S117

LOG BOOK

HODO- CATANIA

May 95

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SUMMARY

PROBLEMS
BEAM TIME MAY 1995

1-<u>DETECTORS</u>: all OK

2- <u>PREAMPLIFIERS:</u>

Replaced on the spare BOX:

Si: #5 (α1-5) #28 (α4-4) #31 (α4-7)

CsI: #22 (γ3-6) #25 (γ4-1) #33 (γ5-1)

CABLES OUT PRE (LEMO-CANNON inside Scatt. Chamber):

Si: #89 (β6-1) **#65 (β3-1)**

CsI: #25 (γ4-1) #61 (δ2-5)

Connected to the pulser cables : (89 Si -->8 test β)

(65 Si -->7 test α)

(25 CsI--> 7 test γ)

(61 CsI--> 7 test β)

CABLES INPUT SHAPERS inverted(but recovered via software):

Si: **#4 (α1-4), #8** (α1–8)

4. -<u>BIAS:</u> High reverse current in the groups: **α1, α4** (see later p.6)

6. - <u>THERMOMETER</u>: Thermometer #1 Not Working

REPLACEMENTS (9/5/95):

Si Detectors (chips)

Si #13 (a2-5) with MSL1073-24B 302 micron

Si #26 MSL1073-21A 306 micron (no 1μμ mylar but Al tape)

Si #36 MSL1073-14B 303 micron

P.A. moved in the spare BOX:

Si #55 (β1-7) #86 (β5-6)

CsI #49 (δ1-1) #61 (δ2-5)

PA replaced:

Si # 6 (α1-6)

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REMARKS on the ELECTRONICS

****************** **Preamplifiers** **********************

GAIN : 45 mV/MeV

****************** **Amplifiers** ******************************

GAIN (adjusted with pulser at 5. MeV) :

Si : .8 V

CsI : 2.3 V

ATTENUATION : 1

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Si Shaping time: 1.5 µsec

CsI Shaping time: 3.0 µsec

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TIMING:

Stretching time: **delay**: 69.0 nsec

width: 27.5 µsec

(IMP:RIcordarsi che lo stretcher satura a valori che sono circa 10*valore del segnale di stretching:Es; NIM 0.8V--->sat a 8 V)

===>se il segn. e' piu' basso satura prima.

Potrebbe essere il caso in tutta la S117 perche' i segn di gatestretching

non sono puliti forse perche' avendo eliminato i 50 ohm sulle schede per mettere un gate comune su entrambe l'impedenza di ingresso e' adesso disaccoppiata (i segnali infatti mostrano riflessione!!)

F-QDC Gates: **delay**: 10.3 µsec

width: 158.6 nsec ----> **Si**

width: 344.2 nsec ---> **Csi**

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FASTBUS SLOTS :

4 5 6 7 8 9 * 11 12 * 13 14 * 17 18 *

Si CsI Si CsI Si CsI * Z.C. CsI * L.E. Si * Z.C. Si *

CT GSI MSU * CT CT CT

var. names n-tuple (TDC1) (TDCT) (TDC2)

Note: -Resistors on the Stretcher: 560 O

–Range QDC Fast Bus : 0 - 1600 pC

MONITOR on the BIAS

10.2.95 (*Temperature: 21.2 14.4 13.3)*

" GROUP Cs ACTIVE V0 I0 ; HV-ENABLE ON

	VMON	IMON	V0	V1	I0	I1	RUP	RDW	TRIP
G1	19.9	0.2	20.0	20.0	200.0	200.0	1.0	1.0	1
G2	20.0	0.2	20.0	20.0	200.0	200.0	1.0	1.0	1
G3	20.0	0.0	20.0	20.0	200.0	200.0	1.0	1.0	1
G4	20.0	**10.4**	20.0	20.0	200.0	200.0	1.0	1.0	1
G5	20.0	0.0	20.0	20.0	200.0	200.0	1.0	1.0	1
G6	20.0	0.1	20.0	20.0	200.0	200.0	1.0	1.0	1
D1	20.1	0.0	20.0	20.0	200.0	200.0	1.0	1.0	1
D2	20.0	0.0	20.0	20.0	200.0	200.0	1.0	1.0	1
D3	20.3	0.0	20.0	20.0	200.0	200.0	1.0	1.0	1
D4	20.3	0.1	20.0	20.0	200.0	200.0	1.0	1.0	1
D5	20.2	0.0	20.0	20.0	200.0	200.0	1.0	1.0	1
D6	20.3	0.2	20.0	20.0	200.0	200.0	1.0	1.0	1

