Simulations of LGAD detectors with GEANT4:
particle transport

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Physics Models

- Imported from the Hadrontherapy example;

- Includes interactions of protons and heavy ions;

- Includes the most detailed models for interactions of photons, electrons and positrons;

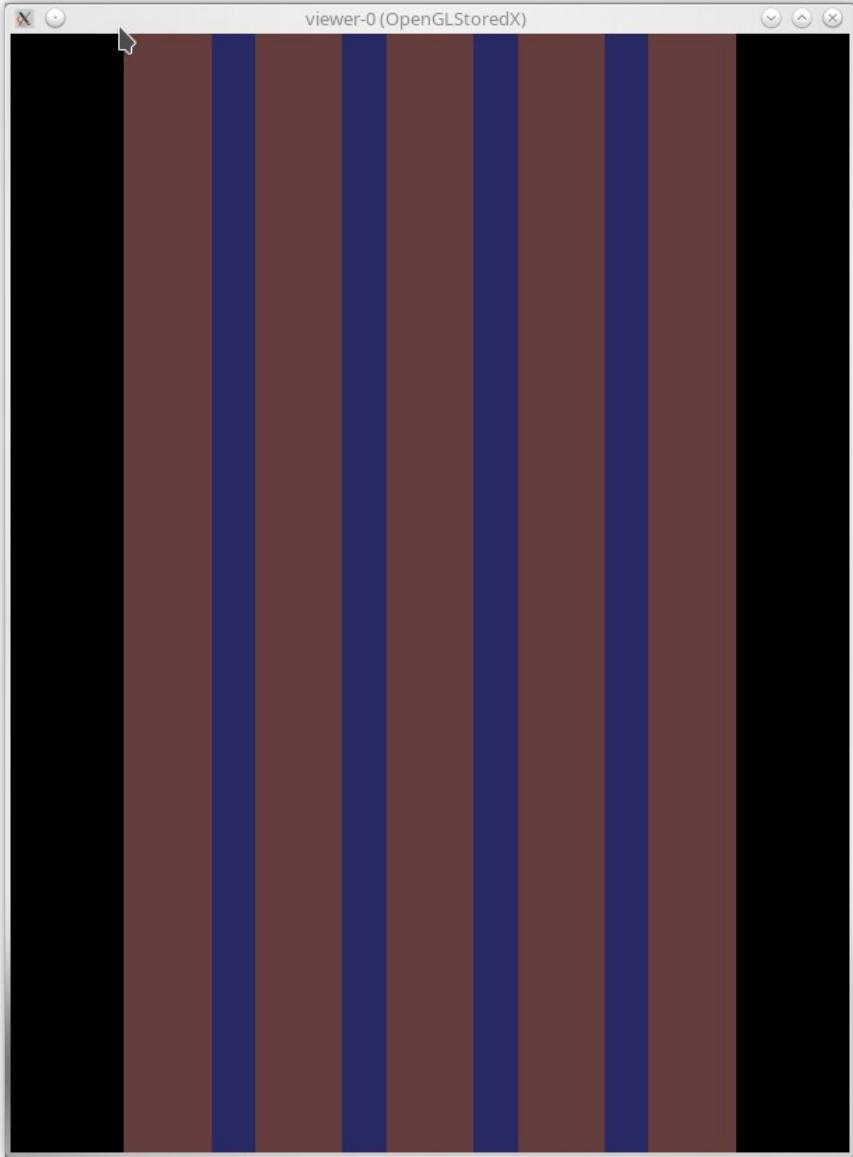- Energy range: 1 keV – 1 TeV.

Geometry

- GDML scheme for volume definition, materials and placement of all detector structures and environment;

- More readable than C++ language;

- Some possibilites for CAD export/importing of geometry definition.

