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In the following, recent changes to some of the smearing subroutines are described.

RDALGN:

The preferable procedure described in the original note (JCN 66) has now been implemented. The variable IPHALG:

COMMON /CRDSTA/ NDUM(12), IPHALG

is now used as a flag: IPHALG = 0 no deletion of lowenergy blocks
IPHALG <> 0 deletion of lowenergy blocks

BLOCK DATA setting is now IPHALG=1, i.e. low energy lead glass blocks are deleted when the MC data undergo the normal smearing process. The read out threshold is automatically set to the value which corresponds to the period (given by HIST(3) in COMMON/CTRIGG/). The pulseheights (in MeV) in ALGN are first converted into ADC-counts with help of the average calibration constant (5.32 MeV/count in 1979-80, 4.94 MeV/count in 1981-82) and then all blocks below the readout threshold (5 counts in 1979-80, 6 counts in 1981-82) are rejected. Surviving blocks get their energy in MeV back by a multiplication, count * calibrationconstant. In this way the electronics of the readout is closely simulated.

Note that the 1983-84 lead glass set up is not yet well simulated, the mixture of SF5 and SF6 has not yet been seriously considered in the MC simulation. Thus the 1982 status is still obtained for these latter periods.

Note also that jobs which standardly set IPHALG=28 are not affected, the low energy block cuts are almost the same as with the old algorithmus.

RDRESO:

The smearing process described in the original note gives a momentum resolution comparable to that of the real data. It was however found that the chisquare distribution of the fitted tracks is about a factor 2 higher than in the real data; also the vertex distribution of fitted tracks is not well simulated. This is partly due to the binning with .380 mm, which makes it difficult to tune the smearing with the parameter RJJTT. In the new version, RJJTT is used without this binning and in addition, RJJTT is made dependent on the distance from the drift-wire (the proportionality constant was given by J. Spitzer). With this change, RJJTT can be set lower and is now by default .230 mm (previously .270 mm). This is still larger than the single hit resolution in the real data; the chisquare distribution of fitted tracks is therefore still somewhat worse than for real data, although momentum resolution and vertex distribution are now both reasonably described.

WARNING:

Until a still better recipee for inner detector smearing has been found, great caution has to be exercised if one wants to make a cut in the chisquare distribution of fitted tracks, in the course of a Physics analysis.

The following code is now used in RDRESO:

```

C      DRIINT = FLOAT(IDRI)*BINMC
      Z1 = RN(DUM)
      SQLOG=SQRT(-2.*ALOG(RN(DUM)))
      G1=SIN(PI*2.*Z1)*SOLOG
C G1 IS RANDOM AND GAUSSIAN
      RJJTT1 = DRIINT*.677E-3 + RJJTT
C
      DRIINT = DRIINT + G1*RJJTT1
      IDRI = IFIX(DRIINT/BINMC)

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