" GROUP Si ACTIVE V0 I0 ; HV-ENABLE ON

	VMON	IMON	V0	V1	I0	I1	RUP	RDW	TRIP
A1	34.9	1.4	35.0	35.0	200.0	200.0	1.0	1.0	1
A2	35.0	3.8	35.0	35.0	200.0	200.0	1.0	1.0	1
A3	35.0	1.3	35.0	35.0	200.0	200.0	1.0	1.0	1
A4	25.0	**12.8**	25.0	25.0	200.0	200.0	1.0	1.0	1
A5	35.0	0.6	35.0	35.0	200.0	200.0	1.0	1.0	1
A6	35.0	0.7	35.0	35.0	200.0	200.0	1.0	1.0	1
B1	35.0	0.3	35.0	35.0	200.0	200.0	1.0	1.0	1
B2	35.0	1.2	35.0	35.0	200.0	200.0	1.0	1.0	1
B3	25.0	**13.4**	25.0	25.0	200.0	200.0	1.0	1.0	1
B4	25.0	0.5	25.0	25.0	200.0	200.0	1.0	1.0	1
B5	35.0	0.5	35.0	35.0	200.0	200.0	1.0	1.0	1
B6	35.0	0.3	35.0	35.0	200.0	200.0	1.0	1.0	1

23/4/95 (*Temperature: 20.5 14.1 13.0)*

GROUP Si ACTIVE V0 I0 ; HV-ENABLE ON

	VMON	IMON	V0	V1	I0	I1	RUP	RDW	TRIP
A1	34.9	**20.2**	35.0	35.0	200.0	200.0	1.0	1.0	1
A2	35.0	*5.1*	35.0	35.0	200.0	200.0	1.0	1.0	1
A3	35.0	1.2	35.0	35.0	200.0	200.0	1.0	1.0	1
A4	25.0	**13**.	25.0	25.0	200.0	200.0	1.0	1.0	1
A5	35.0	*3.1*	35.0	35.0	200.0	200.0	1.0	1.0	1
A6	35.0	*2.5*	35.0	35.0	200.0	200.0	1.0	1.0	1
B1	35.0	0.3	35.0	35.0	200.0	200.0	1.0	1.0	1
B2	35.0	2.1	35.0	35.0	200.0	200.0	1.0	1.0	1
B3	25.0	0.6	25.0	25.0	200.0	200.0	1.0	1.0	1
B4	25.0	0.6	25.0	25.0	200.0	200.0	1.0	1.0	1
B5	35.0	0.8	35.0	35.0	200.0	200.0	1.0	1.0	1
B6	35.0	0.3	35.0	35.0	200.0	200.0	1.0	1.0	1

GROUP Cs

G1	19.9	0.2	20.0	20.0	200.0	200.0	1.0	1.0	1
G2	20.0	0.3	20.0	20.0	200.0	200.0	1.0	1.0	1
G3	20.0	0.1	20.0	20.0	200.0	200.0	1.0	1.0	1
G4	20.0	0.1	20.0	20.0	200.0	200.0	1.0	1.0	1
G5	20.0	0.0	20.0	20.0	200.0	200.0	1.0	1.0	1
G6	20.0	0.1	20.0	20.0	200.0	200.0	1.0	1.0	1
D1	20.1	0.0	20.0	20.0	200.0	200.0	1.0	1.0	1
D2	20.0	**8.3**	20.0	20.0	200.0	200.0	1.0	1.0	1
D3	20.3	0.0	20.0	20.0	200.0	200.0	1.0	1.0	1
D4	20.3	0.1	20.0	20.0	200.0	200.0	1.0	1.0	1
D5	20.2	0.0	20.0	20.0	200.0	200.0	1.0	1.0	1
D6	20.3	0.3	20.0	20.0	200.0	200.0	1.0	1.0	1

20/5/95 (*Temperature: 22.0 15.8 15.5)*

GROUP Si ACTIVE V0 I0 ; HV-ENABLE ON

	VMON	IMON	V0	V1	I0	I1	RUP	RDW	TRIP
A1	34.9	**21.0**	35.0	35.0	200.0	200.0	1.0	1.0	1
A2	35.0	*0.4*	35.0	35.0	200.0	200.0	1.0	1.0	1
A3	35.0	1.0	35.0	35.0	200.0	200.0	1.0	1.0	1
A4	25.0	**13.1**	25.0	25.0	200.0	200.0	1.0	1.0	1
A5	35.0	*0.7*	35.0	35.0	200.0	200.0	1.0	1.0	1
A6	35.0	*1.3*	35.0	35.0	200.0	200.0	1.0	1.0	1
B1	35.0	0.3	35.0	35.0	200.0	200.0	1.0	1.0	1
B2	35.0	**2.3**	35.0	35.0	200.0	200.0	1.0	1.0	1
B3	25.0	0.6	25.0	25.0	200.0	200.0	1.0	1.0	1
B4	25.0	1.0	25.0	25.0	200.0	200.0	1.0	1.0	1
B5	35.0	0.8	35.0	35.0	200.0	200.0	1.0	1.0	1
B6	35.0	0.4	35.0	35.0	200.0	200.0	1.0	1.0	1

