DCV Simulation

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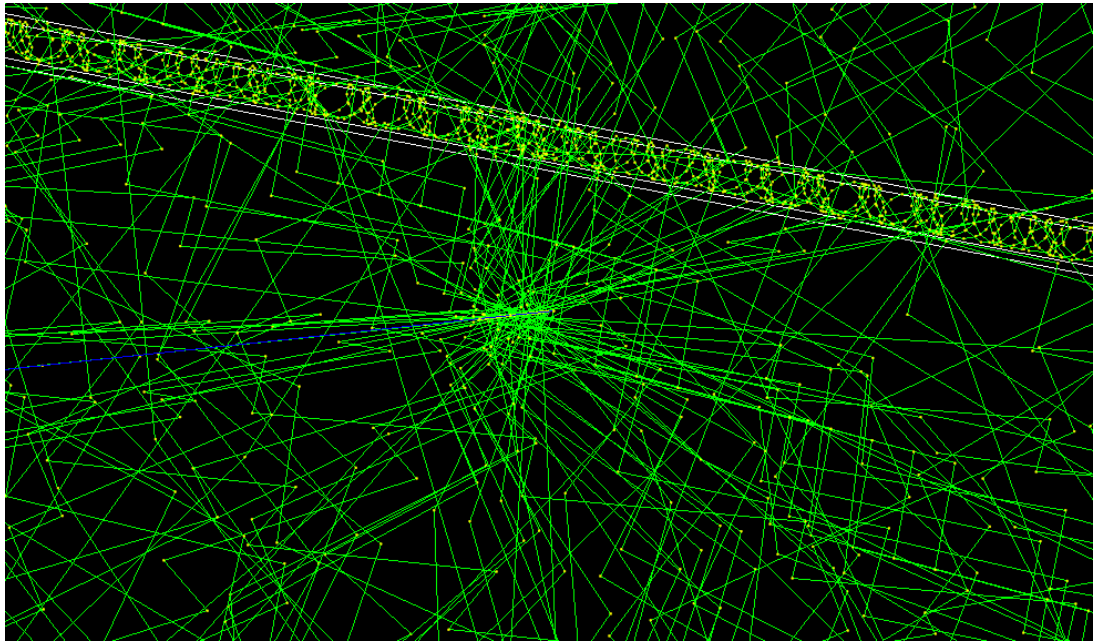
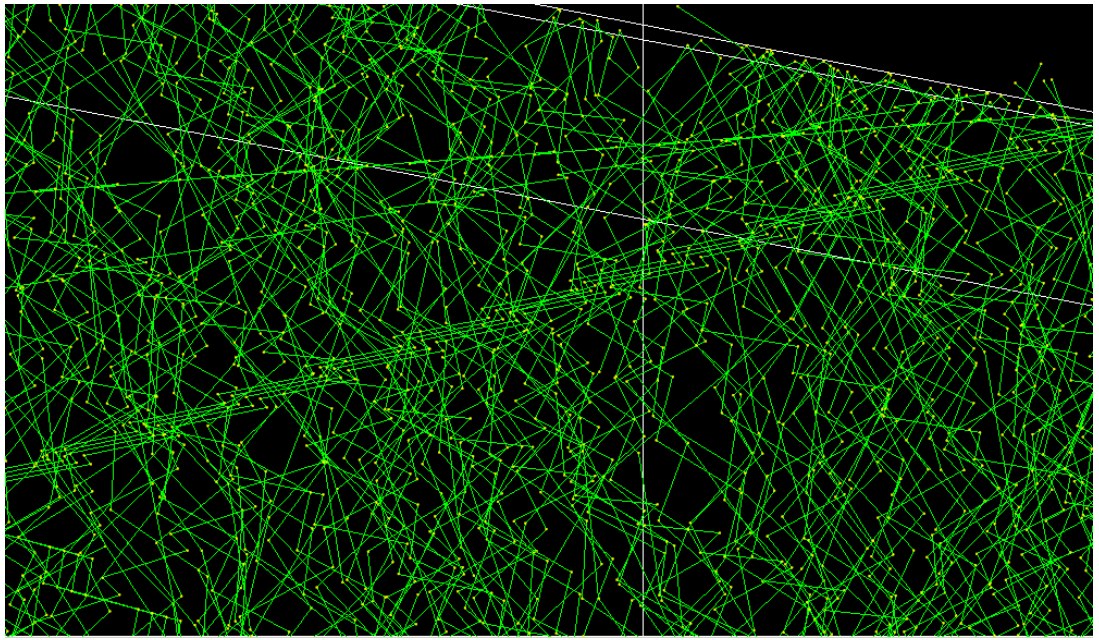
Simulation for Scintillation process



