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RANGE-ENERGY TABLES

By
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March 1954

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Preface

It seems worthwhile to reissue this report in the face of later, more correct work because of the convenience of the graphical presentations of the data for rough estimation. This has proven particularly useful for experimentalists although the results are in error by several percent.

For more precise values, based on the best current experiments, the user should refer to three articles by R. M. Sternheimer:

"Range-Energy Relations for Protons in Be, C, Al, Cu, Pb, and Air", Phys. Rev. 115 137 (1959).

"Range Straggling of Charged Particles in Be, C, Al, Cu, Pb, and Air", Phys. Rev. 117 485 (1960).

"Range-Energy Relations for Protons in Various Substances", Phys. Rev. 118 1045 (1960).

Walter Aron
Livermore, California
July 7, 1960

RANGE-ENERGY TABLES

Marvin Rich and Richard Madey

Radiation Laboratory, Department of Physics
University of California, Berkeley, California
March, 1954

INTRODUCTION

The tables and graphs of this publication are essentially an expansion of the "Range-Energy Curves" of Aron, Hoffman, and Williams (AECU-663). The original work of Aron et al is extended to include pions, protons, deuterons, tritons, and He^3 particles in selected absorber elements and in some compounds that are useful either as target materials or as scintillating materials. This extension is an outgrowth of needs that arose during the course of certain experiments that have been carried on for the past several years at the University of California Radiation Laboratory at Berkeley. Some of the work was done in a random fashion as needed chiefly for pion production experiments with scintillation counters. It seemed worthwhile to unify and complete this work for its utilitarian value to experimenters in high-energy physics, who have found similar needs.

The stopping media included in this publication are Be, C, Al, Cu, Pb, H_2, D_2, air, CH, CH_2, CD_2, H_2O, D_2O, plexiglass ($C_5H_8O_2$) trans-stilbene ($C_{14}H_{12}$), and phenyl-cyclo-hexane ($C_{12}H_{16}$). The proton range-energy data for each element except aluminum were taken from Aron et al; that for aluminum from the article by J. H. Smith, Phys. Rev. 11, 32 (1947).

If the energy loss $-\frac{dT}{dx}$ has the same velocity dependence for different particles, then the range in a given absorber is given by $R = \frac{M}{Z^2} F(v)$, where R is the range, M the mass, and Z the charge of the particle, and where F(v) is some function of the velocity of the particle. Two or more different particles moving in a given absorber will have the same F(v) if they have the same value of $\frac{T}{M}$, where T is the kinetic energy. Thus, for a singly charged particle of mass, M, the range and the energy loss in a given medium was obtained from that for protons in this medium by the relations

$$T = \frac{M}{M_{proton}} \quad T_{proton} = \frac{1}{r} \quad T_{proton} \quad r \equiv \frac{M_{proton}}{M},$$

$$R(T) = \frac{M}{M_{proton}} \quad R_{proton} \left(T_{proton}\right) = \frac{1}{r} \quad R_{proton} \left(r\ T_{proton}\right),$$

$$\left(\frac{dT}{dx}\right)_{T = \frac{1}{r} \quad T_{proton}} = \left(\frac{dT}{dx}\right)_{T_{proton}},$$

For doubly charged particles, the relations are

$$T = \frac{M}{M_{proton}} \quad T_{proton} = \frac{1}{r} \quad T_{proton} \quad r \equiv \frac{M_{proton}}{M},$$

$$R(T) = \frac{1}{4r} \quad R_{proton} \ (rT),$$

$$\left(\frac{dT}{dx}\right)_{T = \frac{1}{r} \quad T_{proton}} = 4\left(\frac{dT}{dx}\right)_{T_{proton}},$$

The stopping power of molecular compounds for charged particles was obtained by assuming that each individual atom acts independently of all others in stopping the incident charged particle.[1] Since chemical binding energies of atoms bound in molecules are very small in comparison with the energy levels of the electrons in the absorber, the shifts in the energy levels should be small compared to the energies of the atomic levels themselves; thus, the effects of chemical binding on the stopping power should be small and it should be a good approximation to add atomic stopping powers. Proton ranges were obtained by numerical integration; the starting range was obtained first by extrapolating smoothly to zero the curve of $d\xi/dT$ versus T, and then by integrating this curve for the molecular compound in question. The tables for the other particles were obtained as explained above.

The masses used in the various calculations are listed on page 8, except in the cases of pions in carbon, aluminum, and copper, where the pion mass was taken in these very early caculations as 276 M_e.

In order to avoid possible confusion or error in using this report, the following facts should be noted. First, the unit for the rate of energy loss in these tables and graphs are Mev per gram-cm^{-2} and is denoted by $-\frac{dT}{d\xi} = -\frac{1}{\rho}\frac{dT}{dx}$, where ξ is the thickness in grams per cm^2, and x is the thickness in cm, and ρ is the density in grams per cm^3. Second, for each range-energy graph, note that the number on the horizontal range scale must be multiplied by the proper factor of ten, given at the right hand end of that curve, to obtain the actual range. Finally, as explained in the Aron report (AECU-663), the values computed have been the rate of energy loss and range corresponding to a loss of energy by ionization only. There are a number of neglected effects such as nuclear interactions, meson production, bremsstrahlung, and polarization effects, which will play an increasingly important role at higher energies. In the tables of Aron, et al, the mean excitation potential, I, of the atoms in the absorber was chosen to be 17.5 ev for hydrogen and 44 ev for helium, in accordance with the theoretical calculation of Williams[2]; for all other elements, the mean excitation potential was taken proportional to Z, in accordance with Bloch's theory[3], which is based on the Fermi-Thomas model of the atom with several electrons. The value of the Bloch constant I/Z was taken to be 11.5 ev in accordance with measurements by Wilson[4]. Recent measurements[5-11] of the mean excitation potential and of ranges have indicated that this value may be considerably in error. For example, the various measurements of the mean excitation potential, I, of Be seem to be between 59 ev and 64 ev, whereas the value used in the calculations for the Aron report is 46 ev. Thus, although the tables in this report are calculated on the basis of the Aron report (AECU-663) to four significant figures, the tabulated values may differ from the experimental values by several percent. The order of magnitude of the discrepancies between the measured range, R_M, and the interpolated tabulated range, R_T, for protons at various energies and absorbers may be seen from Table A. Another estimate of the errors in the tabulated values can be obtained by comparing them directly with some later tabulated values; these newer tabulated values were recalculated by Aron[12] with values of the mean excitation potential, I, that were obtained by Bakker and Segrè[6] and by Mather and Segrè.[7] This comparison is made in Table B through Table E for Be, C, Cu, and Pb as a function of proton energy. The manner of graphical presentation of the range-energy curves is due to Dr. W. J. Frank.

We wish to thank Dr. W. A. Aron and Dr. H. Bichsel for their interest and constructive criticism of the introduction to this work; to acknowledge the work done by Mr. Richard Mitchell in performing the numerical integrations; and finally, to express our gratitude to Dr. B. J. Moyer for his support of this program.

This work was performed under the auspices of the Atomic Energy Commission.

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TABLE A

A comparison of the measured range, R_M, with the interpolated tabulated range, R_T, for protons at various energies in certain absorbers.

Proton Energy	Absorber	R_M	R_T	$R_M - R_T$	$\frac{R_M - R_T}{R_T}$	Reference
(Mev)		g/cm^2	g/cm^2	g/cm^2	Per-cent	
17.35	$_4$Be	0.3992	0.380	0.019	5.0	11
17.85	$_{13}$Al	0.4667	0.465	0.002	0.43	11
17.91	$_{29}$Cu	0.5887	0.580	0.009	1.5	11
18.00	$_{13}$Al	0.4470	0.469	0.022	4.7	9
35-52	$_{13}$Al	---	---	---	~1.5	8
56-76	$_{13}$Al	---	---	---	~1.0	8
73-90	$_{29}$Cu	---	---	---	~1.5	8
96-114	$_{29}$Cu	---	---	---	~1.0	8
339.7	$_4$Be	76.73	74.57	2.16	2.9	7
339.7	$_6$C	70.03	69.40	0.63	0.91	7
339.7	$_{13}$Al	79.42	79.40	0.02	0.0025	7
338.5	$_{13}$Al	78.63	78.95	-0.32	-0.40	7
337.9	$_{29}$Cu	91.84	92.72	-0.88	-0.95	7
338.5	$_{29}$Cu	91.77	93.01	-1.24	-1.3	7
339.7	$_{29}$Cu	92.69	93.51	-0.84	-0.89	7
339.7	$_{82}$Pb	124.37	127.15	-2.78	-2.2	7
338.5	$_{82}$Pb	122.76	126.45	-3.69	-2.9	7

TABLE B

The difference between the range and the energy loss of protons in beryllium with a mean excitation potential, I, of 59 ev and that with a mean excitation potential of 46 ev.

BERYLLIUM: I = 59 ev I = 46 ev

T	$\left(\frac{dT}{d\xi}\right)'$ I=59 ev	$\left(\frac{dT}{d\xi}\right)$ I = 46 ev	$\Delta \equiv \left(\frac{dT}{d\xi}\right)' - \left(\frac{dT}{d\xi}\right)$	$\Delta / \left(\frac{dT}{d\xi}\right)$	R' I=59 ev	R I=46 ev	$\Delta R \equiv R' - R$	$\frac{R' - R}{R}$
Mev	Mev/gm cm^{-2}	Mev/gm cm^{-2}	Mev/gm cm^{-2}	Per-cent	gm/cm^2	gm/cm^2	gm/cm^2	Per-cent
10	38.306	39.9217	-1.616	-4.04	.14521	.13888	0.00633	4.60
20	21.694	22.514	-0.820	-3.65	.50819	.488079	0.02011	3.95
50	10.295	10.638	-0.343	-3.22	2.6816	2.5882	0.0934	3.61
100	6.0090	6.1938	-0.1848	-2.98	9.3342	9.0360	0.2982	3.30
200	3.6948	3.8005	-0.1057	-2.77	31.493	30.561	0.932	3.06
500	2.2509	2.3100	-0.0591	-2.56	142.40	138.54	3.94	2.85
1000	1.8121	1.8564	-0.0442	-2.38	396.61	386.504	10.11	2.66
2000	1.6755	1.7132	-0.0377	-2.25	978.98	955.61	23.37	2.44
5000	1.7407	1.7754	-0.0347	-1.95	2746.6	2686.8	59.8	2.21
10000	1.8776	1.9118	-0.0342	-1.79	5505.2	5394.2	111.0	2.06

TABLE C

The difference between the range and the energy loss of protons in carbon with a mean excitation potential, I, of 74.44 ev and that with a mean excitation potential of 69 ev.

CARBON: I = 74.44 ev I = 69 ev

T	$\left(\frac{dT}{d\xi}\right)'$ I=74.44 ev	$\left(\frac{dT}{d\xi}\right)$ I=69 ev	$\Delta \equiv \left(\frac{dT}{d\xi}\right)' - \left(\frac{dT}{d\xi}\right)$	$\frac{\Delta}{\left(\frac{dT}{d\xi}\right)}$	R' I=74.44 ev	R I=69 ev	$\Delta_R \equiv$ R'-R	$\frac{R'-R}{R}$
Mev	Mev/gm cm^{-2}	Mev/gm cm^{-2}	Mev/gm cm^{-2}	Per-cent	gm/cm^2	gm/cm^2	gm/cm^2	Per-cent
10	41.452	42.007	-0.555	-1.32	0.13488	0.13294	0.00194	1.47
20	23.575	23.856	-0.281	-1.18	0.46943	0.46336	0.00607	1.31
50	11.235	11.353	-0.118	-1.04	2.4638	2.4360	0.0278	1.14
100	6.5747	6.6382	-0.0635	-0.96	8.5499	8.4620	0.0879	1.05
200	4.0508	4.0873	-0.0365	-0.89	28.777	28.545	0.232	0.82
500	2.4736	2.4939	-0.0203	-0.81	129.79	128.65	1.14	0.89
1000	1.9948	2.0100	-0.0152	-0.76	360.89	357.94	2.95	0.82
2000	1.8477	1.8607	-0.0130	-0.70	889.38	882.62	6.76	0.77
5000	1.9243	1.9363	-0.0120	-0.62	2489.9	2472.7	17.2	0.70
10000	2.0793	2.0910	-0.0117	-0.56	4983.0	4951.0	32.0	0.65

TABLE D

The difference between the range and the energy loss of protons in copper with a mean excitation potential, I, of 309.9 ev and that with a mean excitation potential of 333.5 ev.

COPPER: I = 309.9 ev I = 333.5 ev

T	$\left(\frac{dT}{d\xi}\right)'$ I=309.9 ev	$\left(\frac{dT}{d\xi}\right)$ I=333.5 ev	$\Delta \equiv \left(\frac{dT}{d\xi}\right)' - \left(\frac{dT}{d\xi}\right)$	$\frac{\Delta}{\left(\frac{dT}{d\xi}\right)}$	R' I=309.9 ev	R I=333.5 ev	$\Delta_R \equiv R'-R$	$\frac{R'-R}{R}$
Mev	Mev/gm cm^{-2}	Mev/gm cm^{-2}	Mev/gm cm^{-2}	Per-cent	gm/cm^2	gm/cm^2	gm/cm^2	Per-cent
10	28.29	27.80	0.49	1.76	0.2103	0.2134	-0.0031	-1.45
20	16.67	16.42	0.23	1.40	0.6898	0.7007	-0.0109	-1.54
50	8.223	8.119	0.004	0.049	3.447	3.495	-0.049	-1.41
100	4.908	4.852	0.056	1.15	11.663	11.810	-0.15	-1.27
200	3.072	3.040	0.032	1.05	38.50	38.50	-0.44	-1.13
500	1.909	1.891	0.018	0.95	170.28	172.02	-1.74	-1.01
1000	1.558	1.545	0.013	0.84	467.64	472.07	-4.43	-0.94
2000	1.463	1.452	0.011	0.75	1139.3	1149.2	-9.9	-0.86
5000	1.551	1.540	0.011	0.71	3140.7	3165.1	-24.4	-0.78
10000	1.695	1.685	0.010	0.59	6214.2	6258.5	-44.3	-0.71

TABLE E

The difference between the range and the energy loss of protons in lead with a mean excitation potential, I, of 810.79 ev and that with a mean excitation potential of 943 ev.

LEAD: I = 810.79 ev I = 943 ev

T	$\left(\frac{dT}{d\xi}\right)'$ I=810.79 ev	$\left(\frac{dT}{d\xi}\right)$ I= 943 ev	$\Delta \equiv \left(\frac{dT}{d\xi}\right)' - \left(\frac{dT}{d\xi}\right)'$	$\frac{\Delta}{\left(\frac{dT}{d\xi}\right)}$	R' I=810.79 ev	R I=943 ev	$\Delta_R \equiv$ R' - R	$\frac{R'-R}{R}$
Mev	Mev/gm cm^{-2}	Mev/gm cm^{-2}	Mev/gm cm^{-2}	Per-cent	gm/cm^2	gm/cm^2	gm/cm^2	Per-cent
10	19.082	18.207	0.875	4.58	0.32755	0.34055	-0.01300	-3.82
20	11.659	11.215	0.444	3.81	1.0225	1.0652	-0.0427	-4.00
50	5.9480	5.7620	0.1860	3.13	4.8791	5.0560	-0.1769	-3.50
100	3.6198	3.5197	0.1001	2.76	16.100	16.612	-0.512	-3.08
200	2.3001	2.2428	0.0573	2.49	52.151	53.624	-1.473	-2.85
500	1.4522	1.4202	0.0320	2.21	226.39	231.98	-5.59	-2.41
1000	1.1994	1.1755	0.0239	2.00	614.69	628.56	-13.87	-2.21
2000	1.1390	1.1185	0.0205	1.80	1481.7	1512.2	-30.5	-2.02
5000	1.2251	1.2062	0.0189	1.54	4030.5	4103.6	-73.1	-1.78
10000	1.3529	1.3344	0.0185	1.37	7898.8	8028.5	-129.7	-1.62

MASSES OF VARIOUS PARTICLES

1.	Mass of proton	=	m_p	=	938.17 Mev.	(1)
2.	Mass of neutron	=	m_n	=	939.43 Mev.	(1)
3.	Mass of deuteron	=	m_o	=	1875.38 Mev.	(2)
4.	Mass of H^3	=	m_T	=	2808.54 Mev.	(3)
5.	Mass of He^3	=	m_{He}	=	2808.04 Mev.	(3)
6.	Mass of positive pion	=	m_{π^+}	=	139.71 Mev.	(4)

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(1) Physical Constants UCRL-422 (1949)

(2) From Snow: Phys. Rev. 78, 21 the binding energy of deuterium is 2.225 Mev. Thus

$$m_o = m_p + m_n - 2.225 = 1875.38 \text{ Mev.}$$

(3) From Blatt and Weisskoff: Theoretical Nuclear Physics, page 204 the binding energies of H^3 and He^3 are

$$B_{H^3} = 8.492 \text{ Mev.} \quad \text{and} \quad B_{He^3} = 7.728 \text{ Mev.}$$

Thus

$$m_T = m_p + 2m_n - B_{H^3} = 2808.54 \text{ Mev.}$$

$$m_{He} = 2m_p + m_n - B_{He^3} = 2808.04 \text{ Mev.}$$

(4) From W. Barkas (June 1953):

$$m_{\pi^+} = 273.5 \pm 1.2 \text{ electron masses}$$

I. ENERGY AND MOMENTUM TABLES

Kinetic Energy Range: 10^{1} Mev. to 10^{4} Mev.

