/afcs

PS/OP/Min. 76-5
4.6.1976

Compte Rendu du MD du 10.12.75

Participants : G. Azzoni, M. Bôle-Feysot, R. Martin

But : Mesurer l'ouverture verticale de la chambre à vide du PS à 10 GeV/c (relevé de données pour le démarrage après le shut-down de 1976)

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1. Mesure ouverture verticale

La mesure a été faite à l'aide de groupes de 2 dipôles verticaux à 3 positions radiales différentes, soit : + 30 mm, 0 et -20 mm. Les combinaisons utilisées sont les suivantes :

+20-24, +20+34, +20-98, +24-34, +24+54, +24-54, + 24-98,
+34+64, +34-64, +34+84, +54-64, +54+84, +64+98, + 84+98.

L'énergie a été fixée à 10 GeV/c, B_{max} 4760 Gauss, I_p réduit à 150×10^{10}ppi avec Booster (il a été ensuite possible de réduire I_p jusqu'à 80×10^{10}ppi avec un faisceau stable).

Les annexes donnent les résultats suivants :

Annexe I : ouverture verticale pour PRM + 30 mm $Q_R = 6.17$, $Q_V = 6.26$

Annexe II: " " " " 0 mm $Q_R = 6.24$, $Q_V = 6.32$

Annexe III: " " " " - 20 mm $Q_R = 6.29$, $Q_V = 6.37$

Annexe IV: Orbite radiale à + 30 mm

Annexe V : " " à 0 mm

Annexe VI: " " à - 20 mm

Annexe VII: " " à - 36 mm

Annexe VIII: " " à + 40 mm

2. Difficultés rencontrées

a) Limitation de l'excursion de la position radiale vers l'intérieur de la chambre à vide due à une panne sur un tiroir RF.

b) Le SM 58 était bloqué à 58 mm (vide).

G. Azzoni

Distribution : ouverte

MEASURE APERTURE OF PS RING

ANNEXE 1

NPUT

R10 PLANE 6.260 4760.000 V

KINUM	KI1	KI2	KI3	I1	I2	I3	I4	I5	I6	I7	I8	POT
2	20	24	=0	=0.000	20.190	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	20	24	=0	=0.000	=0.000	17.140	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	20	34	=0	15.620	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	20	34	=0	=0.000	=0.000	=0.000	14.570	=0.000	=0.000	=0.000	=0.000	=0.0
2	20	98	=0	=0.000	=0.000	14.290	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	20	98	=0	=0.000	14.290	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	24	34	=0	=0.000	14.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	24	34	=0	=0.000	=0.000	15.230	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	24	54	=0	14.290	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	24	54	=0	=0.000	=0.000	=0.000	14.860	=0.000	=0.000	=0.000	=0.000	=0.0
2	24	54	=0	=0.000	14.290	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	24	64	=0	=0.000	=0.000	16.190	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	24	98	=0	=0.000	13.330	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	24	98	=0	=0.000	=0.000	13.330	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	34	64	=0	15.520	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	34	64	=0	=0.000	=0.000	=0.000	14.290	=0.000	=0.000	=0.000	=0.000	=0.0
2	34	64	=0	=0.000	16.480	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	34	64	=0	=0.000	=0.000	14.480	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	34	84	=0	14.950	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	34	84	=0	=0.000	=0.000	=0.000	13.620	=0.000	=0.000	=0.000	=0.000	=0.0
2	54	64	=0	=0.000	14.570	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	54	64	=0	=0.000	=0.000	14.570	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	54	84	=0	15.050	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	54	84	=0	=0.000	=0.000	=0.000	13.900	=0.000	=0.000	=0.000	=0.000	=0.0
2	64	98	=0	15.430	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	64	98	=0	=0.000	=0.000	=0.000	13.430	=0.000	=0.000	=0.000	=0.000	=0.0
2	84	98	=0	15.620	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	84	98	=0	=0.000	=0.000	=0.000	13.520	=0.000	=0.000	=0.000	=0.000	=0.0

N	APERT1	APERT2
1	17,834	-16,635
2	22,466	-20,613
3	17,219	-15,904
4	21,561	-21,289
5	16,585	-17,002
6	20,702	-22,189
7	16,351	-17,758
8	20,914	-23,802
9	16,634	-17,833
10	20,568	-22,421
11	15,904	-17,220
12	21,331	-21,517
13	17,001	-16,585
14	22,234	-20,659
15	17,757	-16,350
16	23,799	-20,955
17	17,834	-16,632
18	22,377	-20,522
19	17,220	-15,905
20	21,472	-21,374
21	16,585	-17,000
22	20,615	-22,279
23	16,349	-17,756
24	20,553	-22,146
25	15,764	-17,835
26	20,425	-23,141
27	16,432	-18,617
28	20,787	-23,799
29	16,584	-16,584
30	22,323	-20,571
31	17,755	-16,347
32	22,193	-20,513
33	17,836	-15,764
34	23,190	-20,468
35	18,617	-16,432
36	23,802	-20,828
37	18,950	-16,650
38	23,703	-21,877
39	16,333	-17,508
40	20,472	-22,240
41	15,438	-17,836
42	20,511	-23,238
43	16,432	-18,617
44	20,869	-23,804
45	16,651	-18,951
46	21,922	-23,654
47	17,508	-16,334
48	22,286	-20,430
49	17,836	-15,438
50	23,286	-20,553
51	18,617	-16,432

