

Table of Contents

Dream Testbeam November 2012: Good Run List.....	1
Ntuples.....	1
Topics studied:.....	1
Lead module calibration:.....	1
Lead module pion data:.....	2
Lead module electron data:.....	4
Copper module calibration:.....	5
Copper module pion data:.....	5
Copper module electron data:.....	6
Leakage Counter Calibration data:.....	7
Crystal program:.....	7

Dream Testbeam November 2012: Good Run List

Ntuples

Ntuples were automatically produced after completion of each run. They are stored on pcdream in `/mnt/dreamix2/ntuple` In order to analyze them, follow the readout mapping here:

ROmappingNovember2012

You can retrieve the data remotely using Globus Online, using either your own account or the dreamdaq one, using the pcdreamdaq endpoint. The data will also be stored at TTU along with data from previous test beams; Contact Sehwook or Alan if you need access.

Topics studied:

Lead module calibration:

- Steering 20 GeV electron (H8C.753) in each tower and set the HV to have peak at about 800 adc counts for the central towers and 2000 adc counts for the external rings. 10000 events per run. HV as in logbook page 40-41-42-46

Tower	Run	< S >	< C >
1	9010	1957	1058
2	8993	1862	910
3	9008	1966	955
4	8997	1972	932
5	8999	2018	938
6	9040	2001	879
7	9012	2132	1020
8	8956	914	625
9	8953	912	503
10	9049	868	525
11	9073	1984	---
12	9038	1918	855
13	8987	2010	940
14	9047	945	330
15	9045	554	547
16	9046	880	529
17	9006	1944	999
18	9036	2218	954
19	8985	1914	1092
20	9048	842	535
21	8962	896	680
22	8967	939	610
23	9004	1954	951
24	9034	2034	1016
25	9015	1948	932
26	8981	2155	1025
27	8979	2049	932
28	8977	1824	1012

29	8975	2044	917
30	9032	1924	974
31	9017	2002	---
32	9020	1872	972
33	9022	1907	1113
34	9026	2044	957
35	9028	1992	988
36	9030	1902	849

- Calibration of T15 with 80GeV e+ (H8C.410)
 - ◆ HV (S) = 580 V; HV (C) = 750 V; Run 9490 20 kevt
- Calibration of T15 and first ring with reduced HV; 100 GeV e+ (H8C.410); 5 kevt per run

Tower	Run	HV_S	< S >	HV_C	< C >
15	9537	580	1593	750	609
8	9544	600	1634	700	651
9	9545	570	1470	750	530
10	9546	580	1483	850	702
14	9543	590	1687	900	771
16	9539	590	1537	790	654
20	9542	650	1637	810	666
21	9541	740	2059	700	648
22	9540	710	2059	680	584

Lead module pion data:

- Pion beam 60 GeV (H8C.753). Beam steered in T15; Neutron counters gate has been changed from 130 ns (leftside of the table) to 220 ns (leftside of the table) and delayed.

130 ns n-gate		220 ns n-gate	
Run	nevt	Run	nevt
9097	51 kevt	9118	200 kevt
9099	38 kevt	9119	106 kevt
9100	200 kevt	9121	200 kevt
9101	200 kevt	9122	200 kevt
9102	100 kevt	9123	200 kevt
9103	80 kevt	9124	200 kevt
9105	35 kevt	9125	200 kevt
9110	100 kevt	--	--
9116	100 kevt	--	--
Total	0.9 Mevt	Total	1.3 Mevt

- Pion beam 60 GeV (H8C.753). Beam steered in T8. Run 9129 200 kevt.
- Pion beam 20 GeV (H8C.725). Beam steered in T15

Run	nevt	rate
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Lead module calibration:

9250	45 kevt	~7000 evt/spill
9252	22 kevt	~7000 evt/spill
9254	168 kevt	~7000 evt/spill
9256	200 kevt	< 4000 evt/spill
9261	200 kevt	< 4000 evt/spill
9262	200 kevt	< 4000 evt/spill
9265	200 kevt	< 4000 evt/spill
9267	140 kevt	< 4000 evt/spill

- Pion beam 20 GeV (H8C.725). Beam steered in T8. Run 9268 120 kevt.
- Pion+ beam 180 GeV (H8C.405). Beam steered in T15. Zero angle.