ENERGY AND MOMENTUM DATA FOR PIONS
MASS 139.71 MEV

T Mev	E Mev	CP Mev	β	γ	$\frac{1}{\beta C} \times 10^2$ mμ sec/cm
10	149.71	53.7978	.35935	1.07158	9.2829
12	151.71	59.1358	.38980	1.08589	8.5577
15	154.71	66.4553	.42955	1.10736	7.7658
20	159.71	77.3848	.48453	1.14315	6.8846
25	164.71	87.2382	.52965	1.17894	6.2981
30	169.71	96.3462	.56771	1.21473	5.8759
35	174.71	104.903	.60044	1.25052	5.5556
40	179.71	113.035	.62898	1.28631	5.3035
45	184.71	120.826	.65414	1.32210	5.0995
50	189.71	128.340	.67651	1.35788	4.9309
60	199.71	142.707	.71457	1.42946	4.6683
70	209.71	156.395	.74577	1.50104	4.4730
80	219.71	169.569	.77178	1.57261	4.3222
90	229.71	182.340	.79378	1.64419	4.2024
100	239.71	194.787	.81259	1.71577	4.1051
120	259.71	218.930	.84298	1.85892	3.9572
150	289.71	253.797	.87604	2.07365	3.8078
200	339.71	309.651	.91152	2.43154	3.6596
250	389.71	363.806	.93353	2.78942	3.5733
300	439.71	416.924	.94818	3.14730	3.5181
350	489.71	469.358	.95844	3.50519	3.4804
400	539.71	521.314	.96592	3.86307	3.4535
450	589.71	572.922	.97153	4.22096	3.4336
500	639.71	624.268	.97586	4.57884	3.4183
600	739.71	726.397	.98200	5.29461	3.3969

T Mev	E Mev	P Mev - cm	β	γ	$\frac{1}{\beta C}$ mμ sec/cm
700	839.71	828.006	.98606	6.01038	3.3830
800	939.71	929.266	.98888	6.72615	3.3733
900	1039.71	1030.281	.99093	7.44192	3.3663
1000	1139.71	1131.115	.99246	8.15768	3.3612
1200	1339.71	1332.405	.99455	9.58922	3.3541
1500	1639.71	1633.747	.99636	11.7365	3.3480
2000	2139.71	2135.144	.99787	15.3154	3.3429
2500	2639.71	2636.010	.99860	18.8942	3.3405
3000	3139.71	3136.600	.99901	22.4731	3.3391
3500	3639.71	3637.028	.99926	26.0519	3.3383
4000	4139.71	4137.352	.99943	29.6307	3.3377
4500	4639.71	4637.606	.99955	33.2096	3.3373
5000	5139.71	5137.811	.99963	36.7884	3.3371
6000	6139.71	6138.120	.99974	43.9461	3.3367
7000	7139.71	7138.343	.99981	51.1039	3.3365
8000	8139.71	8138.511	.99985	58.2615	3.3363
9000	9139.71	9138.642	.99988	65.4192	3.3362
10000	10139.71	10138.747	.99991	72.5768	3.3361

ENERGY AND MOMENTUM DATA FOR PROTONS

MASS 938.17 MEV

T Mev	E Mev	P Mev	β	γ	$\frac{1}{\beta C}$ mμ sec/cm
10	948.17	137.344	0.14485	1.01066	23.029
12	950.17	150.533	0.15843	1.01279	21.056
15	953.17	168.434	0.17671	1.01599	18.877
20	958.17	194.748	0.20325	1.02132	16.412
25	963.17	218.022	0.22636	1.02665	14.737
30	968.17	239.145	0.24701	1.03198	13.505
35	973.17	258.644	0.26577	1.03731	12.551
40	978.17	276.864	0.28304	1.04264	11.786
45	983.17	294.041	0.29907	1.04797	11.154
50	988.17	310.350	0.31407	1.05330	10.621
60	998.17	340.852	0.34148	1.06395	9.7687
70	1008.17	369.112	0.36612	1.07461	9.1113
80	1018.17	395.610	0.38855	1.08527	8.5853
90	1028.17	420.679	0.40915	1.09593	8.1531
100	1038.17	444.560	0.42822	1.10659	7.7900
120	1058.17	489.449	0.46254	1.12791	7.2120
150	1088.17	551.318	0.50665	1.15989	6.5841
200	1138.17	644.413	0.56618	1.21318	5.8918
250	1188.17	729.099	0.61363	1.26648	5.4362
300	1238.17	808.024	0.65260	1.31977	5.1116
350	1288.17	882.734	0.68526	1.37307	4.8679
400	1338.17	954.220	0.71308	1.42636	4.6781
450	1388.17	1023.158	0.73706	1.47966	4.5259
500	1438.17	1090.033	0.75793	1.53295	4.4012
600	1538.17	1218.936	0.79246	1.63954	4.2094

ENERGY AND MOMENTUM DATA FOR PROTONS

MASS 938.17 MEV (Sheet 2)

T Mev	E Mev	P Mev	β	γ	$\frac{1}{\beta C}$ mμ sec/cm
700	1638.17	1342.922	0.81977	1.74613	4.0692
800	1738.17	1463.240	0.84183	1.85272	3.9626
900	1838.17	1580.730	0.85995	1.95931	3.8791
1000	1938.17	1695.978	0.87504	2.06591	3.8121
1200	2138.17	1921.356	0.89860	2.27909	3.7123
1500	2438.17	2250.447	0.92301	2.59886	3.6141
2000	2938.17	2784.364	0.94765	3.13181	3.5201
2500	3438.17	3307.696	0.96205	3.66476	3.4674
3000	3938.17	3824.790	0.97121	4.19772	3.4347
3500	4438.17	4337.879	0.97740	4.73067	3.4129
4000	4938.17	4848.233	0.98179	5.26362	3.3977
4500	5438.17	5356.634	0.98501	5.79657	3.3866
5000	5938.17	5863.591	0.98744	6.32953	3.3782
6000	6938.17	6874.448	0.99082	7.3954	3.3667
7000	7938.17	7882.536	0.99299	8.4613	3.3594
8000	8938.17	8888.797	0.99448	9.5272	3.3543
9000	9938.17	9893.789	0.99553	10.5931	3.3508
10000	10938.17	10897.862	0.99631	11.6591	3.3482

ENERGY AND MOMENTUM DATA FOR DEUTERONS

MASS 1875.38 MEV

T Mev	E Mev	P Mev	β	γ	$\frac{1}{\beta C}$ mμ sec/cm
10	1885.38	193.9268	0.10286	1.005332	32.430
12	1887.38	212.4928	0.11259	1.006399	29.628
15	1890.38	237.6687	0.12573	1.007998	26.53
20	1895.38	274.6183	0.14489	1.010665	23.023
25	1900.38	307.2361	0.16167	1.013331	20.633
30	1905.38	336.7830	0.17675	1.015997	18.873
35	1910.38	364.0077	0.19054	1.018663	17.507
40	1915.38	389.3975	0.20330	1.02133	16.408
45	1920.38	413.2907	0.21521	1.02400	15.501
50	1925.38	435.9335	0.22641	1.02666	14.734
60	1935.38	478.1691	0.24707	1.03199	13.501
70	1945.38	517.1588	0.26584	1.03733	12.548
80	1955.38	553.5890	0.28311	1.04266	11.788
90	1965.38	587.9357	0.29915	1.04799	11.151
100	1975.38	620.5449	0.31414	1.05332	10.619
120	1995.38	681.5359	0.34156	1.06399	9.7664
150	2025.38	764.9274	0.37767	1.07998	8.8327
200	2075.38	888.9049	0.42831	1.10665	7.7883
250	2125.38	1000.0950	0.47055	1.13331	7.0892
300	2175.38	1102.374	0.50675	1.15997	6.5828
350	2225.38	1198.026	0.53835	1.18663	6.1964
400	2275.38	1288.528	0.56629	1.21329	5.8907
450	2325.38	1374.897	0.59126	1.23995	5.6419
500	2375.38	1457.869	0.61374	1.26661	5.4353
600	2475.38	1615.691	0.65270	1.31994	5.1108

ENERGY AND MOMENTUM DATA FOR DEUTERONS

MASS 1875.38 MEV (Sheet 2)

T Mev	E Mev	P Mev	β	γ	$\frac{1}{\beta C}$ mμ sec/cm
700	2575.38	1765.087	0.68537	1.37326	4.8671
800	2675.38	1908.038	0.71318	1.42658	4.6774
900	2775.38	2045.895	0.73716	1.47990	4.5253
1000	2875.38	2179.624	0.75803	1.53323	4.4007
1200	3075.38	2437.399	0.79255	1.63987	4.2089
1500	3375.38	2806.446	0.83145	1.79984	4.0121
2000	3875.38	3391.389	0.87511	2.06645	3.8119
2500	4375.38	3953.087	0.90348	2.33306	3.6921
3000	4875.38	4500.253	0.92306	2.59968	3.6139
3500	5375.38	5037.624	0.93717	2.86629	3.5595
4000	5875.38	5568.037	0.94769	3.13290	3.5199
4500	6375.38	6093.309	0.95576	3.39951	3.4902
5000	6875.38	6614.666	0.96208	3.66613	3.4673
6000	7875.38	7648.827	0.97123	4.19935	3.4347
7000	8875.38	8674.982	0.97742	4.73258	3.4128
8000	9875.38	9695.673	0.98180	5.26580	3.3976
9000	10875.38	10712.462	0.98502	5.79903	3.3865
10000	11875.38	11726.363	0.98745	6.33225	3.3782

ENERGY AND MOMENTUM DATA FOR H^3

MASS 2808.54 MEV

T Mev	E Mev	P Mev	β	γ	$\frac{1}{\beta C}$ mμ sec/cm
10	2818.54	237.2147	0.084163	1.003561	39.636
12	2820.54	259.9019	0.092146	1.004273	36.201
15	2823.54	290.6565	0.10294	1.005341	32.405
20	2828.54	335.7702	0.11871	1.007121	28.101
25	2833.54	375.5689	0.13254	1.008901	25.168
30	2838.54	411.5974	0.14500	1.010682	23.006
35	2843.54	444.7728	0.15642	1.012462	21.326
40	2848.54	475.6923	0.16700	1.01424	19.975
45	2853.54	504.7708	0.17689	1.01602	18.858
50	2858.54	532.3101	0.18622	1.01780	17.913
60	2868.54	583.6307	0.20346	1.02136	16.395
70	2878.54	630.9482	0.21919	1.02492	15.219
80	2888.54	675.1047	0.23372	1.02848	14.273
90	2898.54	716.6849	0.24726	1.03205	13.491
100	2908.54	756.1137	0.25996	1.03561	12.832
120	2928.54	829.7286	0.28333	1.04273	11.774
150	2958.54	930.0871	0.31437	1.05341	10.611
200	3008.54	1078.6176	0.35852	1.07121	9.3044
250	3058.54	1211.103	0.39597	1.08901	8.4244
300	3108.54	1332.338	0.42861	1.10682	7.7829
350	3158.54	1445.157	0.45754	1.12462	7.2908
400	3208.54	1551.397	0.48352	1.14242	6.8990
450	3258.54	1652.327	0.50708	1.16023	6.5785
500	3308.54	1748.868	0.52859	1.17803	6.3108
600	3408.54	1931.385	0.56663	1.21363	5.8871

ENERGY AND MOMENTUM DATA FOR H^3

MASS 2808.54 MEV (Sheet 2)

T Mev	E Mev	P Mev	β	γ	$\frac{1}{\beta C}$ mμ sec/cm
700	3508.54	2102.845	0.59935	1.24924	5.5657
800	3608.54	2265.759	0.62789	1.28485	5.3127
900	3708.54	2421.853	0.65305	1.32045	5.1081
1000	3808.54	2572.369	0.67542	1.35606	4.9389
1200	4008.54	2860.157	0.71352	1.42727	4.6752
1500	4308.54	3267.357	0.75834	1.53409	4.3988
2000	4808.54	3903.096	0.81170	1.71211	4.1097
2500	5308.54	4504.742	0.84858	1.89014	3.9311
3000	5808.54	5084.411	0.87533	2.06817	3.8109
3500	6308.54	5648.874	0.89543	2.24620	3.7254
4000	6808.54	6202.283	0.91096	2.42423	3.6619
4500	7308.54	6747.359	0.92321	2.60226	3.6133
5000	7808.54	7285.973	0.93308	2.78028	3.5751
6000	8808.54	8348.801	0.94781	3.13634	3.5195
7000	9808.54	9397.849	0.95813	3.49240	3.4816
8000	10808.54	10437.272	0.96565	3.84846	3.4545
9000	11808.54	11469.687	0.97130	4.20451	3.4344
10000	12808.54	12496.832	0.97566	4.56067	3.4190

ENERGY AND MOMENTUM DATA FOR He^3

MASS 2808.04 MEV

T Mev	E Mev	P Mev	β	γ	$\frac{1}{\beta C}$ mμ sec/cm
10	2818.04	237.1936	0.084170	1.0035612	39.632
12	2820.04	259.8788	0.92154	1.004273	36.198
15	2823.04	290.6307	0.10295	1.005342	32.402
20	2828.04	335.7404	0.11872	1.007122	28.098
25	2833.04	375.5356	0.13256	1.008903	25.165
30	2838.04	411.5609	0.14502	1.01068	23.002
35	2843.04	444.7334	0.15643	1.01246	21.325
40	2848.04	475.6503	0.16701	1.01424	19.974
45	2853.04	504.7263	0.17691	1.01603	18.856
50	2858.04	532.2631	0.18623	1.01781	17.912
60	2868.04	583.5793	0.20348	1.02137	16.394
70	2878.04	630.8927	0.21921	1.02493	15.217
80	2888.04	675.0455	0.23374	1.02849	14.271
90	2898.04	716.6221	0.24728	1.03205	13.490
100	2908.04	756.0476	0.25999	1.03561	12.831
120	2928.04	829.6563	0.28335	1.04273	11.773
150	2958.04	930.0065	0.31440	1.05342	10.610
200	3008.04	1078.525	0.35855	1.07122	9.3036
250	3058.04	1211.000	0.39601	1.08903	8.4236
300	3108.04	1332.225	0.42864	1.10684	7.7823
350	3158.04	1445.036	0.45757	1.12464	7.2903
400	3208.04	1551.26	0.48356	1.14245	6.8985
450	3258.04	1652.191	0.50711	1.16025	6.5781
500	3308.04	1748.725	0.52863	1.17806	6.3103
600	3408.04	1931.230	0.56667	1.21367	5.8867

