



**GLAST** *The Gamma Ray Large Area Space Telescope*

Proposal for a study of  
**Calorimeter retriggering**

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*SLAC, 20 July 2005*

# Introduction

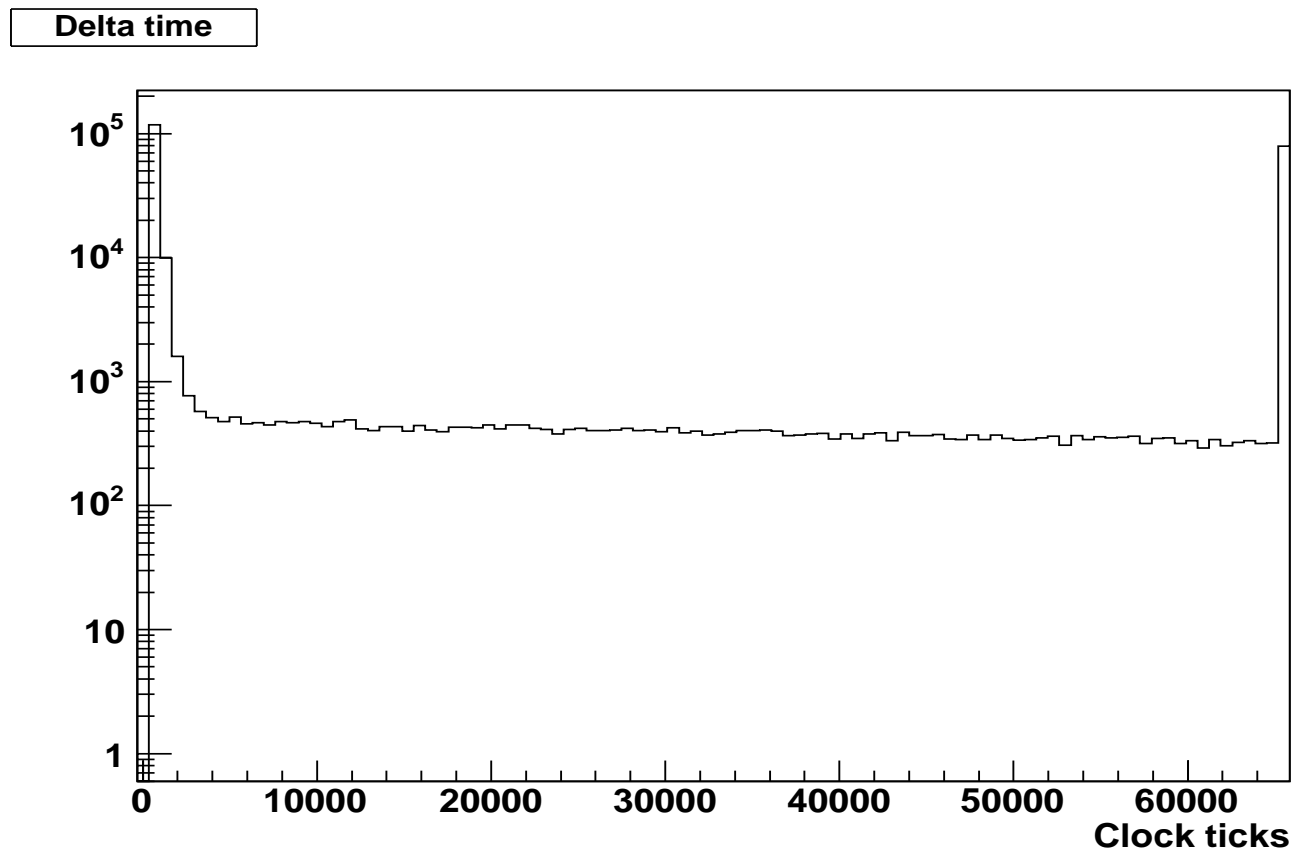
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- Sasha showed CAL is retriggering at low thresholds.
- Some additional plots are presented here.
- An STR is planned to study CAL retriggering.
- A number of measurements for the STR are laid out in this presentation.