Run	Nevt	T15 C Voltage	T15 S Voltage	Comments
9322	100 kevt	900V	620V	Beam not ready
9323	100 kevt	900V	620V	
9324	100 kevt	900V	620V	
9325	100 kevt	900V	620V	
9326	100 kevt	900V	620V	
9327	100 kevt	900V	620V	
9328	100 kevt	900V	620V	
9329	100 kevt	900V	620V	
9330	100 kevt	900V	620V	
9331	100 kevt	900V	620V	
9332	100 kevt	900V	620V	
9333	100 kevt	900V	620V	
9339	100 kevt	900V	620V	
9340	100 kevt	900V	620V	
9341	100 kevt	900V	620V	
9342	100 kevt	900V	620V	
9343	100 kevt	900V	620V	
9354	100 kevt	900V	620V	
9355	100 kevt	900V	620V	
9356	100 kevt	900V	620V	
9391	100 kevt	750V	580V	
9392	100 kevt	750V	580V	
9393	100 kevt	750V	580V	
9396	100 kevt	750V	580V	
9397	100 kevt	750V	580V	
9398	100 kevt	750V	580V	
9399	100 kevt	750V	580V	
9400	100 kevt	750V	580V	
9403	100 kevt	750V	580V	
9405	100 kevt	750V	580V	
9408	100 kevt	750V	580V	
9409	100 kevt	750V	580V	
9410	100 kevt	750V	580V	
9411	100 kevt	750V	580V	
9412	100 kevt	750V	580V	
9413	100 kevt	750V	580V	

9414	100 kevt	750V	580V	
9415	100 kevt	750V	580V	
9416	100 kevt	750V	580V	
9417	100 kevt	750V	580V	

- Pion+ beam 100 GeV (H8C.415). Beam steered in T15; HV(S) = 620 V, HV(C) = 900 V

Run	nevt
9535	100 kevt
9536	247 kevt

Lead module electron data:

- Electron beam steered in T15. Energy scan. Nominal voltages as for calibration

Run	Energy	Beam File	Nevt	Angle
9138	20 GeV	H8C.753	12.9 kevt	0°,0°
9139	20 GeV	H8C.753	4 kevt	0°,0°
9140	20 GeV	H8C.753	50 kevt	0°,0°
9141	20 GeV	H8C.753	21 kevt	0°,0°
9146	20 GeV	H8C.753	29 kevt	1°, 1.5°
9153	20 GeV	H8C.753	25 kevt	1°, 1.5°
9155	6 GeV	H8C.757	50 kevt	1°, 1.5°
9156	40 GeV	H8C.751	50 kevt	1°, 1.5°
9157	40 GeV	H8C.751	50 kevt	1°, 1.5°
9158	30 GeV	H8C.750	50 kevt	1°, 1.5°
9159	10 GeV	H8C.755	50 kevt	1°, 1.5°
9160	15 GeV	H8C.754	24 kevt	1°, 1.5°
9273	80 GeV	H8C.729	50 kevt	1°, 1.5°
9295	100 GeV	H8C.744	42 kevt	1°, 1.5°
9294	100 GeV	H8C.744	8 kevt	1°, 1.5°
9301	125 GeV	H8C.745	69 kevt	1°, 1.5°
9302	125 GeV	H8C.745	32 kevt	1°, 1.5°
9297	60 GeV	H8C.747	50 kevt	1°, 1.5°
9303	40 GeV	H8C.748	28 kevt	1°, 1.5°
9305	40 GeV	H8C.748	11 kevt	1°, 1.5°

- Electron beam steered in T15. Energy scan. Reduced HV: HV(S) = 580 V ; HV(C) = 750V

Run	Energy	beam file	Nevt	angles
9490	80 GeV	H8C.410	20 kevt	0°, 0°
9524	100 GeV	H8C.415	10 kevt	0°, 0°
9525	100 GeV	H8C.415	10 kevt	0°, 0°
9526	120 GeV	H8C.411	20 kevt	0°, 0°
9527	120 GeV	H8C.411	20 kevt	0°, 0°
9528	120 GeV	H8C.411	20 kevt	0°, 0°
9529	60 GeV	H8C.412	10 kevt	0°, 0°
9531	150 GeV	H8C.416	50 kevt	0°, 0°

Lead module electron data:

9532	150 GeV	H8C.416	50 kevt	0°, 0°
9533	40 GeV	H8C.413	10 kevt	0°, 0°

- Position scan (see logbook page 110) e+ beam 100 GeV (H8C.418); HV as for calibration with this beam file

