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9.5.80

Cuts of first Data Reduction (used from 1.3.80 on)

STAGE 1 (after reading the event):

- reject pulser event (first 13 events)
- reject events that fail the 'TRIGGER CHECK' (see below):
two different triggers are considered further on:
energy trigger (T1 accept) and track trigger (T2, T3 accept)
- reject energy trigger events with low lead glass energy:
LGCUT, TAGFLG
- reject track trigger events with no hits in the jet chamber

Stage 2 (after calibration of jet chamber data and calculation of the z-vertex):

- accept all remaining energy trigger events
- reject track trigger events for which no vertex has been found
- reject track trigger events for which the found vertex is more than 350 mm from the origin

Stage 3 (after pattern recognition (fast version) has been performed)

Only track trigger events are considered, which passed stage 2 cuts.

- reject events without PATR-bank
- reject events with no tracks
- tagging events: - accept events with ≥ 1 track of ≥ 200 MeV and of
 > 12 hits originating from $|z| < 300$ mm
- reject all other tagging events
- events with only tracks of ≤ 12 hits in the r-z-projection:
 - accept events with tracks of > 20 hits in the
 r- ϕ -projection
 - reject all other events

events with > 12 hits in the r-z-projection

- accept events with ≥ 1 track of ≥ 600 MeV
originating from $|z| < 300$ mm and a distance
 < 60 mm from the z-axis
- reject all other events

For all accepted events the slow pattern recognition is performed.

In addition:

Every fourth rejected lumi event is accepted but no PATR-bank is generated.

Rejected overflow events that pass the TRIGGER CHECK are accepted but no PATR-bank is generated.

TRIGGER CHECK: SUBROUTINE TRGCHK

Check if events with T2 accept have tracks corresponding to TOF counters.

- A track is assumed if there are at least hits in 6 out of 8 layers
in a half cell of ring 3 and if the corresponding TOF-counter is hit.
- Events are accepted if there are
 1. ≥ 2 tracks in ring 3
 2. ≥ 1 track in ring 3 if tagging event
 3. ≥ 1 track in ring 3 with an associated lead glass energy ≥ 1 GeV
 4. 1 track in ring 3 and 2 tracks in ring 1 and ≤ 48 hits in ring 1

LGCUT:

Check lead glass energy of events with T1-accept:

The energy in the cylinder and in the end caps is calculated.

Events are accepted if

- the total energy is > 7 GeV or
- the energy in the cylinder is > 3.5 GeV

Events are rejected if the total energy is > 6 GeV and $> 95\%$ of it is in a single end cap block, which is not an edge block.

TAGFLG:

Check lead glass energy for tagging events with T1 accept.

- Events with double tag are accepted if the lead glass energy of cylinder and endcaps is > 0.3 GeV
- Events with a single tag are accepted if the lead glass energy of cylinder and opposite end cap are > 0.1 GeV, and if the total lead glass energy is > 0.3 GeV.

TOTAL COUNTS
TOTAL COUNTS
TOTAL COUNTS
TOTAL COUNTS
TOTAL COUNTS
TOTAL COUNTS

0
91
1337
4
0
1257
210

2
12929
456
22
0
25
0
0

8
2820
10270
384
0
2
0
0

31538
0
18
975
0
78
0
0

C
C
C
124
0
0
0
0

3730
0
1240
843
0
0
0
40

0
0
29
446
0
0
0
0

0
0
12731
924
0
0
0
0

0
0
0
780
0
0
0
436

EVENTS READ

31539

STATISTICS FOR RUN

PULSER EVENTS

REAL EVENTS

31447

*****WRONG NO. OF PULSER EVENTS *****

OVERFLOW EVENTS 40. LGALB ERROR RETURNS

0. LLM1 EVENTS

436

59.03% PASSED TRIGGER CHECK

40.63% EVENTS FAILED TRIGGER CHECK 18618
0.67% EVENTS HAD BAD LGLASS BLOCKS
8.94% EVENTS WITH T1-ACCEPT, BUT IART = C
4.32% EVENTS WITH WRITE FLAG: (IART=1-7) 1257
0.0% EVENTS HAD NO ID HITS AND WRITE FLAG OFF
0.0% EVENTS HAD NO ID HITS AND WRITE FLAG CN
50.09% EVENTS