# Delta Event Time

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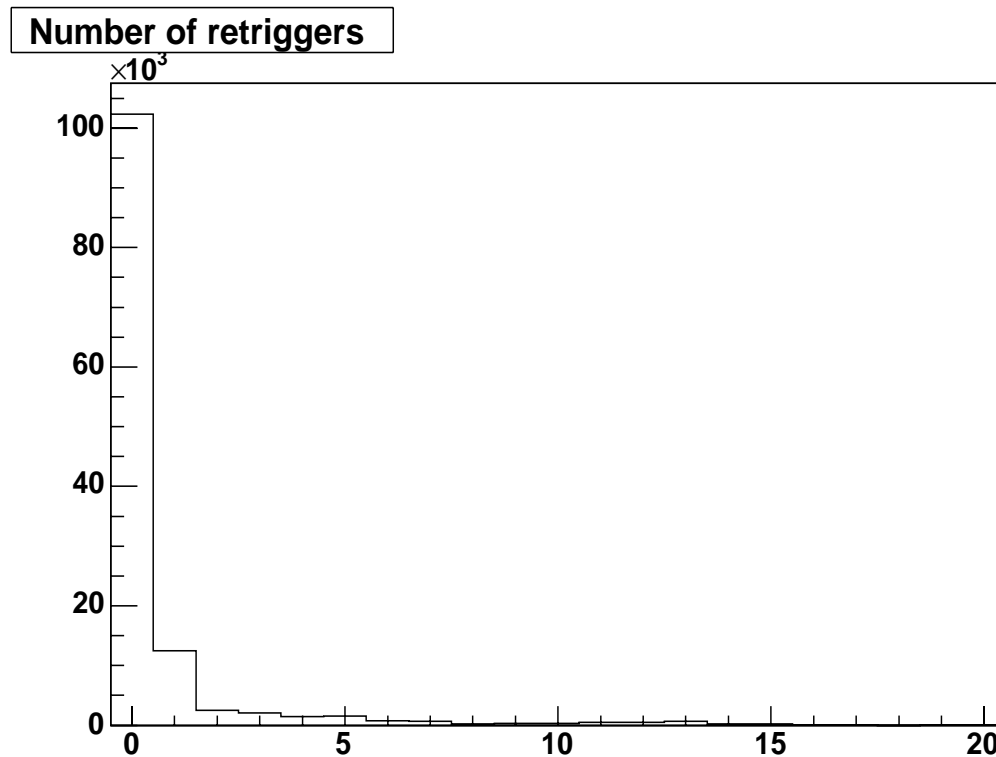
- Spike at early times indicates retriggerers



# Number of retriggers

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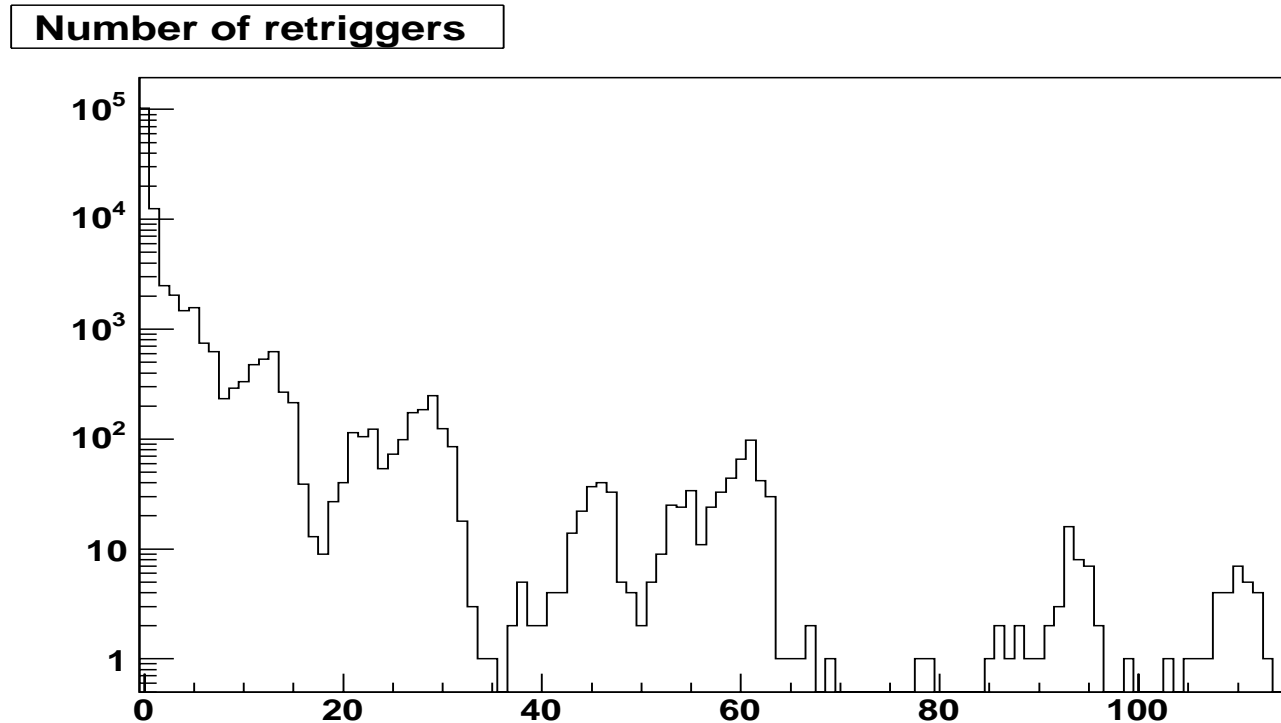
- Number of consecutive events with delta event times of less than 3000 ticks:



# Number of retriggers

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- Log plot shows some events have high number of retriggers
- Number of retriggers is clustered
- Most events have no retriggers

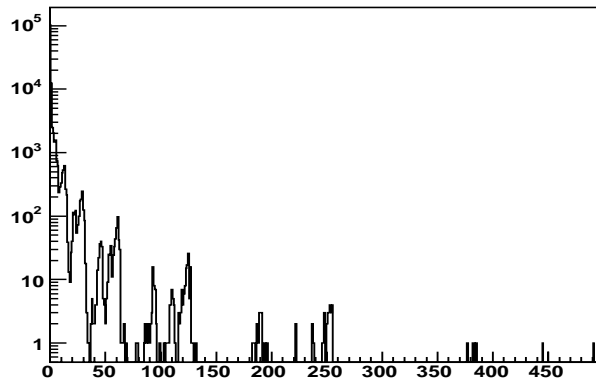


# What is causing the retriggers?

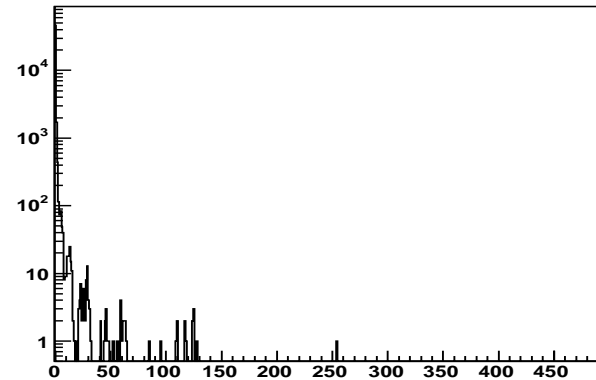
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- Plot number of retriggers vs. initial trigger condition

