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*data range changed*

Because of the format change and to cooperate with the LG counter calibration the input data format for the LG analysis subroutine LGANAL is changed. We should foresee that either converted or non-converted LG-ADC data may come to IBM depending on the NORD status. The data is also calibrated by L.H. O'Neill's scheme before analysis starts. The process flows as below.

Raw data format

(see JADE Note No. 32)

Form.(1) Not converted

Form.(2) converted

Int x 4	ALGL	Int x 2	< 100
	0		
	0		
	LNG		
	B.descr.		
	0		
	ADDR		
	DATA		
	DATA		
	:		
	ADDR		
	DATA		

	ALGL		≤ 100
	0		
	0		
	LNG		
	B.descr.		
	0		
	POINTER		
	"		
	"		
	"		
	ADDR		
	DATA		
	ADDR		
	DATA		
	ADDR		
	DATA		

There is an IBM subroutine LGCDCN which converts the data format from (1) to (2) if necessary by checking the NORD conversion flag in the BANK descriptor. The conversion can be done in a separate job together with the inner chamber reformatting or in a data reduction job before the lead glass calibration/analysis by calling LGCDCN.

The L.H. O'Neill's calibration system will accept the format (2) and a new LG bank 'ALGN'/1 will be generated, which will contain the ADC values in the unit of MeV. The format is same to (2) except the bank name/number. The second word of the bank descriptor will contain the calibration data code.

Form.(3) After calibration

ALGN
①
0
LNG
B.descr.
≠0
pointer
"
"
"
ADDR
DATA
ADDR
DATA

≥ 100  
calibration code  
= 1

Form.(4) present  
M.C. by W. Bartel

ALGL
⑦
0
LNG
pointer
"
"
"
ADDR
DATA
ADDR
DATA
ADDR
DATA

= 1

The lead glass cluster finding routine LGANAL accepts the format shown in Form. 3. But at present the Monte Carlo LG-data generated by W. Bartel has a formally decided format (Form. (4)). To keep the program development going on, LGANAL can also analyse the M.C. data with the old format. At the very beginning of LGANAL the ADC data is copied into the common /CWORK/ by a copying subroutine. At first it looks for the expected bank 'ALGN'/1. When the bank is missing it searches for the present Bartel's M.C. bank 'ALGL'/7 and copies it into /CWORK/ with necessary modifications. (There are Monte Carlo events with both 'ALGL'/7 and 'ALGN'/1 in F22YAM.JETYS130. The latter is generated by means of the 3-dimensional shower program to learn lateral spread of clusters. The original M.C. data for it is F22ELS.JETYS130.)

After cluster analysis 'ALGN'/1 is filled with the shuffled ADC data again as described in the JADE computer note 14. Notice that the ADC-values are not changed and the shuffling is made only among those ADC's from the same detector part and the gross order of data (barrel, -Z end cap, +Z end cap) is maintained. Hence, the output 'ALGN'/1 bank can be used as an input for LGANAL again.

The LGANL needs about 0.5 msec to locate a cluster and ~0.4 msec to calculate its position.

There are sum changes to the /cluster information/ of the 'LGCL'/1 bank described in the page 3 of the computer note 14.

`IDATA(IB + 8)`<sup>+</sup> NCH = (number of connected charged tracks)+100  
+ the index of the 1st one in 'PATR'.  
= 0 for  $\gamma$

`IDATA(IB + 15)` number of the edge lead glasses in the cluster.  
If it is not 0, the energy may be inaccurate.

The 'LGCL' /1 bank will be printed in an easy-to-see format by calling PRLGCL.