GROUP Cs

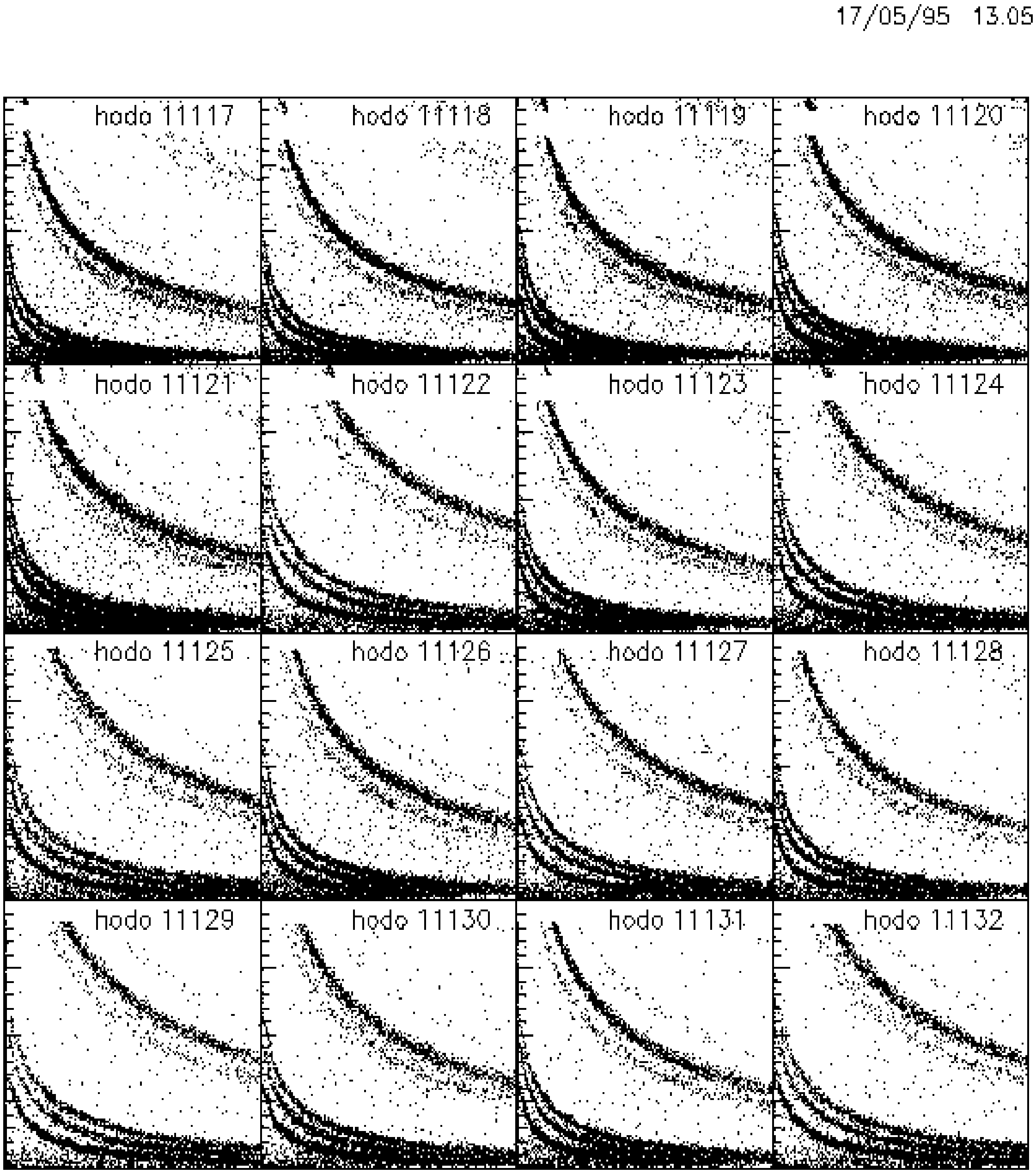
G1	19.9	0.2	20.0	20.0	200.0	200.0	1.0	1.0	1
G2	20.0	0.3	20.0	20.0	200.0	200.0	1.0	1.0	1
G3	20.0	0.1	20.0	20.0	200.0	200.0	1.0	1.0	1
G4	20.0	0.1	20.0	20.0	200.0	200.0	1.0	1.0	1
G5	20.0	0.0	20.0	20.0	200.0	200.0	1.0	1.0	1
G6	20.0	0.0	20.0	20.0	200.0	200.0	1.0	1.0	1
D1	20.1	0.0	20.0	20.0	200.0	200.0	1.0	1.0	1
D2	20.0	0.0	20.0	20.0	200.0	200.0	1.0	1.0	1
D3	20.3	0.1	20.0	20.0	200.0	200.0	1.0	1.0	1
D4	20.3	0.1	20.0	20.0	200.0	200.0	1.0	1.0	1
D5	20.2	0.0	20.0	20.0	200.0	200.0	1.0	1.0	1
D6	20.3	**1.6**	20.0	20.0	200.0	200.0	1.0	1.0	1