Definition of the LGAD
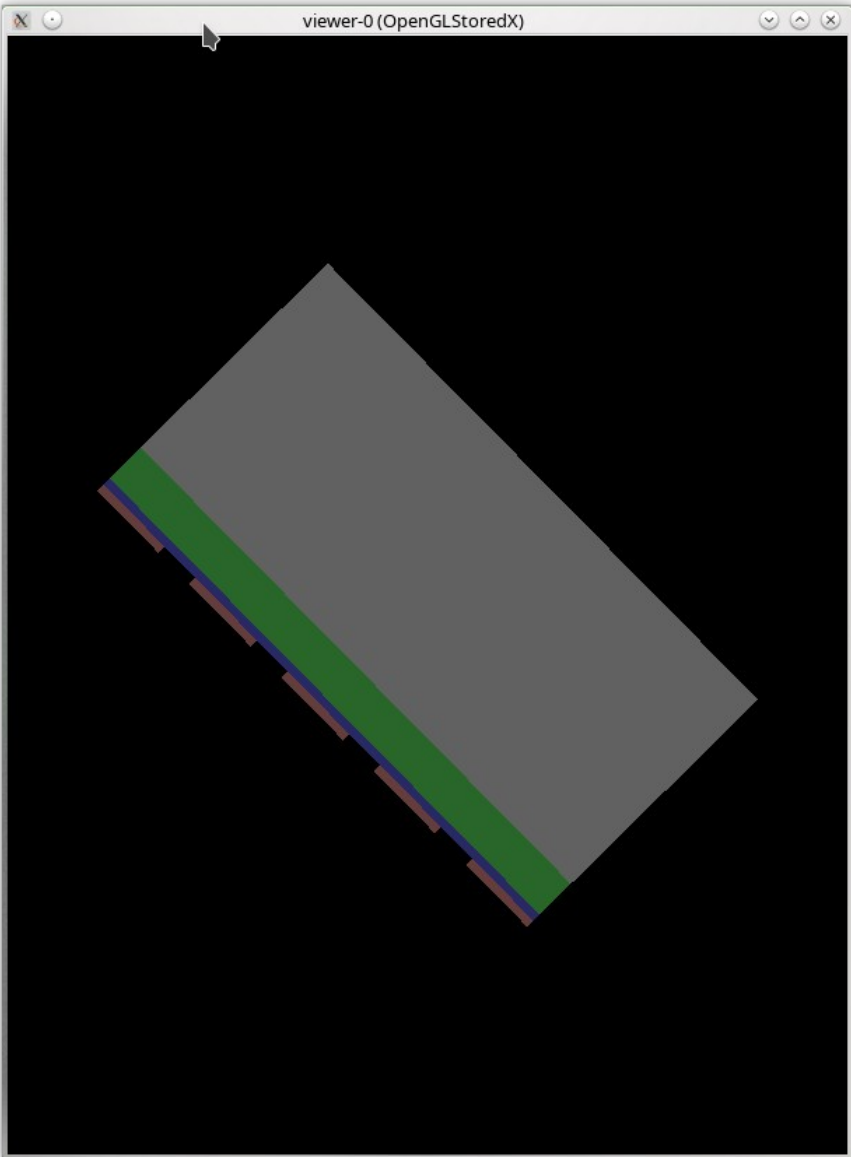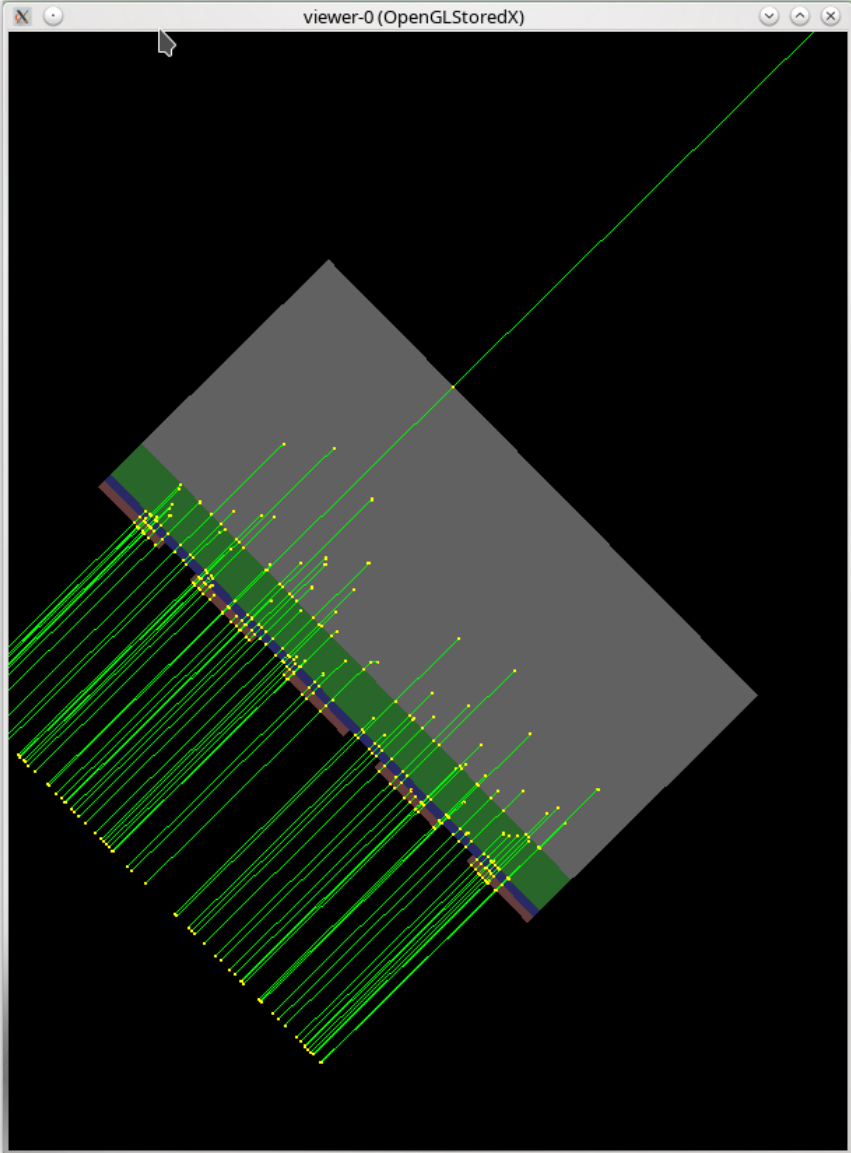
Detector – thickness view
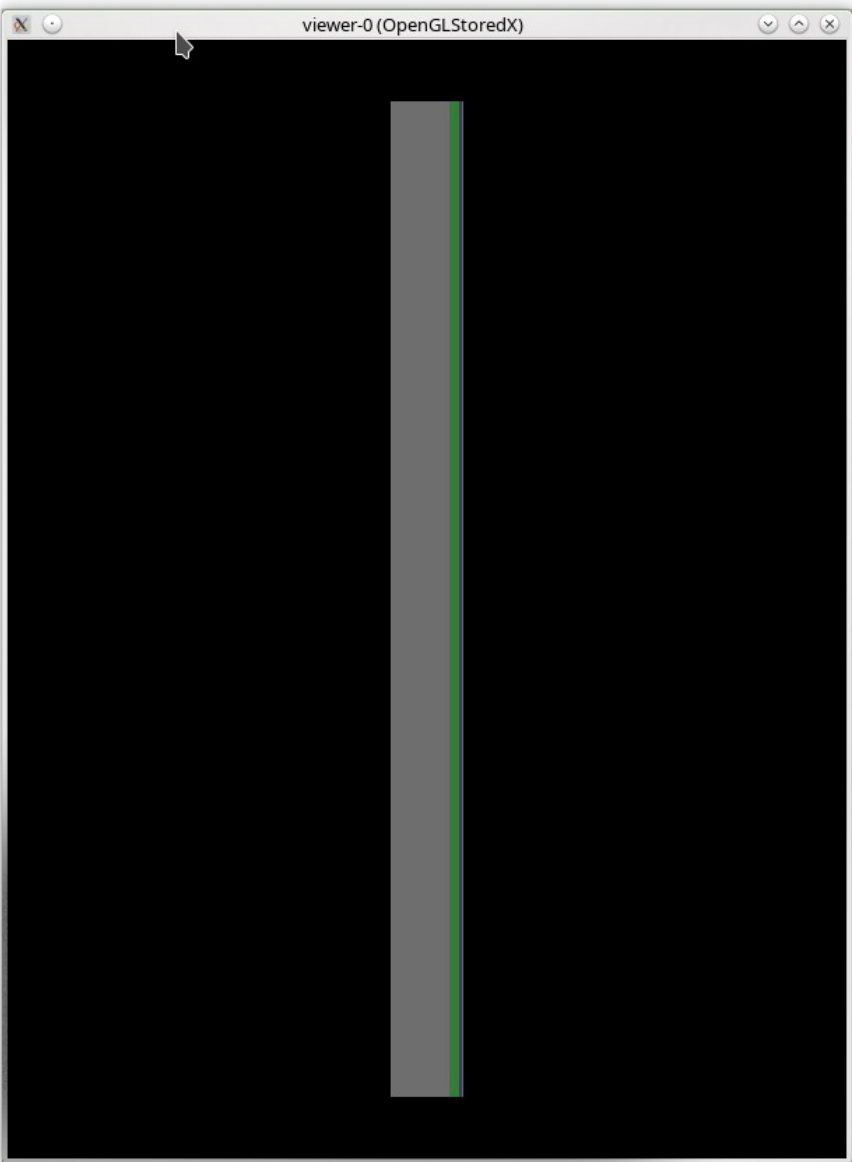
Detector – strips view