52	23,806	-20,910
53	18,951	-16,661
54	23,605	-21,966
55	16,406	-17,507
56	20,478	-22,332
57	16,347	-17,835
58	20,554	-22,146
59	15,935	-17,335
60	20,826	-23,807
61	16,650	-18,950
62	22,009	-23,555
63	17,505	-16,406
64	22,377	-20,435
65	17,834	-16,579
66	22,098	-20,910
67	17,755	-16,347
68	23,808	-20,702
69	17,836	-16,637
70	22,286	-20,788
71	16,334	-16,334
72	20,481	-22,421
73	16,581	-17,833
74	20,869	-22,050
75	16,349	-17,756
76	20,745	-23,808
77	16,637	-17,836
78	20,745	-22,240
79	16,333	-16,333
80	22,465	-20,826
81	17,830	-16,583
82	22,049	-20,828
83	17,757	-16,350
84	23,807	-20,786
85	17,836	-16,637
86	22,193	-20,702
87	17,217	-16,332
88	21,647	-21,782
89	16,584	-17,432
90	20,787	-22,096
91	16,351	-17,758
92	20,831	-23,806
93	16,636	-17,835
94	20,657	-22,146
95	16,330	-17,218
96	21,826	-21,604
97	17,432	-16,585
98	22,143	-20,748
99	17,758	-16,351
100	23,804	-20,872

MEASURE APERTURE OF PS RING

ANNEXE II

NPUT

R10 PLANE 6.320 4760.000 V

KINUM	KI1	KI2	KI3	I1	I2	I3	I4	I5	I6	I7	I8	POT
2	20	24	=0	=0.000	24.760	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	20	24	=0	=0.000	=0.000	22.190	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	20	34	=0	20.480	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	20	34	=0	=0.000	=0.000	=0.000	19.710	=0.000	=0.000	=0.000	=0.000	=0.0
2	20	98	=0	=0.000	=0.000	19.050	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	20	98	=0	=0.000	18.860	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	24	34	=0	=0.000	18.570	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	24	34	=0	=0.000	=0.000	17.900	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	24	54	=0	17.330	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	24	54	=0	=0.000	=0.000	=0.000	18.100	=0.000	=0.000	=0.000	=0.000	=0.0
2	24	54	=0	=0.000	16.760	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	24	54	=0	=0.000	=0.000	18.480	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	24	98	=0	=0.000	18.100	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	24	98	=0	=0.000	=0.000	17.710	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	34	64	=0	17.710	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	34	64	=0	=0.000	=0.000	=0.000	19.050	=0.000	=0.000	=0.000	=0.000	=0.0
2	34	64	=0	=0.000	19.230	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	34	64	=0	=0.000	=0.000	18.570	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	34	84	=0	19.050	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	34	84	=0	=0.000	=0.000	=0.000	18.380	=0.000	=0.000	=0.000	=0.000	=0.0
2	54	64	=0	=0.000	18.100	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	54	64	=0	=0.000	=0.000	18.190	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	54	84	=0	18.670	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	54	84	=0	=0.000	=0.000	=0.000	17.330	=0.000	=0.000	=0.000	=0.000	=0.0
2	64	98	=0	18.950	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	64	98	=0	=0.000	=0.000	=0.000	18.950	=0.000	=0.000	=0.000	=0.000	=0.0
2	84	98	=0	18.370	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.000	=0.0
2	84	98	=0	=0.000	=0.000	=0.000	17.810	=0.000	=0.000	=0.000	=0.000	=0.0

VIPUT

N	APERT1	APERT2
1	20,288	-19,525
2	24,135	-23,368
3	18,788	-17,439
4	24,081	-23,346
5	17,643	-18,214
6	24,263	-22,679
7	19,206	-18,278
8	26,640	-26,642
9	19,440	-20,200
10	23,168	-23,897
11	17,472	-18,823
12	23,610	-23,779
13	18,158	-17,643
14	22,890	-24,572
15	18,424	-19,170
16	26,871	-25,861
17	20,086	-19,331
18	23,662	-22,940
19	18,835	-17,483
20	23,448	-23,845
21	17,621	-18,079
22	24,849	-23,101
23	19,111	-18,861
24	24,804	-25,054
25	17,698	-18,254
26	22,773	-23,779
27	17,472	-19,099
28	22,805	-24,922
29	17,664	-18,424
30	23,331	-25,096
31	18,956	-19,028
32	24,824	-24,576
33	18,288	-17,731
34	24,081	-22,564
35	19,123	-17,766
36	25,079	-23,938
37	20,086	-19,331
38	26,871	-25,861
39	18,837	-19,026
40	24,318	-24,563
41	17,742	-18,299
42	22,606	-24,354
43	17,877	-19,123
44	23,746	-25,204
45	19,440	-20,200
46	25,640	-26,642
47	19,074	-18,883
48	24,272	-24,030
49	18,288	-17,731
50	24,596	-22,830
51	19,099	-17,966