ENERGY AND MOMENTUM DATA FOR He^3

MASS 2808.04 MEV (Sheet 2)

T Mev	E Mev	P Mev	β	γ	$\frac{1}{\beta C}$ mμ sec/cm
700	3508.04	2102.678	0.59939	1.24928	5.5654
800	3608.04	2265.583	0.62793	1.28490	5.3124
900	3708.04	2421.667	0.65309	1.32051	5.1077
1000	3808.04	2572.174	0.67546	1.35612	4.9386
1200	4008.04	2859.947	0.71355	1.42734	4.6750
1500	4308.04	3267.127	0.75838	1.53418	4.3986
2000	4808.04	3902.840	0.81173	1.71224	4.1095
2500	5308.04	4504.464	0.84861	1.89030	3.9309
3000	5808.04	5084.116	0.87536	2.06836	3.8108
3500	6308.04	5648.564	0.89545	2.24642	3.7253
4000	6808.04	6201.961	0.91098	2.42448	3.6618
4500	7308.04	6747.026	0.92323	2.60254	3.6132
5000	7808.04	7285.630	0.93309	2.78060	3.5750
6000	8808.04	8348.442	0.94782	3.13672	3.5195
7000	9808.04	9397.476	0.95814	3.49284	3.4816
8000	10808.04	10436.888	0.96566	3.84896	3.4544
9000	11808.04	11469.295	0.97131	4.20508	3.4344
10000	12808.04	12496.431	0.97567	4.56120	3.4190

ENERGY AND MOMENTUM DATA FOR ALPHA PARTICLES

MASS 3727.07 MEV

T Mev	E Mev	P Mev	β	$\frac{1}{\beta C}$ mμ sec/cm	γ
10	3737.07	273.2060	0.073107	45.629	1.00268
12	3739.07	299.3222	0.080053	41.670	1.00322
15	3742.07	334.7196	0.089448	37.293	1.00402
20	3747.07	386.6302	0.10318	32.330	1.00537
25	3752.07	432.4102	0.11525	28.944	1.00671
30	3757.07	473.8400	0.12612	26.450	1.00805
35	3762.07	511.9766	0.13609	24.5119	1.00939
40	3767.07	547.5086	0.14534	22.952	1.01073
45	3772.07	580.9143	0.15400	21.661	1.01207
50	3777.07	612.5415	0.16217	20.570	1.01342
60	3787.07	671.4525	0.17730	18.815	1.01610
70	3797.07	725.7340	0.19113	17.453	1.01878
80	3807.07	776.3577	0.20393	16.358	1.02146
90	3817.07	823.9980	0.21587	15.453	1.02415
100	3827.07	869.1456	0.22710	14.689	1.02683
120	3847.07	953.3608	0.24781	13.461	1.03220
150	3877.07	1067.999	0.27547	12.110	1.04025
200	3927.07	1237.266	0.31506	10.588	1.05366
250	3977.07	1387.817	0.34895	9.5596	1.06708
300	4027.07	1525.202	0.37874	8.8077	1.08049
350	4077.07	1652.710	0.40537	8.2291	1.09391
400	4127.07	1772.472	0.42947	7.7673	1.10732
450	4177.07	1885.965	0.45150	7.3883	1.12074
500	4227.07	1994.259	0.47178	7.0707	1.13415
600	4327.07	2198.291	0.50803	6.5662	1.16098

ENERGY AND MOMENTUM DATA FOR ALPHA PARTICLES
MASS 3727.07 MEV(Sheet 2)

T Mev	E Mev	P Mev	β	$\frac{1}{\beta C}$ mμ sec/cm	γ
700	4427.07	2389.121	0.53966	6.1813	1.18782
800	4527.07	2569.691	0.56763	5.8768	1.21465
900	4627.07	2742.030	0.59261	5.6290	1.24148
1000	4727.07	2907.600	0.61510	5.4232	1.26831
1200	4927.07	3222.572	0.65405	5.1003	1.32197
1500	5227.07	3664.875	0.70113	4.7578	1.40246
2000	5727.07	4348.365	0.75927	4.3935	1.53661
2500	6227.07	4988.522	0.80110	4.1640	1.67077
3000	6727.07	5600.216	0.83249	4.0070	1.80492
3500	7227.07	6191.889	0.85676	3.8935	1.93908
4000	7727.07	6768.793	0.87598	3.8081	2.07323
4500	8227.07	7334.414	0.89150	3.7418	2.20738
5000	8727.07	7891.179	0.90422	3.6892	2.34154
6000	9727.07	8984.700	0.92368	3.6114	2.60984
7000	10727.07	10058.776	0.93770	3.5574	2.87815
8000	11727.07	11119.044	0.94815	3.5182	3.14646
9000	12727.07	12169.111	0.95616	3.4888	3.41477
10000	13727.07	13211.412	0.96243	3.4660	3.68307

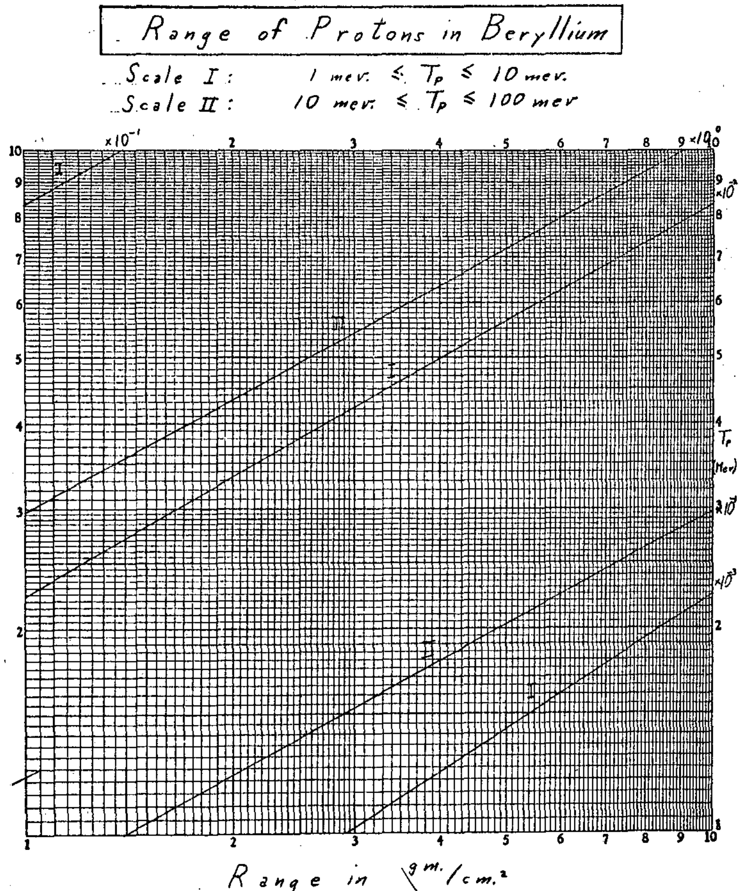
II. PROTON RANGE-ENERGY DATA

Kinetic Energy Range: 1 Mev. to 10^4 Mev.

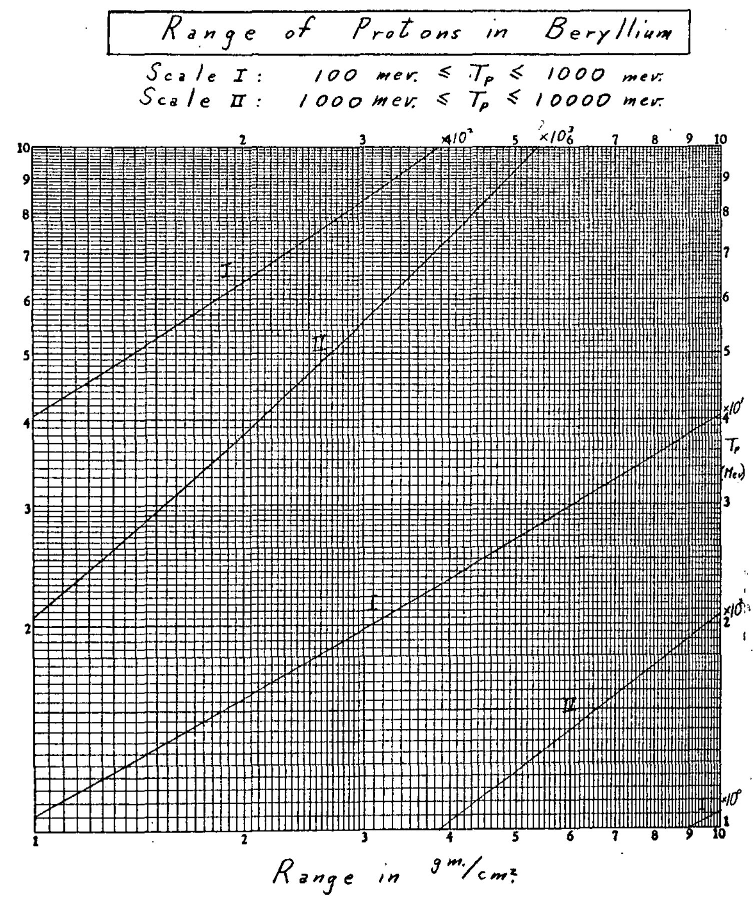
RANGE OF PROTONS IN BERYLLIUM

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
1	2.910×10^{-3}	247.0
2	8.428	145.9
3	1.654×10^{-2}	106.0
4	2.719	84.27
5	4.025	70.38
6	5.560	60.69
7	7.319	53.51
8	9.296	47.96
9	1.149×10^{-1}	43.54
10	1.389	39.92
12	1.931	34.35
14	2.553	30.24
16	3.253	27.08
18	4.029	24.56
20	4.881	22.51
30	1.022×10^{0}	16.12
40	1.725	12.74
50	2.588	10.64
60	3.602	9.197
70	4.760	8.145
80	6.056	7.342
90	7.483	6.707
100	9.036	6.194

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
150	1.853×10^{1}	4.614
200	3.056	3.800
250	4.473	3.304
300	6.073	2.972
350	7.830	2.734
400	9.724	2.556
450	1.174×10^{2}	2.419
500	1.385	2.310
600	1.835	2.150
700	2.313	2.039
800	2.814	1.960
900	3.332	1.901
1000	3.865	1.856
2000	9.556	1.713
3000	1.540×10^{3}	1.716
4000	2.118	1.744
5000	2.687	1.775
6000	3.245	1.806
7000	3.794	1.836
8000	4.335	1.863
9000	4.868	1.888
10000	5.394	1.912

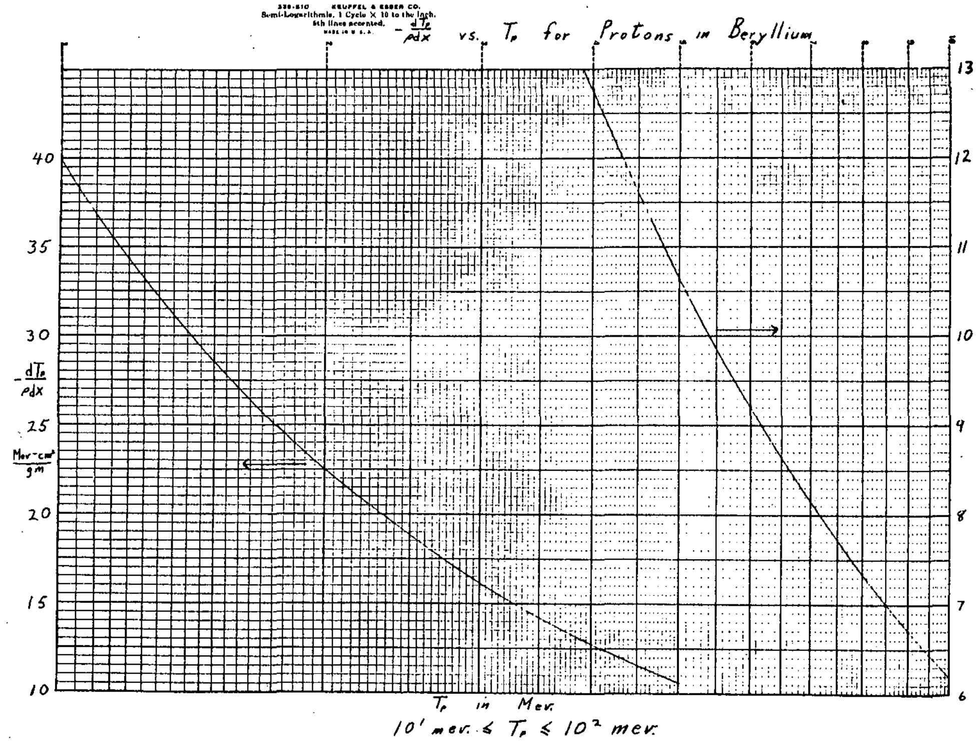

Range of Protons in Beryllium
Scale I: 1 mev. ≤ Tp ≤ 10 mev.
Scale II: 10 mev. ≤ Tp ≤ 100 mev
Tp (Mev)
Range in gm./cm.²

MU-6243



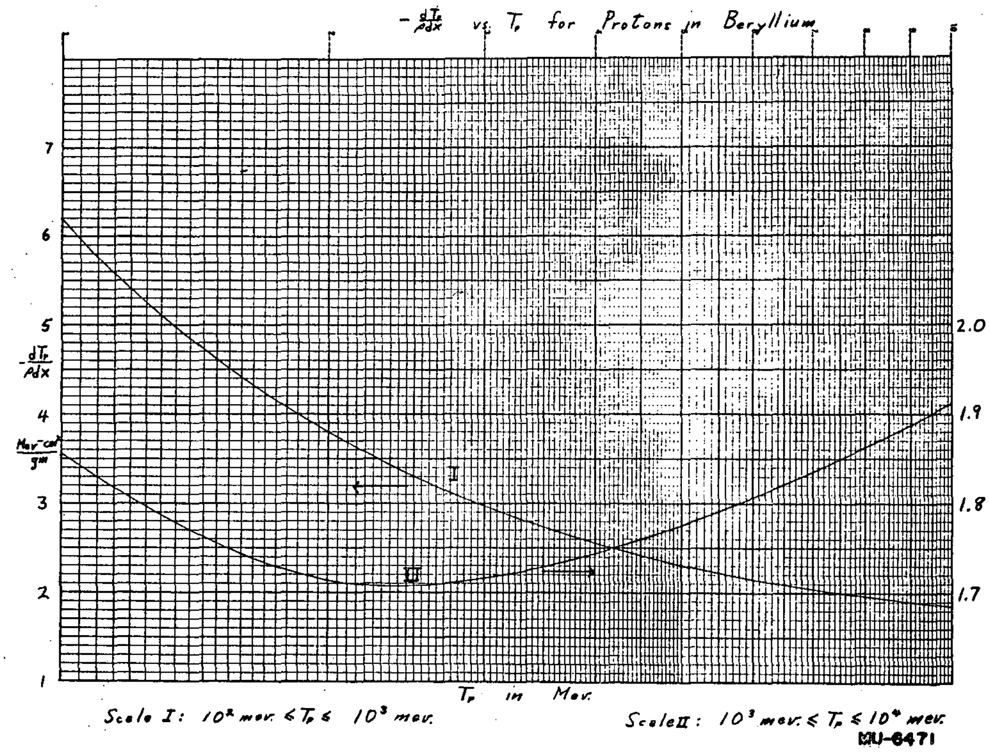
Range of Protons in Beryllium
Scale I: 100 mev. ≤ T_p ≤ 1000 mev.
Scale II: 1000 mev. ≤ T_p ≤ 10000 mev.
I
II
I
II
×10²
×10³
×10¹
×10²
×10⁰
T_p
(Mev)
Range in gm./cm²

MU-6244



$-\frac{dT_p}{\rho dx}$ vs. T_p for Protons in Beryllium
40
35
30
$-\frac{dT_p}{\rho dx}$
25
$\frac{\text{Mev-cm}^2}{\text{gm}}$
20
15
10
13
12
11
10
9
8
7
6
T_p in Mev.
10^1 mev. ≤ T_p ≤ 10^2 mev.

