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JADE Computer Note 87 A

Addendum and Update

J. OLSSON

The update of the Monte Carlo library F22ELS.JMC.S / L which was anticipated in JADE Computer Note 87 was implemented late afternoon, 10.6.1986. The errors reported in that note have now been corrected. As agreed in recent JADE meetings, also other changes were made to this libraries at the same time:

1) The update of the EGS shower simulation, known as K.-H. Meier leadglass simulation, for the combined SF5 / SF6 leadglass system, was made standardly available. The routines have been developed by N. Magnussen and will be described in a forthcoming note. Note that the tracking program decides automatically, based on the date in COMMON /TODAY/ HDATE(6), if the old version (SF5 only) or the new version (SF5 / SF6) should be used (HDATE is of course INTEGER*2 type, JADE standard). Note also that the original SF5 version of K.-H. Meier has been somewhat modified, based on the new EGS3 calculations of N. Magnussen. The use of this simulation is invoked by putting LFLAG(4)=.TRUE., in the COMMON /CFLAG/ LFLAG(10) (LFLAG is type LOGICAL*1). By default though, LFLAG(4)=.FALSE. and the default LG photon tracking uses 1-dimensional shower profiles for SF5, obtained using an old version of the EGS program, both for the old and the new leadglass setup in JADE.

2) The tracking simulation of the vertex chamber, as developed by J. Hagemann, C. Kleinwort and R. Ramcke and previously available on the libraries F22HAG.JMC.S / L is now standard on F22ELS.JMC.S / L. According to the date in COMMON /TODAY/, the use of these programs is enforced. The date of instalment of the vertexchamber is 1.5.1984, i.e., if /TODAY/ contains a later date, the vertex chamber geometry and tracking is automatically invoked.

3) The COMMON /TODAY/ HDATE(6) is now set in the JADE Block Data routine JADEBD (on F11LHO.JADEGS / L). The default date is HDATE(1-6) = 1,1,1,17,5,1985. As is easily seen, the array elements give second, minute, hour, day, month and year.

4) Minor errors were discovered (by J. Hagemann) in the Tables 1 and 2 in JCN 87, giving thickness of various absorber layers in the JADE detector. In Table 1, the thickness of Beam Pipe Counters should be 0.0238 X0 (not 0.0236 X0). In Table 2, the thickness of the Beam Pipe Chamber should be 0.0243 X0 (not 0.0228 X0). Please correct your copy of JCN 87. Corresponding changes in the routines TRKGAM and TRKGMV on F22ELS.JMC.S / L have been made.

5) As described in JCN 87, word 16 in the HEAD bank is now set to 1. This serves to mark the correction of the previous errors in photon conversion probabilities. In order to enable a user to see if the programs described under point 1 above had been used in generating a certain data set, word 17 in the HEAD bank is set to 1 in this case. In real data, word 17 is the miproc pattern word and was previously always zero in Monte Carlo events. In addition, word 18 is set to -1, if multiple scattering and energy loss has been disabled in the tracking process. This is normally not the case and is for experts only, but mentioned here for completeness of the description. Word 18 in the Head bank gives vertex chamber high tension value in real data and is normally zero in Monte Carlo events.