- Scintillation yield 100/MeV
- Shooted particle : mu+
- Energy of particle : 100GeV

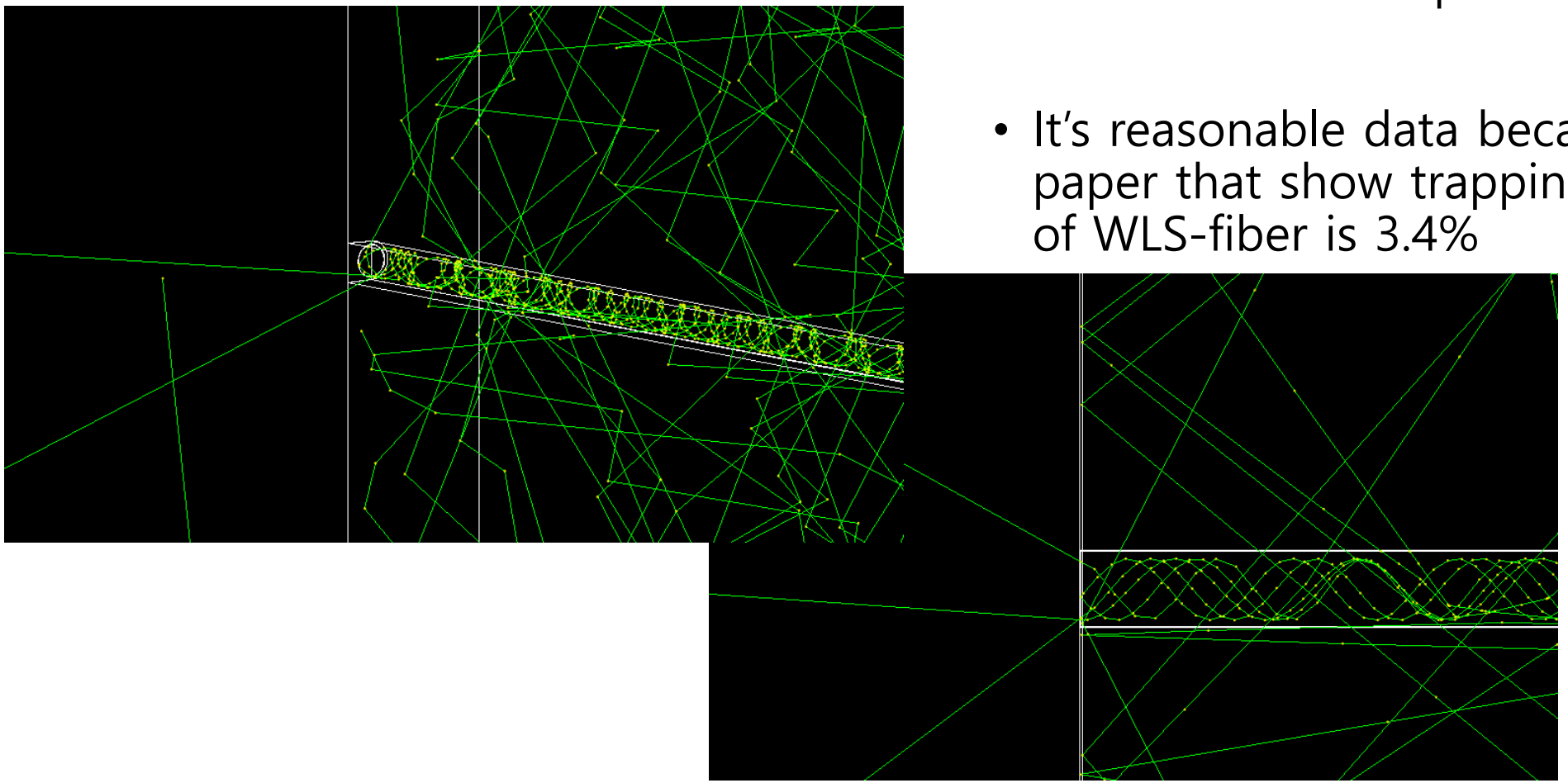
- Scintillation process : 65
- Cerenkov process : 30

Total Reflection



- Considering of refractive index of Plastic Scintillator 1.58, incident angle should be larger than 39.27.
- The probability of total reflection is 0.766

Simulation



- The number of Captured photon : 3
- It’s reasonable data because there is paper that show trapping efficiency of WLS-fiber is 3.4%

Simulation Threshold

- In geant4, Threshold for secondary particles is determined by traveling length in medium.
- For example, if system which consist of plastic scintillator is set as 1mm, it means that if primary particle can travel 1mm, secondary particle will be produced.
- And it means that primary particle needs 2MeV at least.
- Radiation length is different material by material.