

CHORUS Software Workshop

CERN, 26-28.05.1999

INTEGRATION

of

FUJI

module

into

CHANT

Roumen TSENOV

in CHORAL

SUBROUTINE ALLMOD

*
*--- CCD handling
*

IF (IFDZV.GE.2) call dzveri(' before UNFITR ',ixstor,'CFLSU')

IF (IHBTIM.GT.0) CALL TIMEX(TT0)
IF (KAFLAG('OVER').GT.0) CALL OVERLAY(0)
IF (CMODUL('UNFITR').OR.(JCTED.GT.0.AND.CDISEV(ID))) CALL UNFITR
IF (KAFLAG('OVER').GT.0) CALL OVERLAY(1)
IF (IHBTIM.GT.0) CALL TIMEX(TT1)
IF (IHBTIM.GT.0) CALL HF1(IHT+1,TT1-TT0,1.)

*
*--- INITIALIZE CALIBRATION FOR CCDs
*

IF (IFDZV.GE.2) call dzveri(' before UNDISN ',ixstor,'CFLSU')

IF (CMODUL('UNDIST')) CALL UNDISN
IF (IREJEC.NE.0) GOTO 999

*
*--- beta ray data analysis ?
*

IF (IQ(JDIST+1).EQ.-1) THEN
IF (CMODUL('UNBRAY')) CALL UNBRAY ?
GOTO 999

ENDIF

*
*--- Mapping from CCD-space into real space
*

IF (IFDZV.GE.2) call dzveri(' before UNFTSP ',ixstor,'CFLSU')

IF (IHBTIM.GT.0) CALL TIMEX(TT0)
IF (CMODUL('UNFTSP')) CALL UNFTSP
IF (IHBTIM.GT.0) CALL TIMEX(TT1)
IF (IHBTIM.GT.0) CALL HF1(IHT+4,TT1-TT0,1.)
IF (CMODUL('UNDTSP')) CALL UNDTSP
IF (IHBTIM.GT.0) CALL TIMEX(TT2)
IF (IHBTIM.GT.0) CALL HF1(IHT+5,TT2-TT1,1.)
IF (IREJEC.NE.0) GOTO 999

END

5 submodules => FUJI

in CHANT

SUBROUTINE ALLMOD

```

*
*
*
*-----Purpose:   call all processing modules, but not initialisation,
**                command input, I/O, run start and end processing.
*
C Modified: 28-Apr-1998 R. Oldeman:   Krenic introduction
*                15-Jul-1998 A. Artamonov: all SPEC reconstruction calls replaced
*                by single module CALL SPECTR
*                13-May-1999 R.Tzenov:   Invocation of CCD microclustering
*                package FUJI added
*-----
#include "../comm/implct.inc"
#include "../comm/param.inc"
#include "../comm/xqstor.inc"
#include "../comm/runccm.inc"
#include "../comm/inoutc.inc"
#include "../comm/descrc.inc"
#include "../comm/daghead.inc"
      INTEGER IFDZV, KAPRNT
*
      IF (IMODE.EQ.0) IXDIV = IXJOB
      IF (IMODE.EQ.1) IXDIV = IXRUN
      IF (IMODE.GE.2) IXDIV = IXEVT
*
*--- enable DZVERI for debugging
*
      IFDZV = KAPRNT('DZVE')
*
*--- reconstruction modules
*
      IF (IFDZV.GE.2) call dzveri(' before SPECT ',ixstor,'CFLSU')
      CALL SPECT

      IF (IFDZV.GE.2) call dzveri(' before CALOR ',ixstor,'CFLSU')
      CALL CALOR

      IF (IFDZV.GE.2) call dzveri(' before HONEY ',ixstor,'CFLSU')
      CALL HONEY

      IF (IFDZV.GE.2) call dzveri(' before FUJIM ',ixstor,'CFLSU')
      CALL FUJIM

      IF (IFDZV.GE.2) call dzveri(' before MODUSR ',ixstor,'CFLSU')
900 CONTINUE
      CALL MODUSR
*
999 CONTINUE
      END

```

Every module
is called with

IMODE = 0,1,2,3,4

Tree of FUJI module subprogram calls:

FUJIM

FUJISN

- FUPHCP
- FUPHDS
- UFITW
- REVDCC
- CORPEI
- SWAPCCD
- UNCDIN
- APPDCO
- FITDIT
- REVDCC
- SWAPCCD
- UNDIC2
- FITNEW
- UNDICP

