

Particle beam tests for the GLAST-LAT Calibration

Tentative speaker F.Gargano

The calibration strategy of the GLAST Large Area Telescope combines analysis of cosmic ray data with accelerator particle beams measurements. To validate the LAT simulation and to study its performances, a massive campaign of particle beam tests was performed, in parallel with the LAT integration and test, on the LAT Calibration Unit (CU).

This is a detector built with two complete flight spare modules, a third spare calorimeter module, five anticoincidence tiles located around the telescope and flight-like readout electronics.

The CU was exposed to different kinds of beams, representing the whole spectrum of the signal that will be detected by the LAT, using the CERN and the GSI accelerator facilities. Beams of photons (0-2.5GeV), electrons (0.5-300GeV), hadrons (pions and protons, ~GeV-100GeV) and ions (C, Xe, 1.5GeV/n) were shot through the CU to measure the physical processes taking place in the detector and eventually fine-tune their description in the LAT Monte Carlo simulation.

This talk describes the motivations and goals of the test runs, the many different experimental setups used to select the required particles and trigger the CU, the measured performance of the CU and the first results of the LAT Monte Carlo validation.