ALL GAMMA$\text{As using the New Recons}$

First runs of ALL GAMMA – from glast-ts and SLAC Unix farm

**glast-ts sample:** no cuts – cal. only events, "NoCal" events, + *regular 200K*

**SLAC Unix Farm:** cuts - TkrNumTracks > 0
  *940K* (Sat.) + *510K* (Sun.)

Available....

There are new nTupple Variables for both *Tracker & Cal*
Exercise Goals

1) Begin re-building
   1) "GoodEnergy" Analysis
   2) PSF Analysis
   3) Back Ground Rejection Analysis

2) Exercise the MC Pipeline
   (For DC2 estimate 5x10^8 background events)

3) Provide data for DC2 workshop
   (Background events coming this week)

ALL GAMMA Definition:
   Disk generation area = 6m^2; Solid angle: 2\pi str.

\[ A_{\text{eff}} \times \Delta \Omega = 37.7 \, \text{m}^2\text{-str.} \]  (SR: 2.0 m^2-str)
**GoodEnergy Analysis**

**Step 0:** Look at the data! Events in nTuple 54878 (10.3 m²-str)

No Cuts

![No Cuts Plot]

TkrNumTracks > 0

![TkrNumTracks > 0 Plot]

Events: 30117 (5.68 m²-str)

SR: Convert > 65% of γs
Switch to $\sigma$

$\cos(\theta)$

Gap Fraction
Moments Analysis: Say a Moment of Inertial (see Goldstein). Showers form figures of revolutions about the shower axis.

Two larger moments are approx. equal. and a small moment (moment about shower axis). Eigenvector associated with smallest moment is the shower axis.

Capture Moments Information by:

\[
\text{CalTransRms} = \sqrt{\frac{\text{Smallest Moment}}{E_{\text{CAL, Raw}}}}
\]

\[
\text{CallongRms} = \sqrt{\frac{\text{Smallest Moment}}{E_{\text{CAL, Raw}}}} \cdot \frac{\ln(\text{CallATRLn} - \text{CntRLn})}{\ln(\text{CallATRLn} - \text{CntRLn})}
\]

\[
\text{CalRmsAsym} = \frac{\text{Big Moments1} - \text{Big Moment2}}{\text{Big Moments1} + \text{Big Moment2}}
\]
A First Gamma Selection:

CalTotalCorr < 3.5 &
CalDeadTotRat < .15 &
CalGapFraction < .30 &
CalTransRms < 60 &
CalLRmsAsym > 0. &
CalCsIRLn > 4 &
CalEnergyRaw > 5.

\[ \sim 300 \text{ Events/Bin} \]

\[ A_{\text{eff}} \times \Delta\Omega = 2.8 \text{ m}^2\text{-str} \]
Step 1: Re-do the Energy and \( \cos(\theta) \) dependencies
That's as far as it's gone so far.

GOOD PROGRESS!

Lot's of puzzles to solved.

No "Show Stoppers" observed

And...

The re-write of the Recons is a Success!

Go see for yourselves!