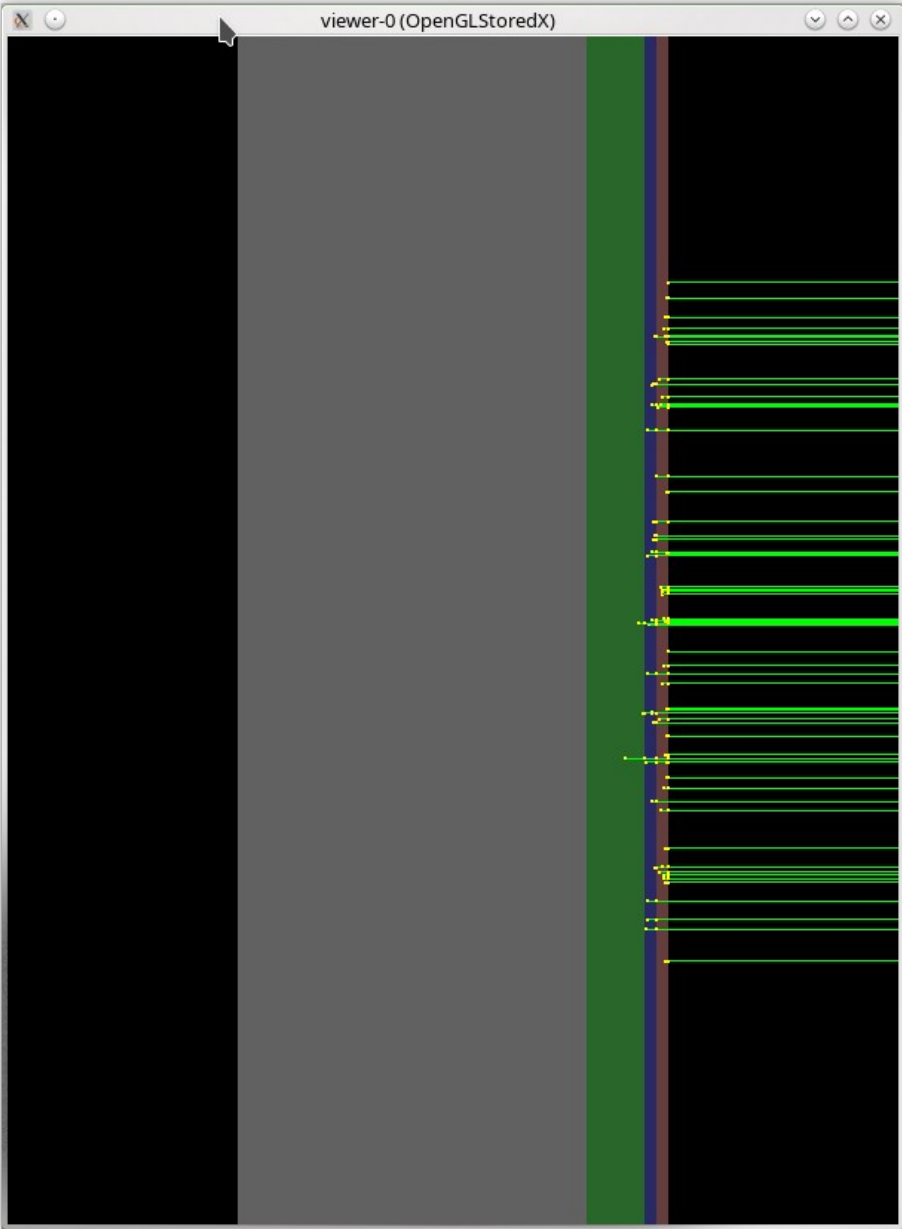# Definition of the LGAD
