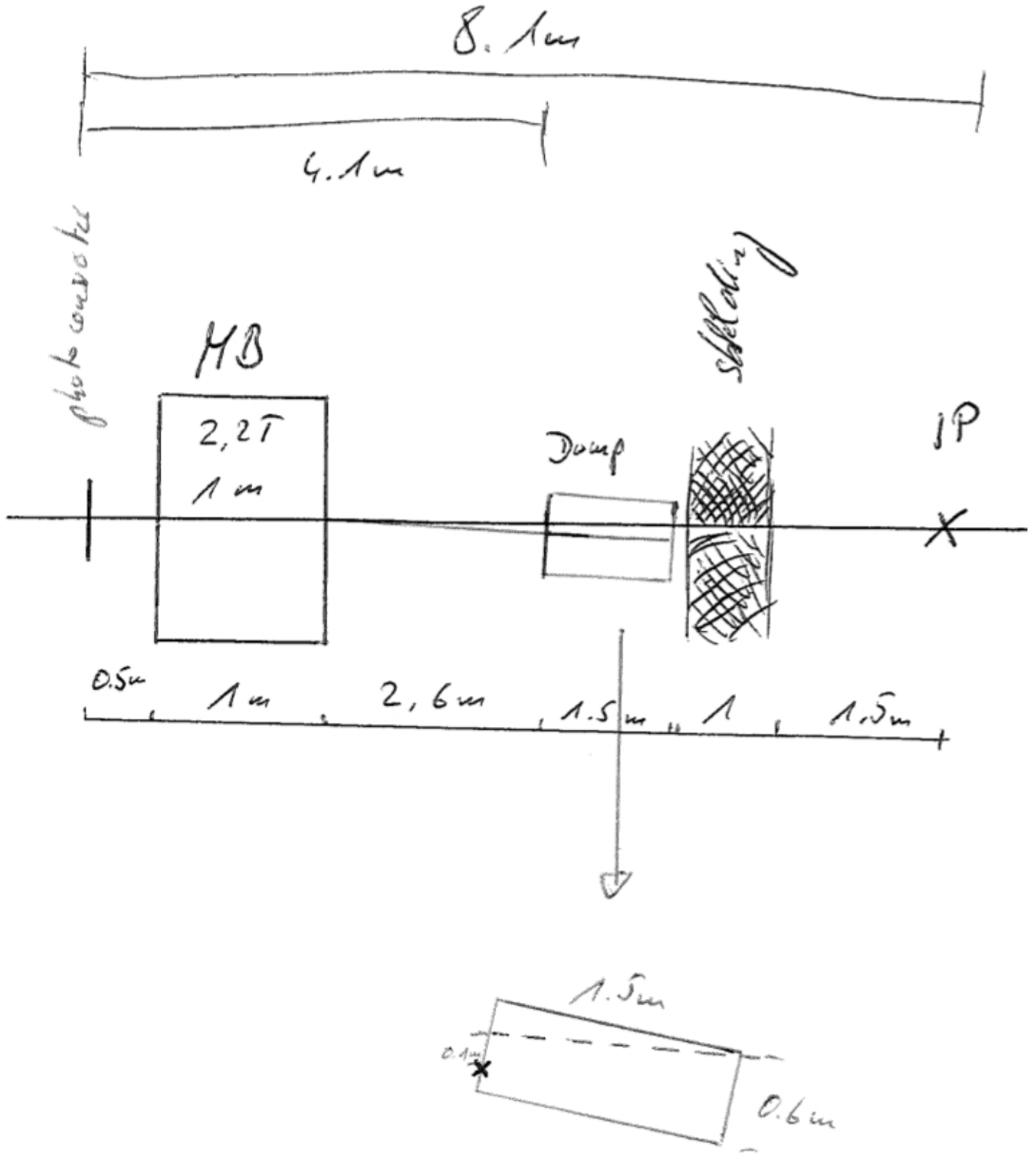
LUXE Background Study in Simulation

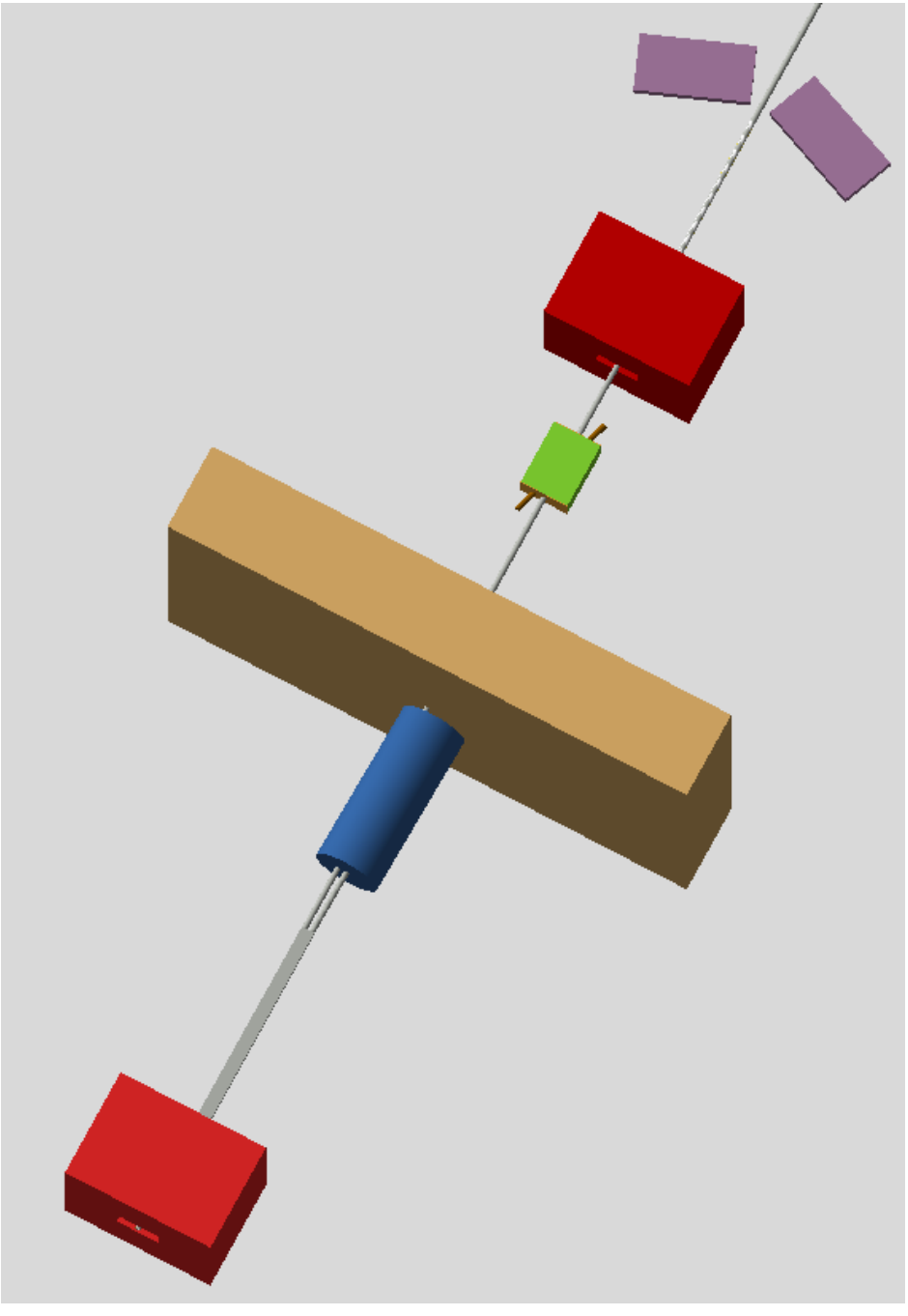
Oleksandr Borysov

LUXE Meeting
June 11, 2019

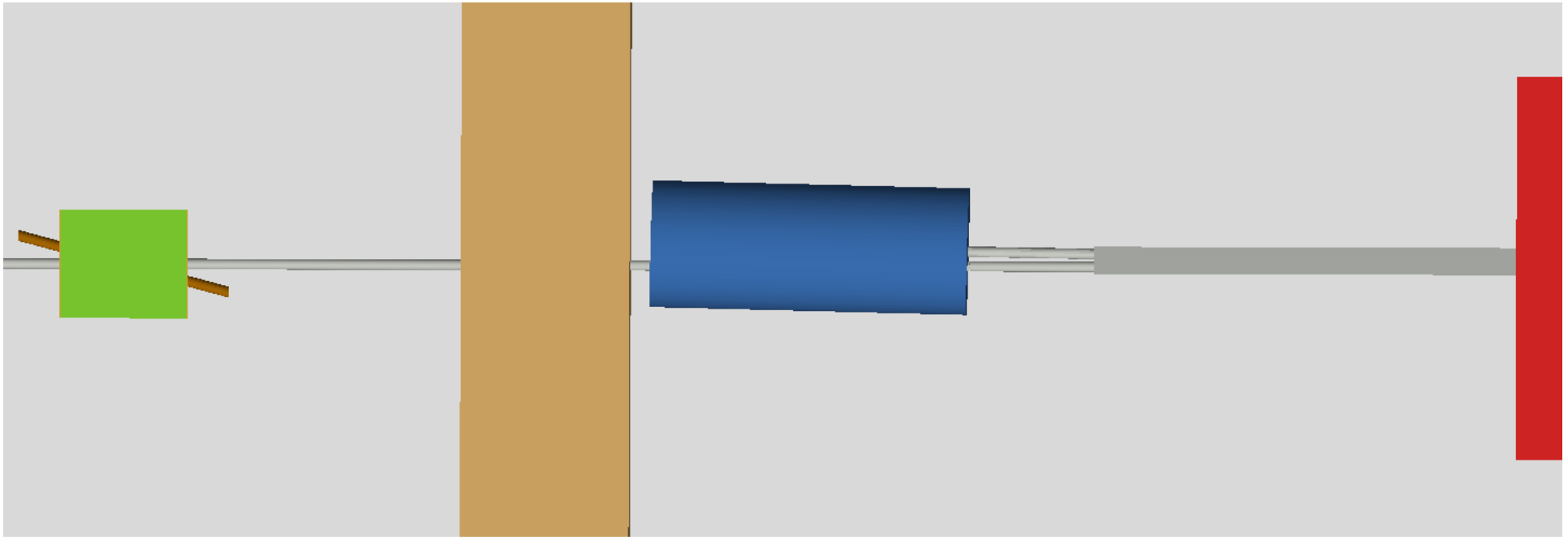


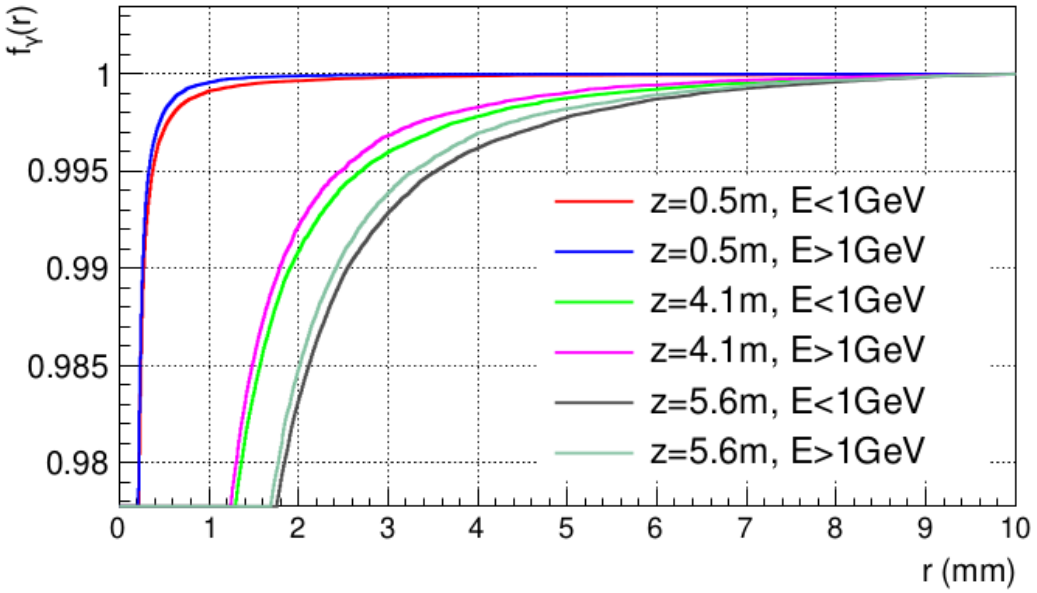
Sketch and Geant4

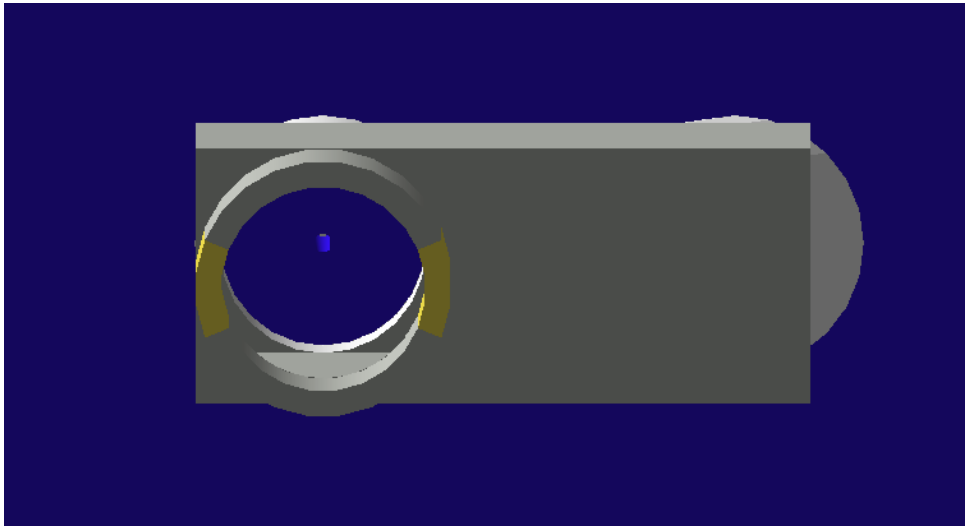


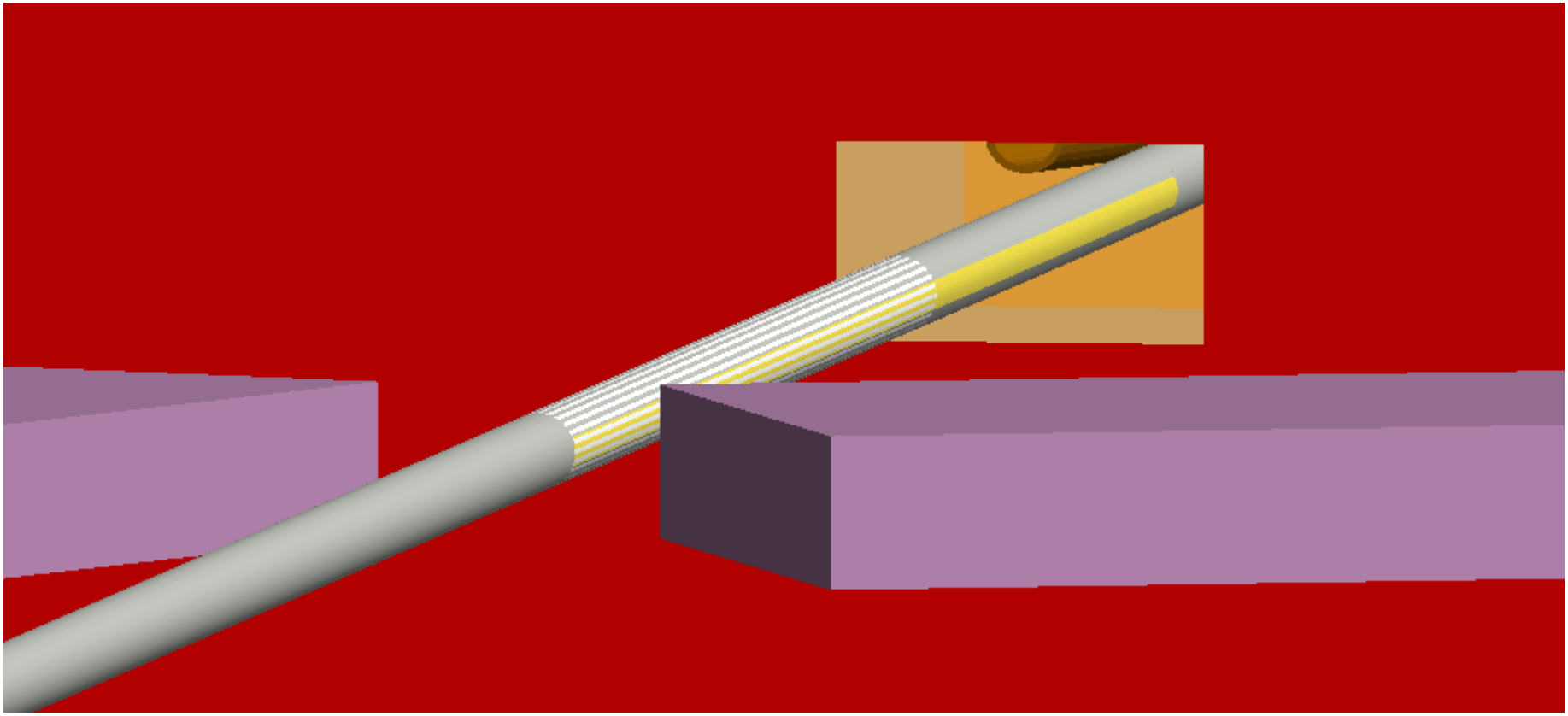


Beam Dump with Hole for Photons





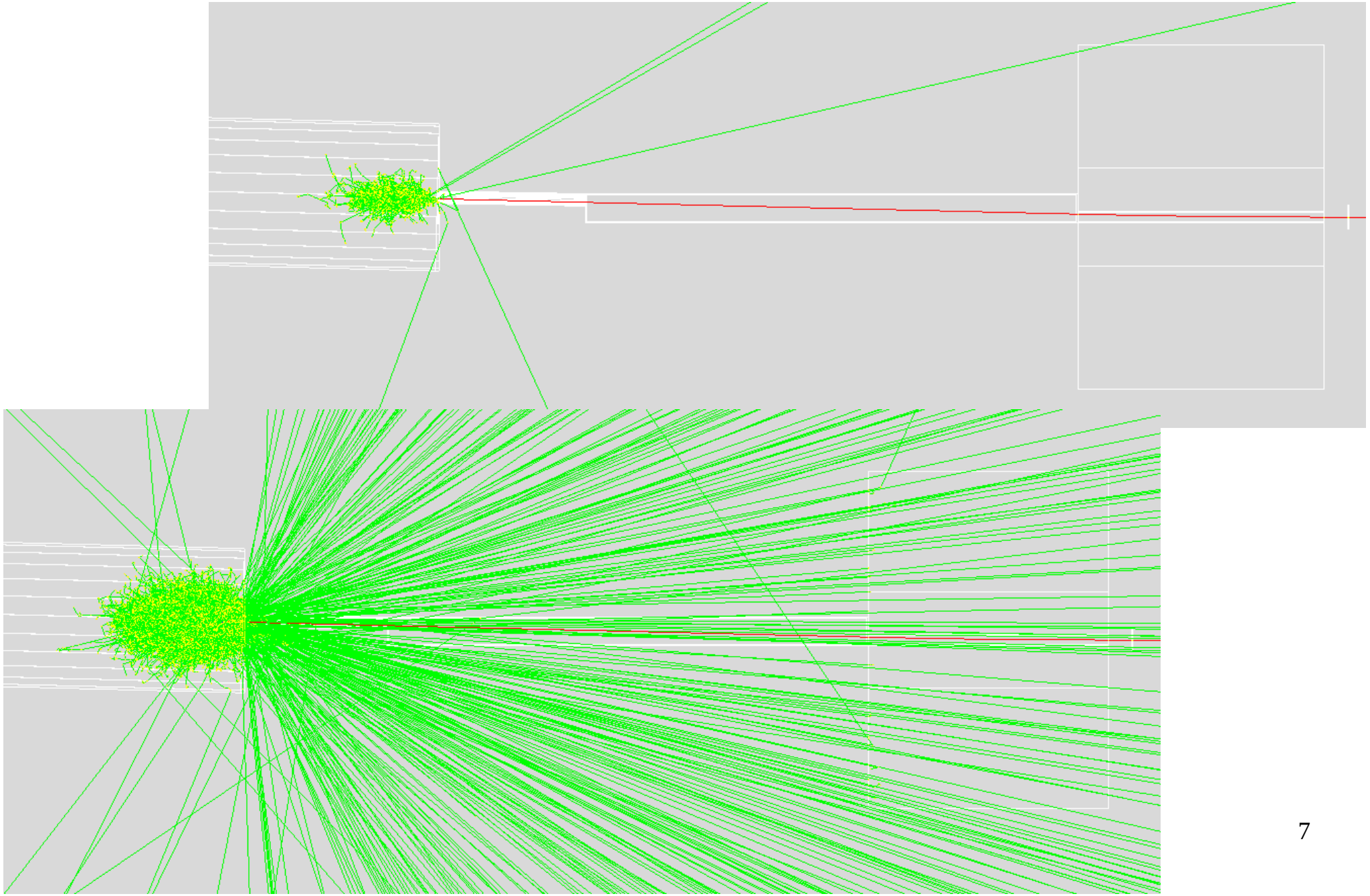




