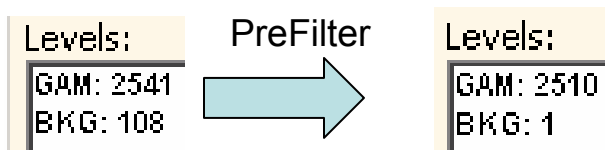


VTX, All Layers, $3500 < \text{CalEnergyRaw}, \cos(\theta) < -.3$

SLIDE 11 from Bill's workbook



$\text{AcdActiveDist} > -10 \mid \text{CalTrackAngle} > .5$
 $\mid \text{CalTrackDoca} > 40$

The Remaining Bkg Event

#	Variable	Mean
1	McId	11.00
2	McCharge	-1.00
3	McEnergy	10,452.20
4	McZDir	-0.58
5	McDirErr	3.23E-4
6	TkrNumTracks	10.00
7	Tkr1Chisq	1.92
8	Tkr1Hits	18.00
9	Tkr1FirstLayer	8.00
10	Tkr1SSDVeto	0.00
11	AcdTotalEnergy	6.09
12	AcdTileCount	4.00
13	AcdDoca	138.04
14	AcdActiveDist	-200.00
15	EvtRun	214,710.00
16	EvtEventId	2,692.00
17	EvtElapsedTime	199,885,000.00
18	EvtLiveTime	199,885,000.00
19	BestEnergy	10,461.30
21	BestEnergyProb	0.96
22	AcdRibbonEnergy	0.00
23	AcdDocaTileEnergy	0.18
24	AcdActDistTileEne...	0.00
25	AcdUpperTileCount	3.00
26	AcdLowerTileCount	1.00
27	AcdTotalTileCount	4.00

e^- (e^- Splash)

Event Well Reconstructed

This is NUTS!

The event clearly has to be pointing at an ACD Side tile and there is no SSD Veto.

The Doca Calc. says the event had a track well within a tile – so why is the ActiveDistance set to its rogue value?

EvtRun	214,710.00
EvtEventId	2,692.00
EvtElapsedTime	199,885,000.00

This is a glast-ts generated event.
 Can Toby find it?
 (It comes from either series 2 or 3)

We NEED a picture of it!

So what's the problem?

- Have a well-reconstructed track and AcdDOCA
- Bill realized that reconstructed tracks that are at small angles wrt a tile face will have very large (absolute value) ActiveDist due to the way it is presently calculated:
 - projecting the track to the plane of the tile and calculating the 2-d distance to the tile edge.
- Instead, if the minimum 3-d DOCA between the track and the four tile edges is used, this problem will not occur.
 - One hitch is determining whether the track pierces the tile or not.

An Improved Active Distance Algorithm – courtesy of Bill

Present Alg. Calc's the 2 D in the plane of the ACD tile to the nearest edge.
Its > 0 when the track intersection falls inside the tile and < 0 when outside.

This has the problem of giving large outside distances for track that are approx. parallel to the plane of the tile even though the track maybe quite close.

New Alg. Proposal

1) When the track intersects the tile – keep the previous calc. its what you want when analyzing the tile response.

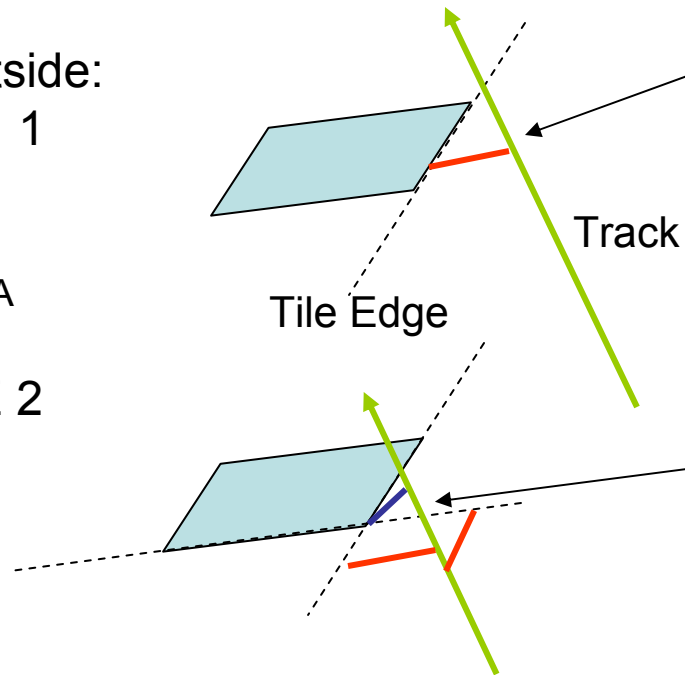
2) When outside:
CASE 1

— Line-to-Line DOCA

— Point-to-Line DOCA

← Track

CASE 2



For each edge of the tile calc. the DOCA for that line to the Track. Only Accept solutions where the DOCA vector joins the Tile Line within the limits of the Tile. Keep the smallest.

When no solutions are found for CASE1, the Track falls into a "corner" region. Calc. the DOCA to each corner of the Tile – keep the smallest