MU-6470



$-\frac{dT_p}{\rho dx}$ vs. T_p for Protons in Beryllium
$-\frac{dT_p}{\rho dx}$
$\frac{Mev\text{-}cm^2}{gm}$
7
6
5
4
3
2
1
2.0
1.9
1.8
1.7
I
II
T_p in Mev.
Scale I: 10^2 mev. $\leq T_p \leq 10^3$ mev.
Scale II: 10^3 mev. $\leq T_p \leq 10^4$ mev.
MU-6471

RANGE OF PROTONS IN CARBON

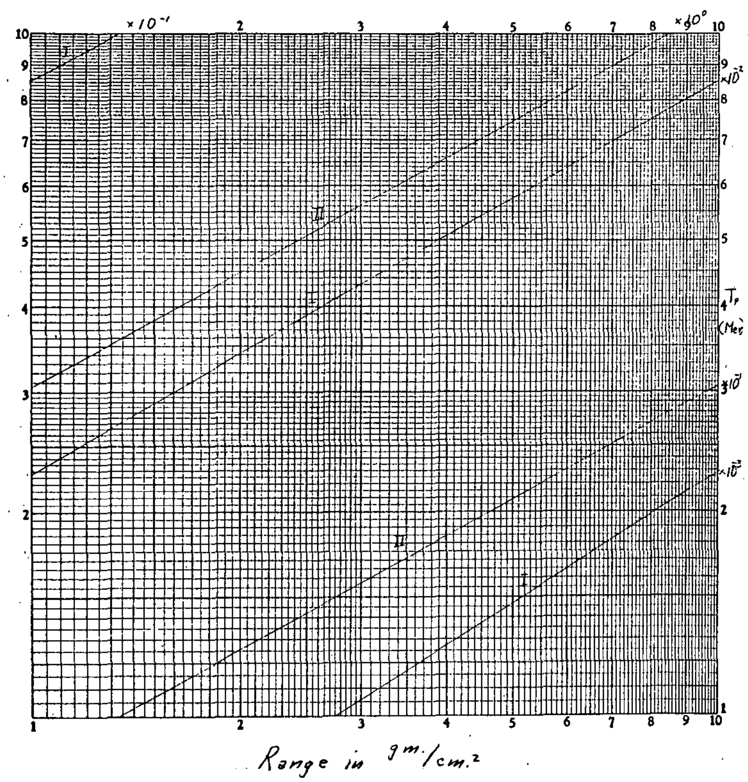
T (Mev)	R (gm/cm^2)	$-\frac{dT}{d\xi}$ (Mev-cm^2/gm)
1	2.760×10^{-3}	241.8
2	8.113	149.7
3	1.598×10^{-2}	109.8
4	2.629	87.58
5	3.888	73.40
6	5.358	63.45
7	7.039	56.06
8	8.924	50.34
9	1.101×10^{-1}	45.76
10	1.329	42.01
12	1.844	36.21
14	2.433	31.93
16	3.096	28.63
18	3.830	26.00
20	4.634	23.86
30	9.658	17.14
40	1.627×10^{0}	13.58
50	2.436	11.35
60	3.386	9.827
70	4.469	8.711
80	5.680	7.858
90	7.012	7.184
100	8.462	6.638

T (Mev)	R (gm/cm^2)	$-\frac{dT}{d\xi}$ (Mev-cm^2/gm)
150	1.731×10^{1}	4.956
200	2.854	4.087
250	4.167	3.557
300	5.655	3.202
350	7.286	2.947
400	9.038	2.757
450	1.090×10^{2}	2.610
500	1.286	2.494
600	1.703	2.323
700	2.145	2.205
800	2.608	2.120
900	3.087	2.057
1000	3.579	2.010
2000	8.826	1.861
3000	1.420×10^{3}	1.868
4000	1.951	1.900
5000	2.473	1.936
6000	2.984	1.974
7000	3.487	2.005
8000	3.982	2.036
9000	4.470	2.064
10000	4.951	2.091

Range of Protons in Carbon

Scale I: 1 mev. ≤ T_p ≤ 10 mev.

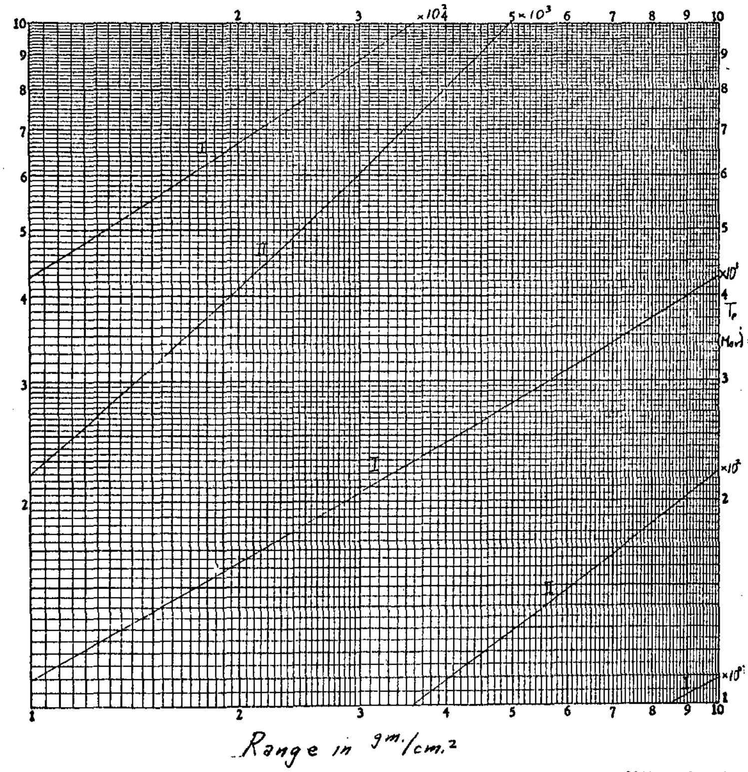
Scale II: 10 mev. ≤ T_p ≤ 100 mev.



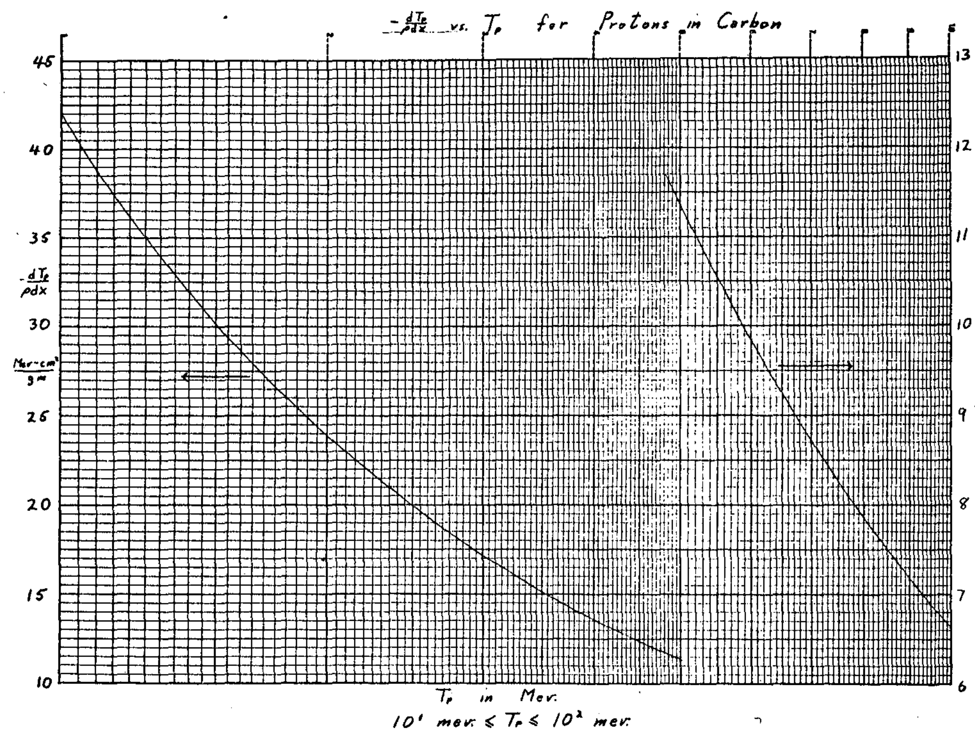
MU-6245

Range of Protons in Carbon

Scale I: 100 mev. ≤ T_p ≤ 1000 mev.
Scale II: 1000 mev. ≤ T_p ≤ 10000 mev.

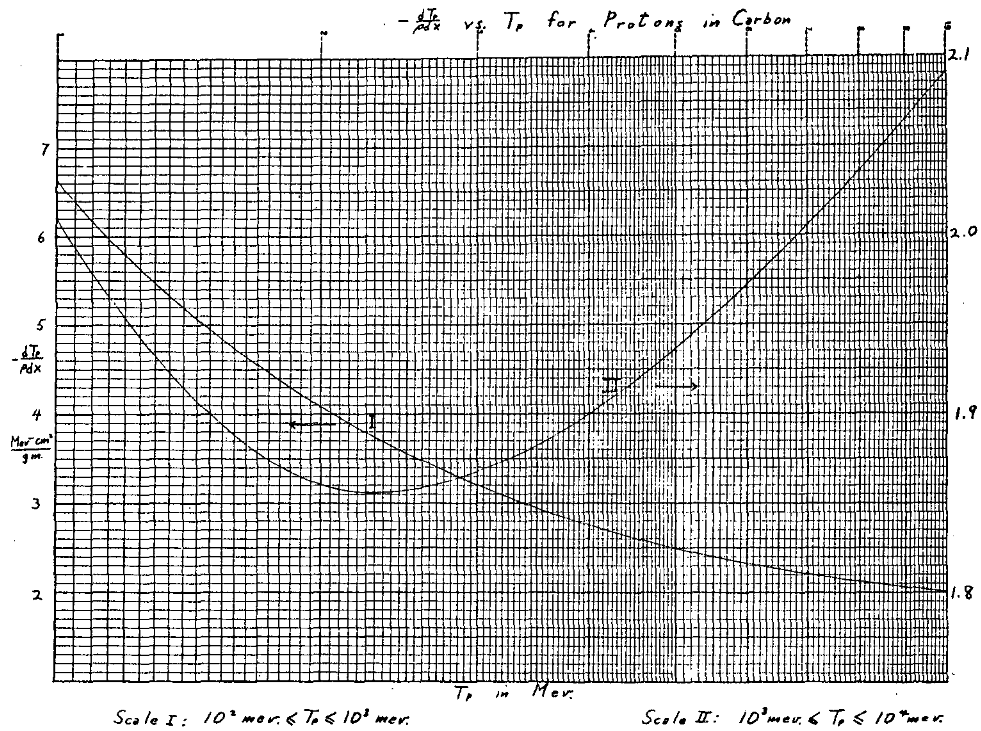


MU-6246



$-\frac{dT_p}{\rho dx}$ vs. T_p for Protons in Carbon
45
40
35
$-\frac{dT_p}{\rho dx}$
30
$\frac{Mev\text{-}cm^2}{gm}$
25
20
15
10
13
12
11
10
9
8
7
6
T_p in Mev.
10^1 mev. $\leq T_p \leq 10^2$ mev.

MU-6472



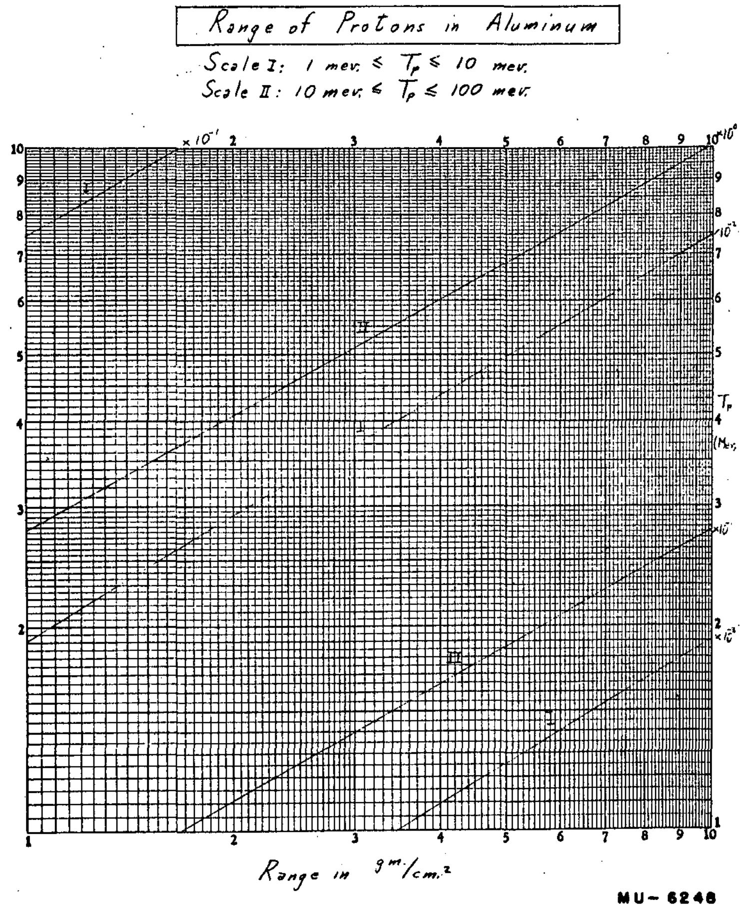
$-\frac{dT_p}{\rho dx}$ vs. T_p for Protons in Carbon
7
6
5
4
3
2
$-\frac{dT_p}{\rho dx}$
$\frac{\text{Mev-cm}^2}{\text{gm.}}$
2.1
2.0
1.9
1.8
I
II
T_p in Mev.
Scale I: 10^2 mev. $\leq T_p \leq 10^3$ mev.
Scale II: 10^3 mev. $\leq T_p \leq 10^4$ mev.