To connect to the BIAS controller:

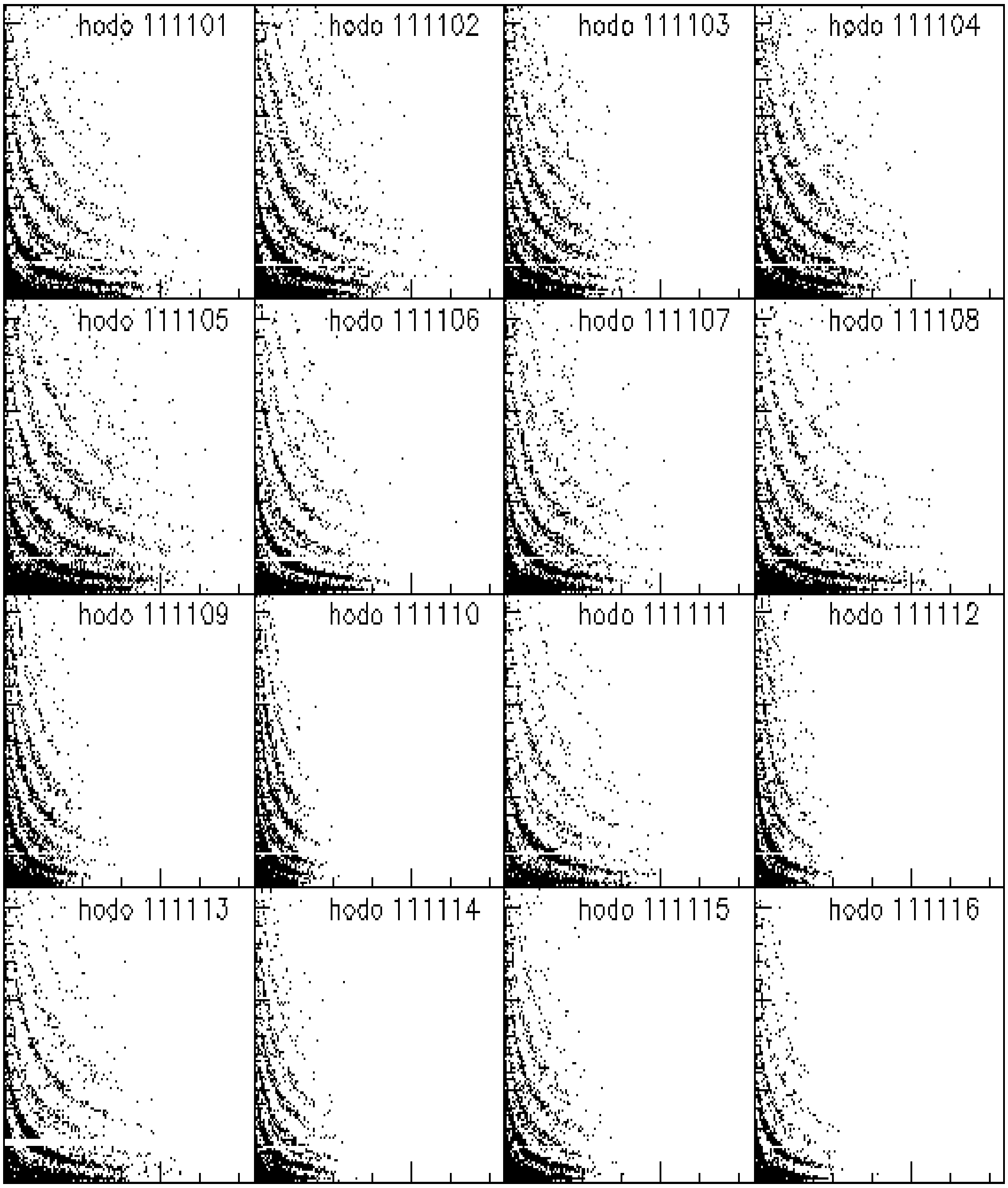
>***connect KP3HBIAS*** (from a VT100 terminal)

$***BIAS*** (from a VAXSTATION Directory: [RACITI])