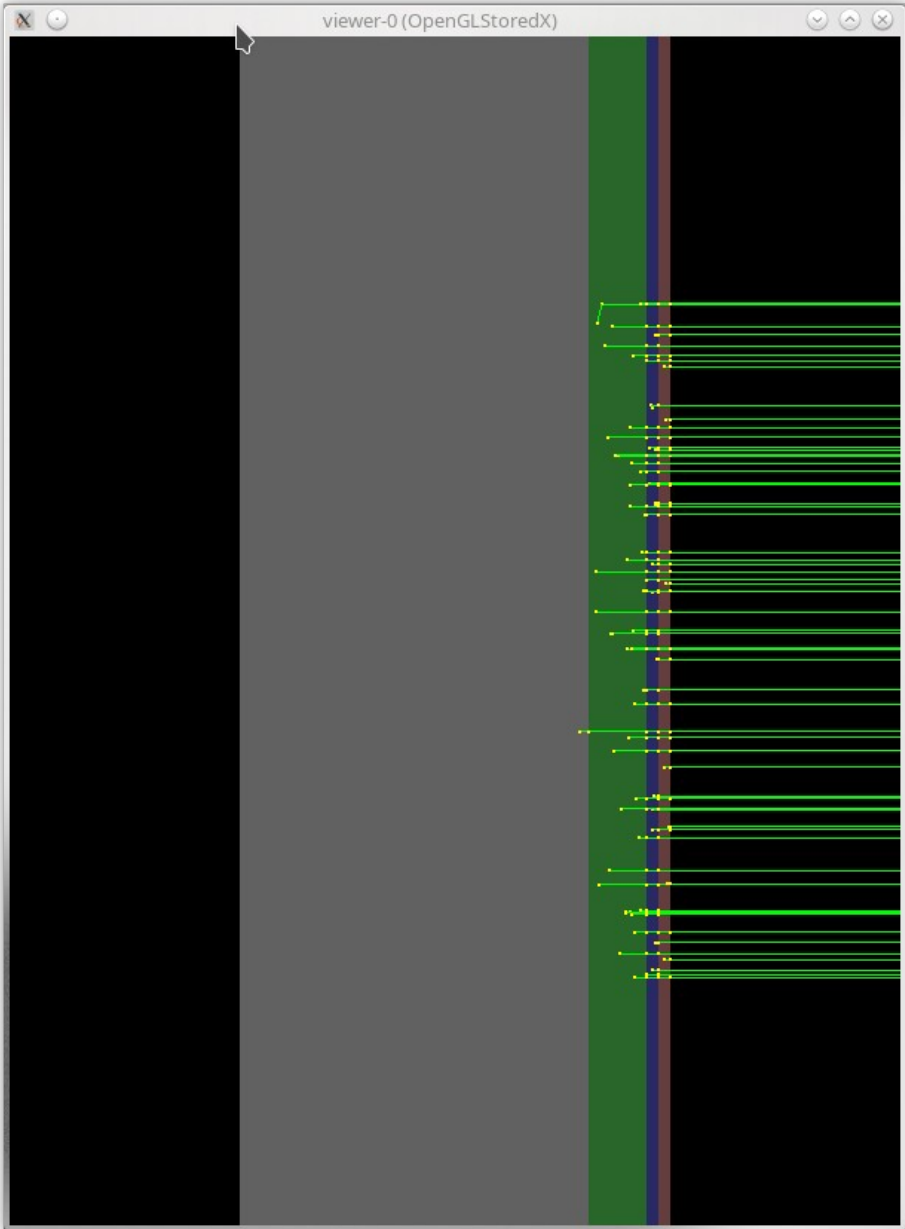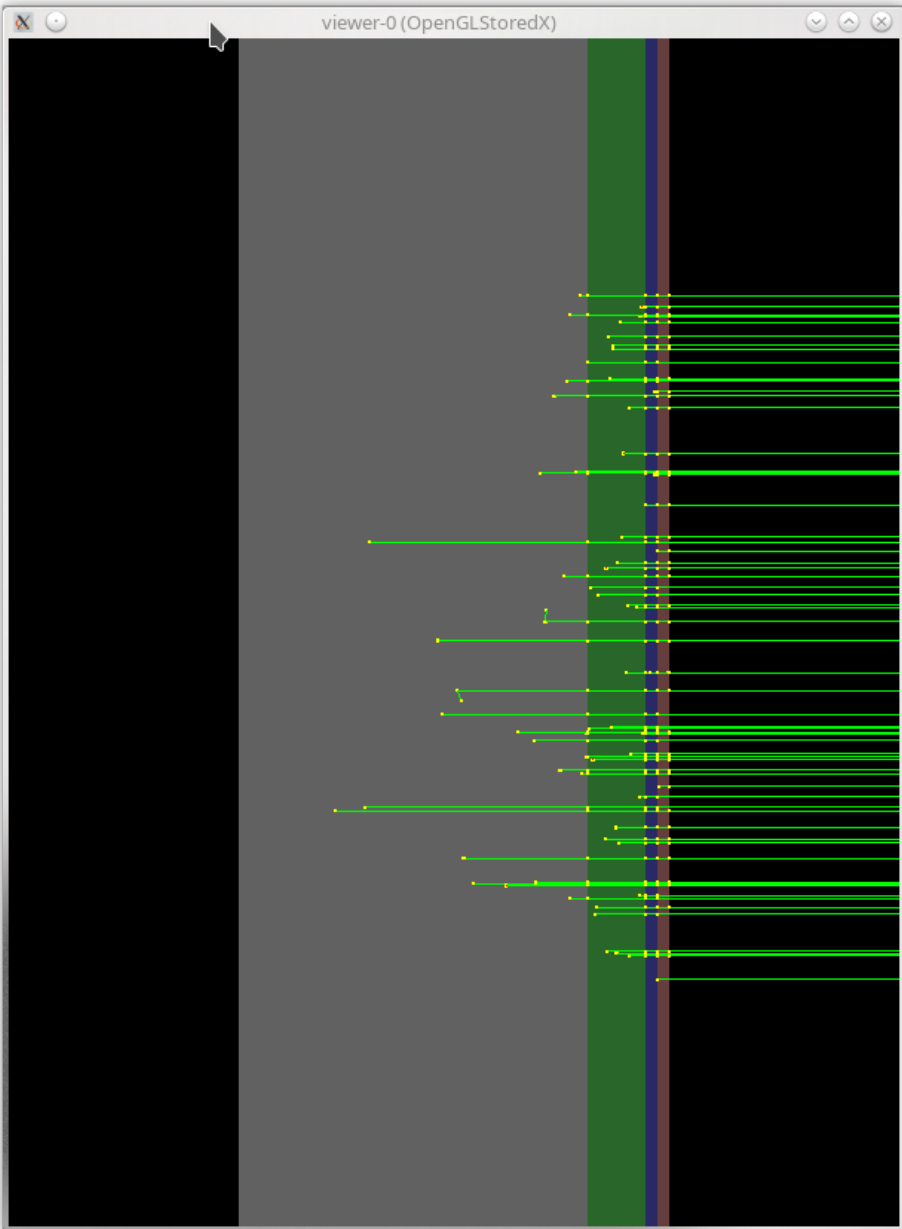
Detector – top view

