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Novel technique for monitoring the performance of the LAT instrument on board the GLAST satellite

Abstract content

The Large Area Telescope (LAT) on board of the Gamma-ray Large Area Space Telescope (GLAST) aims to perform gamma-ray astronomy in the energy range 20 MeV to 300 GeV. GLAST will be launched at the fall of 2007, opening a new and important window on a wide variety of high energy astrophysical phenomena . The LAT consists of 16 identical towers in a four-by-four grid, each one containing a pair conversion tracker and a hodoscopic crystal calorimeter, all covered by a segmented plastic scintillator anti-coincidence shield to reject charged particle background. Altogether, the LAT contains about 1M channels to be monitored. The scientific return of the instrument depends very much on how accurately we know its performance, and how well we can monitor it and correct potential problems promptly. We will report on a novel technique that we are developing to help to characterize and monitor the LAT by using the power of classification trees to pinpoint in a short time potential problems in the recorded data. We will show that the method is able to quickly and efficiently identify data anomalies in LAT data, and we will discuss the feasibility of applying this method during space operations.

If this papers is presented for a collaboration, please specify the collaboration

GLAST/LAT collaboration

Summary

Reference

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