

JADE Computer Note 81

LUMI and RANDOM events on Tape

JANUARY 22, 1987

J. OLSSON

In order to determine trigger efficiencies it is sometimes necessary to study the background conditions during the actual data taking time. For this purpose randomly triggered events are available in the data. These are T1 accept triggers (bit 16, see Jade Note 32 and supplements) with only beam crossing and a clock rate as trigger conditions. For background studies one can also use the small angle Bhabha scattering events, detected in the forward tagging counters. These are the Lumi triggers (T1 accept, bit 1), with no inner detector, TOF, lead glass or muon filter conditions required in the trigger.

Since there are about 250 000 beam crossings per second, a large number of such events have to be studied in order to obtain significant information. This requires the reading of a large number of tapes. For the convenience of such studies, all random and lumi triggers in the data since 1982 (random triggers are only available since 1982) have been collected from the original data tapes (Reform Tapes). This note gives information on the name of tapes, number of events, etc. The total number of lumi and random events (1982-1984) is ~ 2 millions, corresponding to ~ 8 seconds of beam time.

The collected Lumi and Random events are still uncalibrated, i.e. they are "Reform"-data. Any analysis that uses lead glass results requires the use of the "B-files", i.e. F11LH0.BUPDAT0 and F11LH0.BUPDAT1.

Use the following code to select either LUMI or RANDOM (or both) triggers:

```
C
      INTEGER*2 (H)
      COMMON /BCS/ IDATA(40000)
      DIMENSION HELP(2), HDATA(80000)
      EQUIVALENCE (ICAMWD,HELP(1)), (IDATA(1),HDATA(1))
      DATA HELP /0,0/, MSKLUM/Z0001/, DATA MSKRAN/Z8000/, MSKMIX/Z8001/
C      READ STEERING PARAMETER AND SET SELECTION MASK
      READ 3810, IRNSEL
3810  FORMAT(I10)
      MSKSEL = MSKLUM
      IF(IRNSEL.EQ.2) MSKSEL = MSKRAN
      IF(IRNSEL.EQ.3) MSKSEL = MSKMIX
      WRITE(6,3811) IRNSEL,MSKSEL
3811  FORMAT(' IRNSEL ',I5,' MASK = ',Z8)
C      EVENT LOOP:      READ EVENT AND LOCATE TRIG 1 BANK.
      IPTRIG = IDATA(IBLN('TRIG'))
      IF(IPTRIG.LE.0) GO TO 1
C      NO TRIG BANK, SKIP AND READ NEXT EVENT ( GO TO 1 )
      HELP(2) = HDATA(2*IPTRIG+8)
C      HELP(2) NOW HOLDS T1 ACCEPT WORD
      IF(LAND(MSKSEL,ICAMWD).NE.0) GO TO 11
C      IF BIT SET, WRITE EVENT AND READ NEXT EVENT (GO TO 11)
      GO TO 1
```

The summaries of LUMI and RANDOM event collection are given below for the various Reform generation groups, together with Run nr. intervals and Nr. of events. This information can also be found in the member

JADEPR.TEXT(LUMSUM)

F11LH0.JDATA07.REFORM . G0xxxV00 (1982)			
Raw Data (Reform)	Lumi and Random Tape	Run nr.	Nr. of events
xxx = 001 - 020	F110LS.LUMI07 . T001T020	10477 - 10584	47127
xxx = 021 - 045	F110LS.LUMI07 . T021T045	10554 - 10699	51827
xxx = 046 - 065	F110LS.LUMI07 . T046T065	10688 - 10813	53512
xxx = 066 - 090	F110LS.LUMI07 . T066T090	10814 - 10900	45722
xxx = 091 - 115	F110LS.LUMI07 . T091T115	10901 - 11080	47383
xxx = 116 - 140	F110LS.LUMI07 . T116T140	11081 - 11213	48043
xxx = 141 - 160	F110LS.LUMI07 . T141T160	11214 - 11350	50698
xxx = 161 - 185	F110LS.LUMI07 . T161T185	11351 - 11530	53008
xxx = 186 - 205	F110LS.LUMI07 . T186T205	11531 - 11649	49110
xxx = 206 - 225	F110LS.LUMI07 . T206T225	11650 - 11803	48997
xxx = 226 - 250	F110LS.LUMI07 . T226T250	11742 - 11966	42711