Typical DE-E
for Au+Au at 100 MeV/u



17/05/95 12.57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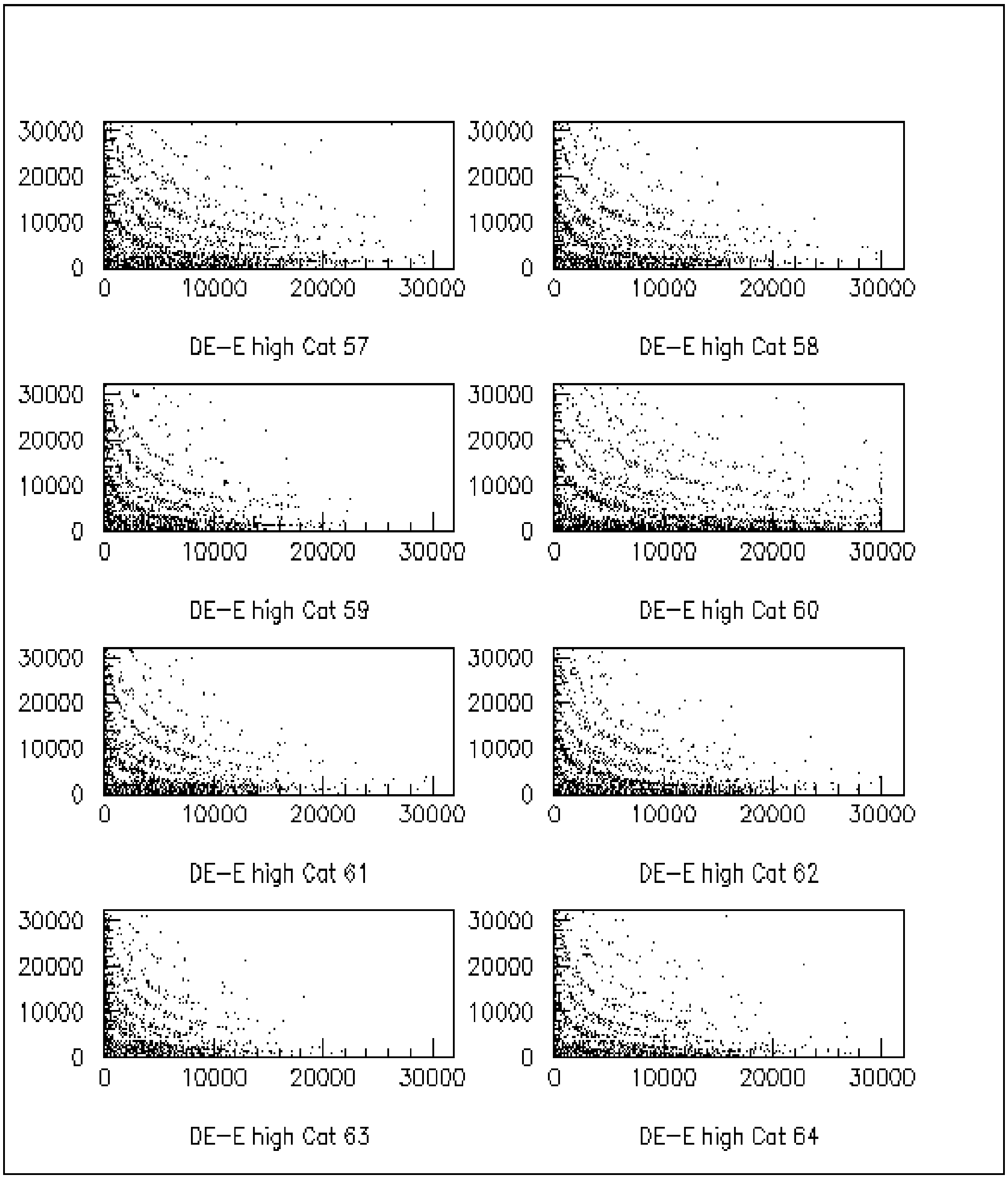
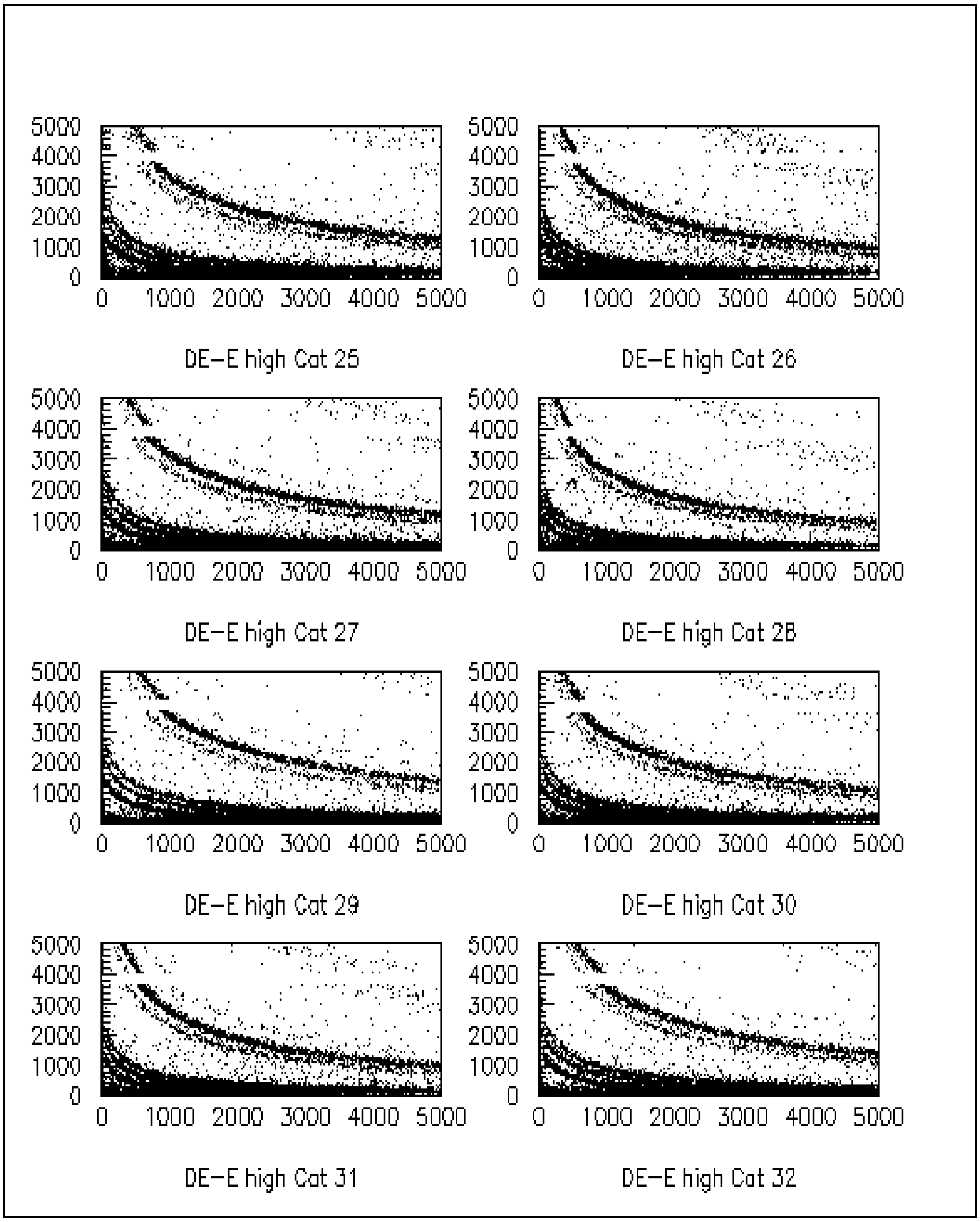
hodo 111116

