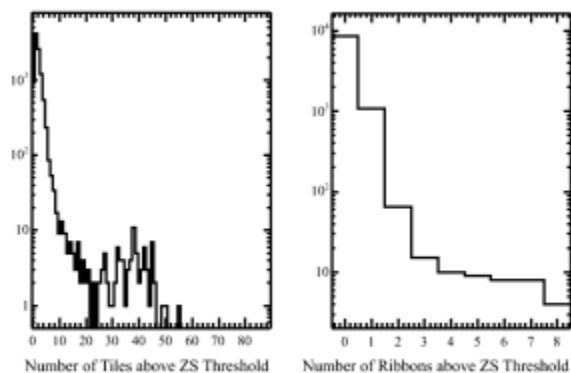# ACD Variables

Merit Tuple Variables

The complete list of merit tuple variables is here: http://glast-ground.slac.stanford.edu/workbook/pages/gleamOvrvw/pr_summaryNtuples.htm
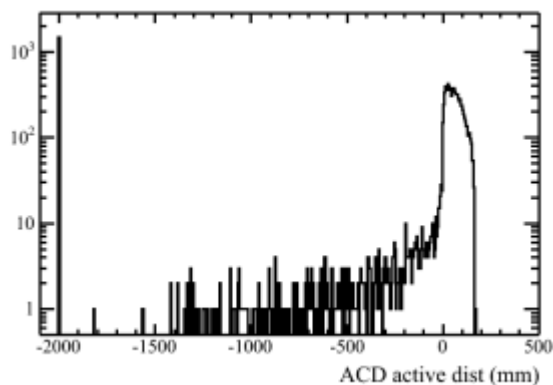
Here are some plots for the most relevent ACD variables:

### AcdTileCount, AcdRibbonCount: Number of Tiles and Ribbons in the Event

AcdNoTop, AcdNoSideRowX [0-3]: Number of tiles in the event (for the top of the ACD and by row)
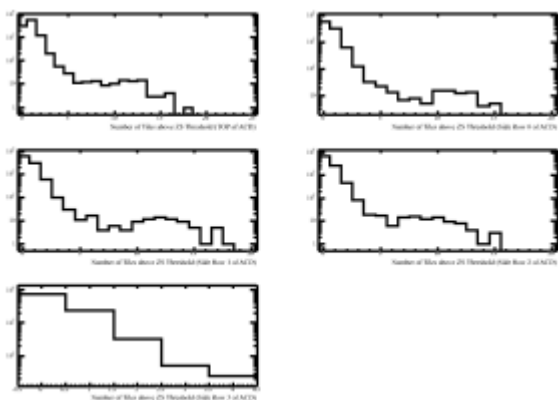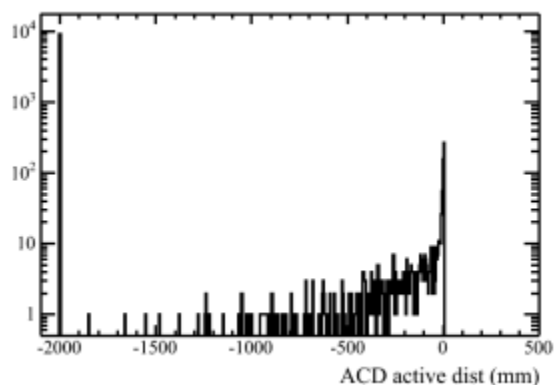

AcdActiveDistance3D: Distance to the closest edge of tile. Positive is inside tile, negative is outside tile.
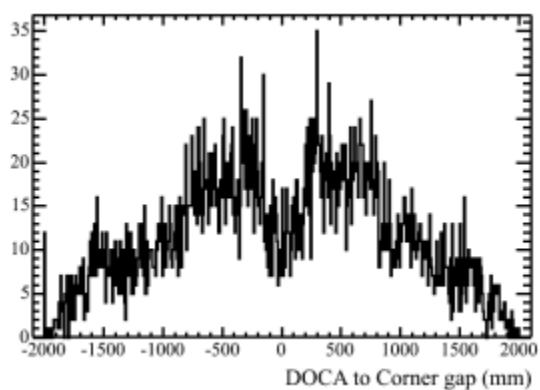
AcdActDist3DTop, AcdActDist3DSideRowX [0-3]. Best active distance for the top and various side rows of the ACD
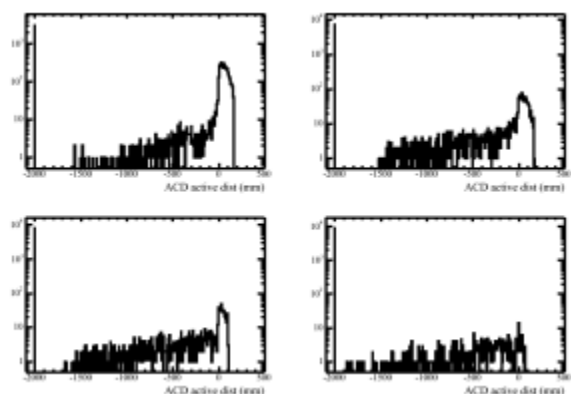
AcdRibbonActDist. Best Active distance to an Acd Ribbon