F11LH0.JDATA08.REFORM . G0xxxV00 (1982 -- 1983)			
Raw Data (Reform)	Lumi and Random Tape	Run nr.	Nr. of events
xxx = 001 - 020	F110LS.LUMI08 . T001T020	11967 - 12125	43144
xxx = 021 - 040	F110LS.LUMI08 . T021T040	12126 - 12250	38841
xxx = 041 - 060	F110LS.LUMI08 . T041T060	12251 - 12357	38641
xxx = 061 - 080	F110LS.LUMI08 . T061T080	12183 - 12439	23687
xxx = 081 - 100	F110LS.LUMI08 . T081T100	12440 - 12608	24600
xxx = 101 - 140	F110LS.LUMI08 . T101T140	12609 - 12950	51082
xxx = 141 - 160	F110LS.LUMI08 . T141T160	12959 - 13229	54232
xxx = 161 - 195	F110LS.LUMI08 . T161T195	13230 - 13418	41922
xxx = 196 - 246	F110LS.LUMI08 . T196T246	13385 - 13597	46385

F11LH0.JDATA09.REFORM . G0xxxV00 (1983)			
Raw Data (Reform)	Lumi and Random Tape	Run nr.	Nr. of events
xxx = 001 - 030	F110LS.LUMI09 . T001T030	13598 - 13767	39990
xxx = 031 - 070	F110LS.LUMI09 . T031T070	13768 - 13918	40939
xxx = 071 - 115	F110LS.LUMI09 . T071T115	13919 - 14088	41166
xxx = 116 - 175	F110LS.LUMI09 . T116T175	14089 - 14295	39658
xxx = 176 - 205	F110LS.LUMI09 . T176T205	14296 - 14399	31615
xxx = 206 - 230	F110LS.LUMI09 . T206T230	14400 - 14483	28768
xxx = 231 - 244	F110LS.LUMI09 . T231T244	14484 - 14548	21078

F11LH0.JDATA10.REFORM . G0xxxV00 (1983 -- 1984)			
Raw Data (Reform)	Lumi and Random Tape	Run nr.	Nr. of events
xxx = 001 - 050	F110LS.LUMI10 . T001T050	14549 - 14794	37709
xxx = 051 - 085	F110LS.LUMI10 . T051T085	14795 - 14980	35732
xxx = 086 - 115	F110LS.LUMI10 . T086T115	14981 - 15095	37147
xxx = 116 - 155	F110LS.LUMI10 . T116T155	15096 - 15276	38397
xxx = 157 - 190	F110LS.LUMI10 . T157T190	15282 - 15459	30012
xxx = 191 - 220	F110LS.LUMI10 . T191T220	15460 - 15619	24166
xxx = 221 - 249	F110LS.LUMI10 . T221T249	15565 - 15770	21823

F11LH0.JDATA11.REFORM . G0xxxV00 (1984)			
Raw Data (Reform)	Lumi and Random Tape	Run nr.	Nr. of events
xxx = 001 - 025	F110LS.LUMI11 . T001T025	15771 - 15934	40032
xxx = 026 - 055	F110LS.LUMI11 . T026T055	15935 - 16079	37205
xxx = 056 - 085	F110LS.LUMI11 . T056T085	16080 - 16291	37958
xxx = 086 - 110	F110LS.LUMI11 . T086T110	16292 - 16530	41004
xxx = 111 - 170	F110LS.LUMI11 . T111T170	16531 - 17012	39263
xxx = 171 - 190	F110LS.LUMI11 . T171T190	17013 - 17182	42251
xxx = 191 - 205	F110LS.LUMI11 . T191T205	17183 - 17290	35512
xxx = 206 - 220	F110LS.LUMI11 . T206T220	17291 - 17388	42697
xxx = 221 - 235	F110LS.LUMI11 . T221T235	17389 - 17475	36677
xxx = 236 - 245	F110LS.LUMI11 . T236T245	17455 - 17525	28596
xxx = 246 - 251	F110LS.LUMI11 . T246T251	17526 - 17562	18820