Au+Au   150 MeV/u




DE−E high Cat 25
DE−E high Cat 26
DE−E high Cat 27
DE−E high Cat 28
DE−E high Cat 29
DE−E high Cat 30
DE−E high Cat 31
DE−E high Cat 32

GENERAL INFORMATIONS

BEAM: ^{197}Au (100 and 150 MeV/u)

beam current (0.6 - 2. 10^6 part./spill)

1 spill= 5 sec.

TARGETS: **Au** (**25.5** mg/cm^2)

Au (**74.9** mg/cm^2) mainly used

Shields: **25 μm Brass**.

VACUUM: 3* 10^{-4} torr

Cooling MACHINE : setted at 2^0

Temperature measured: T2= 20.5^0 T3= 15.6^0 T4= 15.3^0

T2 at the Hodoscope (?)

T3 at Preamps Box BOTTOM

T4 at Preamps Box TOP

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Particle	Range (Si 300μm)	PunchThrough (6cmCsI)	ΔE(Si)
p	6. MeV	144,7 MeV	.3 MeV
d	8.	193.6	.4
t	9.	227.5	.5
^{3}He	9.	517.9	1.12
α	24.	582.7	1.25
^{6}Li	42.	1107.6	2.42

TRIGGERs

TPAT **:** (*MASTER trigger*)

1:

1	2	**3**	4	5	6	7	8
ZDO MUL >=2	ZDO + Start	Telesc Xi	Start	=	=	=	=
(ON)	-	**(ON)**	-				

2:

1	2	3	4	5	6	7	8
Si>1	CsI>1	Si>2	CsI>2	SiArray (µstrip)	ZDO (Cosmics)	=	=
					(ON)		

3:

1	2	3	4	5	6	7	8
CT Pulser	GSI Pulser	MSU Pulser	Telesc Pulser	TOF Laser	Pedestal	Spill On	Spill Off
-	-	-	-	-	**(ON)**		**(ON)**

SPAT: (*Fast Clear*)

1	2	3	4	5	6	7	8
Si>=1	CsI>=1	=	Si>=2 AND CsI>=1	Si>=2	Telesc.	=	CsI>=2
(ON)	**(ON)**	**-**	**(ON)**	**(ON)**	**(ON)**	**-**	**(ON)**

WARNINGS

1-When POWER on the Preamplifiers is switched ON at the same time switch ON the COOLING MACHINE as well.

