

## FCAL Calibrations

### 1 New Tables

<b>FCAL/gains</b> , block gain correction factors	
1 – 2800	gain correction factor

<b>FCAL/timing_offsets</b> , block timing offsets	
1 – 2800	timing offset (ns?)

<b>FCAL/block_quality</b> , block quality factors	
1 – 2800	quality flags (e.g. noisy, dead, ...)

<b>FCAL/alignment</b>	
FCAL_ALIGN_X FCAL_ALIGN_Y FCAL_ALIGN_Z	Key block location
FCAL_ALIGN_CELL_WIDTH FCAL_ALIGN_CELL_HEIGHT	Block cell size

<b>FCAL/shower_calib</b>	
FCAL_SHOWER_CAL_A FCAL_SHOWER_CAL_B FCAL_SHOWER_CAL_C FCAL_SHOWER_CAL_E	$E_{\text{cor}} = AE_{\text{raw}} \left( 1 + \frac{E_{\text{raw}}^{1+\epsilon}}{B+CE_{\text{raw}}} \right)$

Note: Currently implemented as parameters in DFCALShower\_factory.cc.

## 2 Existing Tables

<b>FCAL/fcal_parms</b>		
FCAL_PHOT_STAT_COEF	0.035	Photon-statistics factor for smearing hit energy
FCAL_BLOCK_THRESHOLD	0.02	Single block energy threshold in MeV (applied after smearing)
FCAL_ATTEN_LENGTH	100.	Attenuation length in cm.
FCAL_C_EFFECTIVE	15.	effective speed of light in glass in cm/ns
FCAL_WIDTH_OF_BLOCK	4.	block width in cm
FCAL_LENGTH_OF_BLOCK	45.	block length in cm
FCAL_TWO_HIT_RESOL	75.	time window for two hit separation in ns
FCAL_MAX_HITS	100	maximum number of hits in a single block
FCAL_THRESH_MEV	5.	threshold applied in a block (in hdgeant)
FCAL_ACTIVE_RADIUS	120.	radius of the calorimeter
FCAL_CENTRAL_ROW	29	number of blocks in central row
FCAL_CENTRAL_COLUMN	29	number of blocks in central column

<b>FCAL/cluster_merging</b>		
MIN_CLUSTER_SEPARATION	15.0	Minimum separation between 2 clusters for them NOT to be merged (in cm?)