AcdCornerGap: Distance to closest gap along side of ACD, signed to match the direction of the overlap at the corner
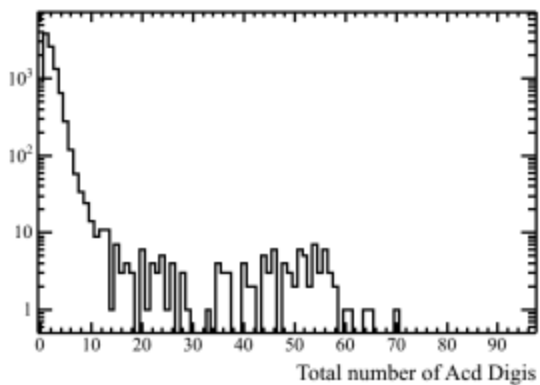

SVAC tuple variables

The complete list of svac tuple variables is here: ftp://ftp-glast.slac.stanford.edu/glast.u01/svac_workshop/Svac_ntuple_description/new/html/index.html

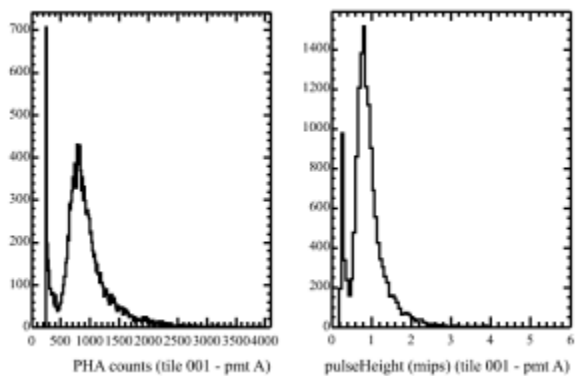Here are some plots for the most relevent ACD variables:

**AcdNumDigis: Total number of digis in the event (Tiles and Ribbons)**

**Acd10Ids[10]:** Tiles ids of the first (by readout order) 10 digis in the event

AcdID
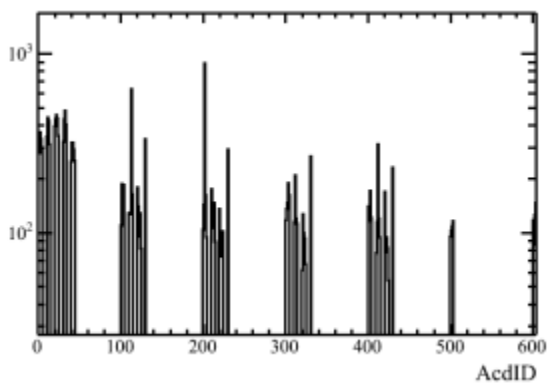
AcdPha[604][2] and AcdMips[604][2]: Pulse Height in pha counts and calibrated to MIPs, by tileid, pmt


PHA counts (tile 001 - pmt A)   pulseHeight (mips) (tile 001 - pmt A)