FURMAP

- FTMPSP
- ISIGNDT
- ITEST
- JEMTE2
- KROW
- NMTE1
- POPST
- RIEMAP1
- TPAD
- TTREFD
- COSPL
- FTREFE
- SINPL

FUINIT

MKFIR

FUJIACTN

TZFIND

FUJIDB

MCDUSE

FUJILNK

MZLINK

OVERLAY

MTELNEED

UNDTSP

UNFTIN

FIT2D

RIBCCD

REVDCC

SWAPCCD

TISPT

XISPT

RIEMAP1

TIMED

UNDTIN

FUMAIN

CUTBNK

FUCHAIN

FUBARI

FUCCDC

FUCHRT

FUCORE

FUDIFI

FUEROD

FUFTCO

FULOCK

FUMCGL

FUMSPD

FUMTEL

FUPEE2

FUPGMT

FUPURG

FUTMBK

FUTMDR

FGMOUT

UNBRAX

UNFTPX

FUVERI

*init
for
FUMAIN
& others*

5 submodules

*67 *.F files*

*20 *.inc files*

```

* obey IACT
* IF (IACT.EQ.MFORCE) THEN
  JFUJI = 0
* ELSEIF (IACT.EQ.MDEFLT) THEN
  IF (JMTHT.EQ.0.OR.JMTEL.EQ.0.OR.JPEEL.EQ.0) JFUJI = 0
  ENDIF

```

μ2Drop instead of this

```

*--- Book the fan-out for the FUJI module
* CALL EVFANO(JFUJI, KL, 'FUJI', NLFUJI, 'MODL', 0)

```

11
6 5

```

*--- CCD handling
*
  IF (KAFLAG('OVER').GT.0) CALL OVERLAY(0)
  IF ((KEYFUMA.GT.0).OR.
+ (JCTED.GT.0.AND.CDISEV(IDUM)))
+ CALL FUMAIN
  IF (KAFLAG('OVER').GT.0) CALL OVERLAY(1)
ENDIF

```

```

IF (IMODE.EQ.4) GOTO 999

```

**** Here we come with IMODE = 0,1,2,3

*--- CALIBRATION FOR CCDs

```

IF (KEYDISN.GT.0) CALL FUDISN
IF (IREJEC.NE.0) GOTO 999

```

*--- Mapping from CCD-space into real space

```

IF (KEYFTSP.GT.0) CALL FURMAP
IF (KEYDTSP.GT.0) CALL UNDTSP

```

dummy yet.

```

IF (IREJEC.NE.0) GOTO 999

```

```

999 CONTINUE
END

```

Return code! FUJIM should return a return code (as all other modules should do!)

IMPROVEMENTS SUBROUTINES

```

-----
*--- ZEBRA TZ package is used.
*---Purpose: Sets flags
*           KEYFITR
*           KEYFTSP
*           KEYDTSP
*           KEYDISN
*           according to values on FUJI data card
*
-----

```

```

* The format of FUJI is
*
* *DO FUJI -II
* :FUMA 0/1    microclustering
* :DISN 0/1    Distortion parameters calculation
* :FTSP 0/1    mapping of MTEL (CCD-space) to MHTT (real space)
*              for target tracker
* :DTSP 0/1    retransformation of CCD coordinates into space coordinates
*              for diamond trackers

```

*ref ad
ult*

```

c FUJI module steering flags
#include "fusteer.inc"
* fusteer.inc

```

```

COMMON/FUSTEER/
+           KEYFUMA,
+           KEYFTSP,
+           KEYDTSP,
+           KEYDISN

```

```

*****
INTEGER*4 HFUNAM(NFUNAM)
+           / 4HFUMA, 4HFTSP, 4HDTSP, 4HDISM /
INTEGER HFUJI

```

```

C
SUBROUTINE FUJILNK
-----

```

```

*---Purpose: initialize FUJI link areas
#include -----

```

```

* Link areas
CALL NZLINK(IXSTOR, '/FIBTRA/', IFIB1, IFIB2, IFIB1)
CALL NZLINK(IXSTOR, '/CCDHIT/', JCCD1, JCCD3, JCCD1)
CALL NZLINK(IXSTOR, '/IHITS/', JPEEL, JFUCA, JPEEL)
CALL NZLINK(IXSTOR, '/LKUNFT/', JCHPX, JUTCL, JCHPX)
CALL NZLINK(IXSTOR, '/LKUNDT/', JDDTG, JTDSC, JDDTG)