F11LH0.JDATA12.REFORM . GOxxxV00 (1984 -- 1985)			
Raw Data (Reform)	Lumi and Random Tape	Run nr.	Nr. of events
xxx = 001 - 010	F110LS.LUMI12 . T001T010	17563 - 17632	31122
xxx = 011 - 020	F110LS.LUMI12 . T011T020	17633 - 17697	28339
xxx = 021 - 030	F110LS.LUMI12 . T021T030	17698 - 17771	35042
xxx = 031 - 050	F110LS.LUMI12 . T031T050	17772 - 17962	42293
xxx = 051 - 060	F110LS.LUMI12 . T051T060	17963 - 18048	36111
xxx = 061 - 080	F110LS.LUMI12 . T061T080	18049 - 18216	33600
xxx = 081 - 095	F110LS.LUMI12 . T081T095	18217 - 18351	35819
xxx = 096 - 110	F110LS.LUMI12 . T096T110	18352 - 18462	35990
xxx = 111 - 125	F110LS.LUMI12 . T111T125	18463 - 18606	33263
xxx = 126 - 140	F110LS.LUMI12 . T126T140	18569 - 18712	33575
xxx = 141 - 155	F110LS.LUMI12 . T141T155	18713 - 18796	32002
xxx = 156 - 170	F110LS.LUMI12 . T156T170	18797 - 18890	33793
xxx = 171 - 185	F110LS.LUMI12 . T171T185	18891 - 18969	31566
xxx = 186 - 198	F110LS.LUMI12 . T186T198	18970 - 20028	28690
xxx = 199 - 221	F110LS.LUMI12 . T199T221	20029 - 20210	39778
xxx = 222 - 245	F110LS.LUMI12 . T222T245	20211 - 20408	24489
xxx = 246 - 251	F110LS.LUMI12 . T246T251	20409 - 20456	8829

F11LH0.JDATA13.REFORM . GOxxxV00 (1985)			
Raw Data (Reform)	Lumi and Random Tape	Run nr.	Nr. of events
xxx = 001 - 025	F110LS.LUMI13 . T001T025	20457 - 20694	45369
xxx = 026 - 050	F110LS.LUMI13 . T026T050	20695 - 20911	41395
xxx = 051 - 075	F110LS.LUMI13 . T051T075	20912 - 21122	41718
xxx = 076 - 100	F110LS.LUMI13 . T076T100	21123 - 21330	41284
xxx = 101 - 125	F110LS.LUMI13 . T101T125	21331 - 21484	33119
xxx = 126 - 145	F110LS.LUMI13 . T126T145	21485 - 21646	34695
xxx = 146 - 170	F110LS.LUMI13 . T146T170	21647 - 21861	40417
xxx = 171 - 195	F110LS.LUMI13 . T171T195	21862 - 22074	38109
xxx = 196 - 202	F110LS.LUMI13 . T196T202	22075 - 22123	9824

F11LH0.JDATA14.REFORM . G0xxxV00 (1985)			
Raw Data (Reform)	Lumi and Random Tape	Run nr.	Nr. of events
xxx = 001 - 025	F110LS.LUMI14 . T001T025	22124 - 22296	36440
xxx = 026 - 055	F110LS.LUMI14 . T026T055	22297 - 22476	36057
xxx = 056 - 080	F110LS.LUMI14 . T056T080	22477 - 22649	35795
xxx = 081 - 105	F110LS.LUMI14 . T081T105	22650 - 22810	35479
xxx = 106 - 130	F110LS.LUMI14 . T106T130	22811 - 22946	28381
xxx = 131 - 165	F110LS.LUMI14 . T131T165	22947 - 23156	34272
xxx = 166 - 190	F110LS.LUMI14 . T166T190	23157 - 23302	33721
xxx = 191 - 215	F110LS.LUMI14 . T191T215	23303 - 23451	45354
xxx = 216 - 230	F110LS.LUMI14 . T216T230	23449 - 23570	48138
xxx = 231 - 245	F110LS.LUMI14 . T231T245	23571 - 23685	45926
xxx = 246 - 255	F110LS.LUMI14 . T246T255	23686 - 23758	26065