Detector – top view with X-rays (8 keV)
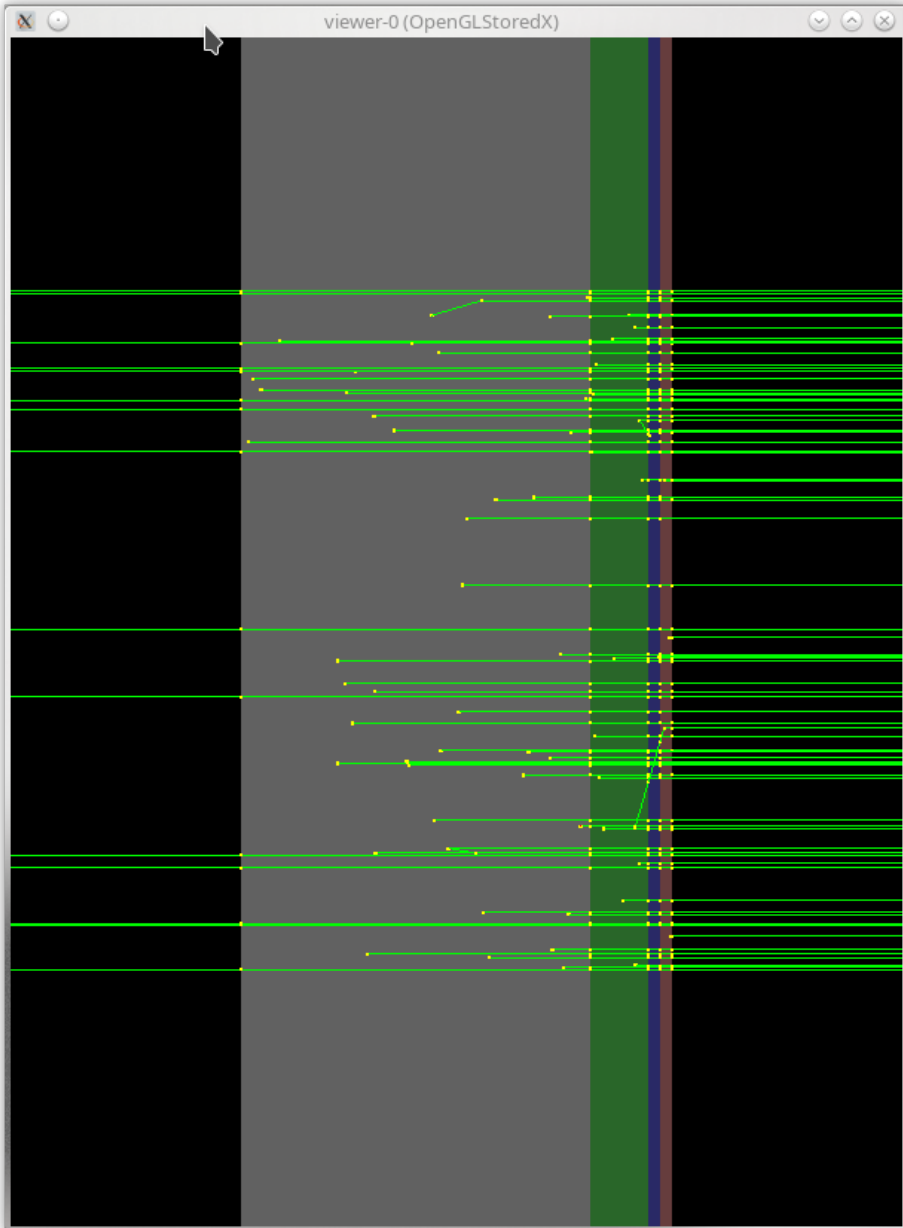