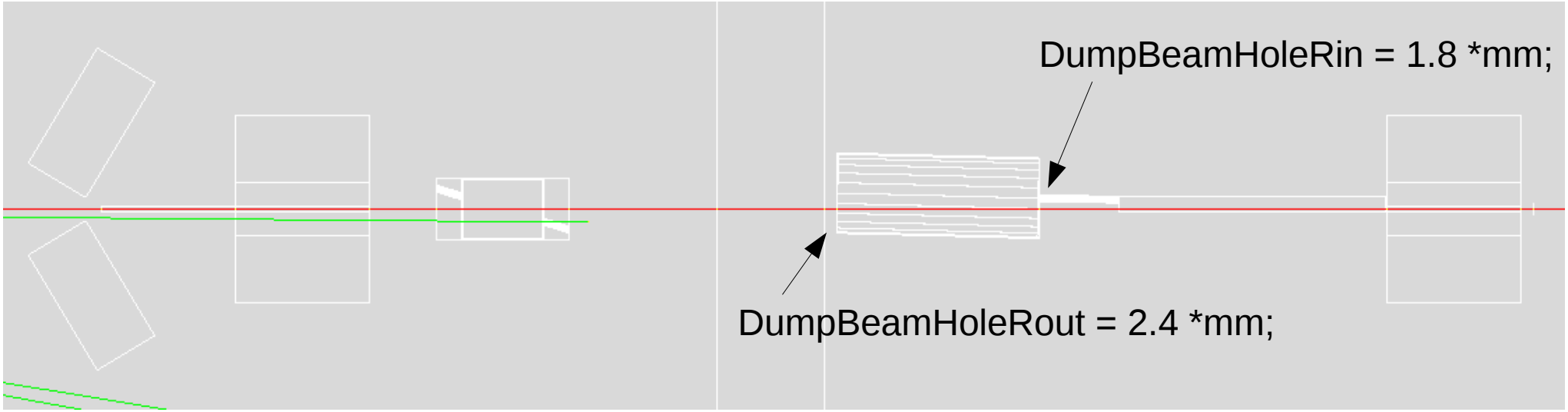
Geometry Check

```
userDetector->Construct() start.
Checking overlaps for volume IPBoxXY ... OK!
Checking overlaps for volume logicIPFront ... OK!
Checking overlaps for volume logicIPFront ... OK!
Checking overlaps for volume ElectronPipe ... OK!
Checking overlaps for volume ElectronPipe ... OK!
Checking overlaps for volume LaserPipe ... OK!
Checking overlaps for volume LaserPipe ... OK!