```

+ *'FUDBNK'*

SORFOPBANK.FUG.FDE

*
*---Purpose: reads banks from HEPDB data base into memory
*

IF (IDBSOP.GT.0) THEN ! data base is open - get banks

*--- these are in /DESCRC/

- CALL MCDUSE('%3030', 'DTPH', JDTPH, 'DG', IRC)
- CALL MCDUSE('%3031', 'DTXP', JDTXP, 'DG', IRC)
- CALL MCDUSE('%3032', 'DPYZ', JDPYZ, 'DG', IRC)
- CALL MCDUSE('%3033', 'DTCR', JDTCR, 'DG', IRC)
- CALL MCDUSE('%3034', 'DTCF', JDTCF, 'DG', IRC)
- CALL MCDUSE('%3035', 'DTBA', JDTBA, 'DG', IRC)
- CALL MCDUSE('%3036', 'DTIO', JDTIO, 'DG', IRC)
- CALL MCDUSE('%3040', 'DDGE', JDDGE, 'DG', IRC)
- CALL MCDUSE('%3101', 'DMPF', JDMPF, 'DG', IRC)

*make local!
check this,
instead of it (IDBSOP...)*

*--- these are in /LKUNDT/

- CALL MCDUSE('%3037', 'DDTG', JDDTG, 'DG', IRC)
- CALL MCDUSE('%3038', 'DDWG', JDDWG, 'DG', IRC)
- CALL MCDUSE('%3039', 'DDTS', JDDTS, 'DG', IRC)

*--- these are in /FIBTRA/

- CALL MCDUSE('%5211', 'CTDI', JCTDI, 'DG', IRC)

*--- these are in /IHITS/

IF (KEYDISN.LE.0) CALL MCDUSE('%5299', 'FUCA', JFUCA, 'DG', IRC)

```

ELSE
  IF (KAFLAG('NODEB').NE.0) THEN ! data base not open
    WRITE(LPUNIT,10000)
  ELSE
    WRITE(LPUNIT,10010)
  ENDIF
ENDIF
ENDIF

```

END

SUBROUTINE FUINIT

```

-----
*--- Author :
*   Integration in CHANT: R.Tzenov, 25.05.1999
-----
#include ++++++++

      CALL MZFORM('PEE1','2I / 2I 3F 6I 2F',IKDUM)
      CALL MZFORM('PEE2',' / 1I 1F',IKDUM)
      CALL MZFORM('MPE2','2I / 1I 10F 2I 7I',IKDUM)
      CALL MZFORM('CTED','2F 1I/ 290F',IKDUM)
      CALL MZFORM('MTH2','1I -F',IKDUM)

*--- Book DCUF stand-alone bank
      CALL MZBOOK(IXJOB,JDCUF,JDCUF,2,'DCUF',0,0,16,0,0)
*
*--- search for data card UNFITR
*
      CALL TZFIND(IXJOB,JDATC,'UNFI',0,0)

      IF (JDATC .GT. 0) THEN
      IF ( LENGTH(JDATC) .GT. 0 ) THEN
*--- Use values from UNFITR data-card
          CALL UCOPY(Q(JDATC+1),Q(JDCUF+1),LENGTH(JDATC))
          GOTO 88
      ELSE
          IF (IPRINT.GT.0) WRITE(LPUNIT,*) '+++ FUINIT: ',
+           'UNFITR card is empty'
      ENDIF
      ELSE
          IF (IPRINT.GT.0) WRITE(LPUNIT,*) '+++ FUINIT: ',
+           'UNFITR card is missing'
      ENDIF
*
*--- Set defaults for DCUF .....
*
      88 CONTINUE

*--- Book DIST stand-alone bank
      CALL MZBOOK(IXJOB,JDIST,JDIST,2,'DIST',0,0,8,0,0)
*--- search for card DISTor
      CALL TZFIND(IXJOB,JDATC,'DIST',0,0)
etc.
+++++++

*   kaiser!
      IF (IQ(JDCUF+7).GT.1) THEN
          CALL MKFIR(IQ(JDCUF+7),IQ(JDCUF+8),IQ(JDCUF+9), Q(JDCUF+10),
+           Q(JDCUF+11),Q(JDCUF+12),Q(JDCUF+13))
      .
      .
      .
      ENDIF
c
      RETURN
      END

```


BANKS

EVNT

MODL

FUJI

these were top banks in CHORAL



internal top or standalone banks: many

in divisions: IXJOB
IX RUN IXDIV
IX EVT

Drop banks not necessary any more!

(in IXEVT)

Results:

- * the code compiles
links
runs !!!
- * tested on few global events (low=111)
(Run 6450) and compared with CHOPPI
MTHH banks are identical !!!
(but much more tests are needed!)
- * time burned: 14 full days
(by persons, who didn't know anything
about the code before.)