MU-6473

RANGE OF PROTONS IN ALUMINUM

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
1	3.45×10^{-3}	
1.5	6.69	
2	1.08×10^{-2}	115
2.5	1.56	98.5
3	2.10	86.2
4	3.45	69.6
5	5.03	58.8
6	6.91	51.2
7	9.00	45.5
8	1.132×10^{-1}	41.0
9	1.388	37.5
10	1.667	34.5
12	2.290	29.9
15	3.393	25.18
21	6.143	19.30
25	8.369	16.82
30	1.157×10^{0}	14.56
35	1.523	12.89
40	1.933	11.60
45	2.385	10.58
50	2.878	9.743
60	3.983	8.458
70	5.240	7.516
80	6.642	6.794
90	8.182	6.222

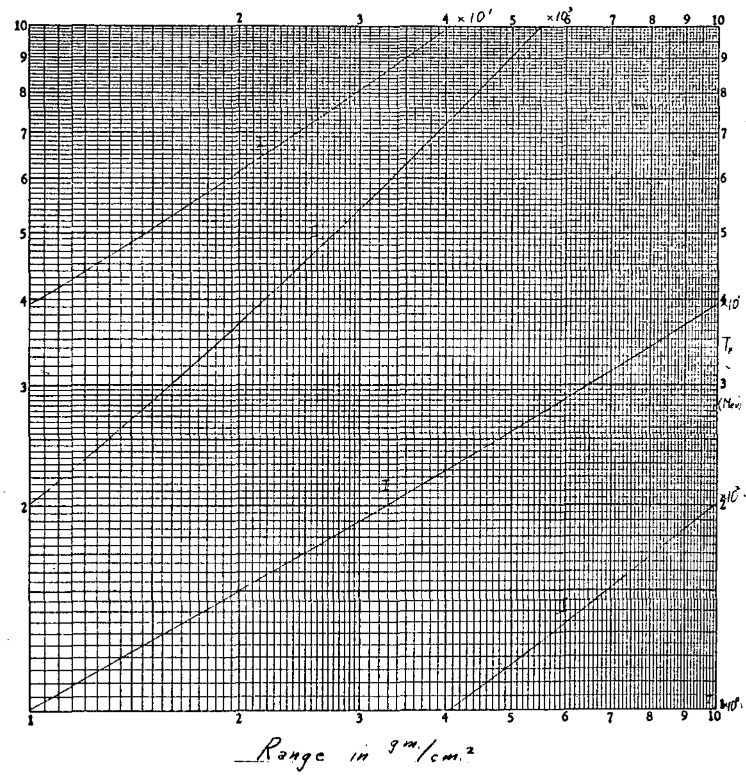
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
100	9.854×10^{0}	5.757
120	1.358×10^{1}	5.047
160	2.240	4.136
200	3.284	3.576
250	4.787	3.120
300	6.480	2.813
350	8.334	2.593
400	1.033×10^{2}	2.428
500	1.467	2.201
600	1.938	2.054
700	2.438	1.952
800	2.961	1.879
900	3.501	1.826
1000	4.055	1.785
1250	5.484	1.721
1500	6.952	1.688
2000	9.941	1.664
3000	1.594×10^{3}	1.677
4000	2.185	1.710
5000	2.763	1.747
6000	3.330	1.782
7000	3.886	1.815
8000	4.432	1.845
9000	4.970	1.873
10000	5.501	1.898


Range of Protons in Aluminum
Scale I: 1 mev. ≤ Tp ≤ 10 mev.
Scale II: 10 mev. ≤ Tp ≤ 100 mev.
Tp (Mev.)
Range in gm./cm.²

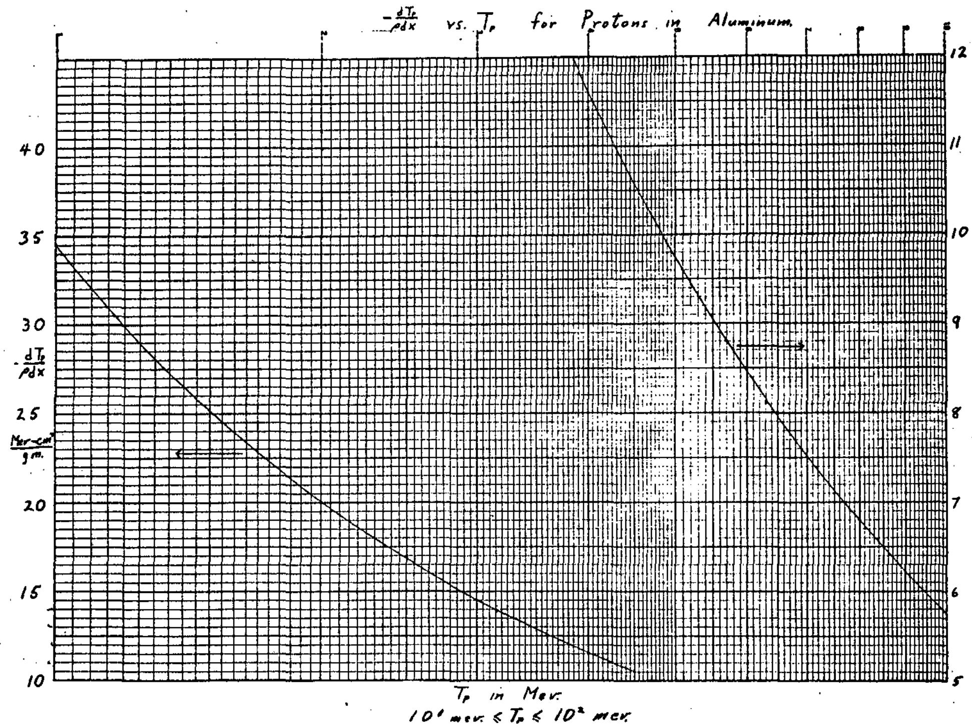
MU-6248

Range of Protons in Aluminum

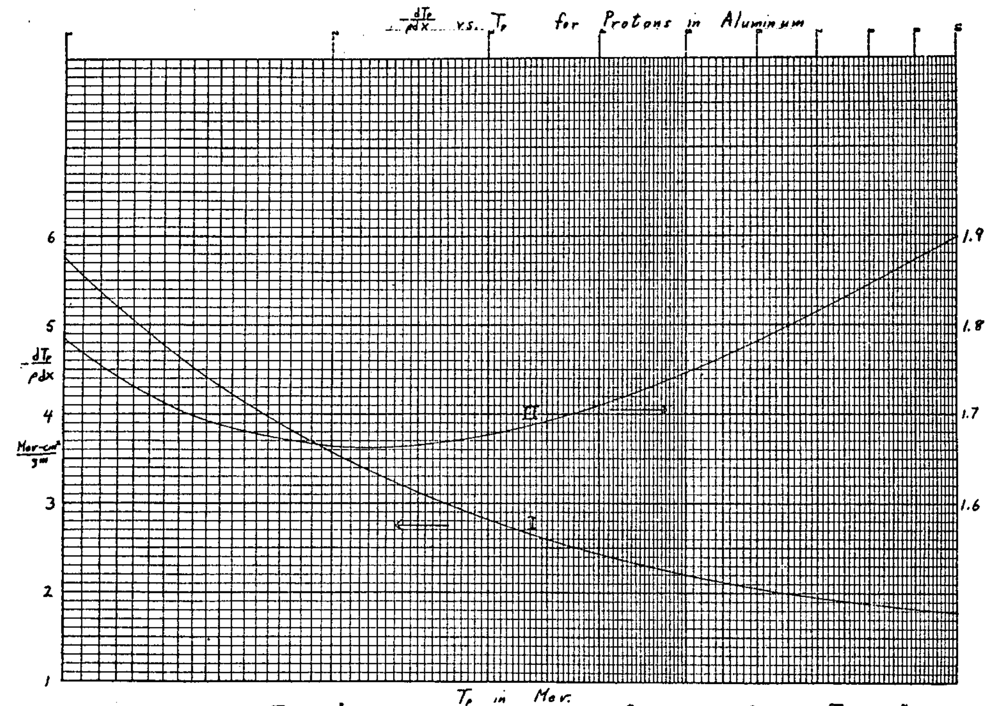
Scale I: 100 mev. ≤ T_p ≤ 1000 mev.
Scale II: 1000 mev. ≤ T_p ≤ 10000 mev.



MU-6247


$-\frac{dT_p}{\rho dx}$ vs. T_p for Protons in Aluminum
40
35
30
25
20
15
10
$-\frac{dT_p}{\rho dx}$
$\frac{\text{Mev-cm}^2}{\text{gm.}}$
12
11
10
9
8
7
6
5
T_p in Mev.
10^1 mev. $\leq T_p \leq 10^2$ mev.

MU-6474

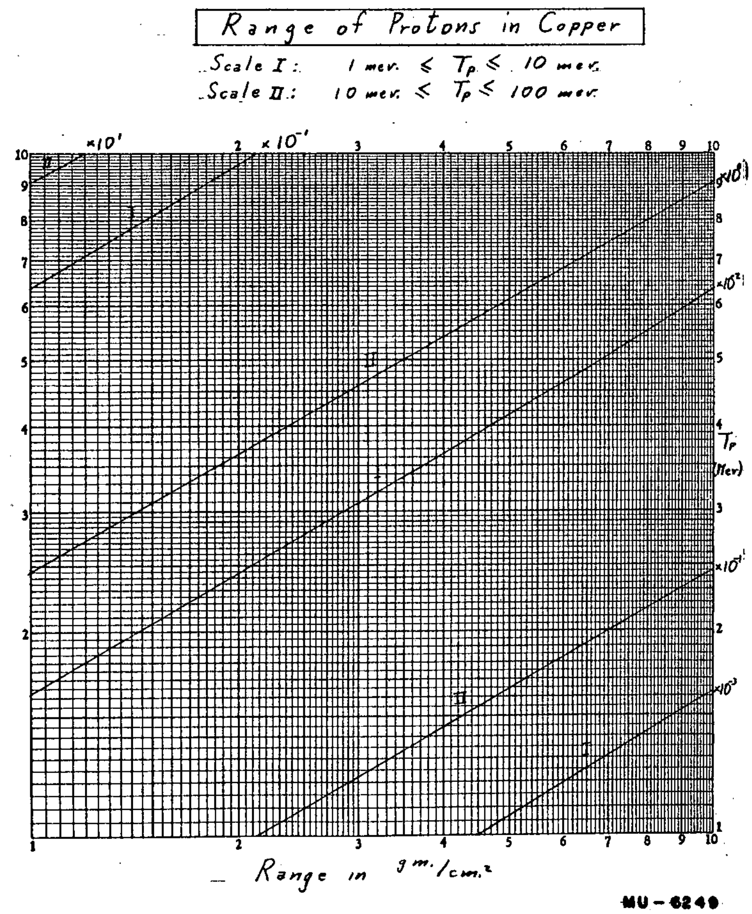

$-\frac{dT_p}{\rho dx}$ v.s. T_p for Protons in Aluminum
6
5
$-\frac{dT_p}{\rho dx}$
4
$\frac{Mev\text{-}cm^2}{gm}$
3
2
1
1.9
1.8
1.7
1.6
II
I
T_p in Mev
Scale I: 10^2 mev $\leq T_p \leq 10^3$ mev.
Scale II: 10^3 mev. $\leq T_p \leq 10^4$ mev.

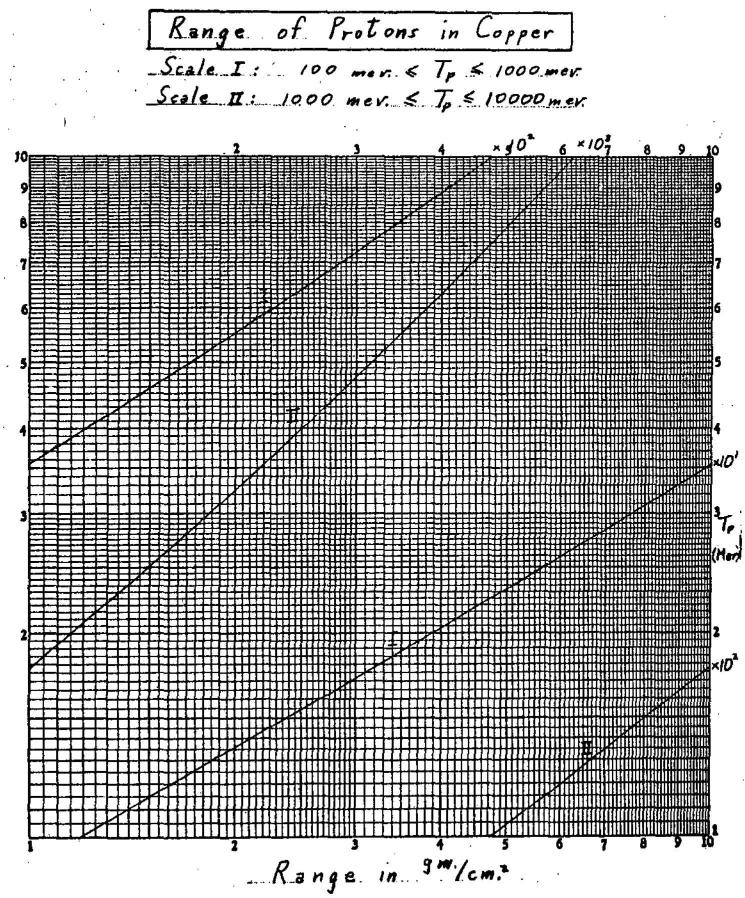
MU-6478

RANGE OF PROTONS IN COPPER

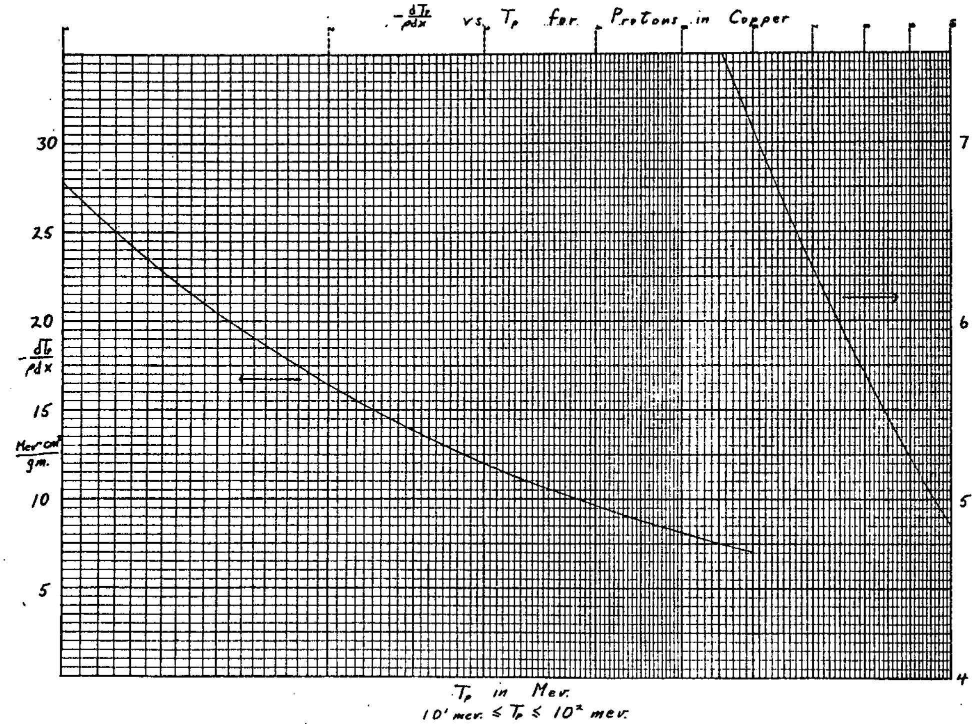
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
1	4.50×10^{-3}	
2	1.430×10^{-2}	
3	2.840	
4	4.666	
5	6.848	46.08
6	9.170	40.46
8	1.470×10^{-1}	32.81
10	2.134	27.80
12	2.907	24.24
16	4.761	19.48
20	7.007	16.42
26	1.107×10^{0}	13.42
30	1.423	12.02
35	1.866	10.67
40	2.360	9.629
45	2.904	8.798
50	3.496	8.119
60	4.820	7.072
70	6.321	6.300
80	7.992	5.706
90	9.824	5.235
100	1.181×10^{1}	4.852
120	1.622	4.254
150	2.385	3.661
200	3.894	3.040

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
250	5.660×10^{1}	2.659
300	7.644	2.402
350	9.814	2.213
400	1.214×10^{2}	2.081
450	1.461	1.975
500	1.720	1.891
600	2.268	1.768
700	2.849	1.683
800	3.455	1.623
900	4.080	1.578
1000	4.721	1.545
1200	6.036	1.501
1500	8.055	1.468
2000	1.149×10^{3}	1.452
2500	1.493	1.456
3000	1.835	1.470
3500	2.174	1.486
4000	2.508	1.504
4500	2.838	1.522
5000	3.165	1.540
6000	3.807	1.574
7000	4.436	1.605
8000	5.054	1.634
9000	5.661	1.661
10000	6.258	1.685