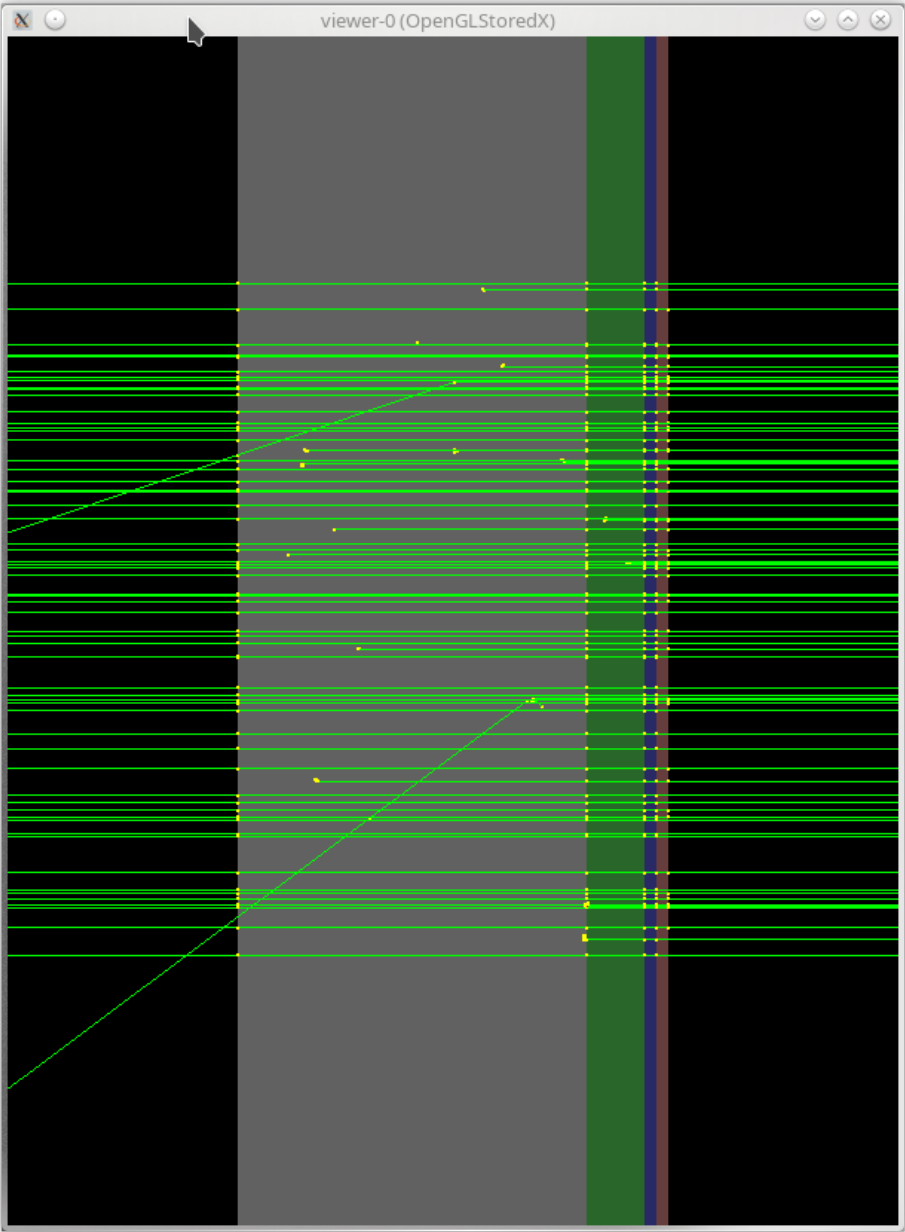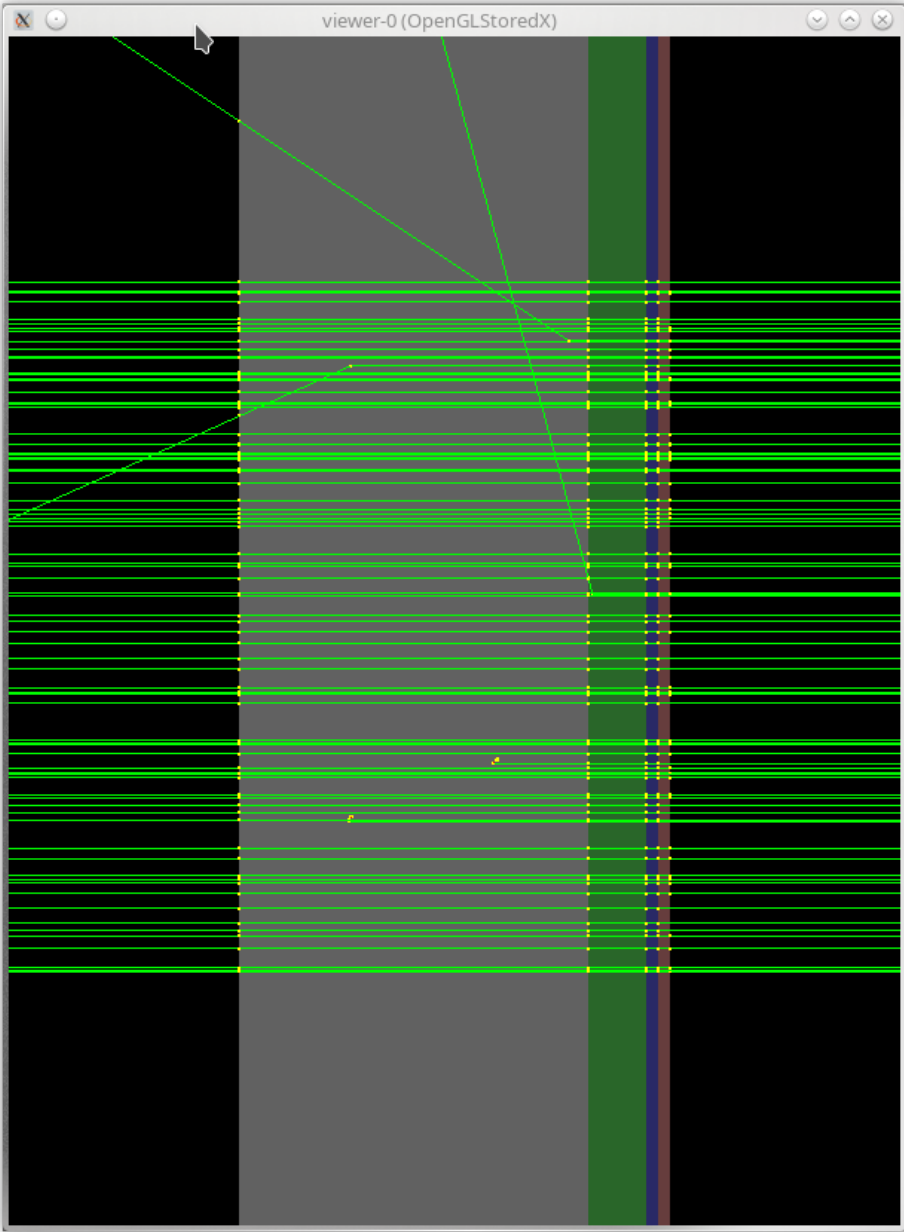# Some results: X-rays