Run	point	x	y	Nevt
9547	A	116.5	29.9	70 k
9548	B	118.8	29.9	70 k
9549	C	121.1	29.9	70 k
9550	D	121.1	32.2	70 k
9551	I	121.1	34.5	70 k
9552	H	118.8	34.5	70 k
9553	G	116.5	34.5	70 k
9554	F	116.5	32.2	70 k
9555	E	118.8	32.2	100 k

Copper module calibration:

- Steering 20 GeV electron (H8C.753) in each tower and set the HV to have peak at about 600 adc counts for the scintillation and 200 adc counts for the Cherenkov. 10000 events per run

Tower	Run	< S >	< C >
Al-Cu1	9207	856	921
Al-Cu2	9205	534	550
Al-Cu3	9214	815	986
Al-Cu4	9229	891	894
Cu1	9221	836	---
Cu2	9225	839	---
Cu4	9216	847	---

- Calibration of Al-Cu2 with 80GeV e+ (H8C.410)
 - ◆ HV = 550 V; Run 9442 and 9443 10 kevt each

Copper module pion data:

- Pion+ beam 180 GeV (H8C.405). Beam steered in Cu(Al)2. Zero angle.

Run	Nevt	Cu(Al)2 S Voltage
9362	100 kevt	580V
9365	100 kevt	580V
9366	100 kevt	580V
9369	100 kevt	580V
9370	100 kevt	580V
9371	100 kevt	580V
9372	100 kevt	580V
9373	100 kevt	580V
9374	100 kevt	580V

9375	100 kevt	580V
9378	100 kevt	580V
9379	100 kevt	580V
9382	100 kevt	580V
9383	100 kevt	580V
9384	100 kevt	580V
9385	100 kevt	580V
9386	100 kevt	580V
9387	100 kevt	580V
9389	100 kevt	580V
9390	100 kevt	580V
9418	100 kevt	550V
9419	100 kevt	550V
9420	100 kevt	550V
9421	100 kevt	550V
9422	100 kevt	550V
9423	100 kevt	550V
9424	<79 kevt	550V
9426	100 kevt	550V
9427	100 kevt	550V
9428	100 kevt	550V
9429	100 kevt	550V
9430	100 kevt	550V
9431	100 kevt	550V
9432	100 kevt	550V
9433	100 kevt	550V
9434	100 kevt	550V
9435	100 kevt	550V
9436	100 kevt	550V
9437	300 kevt	550V

Copper module electron data:

Electron beam steered in Al-Cu2. Energy scan.

Run	Energy	Beam File	Nevt	Angle
9230	20 GeV	H8C.753	12.9 kevt	1°, 1.5°
9231	40 GeV	H8C.751	4 kevt	1°, 1.5°
9232	40 GeV	H8C.751	50 kevt	1°, 1.5°
9233	30 GeV	H8C.750	21 kevt	1°, 1.5°
9234	10 GeV	H8C.755	29 kevt	1°, 1.5°
9235	10 GeV	H8C.755	25 kevt	1°, 1.5°
9236	6 GeV	H8C.757	50 kevt	1°, 1.5°
9274	80 GeV	H8C.729	50 kevt	1°, 1.5°
9275	100 GeV	H8C.744	50 kevt	1°, 1.5°
9300	125 GeV	H8C.745	100 kevt	1°, 1.5°
9298	60 GeV	H8C.747	50 kevt	1°, 1.5°
9304	40 GeV	H8C.748	50 kevt	1°, 1.5°

Electron shower profile study. 20 GeV electron beam

Copper module pion data:

Run	Tower	X	Y	nevt
9238	Al-Cu2	116.4	15.8	47 kevt
9240	Al-Cu1	111.6	15.8	50 kevt
9241	Al-Cu center	114.0	13.4	50 kevt

Leakage Counter Calibration data:

- 180 GeV pi+. Beam file H8C.405. zero angle. Calibration for counters L1-L12, see pg. 47 of logbook. Calibration for counters L13-L20 on pg. 77 and 78. Voltages for all Counters on pg. 69.

Run	Counter No.	Nevts	comments
9319	L13, L15, L17, L19	50 kevt	
9320	L14, L16, L18, L20	50 kevt	
9056	L1, L2, L3, L4	10 kevt	
9062	L9, L10	20 kevt	
9061	L11, L12	20 kevt	
9065	L5, L6, L7, L8	20 kevt	

Crystal program:

PbWO4 and PbF2 crystals HV= 550 HV = 420 80 GeV e+ beam H8C.410 10 kevt per run

X_0 lead	PWO run	PF2 run
0	9493	9495
10	9512	9513
6	9515	9514
4	9516	9517
2	9519	9518
1	9520	9521

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