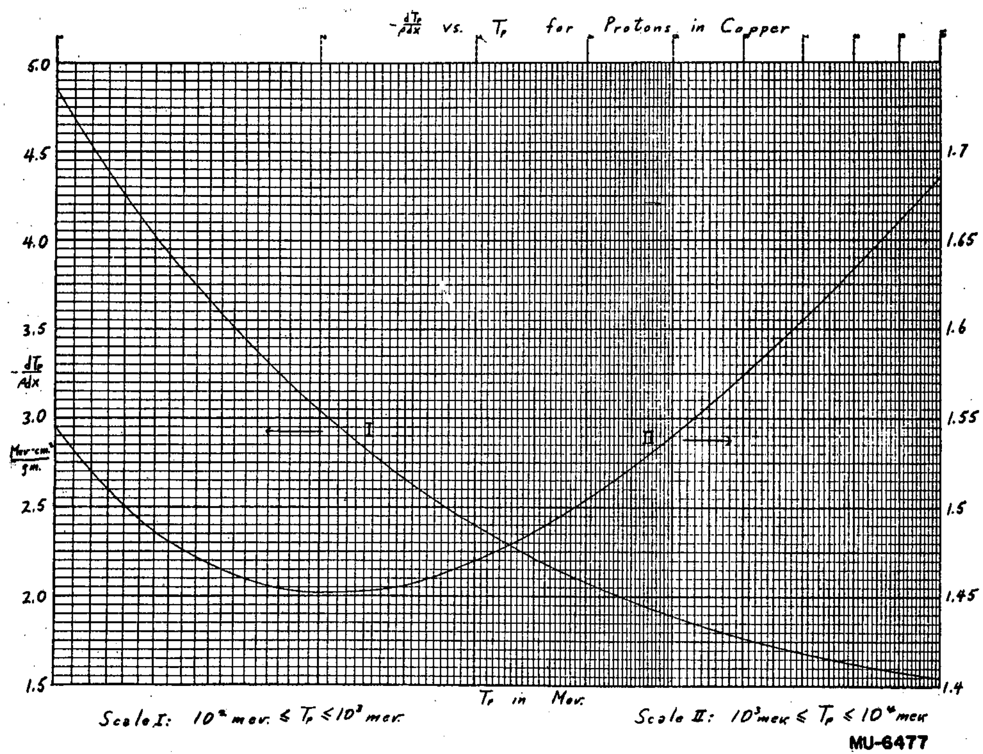

Range of Protons in Copper
Scale I: 1 mev. ≤ T_p ≤ 10 mev.
Scale II: 10 mev. ≤ T_p ≤ 100 mev.
Range in gm./cm.²
T_p (Mev)
MU-6249


Range of Protons in Copper
Scale I : 100 mev. ≤ T_p ≤ 1000 mev.
Scale II : 1000 mev. ≤ T_p ≤ 10000 mev.
$\times 10^2$
$\times 10^3$
$\times 10^1$
$\times 10^2$
T_p (Mev)
I
II
I
II
Range in gm/cm.^{2}

MU-6250

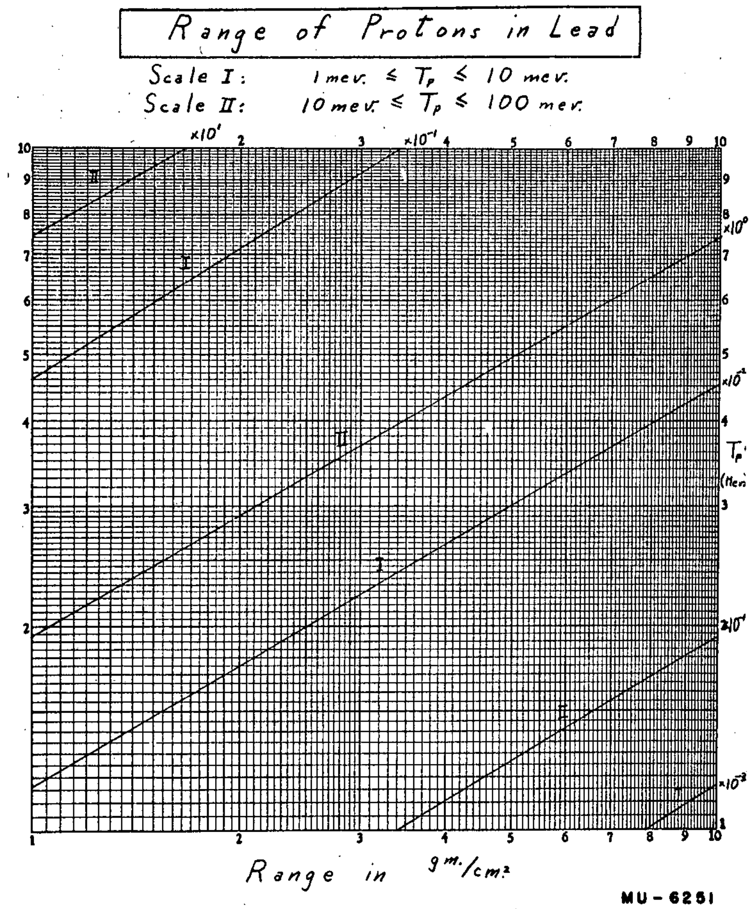

$-\frac{dT_p}{\rho dx}$ vs. T_p for Protons in Copper
30
25
20
$-\frac{dT_p}{\rho dx}$
15
$\frac{\text{Mev cm}^2}{\text{gm.}}$
10
5
7
6
5
4
T_p in Mev.
10^1 mev. $\leq T_p \leq 10^2$ mev.

MU-6476


$-\frac{dT_p}{\rho dx}$ vs. T_p for Protons in Copper
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
$-\frac{dT_p}{\rho dx}$
$\frac{\text{Mev}\cdot\text{cm}^2}{\text{gm.}}$
1.7
1.65
1.6
1.55
1.5
1.45
1.4
I
II
T_p in Mev.
Scale I: 10^2 mev. $\leq T_p \leq 10^3$ mev.
Scale II: 10^3 mev $\leq T_p \leq 10^4$ mev
MU-6477

RANGE OF PROTONS IN LEAD

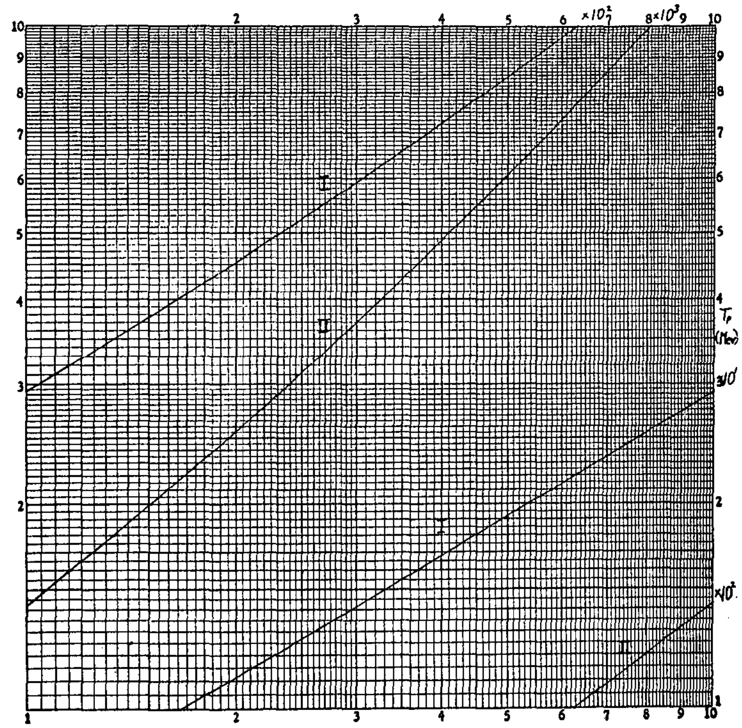
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
1	7.90×10^{-3}	61.81
2	2.51×10^{-2}	46.98
3	4.98	38.53
4	8.167	32.76
6	1.515×10^{-1}	25.50
8	2.382	21.08
10	3.406	18.21
12	4.577	16.08
16	7.345	13.15
20	1.065×10^{0}	11.21
24	1.447	9.833
30	2.112	8.361
35	2.745	7.472
40	3.449	6.777
45	4.220	6.220
50	5.056	5.762
60	6.915	5.051
70	9.011	4.522
80	1.133×10^{1}	4.113
90	1.387	3.787
100	1.661	3.520
120	2.268	3.108
160	3.691	2.575
200	5.362	2.243
250	7.750	1.971
300	1.042×10^{2}	1.787
350	1.333	1.655
400	1.645	1.557
450	1.975	1.480
500	2.320	1.420
600	3.048	1.332
700	3.818	1.272
800	4.618	1.229
900	5.443	1.198
1000	6.286	1.175
1200	8.011	1.146
1600	1.155×10^{3}	1.122
2000	1.512	1.118
2500	1.958	1.127
3000	2.399	1.141
3500	2.834	1.157
4000	3.263	1.174
4500	3.686	1.190
5000	4.104	1.206
6000	4.922	1.236
7000	5.722	1.264
8000	6.505	1.290
9000	7.273	1.313
10000	8.028	1.334


Range of Protons in Lead
Scale I: 1 mev. ≤ T_p ≤ 10 mev.
Scale II: 10 mev. ≤ T_p ≤ 100 mev.
×10¹
×10⁻¹
×10⁰
×10⁻¹
×10⁻¹
×10⁻²
T_p
(Mev)
I
II
Range in gm./cm²
MU-6251

Range of Protons in Lead

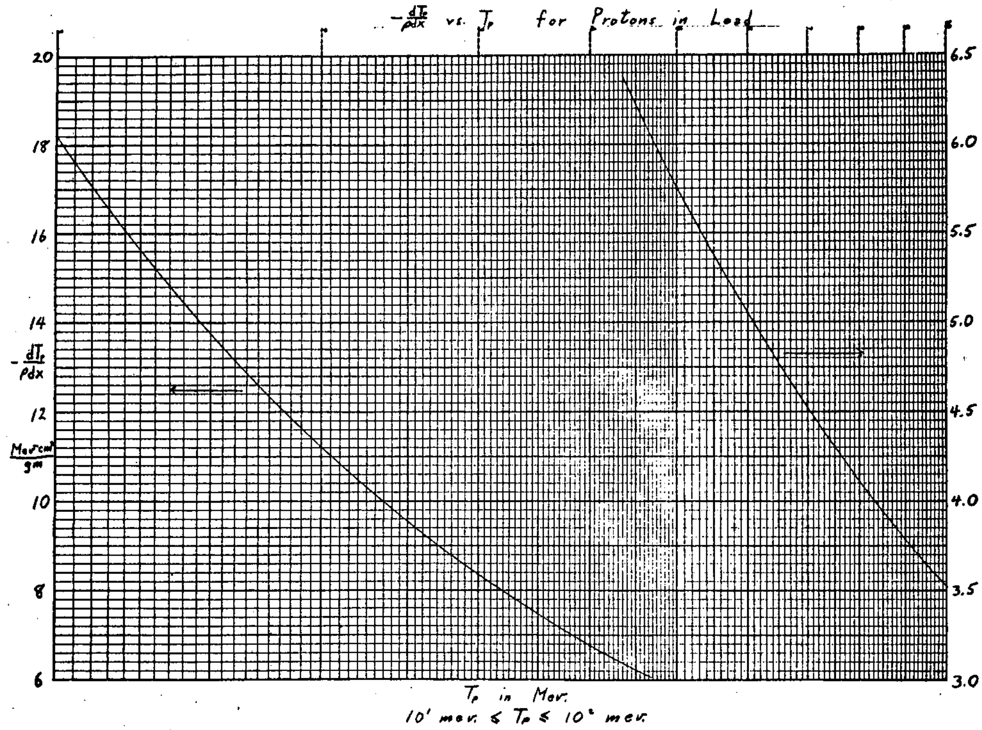
Scale I: 100 mev. ≤ T_p ≤ 1000 mev.

Scale II: 1000 mev. ≤ T_p ≤ 10000 mev.



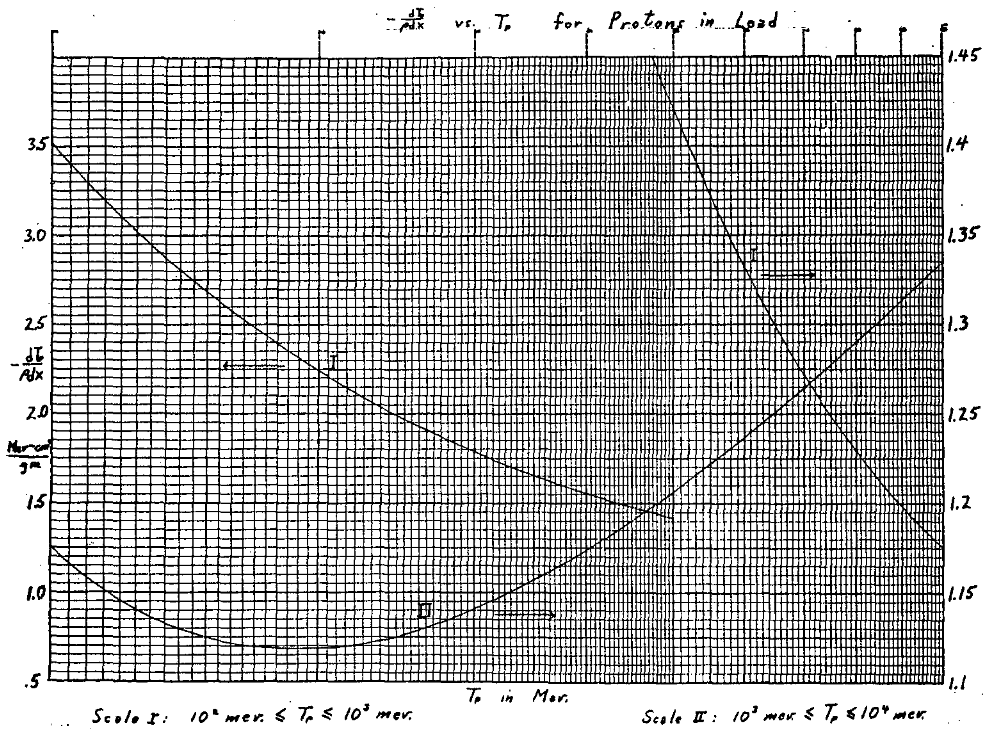
Range in gm./cm.²

MU - 6252



$-\frac{dT_p}{\rho dx}$ vs. T_p for Protons in Lead
20
18
16
14
$-\frac{dT_p}{\rho dx}$
12
$\frac{Mev\,cm^2}{gm}$
10
8
6
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
T_p in Mev.
10^1 mev. $\leq T_p \leq 10^2$ mev.

MU-6478


$-\frac{dT}{\rho dx}$ vs. T_p for Protons in Lead
3.5
3.0
2.5
2.0
1.5
1.0
.5
$-\frac{dT}{\rho dx}$
Mev-cm²/gm
1.45
1.4
1.35
1.3
1.25
1.2
1.15
1.1
I
II
T_p in Mev.
Scale I: 10^2 mev. ≤ T_p ≤ 10^3 mev.
Scale II: 10^3 mev. ≤ T_p ≤ 10^4 mev.

