Gamma-ray Large Area Space Telescope

GLAST CERN BEAM TEST T9 – PS Run Status

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Overall status

- **Lost 11 days of beam-time for CERN problem**
  - **Need to optimize program and prioritize goals**
- **Eventually beam is back since today 9AM**
  - **Stable and good since 11AM**
- **Used no-beam time to**
  - **Review existing data**
    - **π pile-up reduced with 10μs pile-up veto on large trigger scintillators**
    - **Refine CAL cross-calibration constant and update DB**
    - **Spotted a CAL pedestal drift to monitor (Sasha)**
      - **Temperature or power supply responsibility**
      - **Monitor pedestal continuosly**
  - **Provided lots of documentation on confluence to help reduce training time**
  - **Discuss program to make sure we fit in the remaining 14 days**
- **Restarted with photon program**
  - **Tagger calibration today**
    - **Data synchronization worked straight-on at 1.2KHz**
  - **Start collecting photons tonight**

Program

- **Photons are first priority**
    - **½ day to calibrate tagger and place dump**
        - **ready to take photons by tonight**
    - **Take 4 days of data mixing tagged photons and full-bremstrahlung**
        - **Trade-off between energy coverage and resolution**

Photons setup
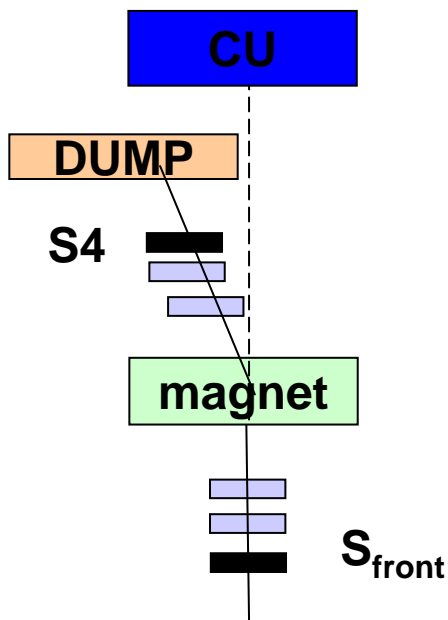
	Tagged mode	Full-brems
Trigger	S_{front}+S4	S_{front}
E meas	Yes	No
g direction	Event-based	No
Max trigger rate	500Hz (AD, TBD)	1KHz (CU)
E coverage	Approx Ebeam/2 – Ebeam*3/4	Full spectrum
In summary	fewer E bins, lower rate, better resolution	All E bins at once, higher rate, no resolution

CU

DUMP

S4

magnet

S_{front}

Program optimization

- **First reduce number of angles and positions for all particles but keep high statistics**

- **Complete program with e**

  – **Check new e runs after pile-up rejection and new calibration and decide if we need to repeat some scans**

- **Run 1 GeV positron annihilation in MMS**

- **Run 10 GeV protons at 0, 90 degree through MMS**

- **If time go back to γ and increase number of configurations**

Local offline coordination

- **Offline group piquet at CERN to maximize efficiency in the rest of the run**
- **Goals**
  - **Agree on infrastructure and changes we may need to do here**
    - **Involve relevant people in the discussion**
    - **Advertise changes to whole beamlist**
  - **Update everyone on the current status**
    - **Daily reports on data quality and anomalies**
  - **Provide tools to all people interested in analysis of beam test data**
    - **Share useful tools and macros**
    - **Involve as many people as possible**
    - **Avoid duplication of work and assign tasks**

Local offline coordination

- **TKR analysis – Claudia Cecchi**
  - **Hits, tracks, TOT**
  - **Conversion effect, double photons**
  - **Faults in the reconstruction**
  - **PSF (tagged vs full-brems mode)**
- **CAL – Philippe Bruel**
  - **CAL calibration**
  - **Energy resolution**
  - **Effects of cracks, radiation lengthin the tracker**
  - **Direction reconstruction and imaging capabilities**
- **ACD – Eric Charles**
  - **Calibration**
  - **Rejction power**
  - **Backsplash**
- **Ancillary and beam diagnostics – Nicola Mazziotta**
  - **Beam rate, divergence, stability, e fraction**
  - **Trigger efficiency**
  - **Photon tagging performance**