**AcdNumTkrIntSec: Number of intersection between tracks and ACD**

Number of Tkr-Acd intersections
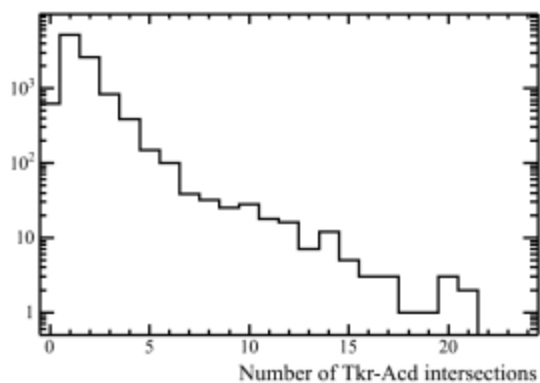
AcdTkrIntSecTkrIndex[20], AcdTkrIntSecTileId[20]: Track Index and Tile id for the first 20 intersections of tracks with the ACD
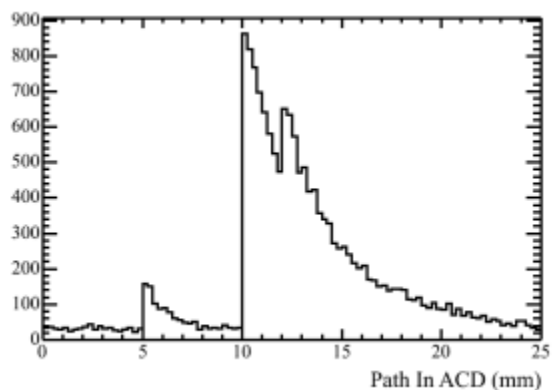

Tile ID

Track Index
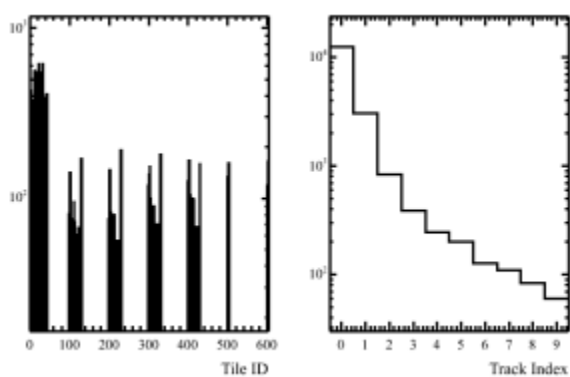
AcdTkrIntSecGlobalX[20] (also Y,Z): Position in global cooridinates when the track crosses the ACD
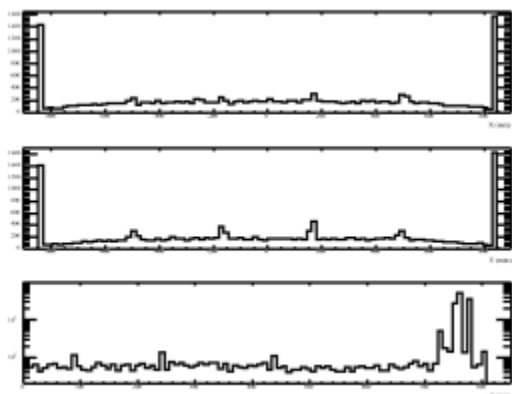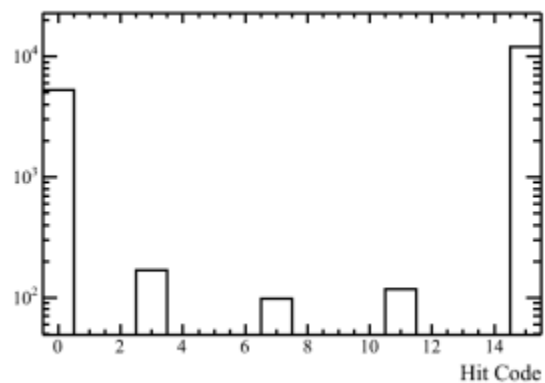

AcdTkrIntSecArcLengthToIntSec[20]: Distance from first (last) hit to the intersection with the ACD. Postivie for up, negative for down
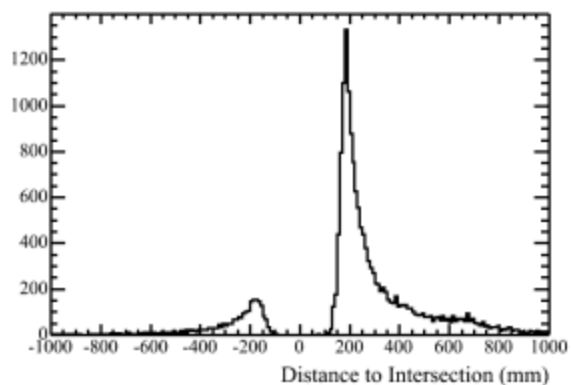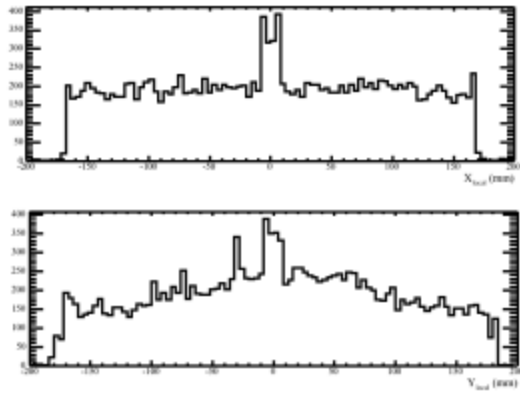
**AcdTkrIntSecPathLengthInTile[20]: Distance traveled inside active ACD volume.**