52	25,298	-24,099
53	20,268	-19,525
54	26,380	-25,388
55	18,907	-19,097
56	23,712	-23,951
57	17,698	-18,254
58	22,830	-23,845
59	18,034	-17,781
60	24,423	-25,361
61	19,586	-20,351
62	25,104	-26,085
63	19,097	-18,907
64	23,662	-23,365
65	18,198	-17,643
66	23,610	-23,329
67	17,770	-19,028
68	25,392	-25,096
69	20,389	-19,622
70	25,758	-24,789
71	18,883	-19,074
72	23,168	-23,897
73	17,566	-18,214
74	23,145	-23,346
75	19,111	-17,767
76	24,849	-25,399
77	19,634	-20,401
78	24,863	-25,399
79	19,026	-18,837
80	24,103	-23,368
81	18,248	-17,512
82	23,053	-23,161
83	17,822	-19,170
84	25,758	-24,789
85	20,389	-19,622
86	25,008	-24,824
87	18,767	-18,956
88	24,596	-22,830
89	17,577	-18,259
90	23,558	-22,805
91	19,206	-17,920
92	25,104	-26,085
93	19,586	-20,351
94	25,054	-24,804
95	18,861	-18,730
96	23,053	-24,354
97	18,248	-17,621
98	22,534	-23,925
99	18,111	-19,218
100	26,380	-25,388

MEASURE APERTURE OF PS RING

ANNEXE III

NPUT

R10 PLANE 6,370 4760,000 V

KINUM	KI1	KI2	KI3	I1	I2	I3	I4	I5	I6	I7	I8	POT
2	20	24	=0	=0,000	22,480	=0,000	=0,000	=0,000	=0,000	=0,000	=0,000	=0,0
2	20	24	=0	=0,000	=0,000	20,480	=0,000	=0,000	=0,000	=0,000	=0,000	=0,0
2	20	34	=0	19,330	=0,000	=0,000	=0,000	=0,000	=0,000	=0,000	=0,000	=0,0
2	20	34	=0	=0,000	=0,000	=0,000	17,710	=0,000	=0,000	=0,000	=0,000	=0,0
2	20	98	=0	=0,000	=0,000	17,900	=0,000	=0,000	=0,000	=0,000	=0,000	=0,0
2	20	98	=0	=0,000	18,570	=0,000	=0,000	=0,000	=0,000	=0,000	=0,000	=0,0
2	24	34	=0	=0,000	14,860	=0,000	=0,000	=0,000	=0,000	=0,000	=0,000	=0,0
2	24	34	=0	=0,000	=0,000	16,190	=0,000	=0,000	=0,000	=0,000	=0,000	=0,0
2	24	54	=0	16,570	=0,000	=0,000	=0,000	=0,000	=0,000	=0,000	=0,000	=0,0
2	24	54	=0	=0,000	=0,000	=0,000	14,860	=0,000	=0,000	=0,000	=0,000	=0,0
2	24	54	=0	=0,000	15,230	=0,000	=0,000	=0,000	=0,000	=0,000	=0,000	=0,0
2	24	54	=0	=0,000	=0,000	18,190	=0,000	=0,000	=0,000	=0,000	=0,000	=0,0
2	24	98	=0	=0,000	16,670	=0,000	=0,000	=0,000	=0,000	=0,000	=0,000	=0,0
2	24	98	=0	=0,000	=0,000	17,140	=0,000	=0,000	=0,000	=0,000	=0,000	=0,0
2	34	64	=0	17,710	=0,000	=0,000	=0,000	=0,000	=0,000	=0,000	=0,000	=0,0
2	34	64	=0	=0,000	=0,000	=0,000	18,100	=0,000	=0,000	=0,000	=0,000	=0,0
2	34	64	=0	=0,000	19,330	=0,000	=0,000	=0,000	=0,000	=0,000	=0,000	=0,0
2	34	64	=0	=0,000	=0,000	18,100	=0,000	=0,000	=0,000	=0,000	=0,000	=0,0
2	34	84	=0	19,520	=0,000	=0,000	=0,000	=0,000	=0,000	=0,000	=0,000	=0,0
2	34	84	=0	=0,000	=0,000	=0,000	18,670	=0,000	=0,000	=0,000	=0,000	=0,0
2	54	64	=0	=0,000	18,190	=0,000	=0,000	=0,000	=0,000	=0,000	=0,000	=0,0
2	54	64	=0	=0,000	=0,000	18,190	=0,000	=0,000	=0,000	=0,000	=0,000	=0,0
2	54	84	=0	17,620	=0,000	=0,000	=0,000	=0,000	=0,000	=0,000	=0,000	=0,0
2	54	84	=0	=0,000	=0,000	=0,000	15,810	=0,000	=0,000	=0,000	=0,000	=0,0
2	64	98	=0	16,860	=0,000	=0,000	=0,000	=0,000	=0,000	=0,000	=0,000	=0,0
2	64	98	=0	=0,000	=0,000	=0,000	19,330	=0,000	=0,000	=0,000	=0,000	=0,0
2	84	98	=0	17,810	=0,000	=0,000	=0,000	=0,000	=0,000	=0,000	=0,000	=0,0
2	84	98	=0	=0,000	=0,000	=0,000	17,140	=0,000	=0,000	=0,000	=0,000	=0,0