F11LH0.JDATA15.REFORM . G0xxxV00 (1985 -- 1986)			
Raw Data (Reform)	Lumi and Random Tape	Run nr.	Nr. of events
xxx = 001 - 020	F110LS.LUMI15 . T001T020	23759 - 23903	49245
xxx = 021 - 040	F110LS.LUMI15 . T021T040	23904 - 24046	44560
xxx = 041 - 060	F110LS.LUMI15 . T041T060	24047 - 24160	51423
xxx = 061 - 085	F110LS.LUMI15 . T061T085	24161 - 24434	49065
xxx = 086 - 095	F110LS.LUMI15 . T086T095	24435 - 24578	41307
xxx = 096 - 115	F110LS.LUMI15 . T096T115	24579 - 24755	51978
xxx = 116 - 130	F110LS.LUMI15 . T116T130	24756 - 24866	45623
xxx = 131 - 140	F110LS.LUMI15 . T131T140	24867 - 24955	36581
xxx = 141 - 155	F110LS.LUMI15 . T141T155	24960 - 25064	34591
xxx = 156 - 170	F110LS.LUMI15 . T156T170	25065 - 25194	42425
xxx = 171 - 185	F110LS.LUMI15 . T171T185	25195 - 25303	53787
xxx = 186 - 200	F110LS.LUMI15 . T186T200	25304 - 25430	55133
xxx = 201 - 215	F110LS.LUMI15 . T201T215	25431 - 25545	49354
xxx = 216 - 230	F110LS.LUMI15 . T216T230	25546 - 25673	57849
xxx = 231 - 245	F110LS.LUMI15 . T231T245	25674 - 25798	50677
xxx = 246 - 255	F110LS.LUMI15 . T246T255	25799 - 25872	27569

86:
24214

F11LH0.JDATA16.REFORM . G0xxxV00 (1986)			
Raw Data (Reform)	Lumi and Random Tape	Run nr.	Nr. of events
xxx = 001 - 020	F110LS.LUMI16 . T001T020	25873 - 26031	59781
xxx = 021 - 035	F110LS.LUMI16 . T021T035	26032 - 26144	55295
xxx = 036 - 050	F110LS.LUMI16 . T036T050	26145 - 26254	50472
xxx = 051 - 065	F110LS.LUMI16 . T051T065	26255 - 26371	61822
xxx = 066 - 080	F110LS.LUMI16 . T066T080	26372 - 26494	60128
xxx = 081 - 095	F110LS.LUMI16 . T081T095	26495 - 26617	51295
xxx = 096 - 110	F110LS.LUMI16 . T096T110	26618 - 26739	64718
xxx = 111 - 125	F110LS.LUMI16 . T111T125	26740 - 26933	48901
xxx = 126 - 140	F110LS.LUMI16 . T126T140	26934 - 27158	56963
xxx = 141 - 160	F110LS.LUMI16 . T141T160	26608 - 27314	59979
xxx = 161 - 185	F110LS.LUMI16 . T161T185	27315 - 27533	62481
xxx = 181 - 200	F110LS.LUMI16 . T181T200	27534 - 27688	62563
xxx = 201 - 220	F110LS.LUMI16 . T201T220	27647 - 27853	60379
xxx = 221 - 240	F110LS.LUMI16 . T221T240	27854 - 28042	51986
xxx = 241 - 255	F110LS.LUMI16 . T241T255	28043 - 28110	42826

F11LH0.JDATA17.REFORM . G0xxxV00 (1986)			
Raw Data (Reform)	Lumi and Random Tape	Run nr.	Nr. of events
xxx = 001 - 015	F110LS.LUMI17 . T001T015	28111 - 28245	58378
xxx = 016 - 035	F110LS.LUMI17 . T016T035	28246 - 28371	53910
xxx = 036 - 055	F110LS.LUMI17 . T036T055	28372 - 28523	55626
xxx = 056 - 075	F110LS.LUMI17 . T056T075	28524 - 28654	56328
xxx = 076 - 115	F110LS.LUMI17 . T076T115	28655 - 28973	63202
xxx = 116 - 135	F110LS.LUMI17 . T116T135	28974 - 29112	52398
xxx = 136 - 155	F110LS.LUMI17 . T136T155	29113 - 29259	57472
xxx = 156 - 180	F110LS.LUMI17 . T156T180	29260 - 29413	56448
xxx = 181 - 200	F110LS.LUMI17 . T181T200	29414 - 29582	53850
xxx = 201 - 230	F110LS.LUMI17 . T201T230	29583 - 29774	65804
xxx = 231 - 248	F110LS.LUMI17 . T231T248	29775 - 29899	50270

F11LH0.JDATA18.REFORM . G0xxxV00 (1986)			
Raw Data (Reform)	Lumi and Random Tape	Run nr.	Nr. of events
xxx = 001 - 025	F110LS.LUMI18 . T001T025	29900 - 30073	56207
xxx = 026 - 045	F110LS.LUMI18 . T026T045	30074 - 30228	56669
xxx = 046 - 071	F110LS.LUMI18 . T046T071	30229 - 30397	47486