MU-8479

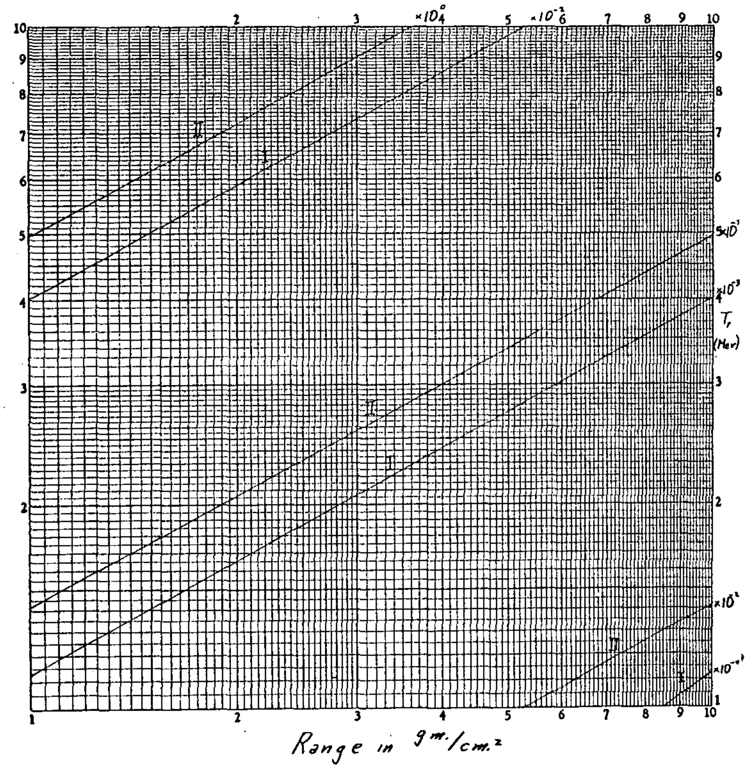
RANGE OF PROTONS IN H_2

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm	T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
1	8.542×10^{-4}	690.7	200	1.226×10^{1}	9.418
3	5.884×10^{-3}	283.4	250	1.798	8.172
5	1.483×10^{-2}	185.2	300	2.446	7.337
6	2.068	159.0	350	3.158	6.740
7	2.741	139.6	400	3.927	6.295
8	3.500	124.8	450	4.746	5.902
9	4.344	112.9	500	5.608	5.678
10	5.270	103.3	600	7.438	5.277
12	7.369	88.54	700	9.391	4.999
14	9.786	77.71	800	1.143×10^{2}	4.798
16	1.251×10^{-1}	69.41	900	1.355	4.649
18	1.555	62.83	1000	1.573	4.536
20	1.888	57.48	2000	3.910	4.159
30	3.985	40.87	3000	6.323	4.150
40	6.766	32.17	4000	8.718	4.205
50	1.019×10^{0}	26.78	5000	1.108×10^{3}	4.272
60	1.423	23.09	6000	1.339	4.340
70	1.884	20.41	7000	1.568	4.404
80	2.402	18.37	8000	1.794	4.464
90	2.972	16.76	9000	2.016	4.520
100	3.594	15.46	10000	2.236	4.572

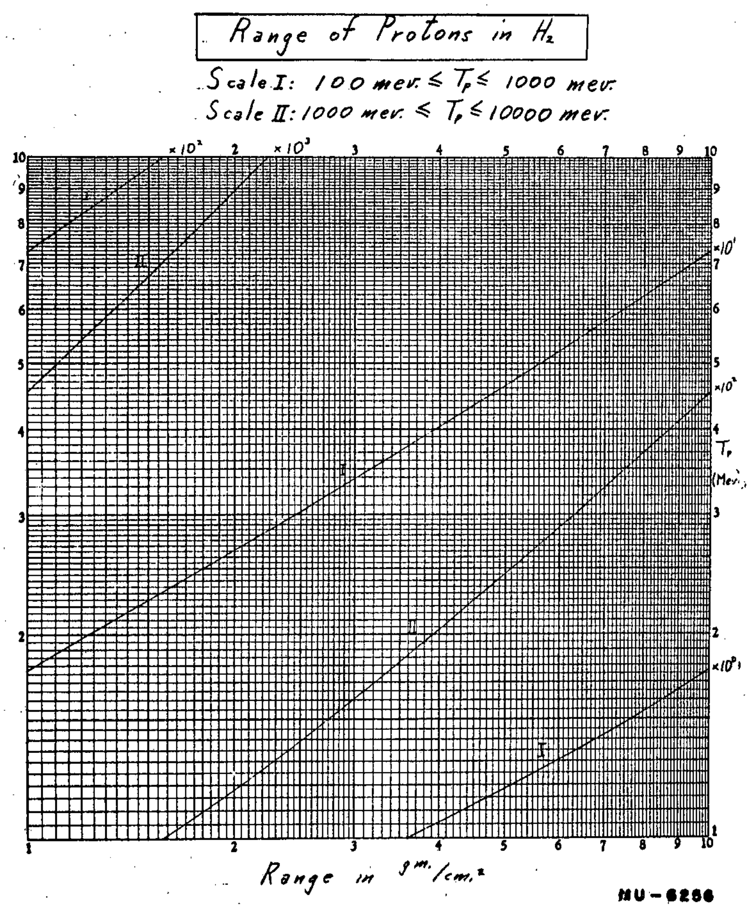
Range of Protons in H_2

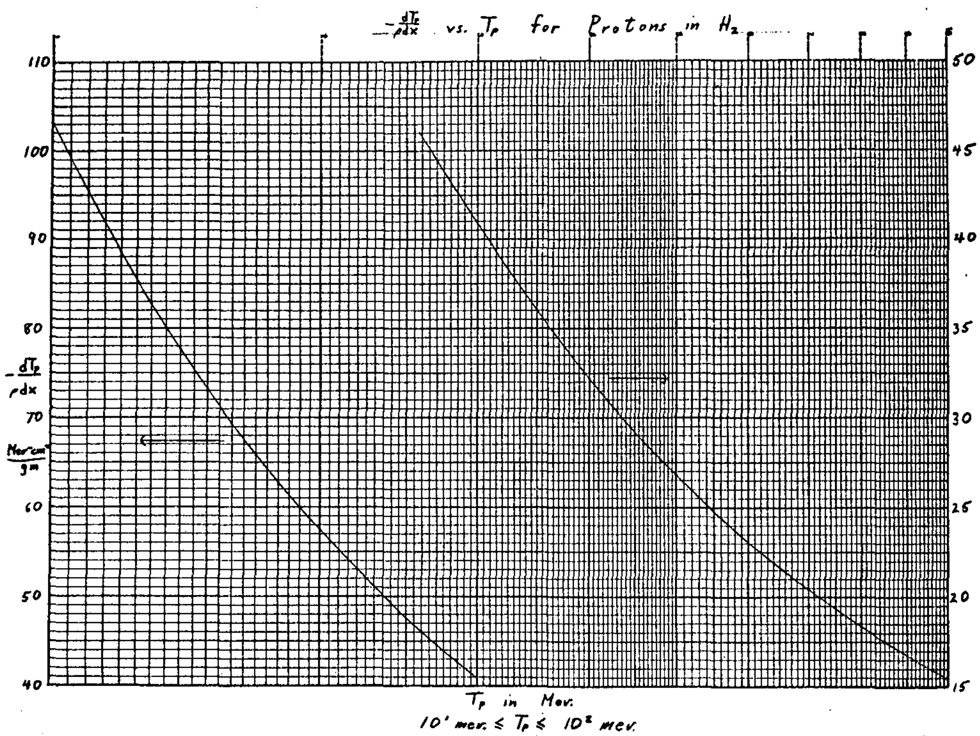
Scale I : 1 mev. $\leq T_p \leq$ 10 mev.

Scale II : 10 mev. $\leq T_p \leq$ 100 mev.



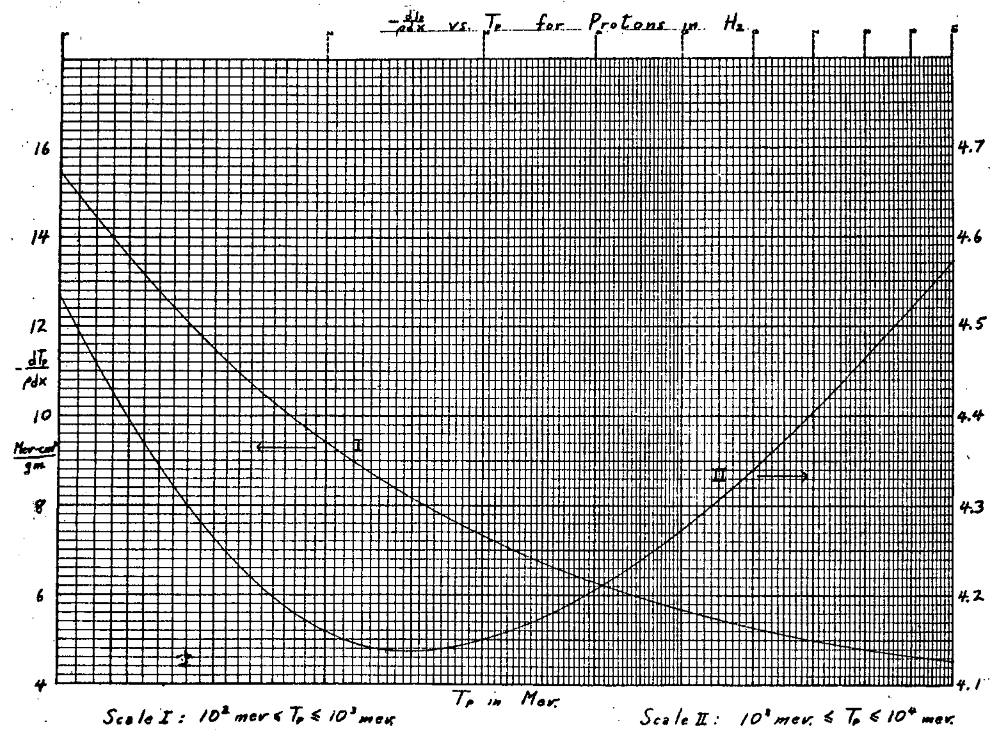
MU-6255


Range of Protons in H_2
Scale I: 100 mev. ≤ T_p ≤ 1000 mev.
Scale II: 1000 mev. ≤ T_p ≤ 10000 mev.
T_p (Mev.)
Range in gm./cm.²
MU-6256



$-\frac{dT_p}{\rho dx}$ vs. T_p for Protons in H_2
110
100
90
80
$-\frac{dT_p}{\rho dx}$
70
$\frac{Mev\,cm^2}{gm}$
60
50
40
50
45
40
35
30
25
20
15
T_p in Mev.
10^1 mev. $\leq T_p \leq 10^2$ mev.

MU-6482


$-\frac{dT_p}{\rho dx}$ vs. T_p for Protons in H_2
16
14
12
$-\frac{dT_p}{\rho dx}$
10
$\frac{Mev\text{-}cm^2}{gm}$
8
6
4
4.7
4.6
4.5
4.4
4.3
4.2
4.1
I
II
T_p in Mev.
Scale I: 10^2 mev $\leq T_p \leq 10^3$ mev.
Scale II: 10^3 mev. $\leq T_p \leq 10^4$ mev.

MU-6403

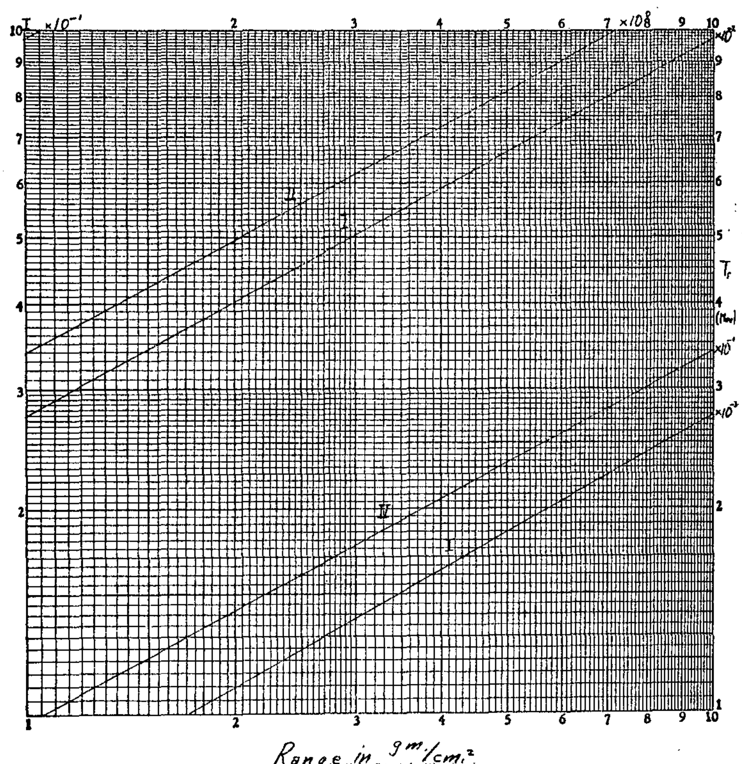
RANGE OF PROTONS IN D_2

T (Mev)	R (gm/cm^2)	$-\frac{dT}{d\xi}$ ($Mev\text{-}cm^2/gm$)	T (Mev)	R (gm/cm^2)	$-\frac{dT}{d\xi}$ ($Mev\text{-}cm^2/gm$)
1	1.707×10^{-3}	345.6	200	2.450×10^{1}	4.712
3	1.176×10^{-2}	141.8	250	3.593	4.089
5	2.964	92.69	300	4.888	3.671
6	4.133	79.54	350	6.311	3.373
7	5.478	69.86	400	7.847	3.150
8	6.994	62.42	450	9.484	2.953
9	8.690	56.51	500	1.121×10^{2}	2.841
10	1.053×10^{-1}	51.70	600	1.486	2.640
12	1.473	44.30	700	1.877	2.501
14	1.956	38.88	800	2.285	2.401
16	2.501	34.73	900	2.708	2.326
18	3.107	31.44	1000	3.143	2.270
20	3.773	28.76	2000	7.815	2.081
30	7.964	20.45	3000	1.264×10^{3}	2.077
40	1.352×10^{0}	16.10	4000	1.742	2.104
50	2.037	13.40	5000	2.214	2.138
60	2.843	11.56	6000	2.676	2.172
70	3.766	10.21	7000	3.134	2.204
80	4.800	9.191	8000	3.584	2.234
90	5.940	8.386	9000	4.029	2.262
100	7.183	7.735	10000	4.469	2.288

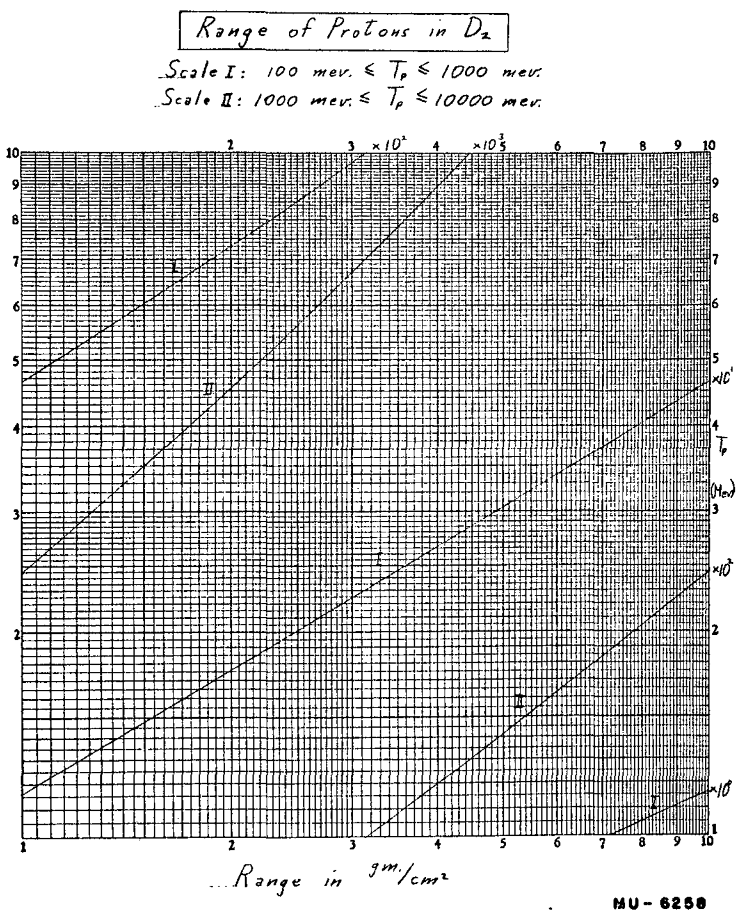
Range of Protons in D_2

Scale I: 1 mev. $\leq T_p \leq$ 10 mev.

