

On-Ground Calibration of AGILE-GRID with a Photon Beam. Results and lessons for the future.

AGILE, an Italian Space Agency mission launched in April 2007, has at its core a pair-production Gamma Ray Imager (GRID) sensitive from 30 MeV-50GeV. The instrument was calibrated before launch in the Beam Test Facility at the INFN Laboratori Nazionali di Frascati using a tagged photon beam designed for the purpose.

The data were used to measure the effective area, energy dispersion, and point spread function versus the photon direction and energy under beam test condition and to validate the Monte Carlo simulation to be used for estimating the same quantities in flight condition.

This calibration required first a careful characterization of the photon tagging system in terms of efficiency and energy resolution, followed by an analysis of the AGILE data.

During this analysis we identified some problems in the calibration setup that limited the precision of our calibration.

We discuss these limitations and suggest an improved setup for calibration of future gamma ray telescope on satellite.

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