Checking overlaps for volume IPBox ... OK!
Checking overlaps for volume DMBoxXY ... OK!
Checking overlaps for volume DMBPipe ... OK!
Checking overlaps for volume DMBPipe ... OK!
Checking overlaps for volume DMBPipeWindow ... OK!
Checking overlaps for volume DMBPipeWindow ... OK!
Checking overlaps for volume DumpMagnet ... OK!
Checking overlaps for volume IPMagnet ... OK!
Checking overlaps for volume BeamDump ... OK!
Checking overlaps for volume DumpBeamPipeIn ... OK!
Checking overlaps for volume DumpBeamPipeOut ... OK!
Checking overlaps for volume DumpBeamPipe ... OK!
Checking overlaps for volume BeamDumpAssembly ... OK!
Checking overlaps for volume Shilding ... OK!
Checking overlaps for volume ShildingBipe ... OK!
Checking overlaps for volume ShildingAssembly ... OK!
Checking overlaps for volume BeamSplit ... OK!
Checking overlaps for volume BeamPipeMB ... OK!
Checking overlaps for volume BeamPipeMD ... OK!
Checking overlaps for volume BeamPipeSIP ... OK!
Checking overlaps for volume BeamPipeSD ... OK!
Checking overlaps for volume BeamPipeIPM ... OK!
Checking overlaps for volume OpppDetContainer ... OK!
Checking overlaps for volume OpppDetContainer ... OK!
Checking overlaps for volume BPipeD ... OK!
Checking overlaps for volume BPipeD ... OK!
Checking overlaps for volume BPipeWindowD ... OK!
Checking overlaps for volume BPipeWindowD ... OK!
Checking overlaps for volume BPipeDAssembly ... OK!
Checking overlaps for volume GammaDump ... OK!
Checking overlaps for volume BeamPipeGammaD ... OK!
Material: Galactic    density:  0.000 kg/m3   RadL: 204727512.315 pc   Nucl.Int.Length: 113427275.267 pc
                       Imean:  19.200 eV   temperature:   2.73 K  pressure:   0.00 atm
```

