

Status report (8 Mar. 2017)

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Simulation: dope

- Issue
 1. Triton depth distribution: Au (distributed) / Cu (sharp peak)
- **multiple scattering involved / not involved**
 2. Electron depth distribution: Beam from outside / inside
- **multiple scattering involved / not involved**

Triton depth: Au (distributed) / Cu (sharp peak)

- Range vs. mean-free-path
 - $\text{range} < \text{mean-free-path}$: just lose its energy (no multiple scattering)
 - $\text{range} > \text{mean-free-path}$: multiple scattering adapted
- Range straggling? (or Energy loss fluctuation?)
 - Low energy case: **no fluctuation** of energy loss (energy loss table → interpolation)
 - no msc.: A sharp peak appears even in the case of Au plate.

Electron depth: Outside (dist.) / inside (sharp)

- Boundary effect
 - when Geant4 try to adapt multiple scattering: check the track crossing a boundary or near to it.
- Check high-energy case (>18 keV electron beam)
 - Au case (depth: 1.287 μm): msc. occurs from $K = 33$ keV.
 - Cu case (depth: 1.618 μm): msc. occurs from $K = 23$ keV.

What else ...

- Writing manuals
 - DAQ program (fdaq / fdaqg): code organization, how to use the library for modules provided by the manufacturer, and so on.
 - Raw data conversion program (dat2root): usage, code organization
 - Geant4 simulation (kgbar_sim): about to write
- GBAR note update
- DAQ program revision: FADC model changed? (FADC500-IBS → NKFADC500)