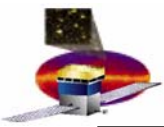


LAT Instrument Test Analysis

Eduardo do Couto e Silva

April 12, 2004

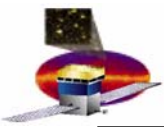


The Context

- There are **two data analysis** efforts during the LAT Integration and both use the same test data and both benefit from each other
 - **Pass/Fail tests of the flight hardware data**
 - Determine hardware baseline and calibrations
 - Results due with hours or, at most, a day (TBR)
 - I&T, SAS and Subsystems effort
 - See Heather's presentation in SAS Ground Software meeting from April 8, 2004

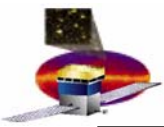
This talk

- **Instrument Data Analyses of the flight hardware data, which assume baseline and calibrations to be already understood**
 - To uncover subtle hardware problems
 - To apply reconstruction algorithms to real data
 - Results due in 2 to 3 weeks after data taking (TBR)
 - LAT wide collaboration effort



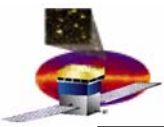
Instrument Analysis Workshop

- **Date** : June 7 (Monday) and 8 (Tuesday), 2004
- **Location** : SLAC , June 7 (ROB C&D) , June 8 (TBD)
- **Goal** : Prepare for data analysis during I&T
 - Produce MC datasets with two-tower in a grid at different configurations to
 - Validate geometry implementation
 - Create datasets for data analysis
 - Recommend data taking time based on MC studies
 - Define and assign tasks to participants to
 - Evaluate if there are modifications necessary to the reconstruction
 - Evaluate if there are modifications necessary to the analysis (merit) ntuple
 - Create reference plots for different configurations
 - Define infrastructure necessary for
 - Data pipeline (OPUS)
 - Report generation
 - Comparison of results



Evaluation of Results

- **We will meet again at SLAC 1 month later (TBR) to**
 - **Evaluate results and regenerate MC datasets if necessary**
 - **Suggest modifications for data analysis tests with real data and flight hardware**
 - **Work with I&T to evaluate if the data taking time is**
 - **adequate to understand the instrument**
 - **and if fits the LAT schedule.**
 - **Define what analyses will be done during the integration sequence.**
 - **The plan is to have data taking with 1,2,4,6,8,10,12,14,16 towers and 16 towers with ACD.**
 - **Define infrastructure needed full LAT analysis**



Who are the people?

- Core and support people

- GSFC

- Luis?

- LLR

- Pol?

- SLAC

- Anders
- Dan
- Eduardo
- Heather
- Leon
- Tracy
- Warren
- Xin

- UCSC

- Bill

- People who expressed interest and should define how much of their time can be allocated for this effort

- Bordeaux

- Benoit

- GSFC

- Steve

- LLR

- Berrie

- Pisa

- Michael

- SLAC

- Gary
- Johann
- Hiro
- Larry
- Mutsumi
- Richard

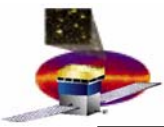
- UCSC

- Marcus



Preparation Phase – Current Status

- **Infrastructure**
 - **Generating a MC dataset of the 2 tower geometry in a grid (Xin)**
 - **Verifying geometry implementation with the event display (Anders)**
 - **Working on automating script that tracks processing history in OPUS (Dan)**
- **Data Analysis**
 - **Bill and Eduardo have weekly meetings on Thursday to steer the effort**
 - **Studying variables in the analysis ntuple for 100 MeV γ (Xin, Eduardo, Anders, Warren)**
 - **Bill, Eduardo and Xin @ NRL for CAL software workshop**
 - **Need to discuss usage of TKR info by calRecon**
 - **Need preliminary list of tests on digitized data using CAL (see TKR example in p 6 of Eduardo's presentation in the ANA meeting of March 21, 2004)**



What should you do?

- **For people not in the core group, please send an mail to Eduardo to**
 - **Give an idea of your level of commitment so that we can plan and define tasks in a way that everyone can contribute (even if you have limited time)**
- **Please inform Eduardo if you are coming to the Workshop since we need to know the room size especially for the last day**
- **Book your room at the SLAC guest house**
 - **<http://www.stanford.edu/dept/hds/SLAC/reservations2.html>**