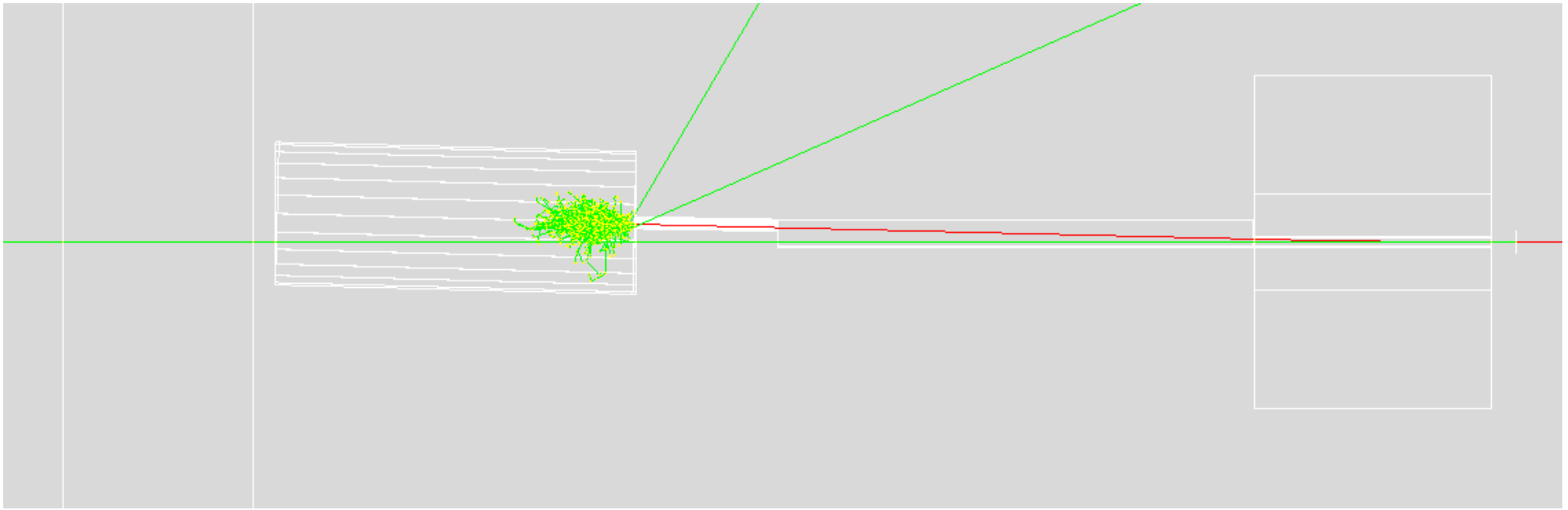
Galactic Target, 1.4 T

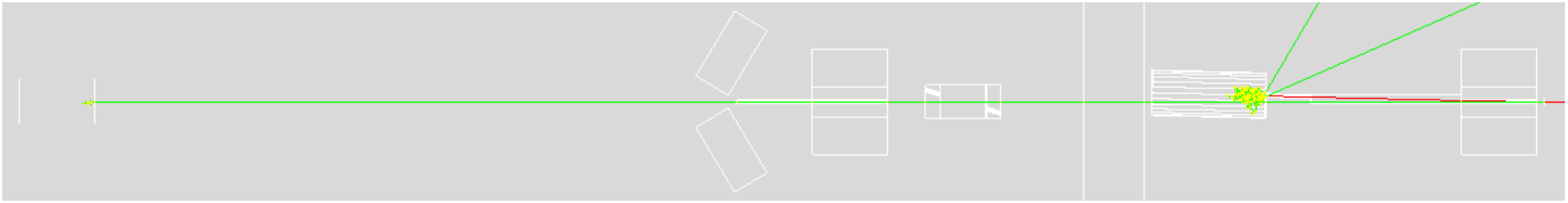


Galactic Target, Magnet off



Tungsten Target, 1.4 T





Tungsten Target, 1.4 T, ~30 e-