2 -No BIAS on the detectors when:

(i) Beam focusing

(ii) Vacuum operations (Pumping or Air filling)

MISSING LOGIC OUTPUT IN THE TDCs

Leading Edge Si: (TDCT) #32, 33 , 62

Zero Crossing Si: (TDC2) all OK

Zero Crossing CsI: (TDC1) # 2, 3, 4 ,5, 6, 7, 12 , 14 , 61 , 73

Thresholds VALUES (in mV) measured with Multimeter

Leading edge Si:

α1	α2	α3	α4	α5	α6
-90.6	-134.0	-121.3	-107.8	- 94.0	-136.5
-85.0	-109.4	-124.8	- 92.8	- 80.4	-102.7
-74.7	-109.2	-110.8	-102.1	- 80.3	-116.5
-74.8	-130.8	-110.0	-102.6	-169.0	-109.3
-76.3	-152.5	-116.2	-105.2	- 80.8	-109.0
-75.0	-123.0	-107.0	-107.8	- 96.8	-114.8
-88.0	-120.0	-111.7	- 97.3	- 88.7	-150.1
-97.0	-139.4	-117.8	-104.6	- 93.6	-156.2

β1	β2	β3	β4	β5	β6

-93.0	-109.6	-138.1	-151.1	- 91.2	-107.5
-90.5	- 98.0	-151.1	-154.4	-111.0	- 94.5
-94.5	-101.7	-143.8	-147.4	-104.6	- 96.2
-88.8	-104.6	-146.0	-148.6	-103.8	-112.5
-92.4	-1600.0	-141.2	-150.6	- 95.7	-108.5
-94.9	- 97.6	-141.2	-155.4	-103.2	-110.6
-99.5	- 97.6	-136.8	-153.0	-109.0	-111.9
-97.5	-100.5	-144.5	-118.6	-104.9	-100.9

Leading edge CsI:

γ1	γ2	γ3	γ4	γ5	γ6
-73.0	-78.0	-74.9	-69.6	-73.1	-74.3
-73.8	-65.1	-73.7	-72.4	-72.3	-72.5
-72.6	-66.2	-72.5	-73.7	-72.8	-73.4
-73.0	-65.3	-73.4	-72.6	-72.2	-74.6
-71.8	**+95.7**	-73.1	-70.0	-73.1	-71.3
-74.3	-63.0	-73.7	-73.0	-71.0	-72.1
-72.7	-62.8	-73.3	-73.6	-83.0	-71.6
-73.1	?	-71.9	-71.2	-73.0	-73.8

δ1	δ2	δ3	δ4	δ5	δ6 -
- 81.0	-72.7	-73.4	-72.4	-73.5	+180.0
- 72.6	-71.9	-72.5	-72.7	-74.2	-149.8
- 72.2	-71.8	-72.2	-71.9	-72.4	-115.0
- 70.9	-71.4	-70.0	-72.3	-73.0	- 26.0
- 71.9	-80.0	-71.7	-71.6	-70.6	- 73.5
- 71.6	-70.9	-71.4	-72.0	-73.0	-1154.0
- 70.5	-71.6	-71.7	-73.2	-73.5	- 72.1
- 81.0	-71.8	-74.0	-73.0	-72.7	-165.4

Zero Crossing Si:

α1	α2	α3	α4	α5	α6
?	-66.1	-66.5	-76.5	-56.1	-62.4
-47.6	-63.8	?	-65.1	-61.5	-61.5
-60.9	-63.2	-62.2	-57.7	-63.6	-72.2
-59.7	-66.6	-65.1	-75.0	-69.5	-62.4
-64.9	-60.3	-68.9	-67.4	-79.1	-69.5
-65.0	-67.4	-78.4	-72.8	-76.6	-68.5
-65.3	-61.2	-65.5	-57.1	-76.1	-60.4
-65.8	-56.6	-63.1	-61.9	-53.2	-72.8

