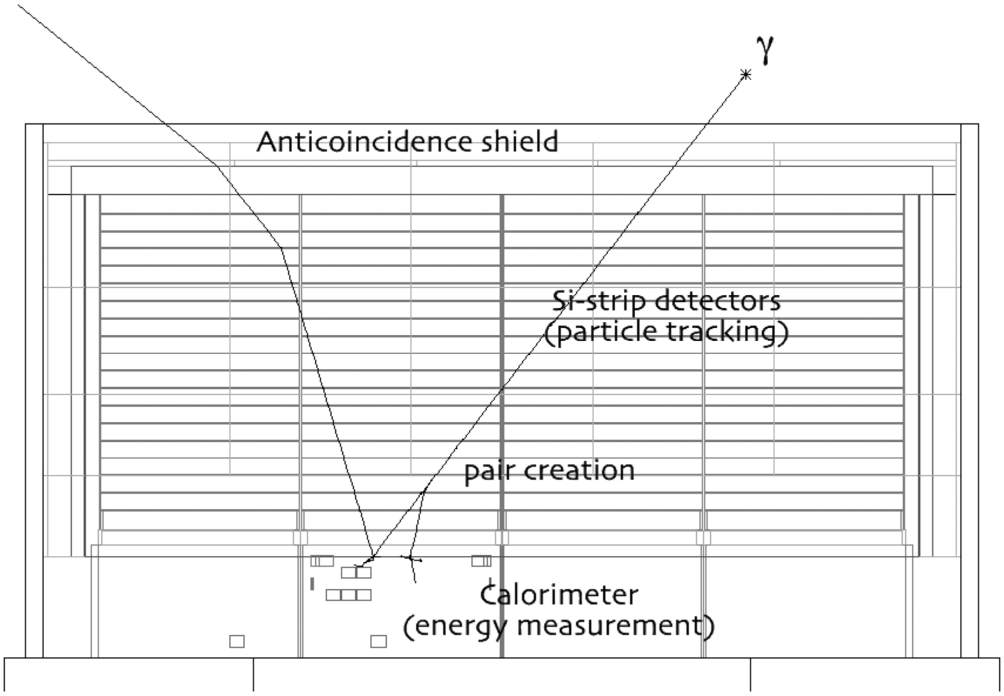

Figure 1. A simulated gamma-ray event detected with the LAT

pair will be tracked by the SSDs, providing the incident direction of the gamma ray. The e^+e^- pair will continue into the calorimeter ("logs" of CsI(Tl)); the sum of the energy deposited in the calorimeter logs will give the gamma rays' energy. Anticoincidence shields will reject charged particles.

The LAT will consist of 16 "towers." In each tower there will be 18 planes with SSDs. The SSDs will actually be two planes of strips running in crossing directions. The upper 12 planes will have thin (0.035 radiation lengths) tungsten foils, the next 4 will have thick (0.18 radiation lengths) tungsten foils, and the last 2 will not have any foils. Below the SSD planes will be 8 planes with 12 CsI(Tl) each. The anticoincidence shields will be plastic scintillator tiles on the outside of the 16 towers. The outside dimension of the LAT will be $1.8 \times 1.8 \times 1$ m, and it will weigh ~ 3000 kg.

The celestial gamma rays will be only a small fraction of the total number of events in the LAT, most of which will result from charged particles. Therefore, filtering of the events on board will reduce the ~ 30 kHz event rate to ~ 30 Hz that will be telemetered to the ground; ground processing will result in a ~ 1.5 Hz photon rate.

3. The GBM

A descendant of the BATSE detectors, the GBM will consist of 12 NaI(Tl) detectors for the 10–1000 keV band and 2 BGO detectors for the 1–20 MeV band. The GBM will monitor > 8 sr of the sky, including the LATs field-of-view.