Geant4 Geometry and Simulation

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GLAST Balloon Analysis VRVS meeting

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Detector Geometry

• Detectors and pressure vessel are implemented
  Now shooting cosmic-ray proton/electron to verify
  the simulator and to study background
• Gondola is almost ready
  Next: bombard particle aimed at gondola
Cosmic-ray Generator

• Proton and electron generator are constructed based on AMS/BESS experiment
• Solar modulation and geomagnetic effect are implemented on primary component

Downward proton

Downward electron
Proton aimed at 4 XGTs

About 6% of protons aimed at XGTs will give level1 trigger

(here, albedo means reentrant+splash)
Proton aimed at 4 XGTs

1M events run
(2.5M protons in 6 hours)

3k L1T events
(0.3-0.4Hz)

60k L1T events
(∼7Hz)

3k L1T events
(0.3-0.4Hz)

downward  upward

(here, albedo means reentrant+splash)
Proton aimed at Pressure Vessel

500k events run (~15k/s when aimed at PV)

(primary + albedo)
(primary + albedo, detector hit)
(primary + albedo, L1T)

(here, albedo means reentrant+splash)

~200Hz L1T  10-15Hz L1T

downward  ←→  upward