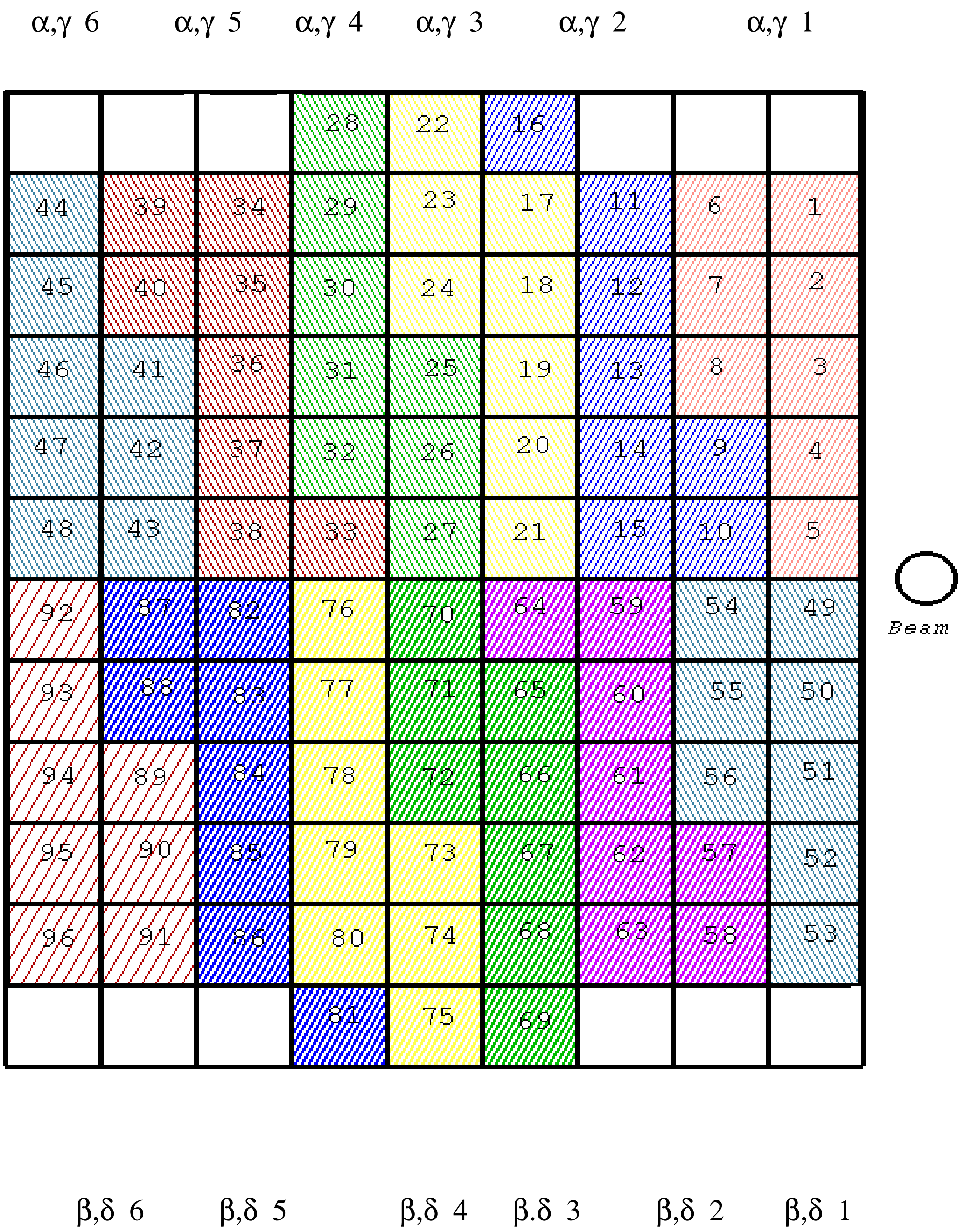
β1	β2	β3	β4	β5	β6
-52.4	-65.4	?	-62.5	-66.5	-70.9
-69.5	-56.9	-54.9	-153.6	-54.4	-41.2
-62.5	-71.6	-64.7	-146.7	-51.9	-51.1
-66.2	-31.5	-64.8	-147.8	-61.4	-54.5
-68.1	-68.4	-68.6	-149.7	-46.3	-58.5
-69.5	-63.7	-50.6	-154.6	-62.5	-48.4
-69.2	-68.7	-56.4	-152.1	-65.4	-64.4
-69.7	-76.5	-65.0	-117.7	-59.9	-64.1

Zero Crossing CsI:

γ1	γ2	γ3	γ4	γ5	γ6
-24.6	-44.1	-45.9	-30.1	-24.4	-40.4
-39.2	-38.6	-46.5	-29.8	-25.0	-36.1
-24.0	-47.9	-44.6	-29.6	-25.2	-40.3
-25.8	?	-48.2	-29.9	-24.9	-48.4
-24.1	-48.2	-44.5	-30.9	-19.6	-52.4
-24.5	-54.0	-41.8	-30.7	-24.7	-52.3
-24.0	-48.6	-44.5	-30.2	-24.9	-55.3
-24.1	?	-54.3	-30.3	-25.4	-56.2

δ1	δ2	δ3	δ4	δ5	δ6
-63.9	-33.7	-32.6	-24.5	-36.3	-31.0
-31.8	-31.9	-32.4	-31.9	-37.9	-38.3
-32.0	-31.9	-32.0	-34.3	-33.4	-38.1
-36.1	-31.6	-32.3	-31.6	-38.2	-31.5
?	disconnected	-32.4	-34.6	-29.7	-33.0
-34.6	-32.6	-32.0	-32.1	-28.2	-30.2
-32.5	-30.5	-31.9	-38.1	-35.1	-30.9
-32.3	-32.6	-32.4	-38.4	-33.0	-33.0

HODO CT DET Numbers and Groups



Font view.

Note: ***Beam going on the view***