3 keV

5 keV

Some results: X-rays

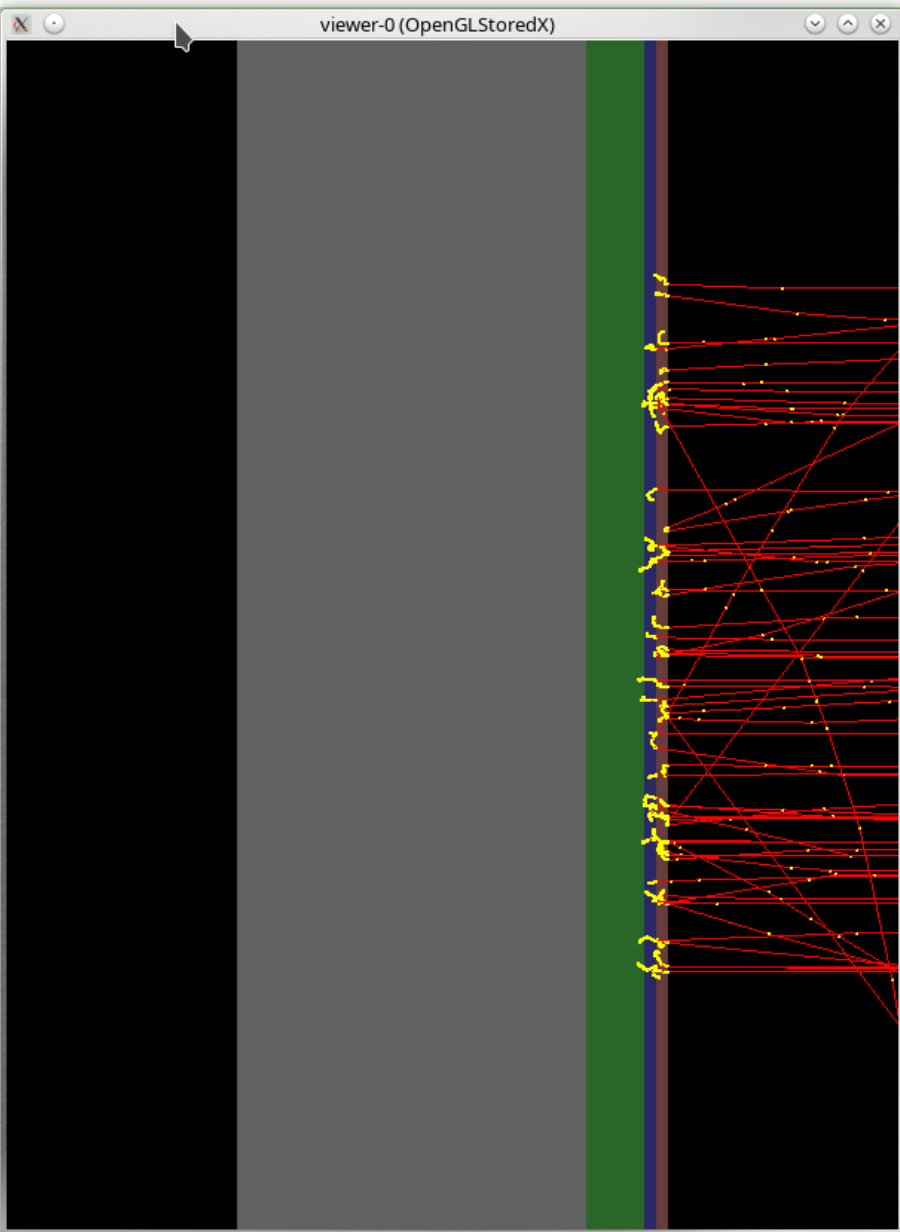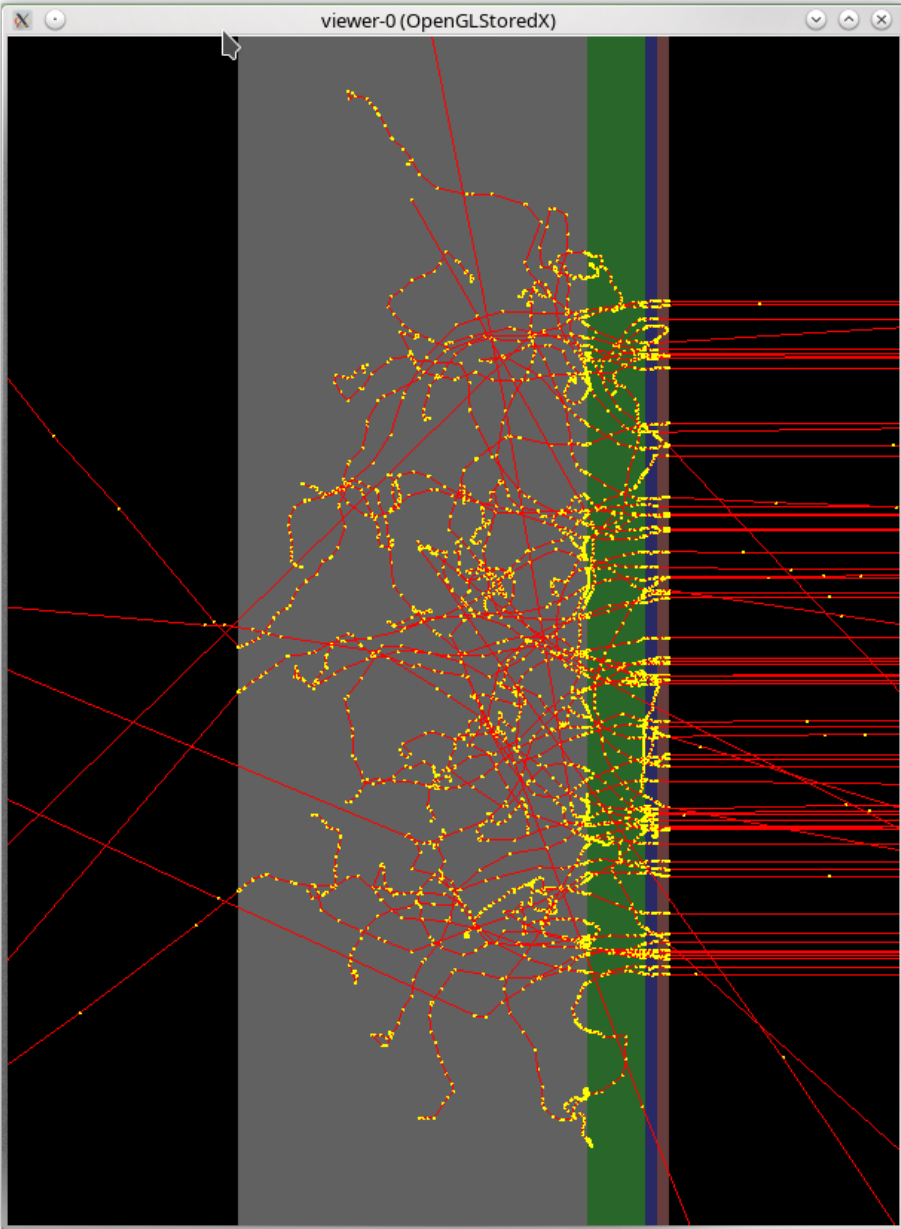8 keV