UTPUT

N	APERT1	APERT2
1	17.567	-16.095
2	22.106	-21.273
3	16.475	-14.763
4	21.534	-19.875
5	16.192	-16.192
6	21.698	-21.231
7	17.017	-16.650
8	21.810	-23.805
9	15.888	-17.341
10	21.108	-21.933
11	14.864	-16.866
12	20.389	-21.123
13	16.192	-16.192
14	21.644	-22.121
15	16.560	-16.924
16	23.992	-21.981
17	17.052	-15.623
18	21.681	-20.865
19	16.596	-14.891
20	20.828	-20.828
21	16.133	-16.133
22	22.464	-21.980
23	16.770	-16.408
24	23.204	-22.366
25	15.720	-16.335
26	20.547	-21.350
27	14.864	-17.605
28	21.192	-22.729
29	16.016	-16.016
30	22.235	-22.725
31	16.335	-16.947
32	22.151	-22.980
33	16.424	-15.806
34	21.688	-20.154
35	17.669	-15.042
36	22.368	-21.479
37	18.708	-17.518
38	24.153	-22.616
39	17.135	-16.516
40	22.673	-21.855
41	15.835	-16.454
42	19.688	-22.249
43	15.180	-17.669
44	21.688	-23.047
45	17.582	-18.777
46	22.139	-23.805
47	16.638	-17.260
48	21.480	-22.284
49	16.424	-15.806
50	22.729	-19.850
51	17.605	-15.264

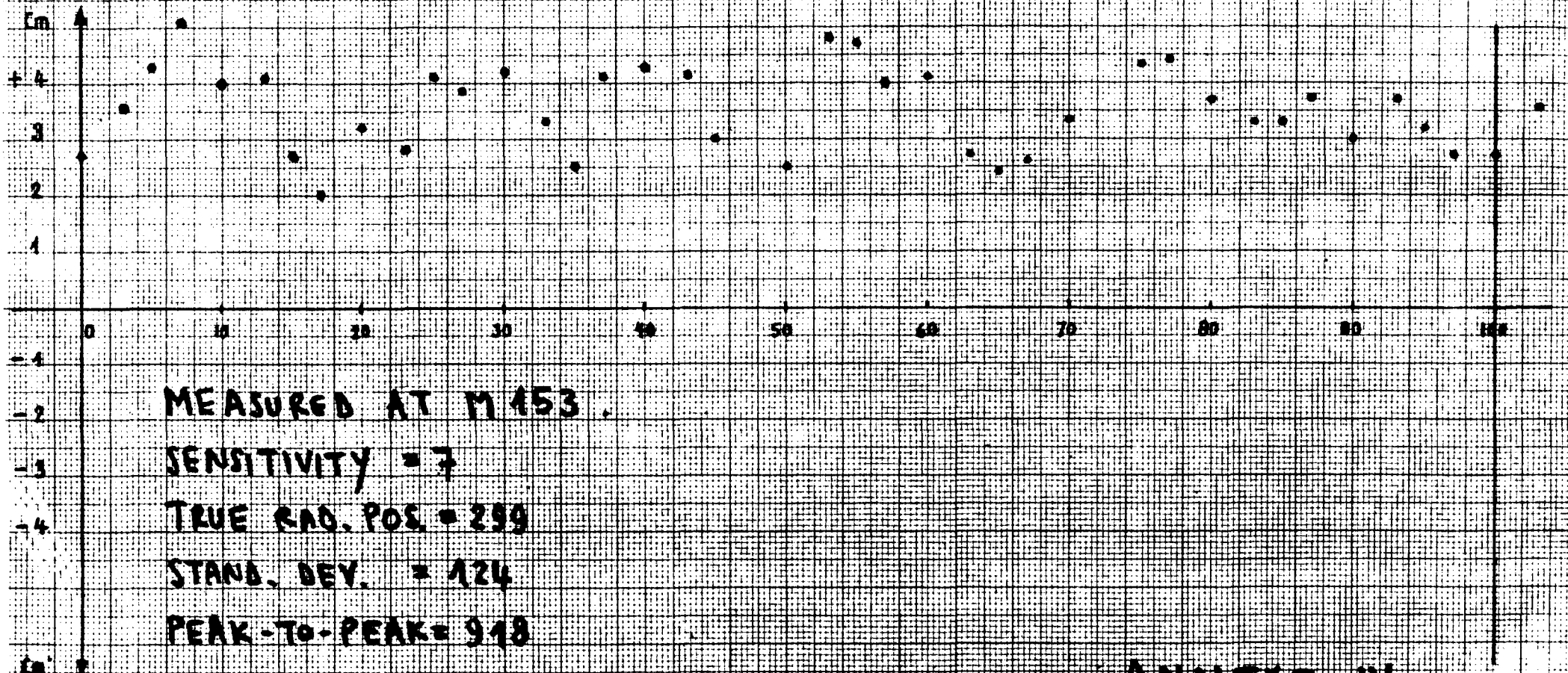
52	23,643	-22,139
53	18,777	-17,582
54	23,531	-21,581
55	17,324	-16,698
56	21,813	-21,350
57	15,720	-16,335
58	20,804	-19,878
59	15,292	-15,988
60	22,616	-24,153
61	17,518	-18,708
62	21,231	-23,173
63	16,698	-17,324
64	21,681	-21,264
65	16,185	-15,577
66	21,818	-21,818
67	16,198	-16,554
68	22,235	-22,725
69	17,826	-16,332
70	22,729	-21,480
71	17,260	-16,638
72	21,108	-21,933
73	15,606	-15,977
74	21,688	-21,688
75	16,770	-16,408
76	22,464	-22,203
77	16,362	-17,858
78	21,855	-22,673
79	16,516	-17,135
80	22,105	-21,273
81	15,840	-15,840
82	21,479	-21,479
83	16,560	-16,924
84	22,729	-22,121
85	17,826	-16,332
86	22,980	-22,151
87	16,947	-16,335
88	22,122	-19,850
89	16,016	-16,016
90	21,192	-21,192
91	17,017	-16,650
92	21,698	-23,173
93	16,243	-17,729
94	22,366	-23,204
95	16,094	-16,697
96	19,833	-21,868
97	16,133	-16,133
98	20,828	-21,196
99	16,681	-17,048
100	23,531	-21,901