25 2 78
0 0 0
0 0 0
0 0 0

>>>> REJECTED <<<<<
>>>> REJECTED <<<<<
>>>> REJECTED <<<<<
>>>> REJECTED <<<<<

PASSED

PASSED

***** ACCEP

50.08% EVENTS ENTERED ZVERTEX ROUTINE
4.24% EVENTS WITH WRITE FLAG CN
0.06% EVENTS WITHOUT "ZVTX"-BANK
ZVTX FLAG 0,1,2,3: 438
1.45% FAILED TO FIND Z VERTEX
32.55% EVENTS HAD ZVTX > 350
11.77% EVENTS HAD ZVTX < 350

1240 3.93%
29 0.09%
0.09%
0.09%

>>>> REJECTED <<<<<
>>>> REJECTED <<<<<
>>>> REJECTED <<<<<
>>>> REJECTED <<<<<

***** ACCEP

11.83% EVENTS THROUGH PATREC
0.01% EVENTS WITHOUT "PATR"-BANK
0.07% EVENTS 0 TRACKS AND NO WRITE FLAG
11.71% EVENTS HAD AT LEAST ONE TRACK

11.83%
0.01%
0.07%
11.71%

>>>> REJECTED <<<<<
>>>> REJECTED <<<<<
>>>> REJECTED <<<<<
>>>> REJECTED <<<<<

***** ACCEP

4.31% EVENTS WITH TRACKS AND TAG FLAG
1.23% TAG-EVENTS WITH TRACKS OF LOW MOMENTUM
3.03% TAG EVENTS WITH TRACKS OF HIGH MOMENTUM

4.31%
1.23%
3.03%

>>>> REJECTED <<<<<
>>>> REJECTED <<<<<
>>>> REJECTED <<<<<
>>>> REJECTED <<<<<

***** ACCEP

0.39% SHORT TRACK IN R-2 AND R-FI
0.03% SHORT TRACK IN R-2, LONG TRACK IN R-FI

0.39%
0.03%

>>>> REJECTED <<<<<
>>>> REJECTED <<<<<
>>>> REJECTED <<<<<
>>>> REJECTED <<<<<

***** ACCEP

2.67% LONG TRACK CF LOW MOMENTUM ONLY

2.67%

>>>> REJECTED <<<<<
>>>> REJECTED <<<<<
>>>> REJECTED <<<<<
>>>> REJECTED <<<<<

***** ACCEP

6.82% LONG TRACKS CF HIGH MOMENTUM

6.82%

>>>> REJECTED <<<<<
>>>> REJECTED <<<<<
>>>> REJECTED <<<<<
>>>> REJECTED <<<<<

***** ACCEP

1.41% 24IN > 100

1.41%

>>>> REJECTED <<<<<
>>>> REJECTED <<<<<
>>>> REJECTED <<<<<
>>>> REJECTED <<<<<

***** ACCEP

5.40% EVENTS WENT INTO RMIN CUT

5.40%

>>>> REJECTED <<<<<
>>>> REJECTED <<<<<
>>>> REJECTED <<<<<
>>>> REJECTED <<<<<

***** ACCEP

2.91% EVENTS REJECTED BY RMIN CUT

2.91%

>>>> REJECTED <<<<<
>>>> REJECTED <<<<<
>>>> REJECTED <<<<<
>>>> REJECTED <<<<<

***** ACCEP

2.47% EVENTS PASSED RMIN CUT AND ZMIN

2.47%

>>>> REJECTED <<<<<
>>>> REJECTED <<<<<
>>>> REJECTED <<<<<
>>>> REJECTED <<<<<

***** ACCEP

31539 EVENTS WERE READ AND A TOTAL OF 2761 EVENTS WERE WRITTEN - REDUCTION FACTOR OF 8.82%