12 keV

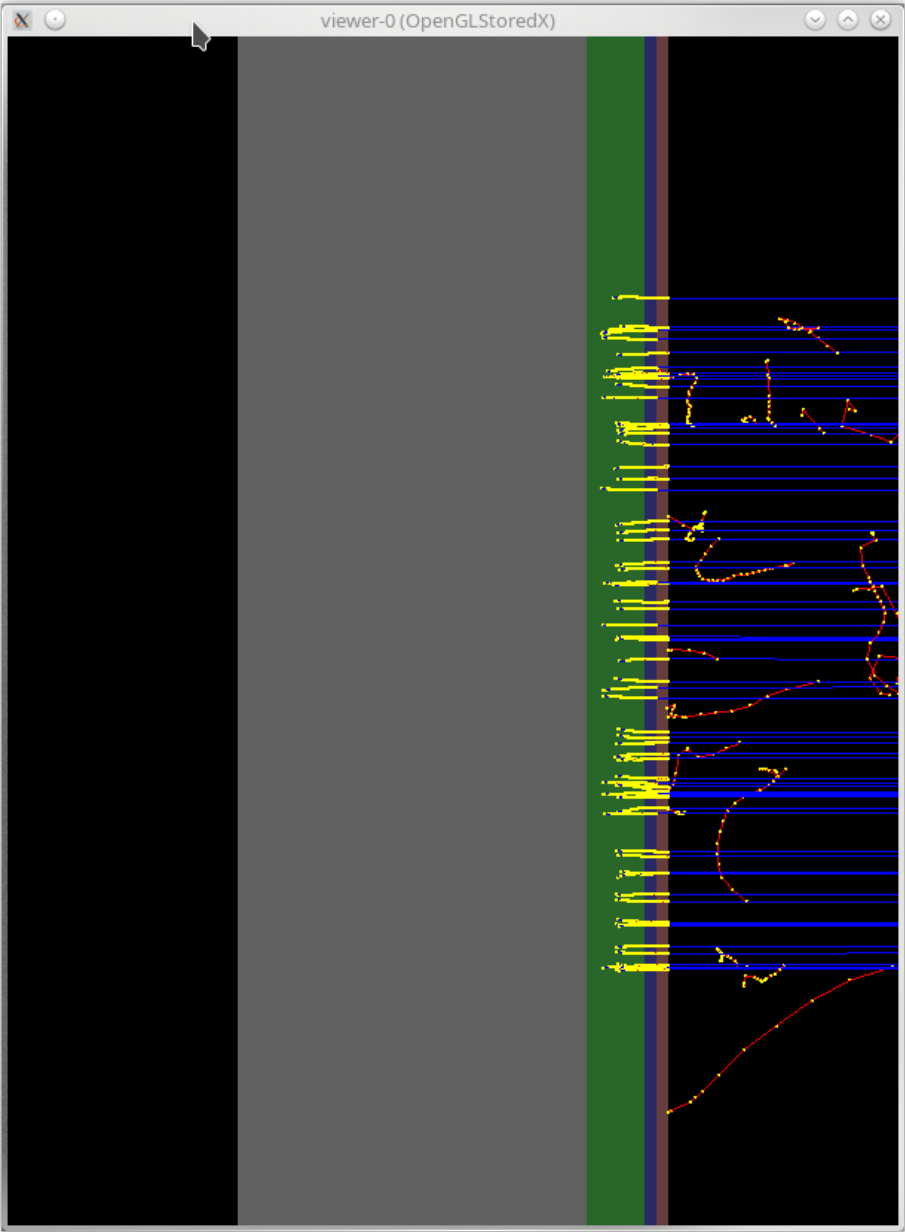# Some results: X-rays
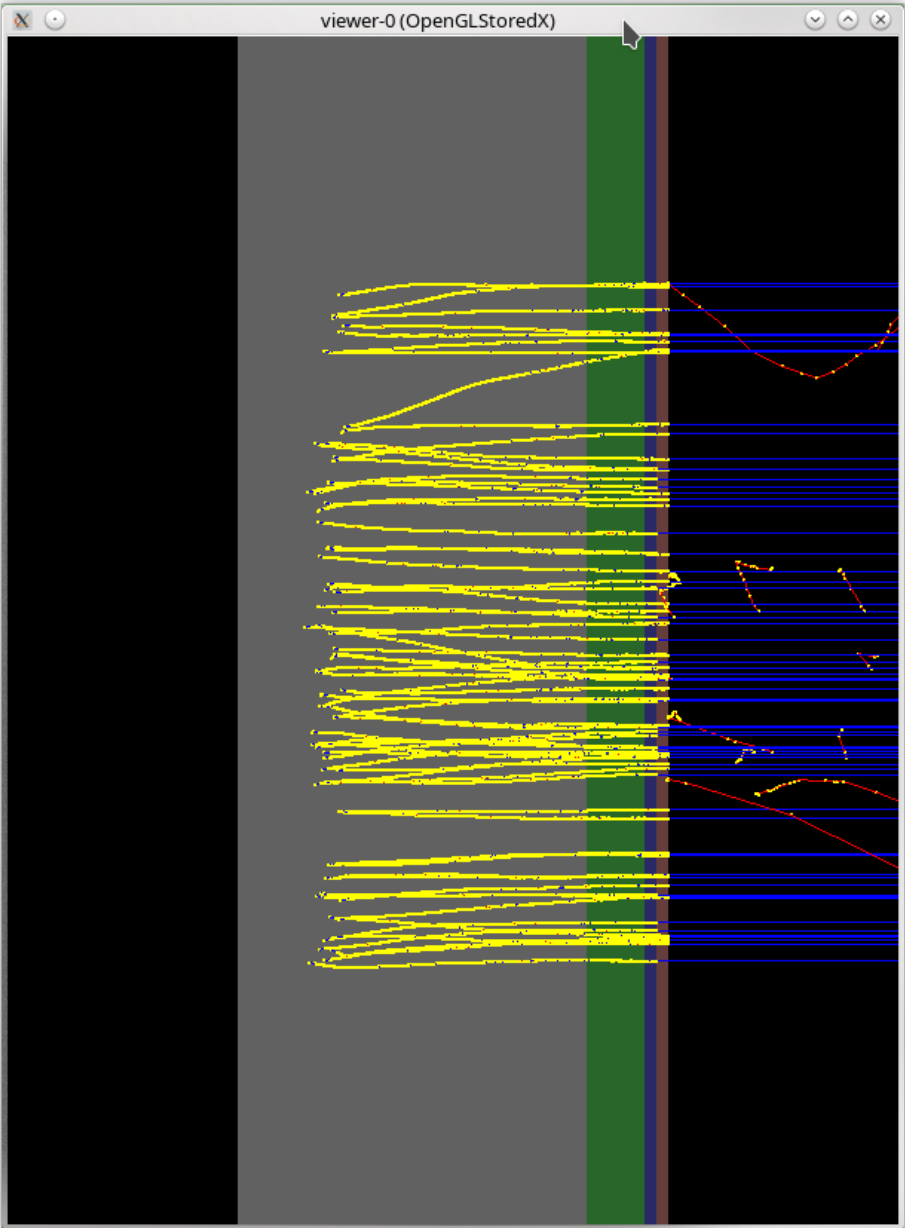
25 keV

40 keV

Some results: electrons

50 keV

300 keV

Some results: protons

2 MeV

6 MeV

Particle tracking: X-ray + electron

End