RADIAL CLOSED ORBIT at 10 GeV/c

Film n° CODD

Date 10-12-75

IE11: kV	IPI1: kV	IPI2: kV	Inj time: μs	PFW: mm	BLW n°	Mag:
QUAD Foc / Def A / A	SK. QUAD Foc / Def A / A	Qr: 6.17	Qv: 6.26			



MEASURED AT M 153.

SENSITIVITY = 7

TRUE RAD. POS. = 299

STAND. DEV. = 1.24

PEAK-TO-PEAK = 9.18

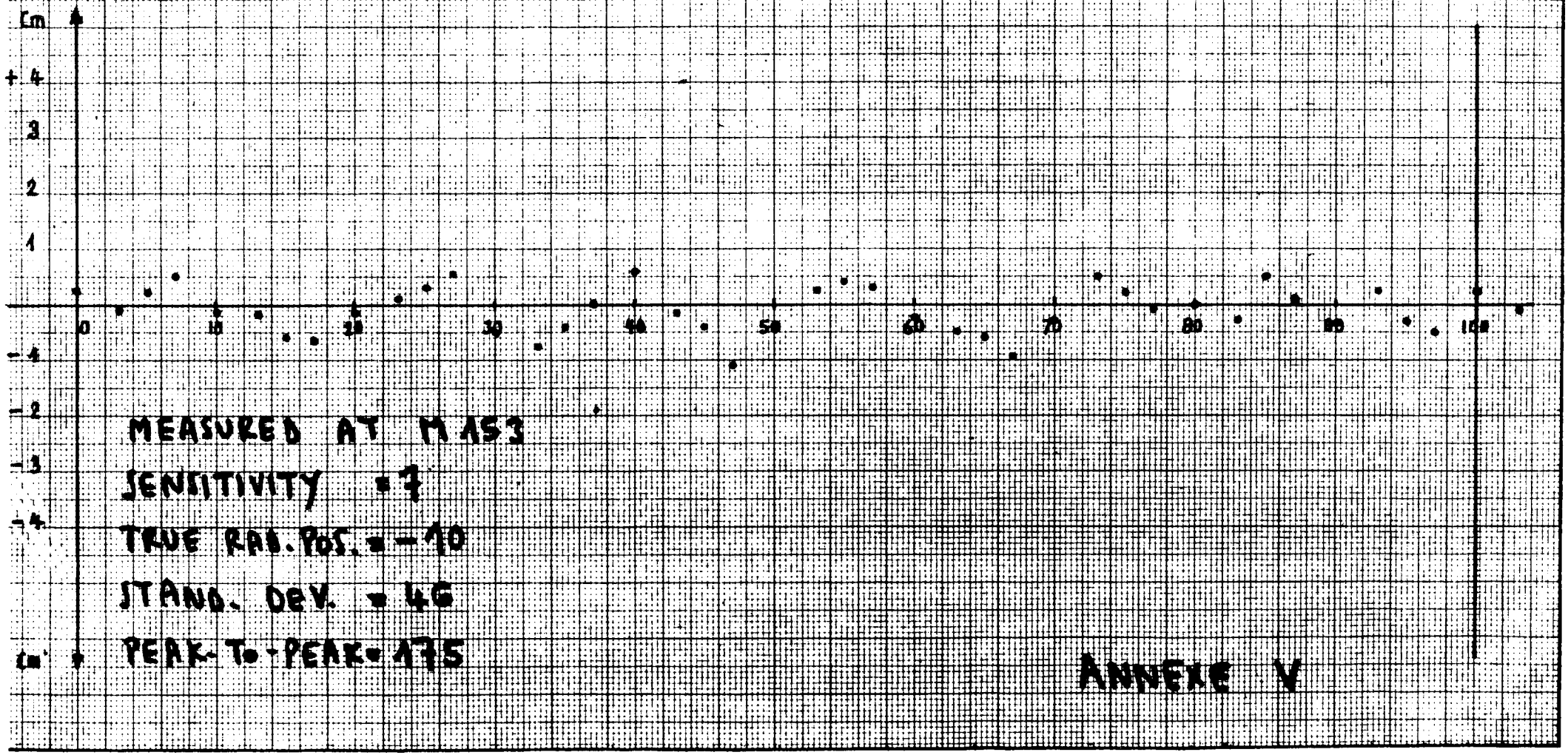
ANNEXE IV

RADIAL CLOSED ORBIT at 1.06 GeV/c

Film n° C0DD | Date 10.12.75

IE1.1: kV	IP1.1: kV	IP1.2: kV	Inj. time: μs	PFW: mm	B.L.W. n°	Mag.:

QUAD	Foc / Def	A / A	SK. QUAD	Foc / Def	A / A	Qr: 6.24	Qv: 6.32



ANNEXE V

RADIAL CLOSED ORBIT at 10 GeV/c

Film n° COLD | Date 10-12-75

IP 1: kV | IP 11: kV | IP 12: kV | Inj. time: µs | PFW: mm | B.L.W. n° | Mag:

QUAD Frac Def A A | SK. QUAD Frac Def A A | Qr: 6.29 | Qv: 6.37

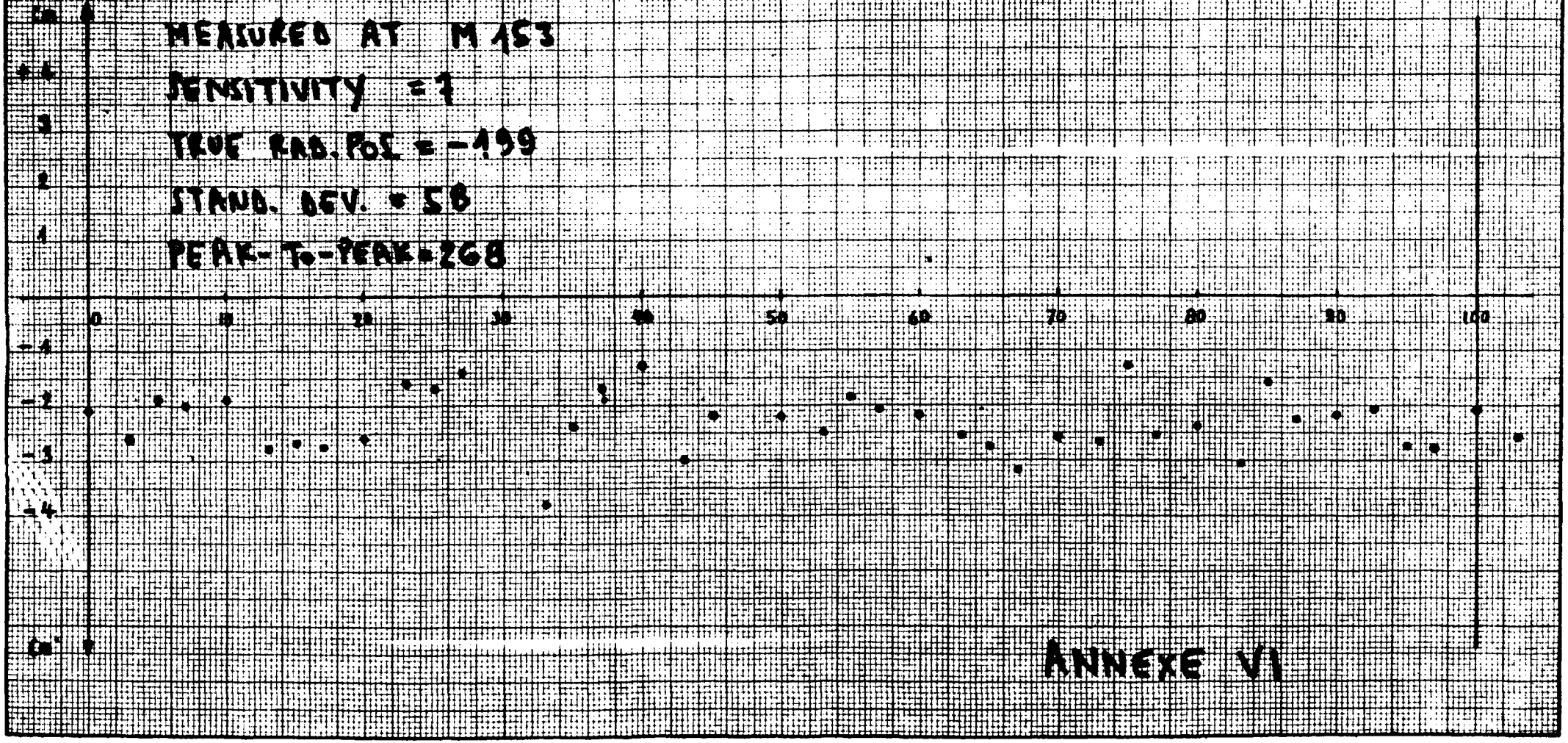
MEASURED AT M 153

SENSITIVITY = 1

TRUE RAD. POS. = -199

STAND. DEV. = 58

PEAK-TO-PEAK = 268



ANNEXE VI

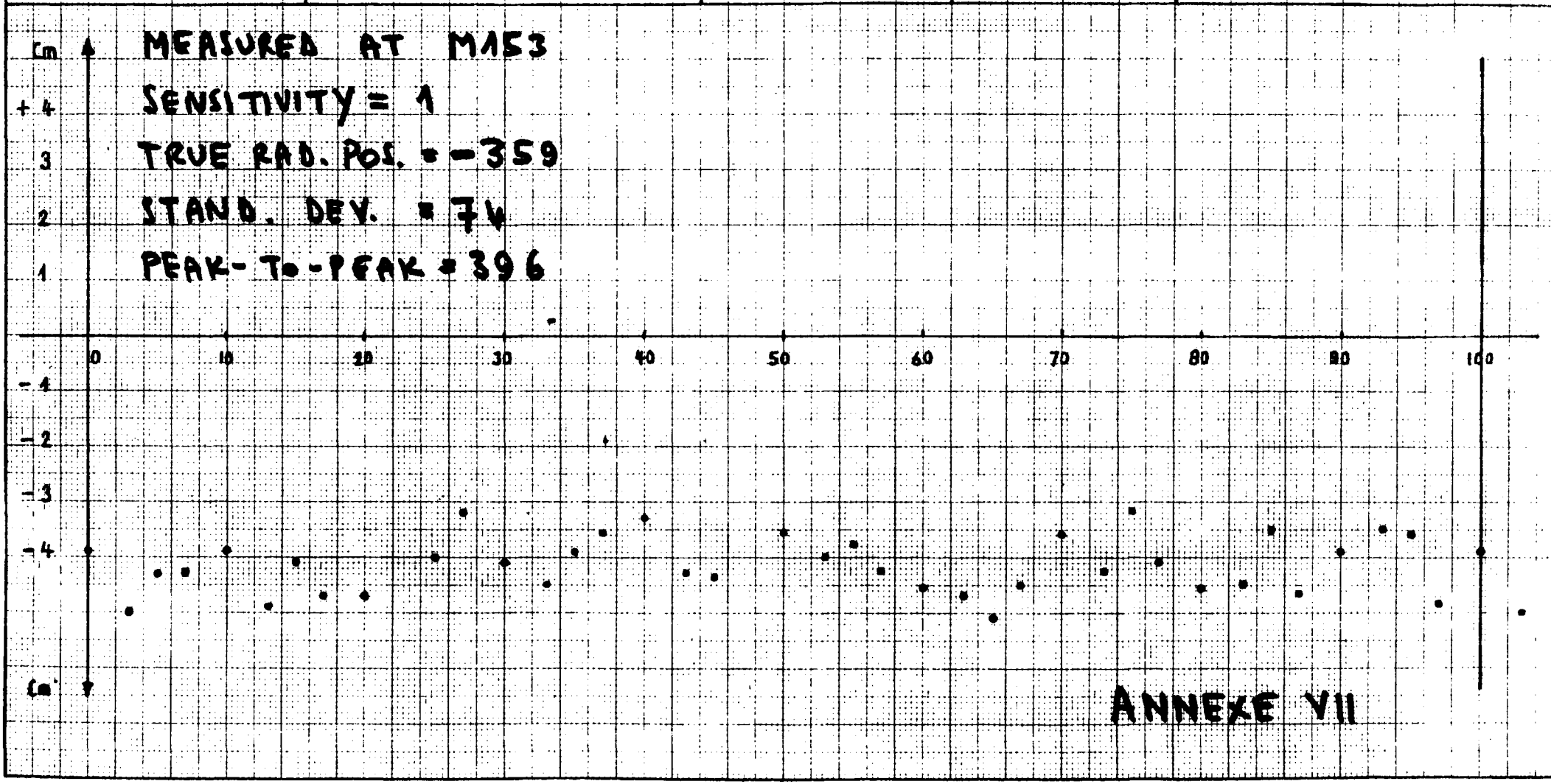
RADIAL CLOSED ORBIT at 10 GeV/c

Film CODD n° | Date 10-12-75

IE1.1: kV | IP1.1: kV | IP1.2: kV | Inj time: µs | PFW: mm. | B.L.W. n° | Mag:

QUAD Foc A / Def A | SK. QUAD Foc A / Def A | Qr: | Qv:

APRES REPARATION TIROIR R.F.



