

# 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
  - range < mean-free-path: just lose its energy (no multiple scattering)
  - range > 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  $\mu\text{m}$ ): msc. occurs from  $K = 33$  keV.
  - Cu case (depth: 1.618  $\mu\text{m}$ ): 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)