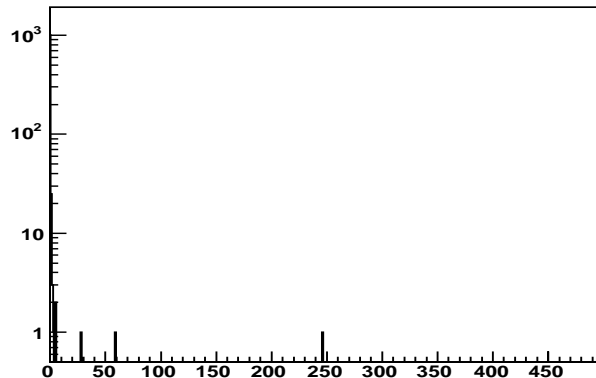
Number of retriggers TKR



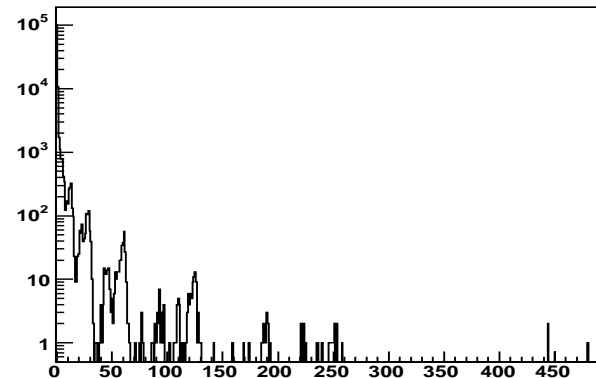
Number of retriggers CAL



Number of retriggers EXT



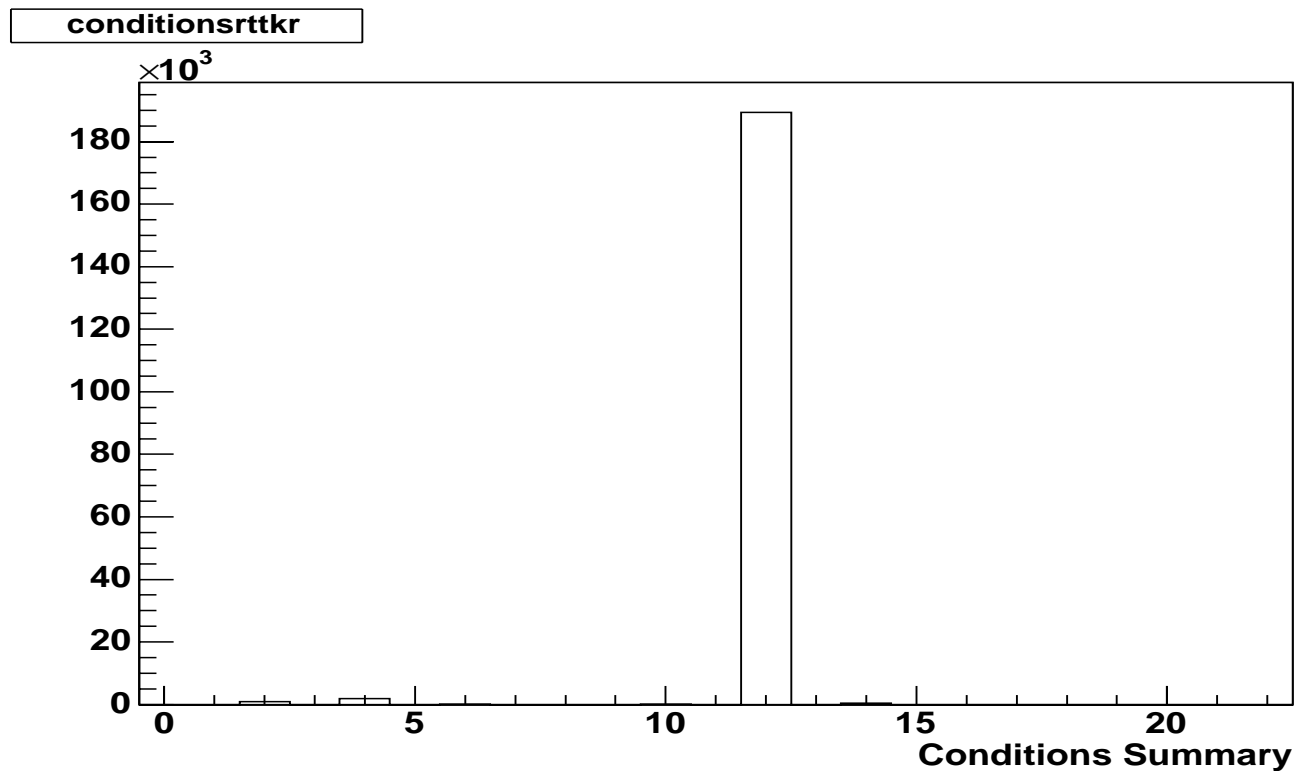
Number of retriggers mixed



# What retriggerers?

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- Plot the conditions summary of retriggered events



-> CAL high plus CAL low

# STR plan

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- Do the following cosmics runs with 6 towers:
  - Baseline run
  - Turn on CAL reset (was turned off by mistake)
  - Set high energy gain to nominal instead of muon gain
  - Scan through CAL low thresholds: +5, +10, +20, +30
  - Do a run with CAL low triggering disabled at front ends
  - Do a run with TKR triggers disabled
  - Do a charge injection run to establish if we see the effect with charge injection also
  - If this is the case, scan FHE with CI