AcdTkrIntSecTileHit[20]: Hit code for tile (CN0B | CN0A | VetoB | VetoA | PHA_B | PHA_B)
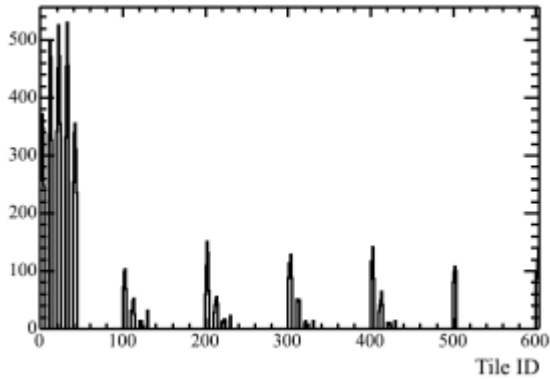

**AcdTkrIntSecLocalX[20] (also Y): Position of hit in local coordinates (to Tile Center)**

AcdPocaNbrTrack1 (also 2): Number of hit tiles and ribbons within 20cm of track 1 (or 2)


Number of Nearby ACD hits, track 1   Number of Nearby ACD hits, track 2
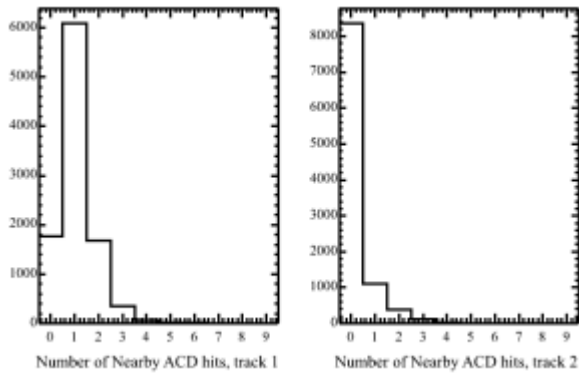
AcdPocaTileID[2][6]: Ids of up to six hit tiles or ribbons that a track passed with 20cm of, sorted by distance

Tile ID

AcdPocaDoca[2][6]: Distance of Closest approach between track and up to 6 tiles / ribbons, sorted by distance

DOCA from track (mm)
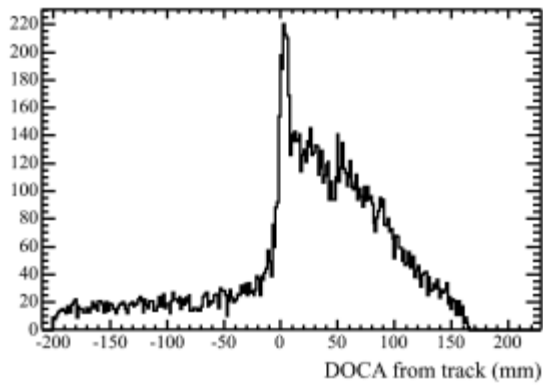
AcdPocaX[2][6] (also Y,Z): Point of closest approach (along track) to hit tile or ribbon, global cooridinates
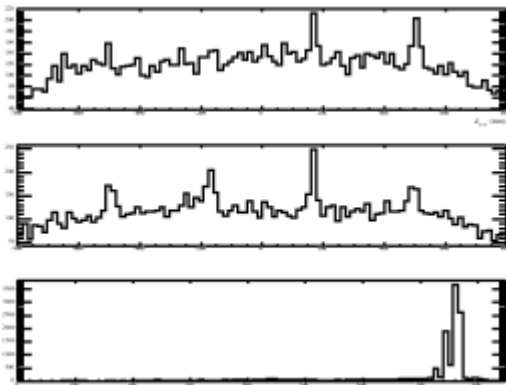
AcdMaxActiveDistId : Acd id of tile with the best (largest) active distance

Tile ID