JADE COMPUTER NOTE 56
STATUS 14/01/82
P. STEFFEN

THIS IS JADEPR.TEXT(CPNOTE56)

SUBROUTINE MCTRCO

SEARCH FOR A TRACK IN 'PATR'-BANK 10 - OR ANY OTHER PATR BANK - WHICH CORRESPONDS TO A SELECTED MONTE CARLO GENERATED TRACK OF 'PATR'-BANK 12.

1.) CALL MCTRCO(IPTR1,IPPATR,JPTR2,CHSQTR)

- INPUT :
  IPTR1 : POINTER TO SELECTED TRACK IN PATR(12)-BANK
  (E.G. IDATA(IPTR1+1) = TRACK #)
  IPPATR : POINTER TO PATR(10)-BANK (BOS-POINTER)

- OUTPUT:
  JPTR2 : POINTER TO FOUND TRACK IN PATR(10)-BANK
  (E.G. IDATA(IPTR2+1) = TRACK #)
  = 0 IF NO TRACK FOUND
  CHSQTR : ARRAY OF 5 WORDS WITH RESULTS
  CHSQTR(1) < 20. IF PROPER TRACK FOUND

- TRACK IS SEARCHED FOR BY COMPARING POSITION + DIRECTION OF FIRST + LAST POINT OF TRACKS (ONLY IN THE X-Y-PLANE)
  CHI**2 = 1/4 * ((DXY/.40)**2 + (DFI/.010)**2 : FIRST POINT
  + (DXY/.40)**2 + (DFI/.010)**2) : LAST POINT

  CHSQTR(1) : CHI**2 (< 20. IF PROPER TRACK FOUND)
  CHSQTR(2) : DXY(FIRST POINT ON TRACK)
  CHSQTR(3) : DXY(LAST POINT ON TRACK)
  CHSQTR(4) : DFI(FIRST POINT ON TRACK)
  CHSQTR(5) : DFI(LAST POINT ON TRACK)

2.) EXEMPLE FOR APPLICATION OF MCTRCO:

1. SELECT TRACK FROM VECT-BANK
2. SEARCH FOR TRACK IN PATR(12)-BANK COMPARING TRACK# + TYP# (2. WORD IN TRACK ARRAY OF PATR(12)). THIS DOES NOT WORK FOR SOME MC-DATA CALCULATED IN TOKYO. BECAUSE WORD 2 OF THE TRACKS IN THE PATR-BANK(12) IS NOT SET CORRECTLY (TRACK # IN VECT-BANK = 0).
3. CALL MCTRCO: TRACK FOUND IF JPTR2 ⌀ 0 .AND. CHSQTR(1) < 20.
4. 'F11PST.JADESR(MKLOTR)' IS AN EXEMPLE FOR MARKING PROTON + PION TRACKS FROM LAMBDA -> P. PI

3.) EFFICIENCY: ABOUT 3% OF THE TRACKS ARE NOT FOUND. THESE ARE IN GENERAL OF LOW MOMENTUM (ABOUT 50 MEV). OR SHORT TRACKS (10 HITS OR LESS)

4.) COMMENT: THE PROGRAM WILL BE IMPROVED IF BETTER TRACK PARAMETERS WILL BE STORED IN PATR-BANK(12) BY THE MC-TRACKIMG PROGRAM

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      SUBROUTINE   MCTRCO
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      SEARCH FOR A TRACK IN 'PATR'-BANK 10 - OR ANY OTHER PATR BANK -
      WHICH  CORRESPONDS TO A SELECTED MONTE CARLO GENERATED TRACK OF
      'PATR'-BANK 12.


1.)   CALL   MCTRCO(IPTR1,IPPATR,JPTR2,CHSQTR)
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                   CHSQTR(1) < 20. IF PROPER TRACK FOUND

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        FIRST + LAST POINT OF TRACKS (ONLY IN THE X-Y-PLANE)
        CHI**2 = 1/4 * ( (DXY/.40)**2 + (DFI/.010)**2    : FIRST POINT
                       + (DXY/.40)**2 + (DFI/.010)**2 )  : LAST  POINT

        CHSQTR(1)  : CHI**2 ( < 20. IF PROPER TRACK FOUND)
        CHSQTR(2)  : DXY(FIRST POINT ON TRACK)
        CHSQTR(3)  : DXY(LAST  POINT ON TRACK)
        CHSQTR(4)  : DFI(FIRST POINT ON TRACK)
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    1.  SELECT TRACK FROM VECT-BANK

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        TRACK# + TYP# (2. WORD IN TRACK ARRAY OF PATR(12)).
        THIS DOES NOT WORK FOR SOME MC-DATA CALCULATED IN
        TOKYO, BECAUSE WORD 2 OF THE TRACKS IN THE PATR-BANK(12)
        IS NOT SET CORRECTLY (TRACK # IN VECT-BANK = 0).

    3.  CALL MCTRCO: TRACK FOUND IF JPTR2 > 0 .AND. CHSQTR(1) < 20.

    4.  'F11PST.JADESR(MKL0TR)' IS AN EXEMPLE FOR MARKING
        PROTON + PION TRACKS FROM LAMBDA -> P, PI

3.) EFFICIENCY: ABOUT 3% OF THE TRACKS ARE NOT FOUND.
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