JADE Computer Note 49

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SUBROUTINE REFITO(IPTR,IPJHTL,XO,YO,WGHTO) on 'F11GOD.PATRELLD'.

This subroutine refits a track of the PATR-bank (in the x-y-projection) with one additional point (XO.YO) e.g. the production vertex of the event. The measured points are subject to all corrections described in JADE Computer Note 45. The measured points are used in the fit with the weight of 1.0, while the additional point has the weight given by WGHTO. As a consequence the error of the point (XO,YO) is assumed to be $1/\sqrt{WGHTO}$ times larger than the error of the measured points.

IPTR: pointer to Øth word of track array in PATR-bank, e.g. = IPPATR + 8 for 1. track

IPJHTL : pointer to JHTL-bank

XO,YO : coordinates of the vertex [mm]

WGHTO : weight of the vertex (e.g. = .01 $\hat{=}$ $\sigma \approx$ 2 mm)

The result is stored in a track array in /CWORK/ starting from pointer HPTRØ on [use %MACRO GWORKPR and %MACRO CWORKEQ from 'F11GOD.PATRECSR] The track array in /WORK/ is a copy of the track array in the PATR-bank. Only the fit parameters and the start and end points are replaced by new values. The 2nd word of the track array (program identifier) is set to 32. The 4th word (type of 1. point) is set to 8.

In case of a bad fit and a low momentum track (σ > .24 mm; curvature > .0006, $\hat{=}$ 220 MeV) a second fit is tried using only the hits of ring 1 + 2. If this fit turns out to become better the fit parameters and the start points are changed.

Example:
```
IPPATR = IDATA(IBLN('PATR')
IPTR = IPPATR + IDATA(IPPATR + 1) + (ITR - 1) * IDATA(IPPATR +3)
IDATA(IPTR + 1): track number
      .
      .                          } track array of 'PATR'-bank
      .
IDATA(IPTR + 48):
```

IWRK(HPTRO): track number
:
IWRK(HPTRO + 47)

} track array in /CWORK) with fit results.

If one wants to replace the track array in the PATR-bank by the new fit results (e.g. if WRK(HPTRØ + 22).LT.ADATA(IPTR + 23): $\sigma_{new} < \sigma_{old}$) one can do so by copying the track array from CWORK TO CDATA:

```
CALL MVCL(ADATA(IPTR+1),0,WRK(HPTRØ),0,192)
```

Users not running their programs under the SUPERV-program must take care that INPATR is called at program start and KALIBR and INPATC are called for each new run. In addition the BLOCK DATA of the SUPERV-program must be included.