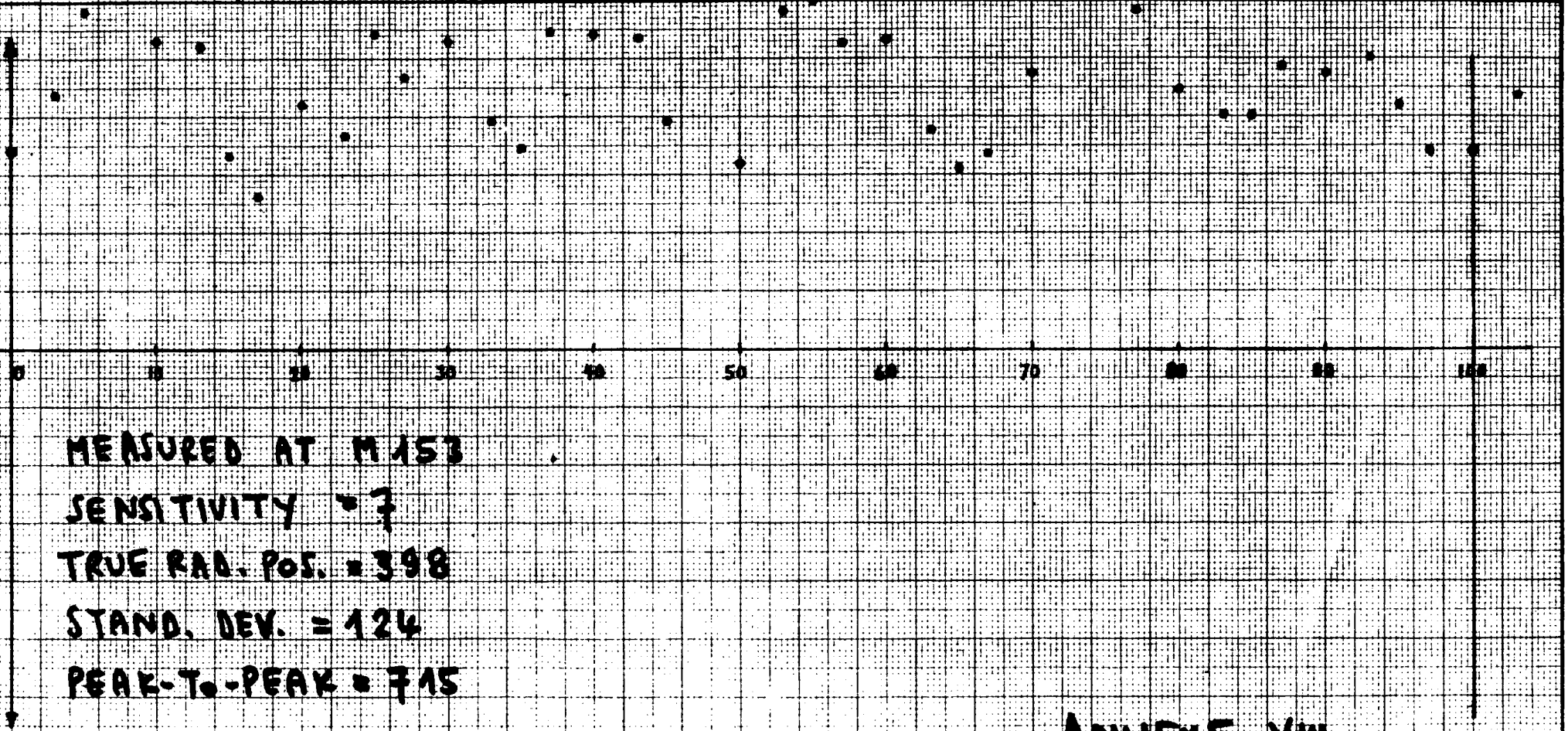
ANNEXE VII

RADIAL CLOSED ORBIT at 10 GeV/c

Film CERN n° | Date 10-12-75

IE11: kV | IP11: kV | IP12: kV | B_z time: µs | RFW: mm. | RLW n° | Mag:

QUAD	Foc / Def	A / A	SK. QUAD	Foc / Def	A / A	Qr:	Qv:



MEASURED AT M 153

SENSITIVITY = 7

TRUE RAD. POS. = 398

STAND. DEV. = 124

PEAK-TO-PEAK = 715

ANNEXE VIII