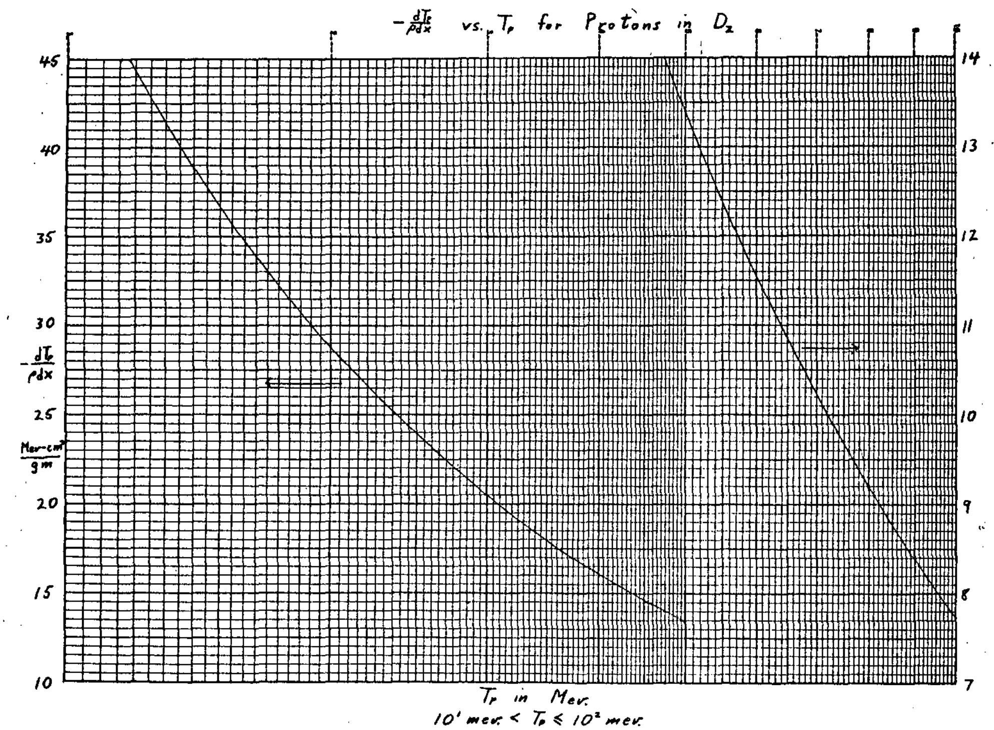
Scale II: 10 mev. $\leq T_p \leq$ 100 mev.



MU-6257



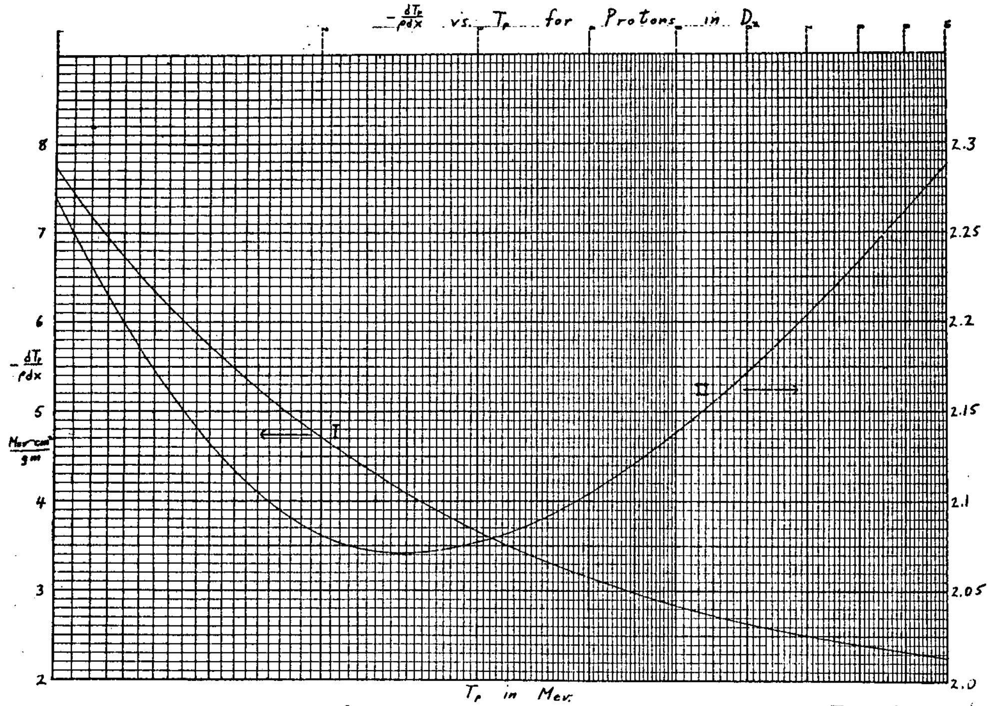
Range of Protons in D_2
Scale I: 100 mev. ≤ T_p ≤ 1000 mev.
Scale II: 1000 mev. ≤ T_p ≤ 10000 mev.
×10²
×10³
×10¹
T_p
(Mev)
×10²
×10³
I
II
I
II
I
Range in gm./cm²
MU - 6258



$-\frac{dT_p}{\rho dx}$ vs. T_p for Protons in D_2
45
40
35
30
$-\frac{dT_p}{\rho dx}$
25
$\frac{\text{Mev-cm}^2}{\text{gm}}$
20
15
10
14
13
12
11
10
9
8
7
T_p in Mev.
10^1 mev. < T_p ≤ 10^2 mev.

MU-6484

$-\frac{dT_p}{\rho dx}$ vs. T_p for Protons in D_2



Scale I: 10^2 mev. $\leq T_p \leq 10^3$ mev.

Scale II: 10^3 mev. $\leq T_p \leq 10^4$ mev.

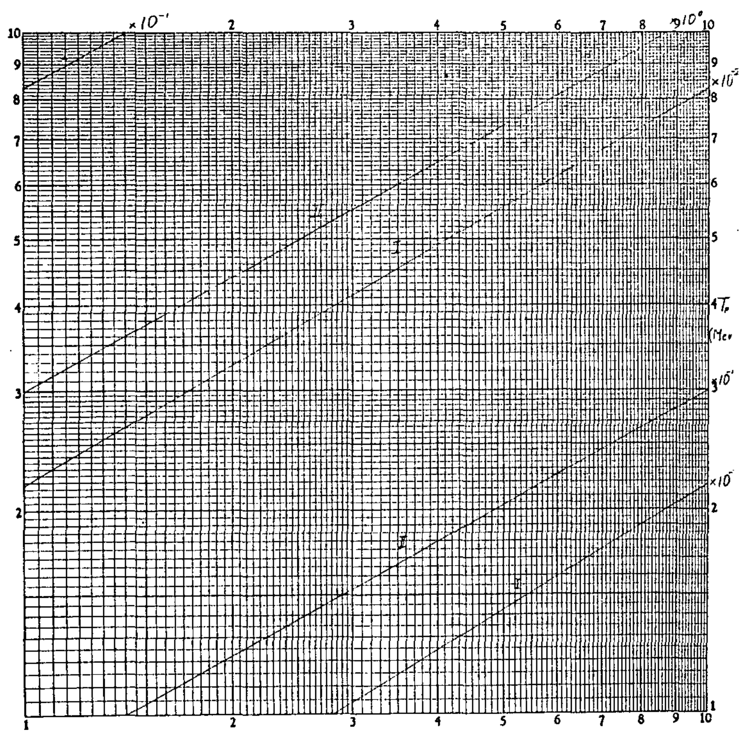
MU-6485

RANGE OF PROTONS IN AIR

T	R	$-\frac{dT}{d\xi}$
Mev	gm/cm^2	$Mev\text{-}cm^2/gm$
1	2.82×10^{-3}	
2	8.70	
3	1.729×10^{-2}	102.0
4	2.832	81.73
5	4.138	68.68
6	5.701	59.38
7	7.448	51.71
8	9.465	46.00
9	1.160×10^{-1}	42.09
10	1.404	38.82
12	1.941	33.93
15	2.924	29.15
21	5.307	22.19
25	7.246	19.28
30	1.004×10^{0}	16.64
35	1.325	14.69
40	1.684	13.19
45	2.083	12.01
50	2.517	11.03
60	3.493	9.568
70	4.605	8.483
80	5.847	7.662
90	7.212	7.010
100	8.698	6.479
120	1.201×10^{1}	5.669
160	1.987×10^{1}	4.631
200	2.922	3.996
250	4.269	3.479
300	5.788	3.132
350	7.454	2.876
400	9.249	2.698
500	1.315×10^{2}	2.442
600	1.741	2.275
700	2.192	2.161
800	2.665	2.077
900	3.153	2.016
1000	3.656	1.971
1250	4.950	1.896
1500	6.284	1.857
2000	9.004	1.827
2500	1.174×10^{3}	1.825
3000	1.448	1.835
4000	1.988	1.868
5000	2.518	1.904
6000	3.039	1.940
7000	3.549	1.973
8000	4.053	2.004
9000	4.548	2.033
10000	5.036	2.059

Range of Protons in Air

Scale I: 1 mev. ≤ T_p ≤ 10 mev.
Scale II: 10 mev. ≤ T_p ≤ 100 mev.



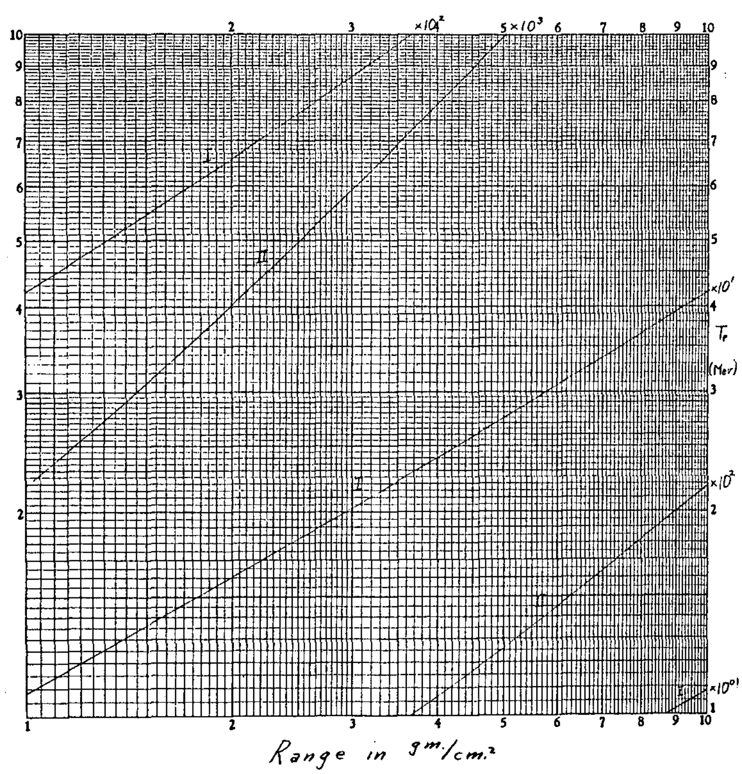
Range in gm/cm²

MU – 6253

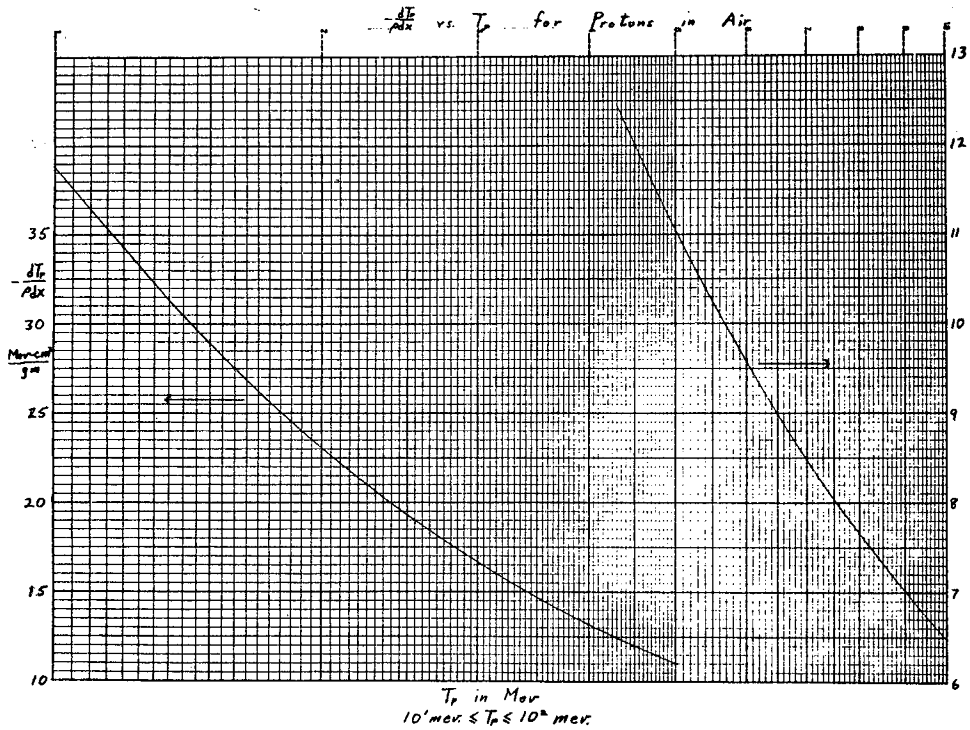
Range of Protons in Air

Scale I: 100 mev. ≤ T_p ≤ 1000 mev.

Scale II: 1000 mev. ≤ T_p ≤ 10000 mev.

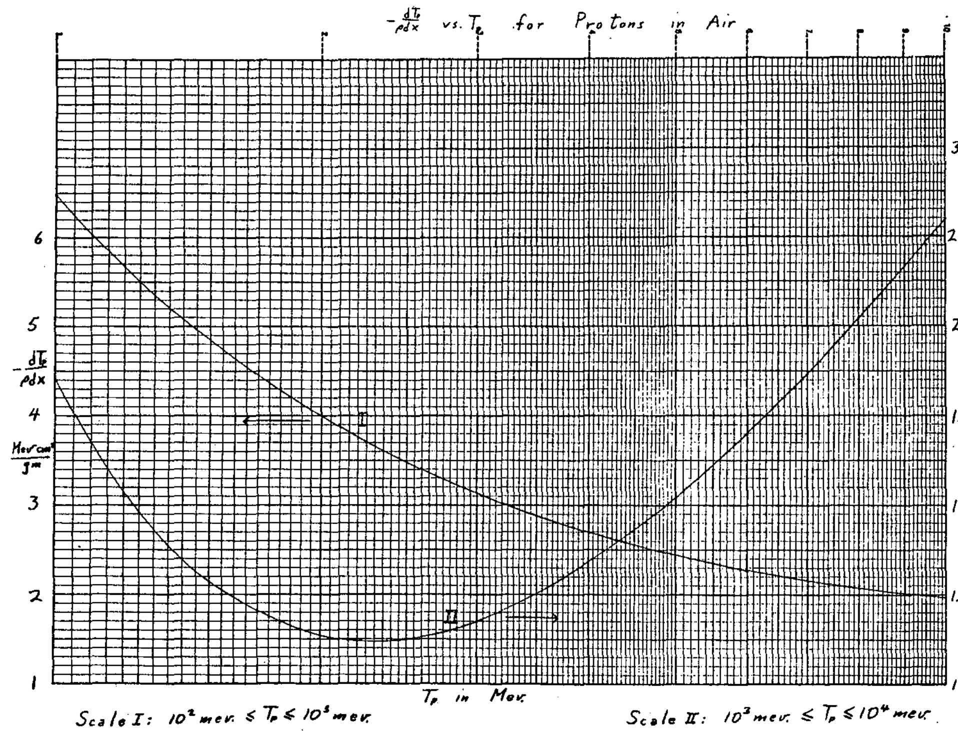


MU - 6254



$-\frac{dT_p}{\rho dx}$ vs. T_p for Protons in Air
35
30
25
20
15
10
$-\frac{dT_p}{\rho dx}$
$\frac{Mev\text{-}cm^2}{gm}$
13
12
11
10
9
8
7
6
T_p in Mev
10^1 mev. $\leq T_p \leq 10^2$ mev.

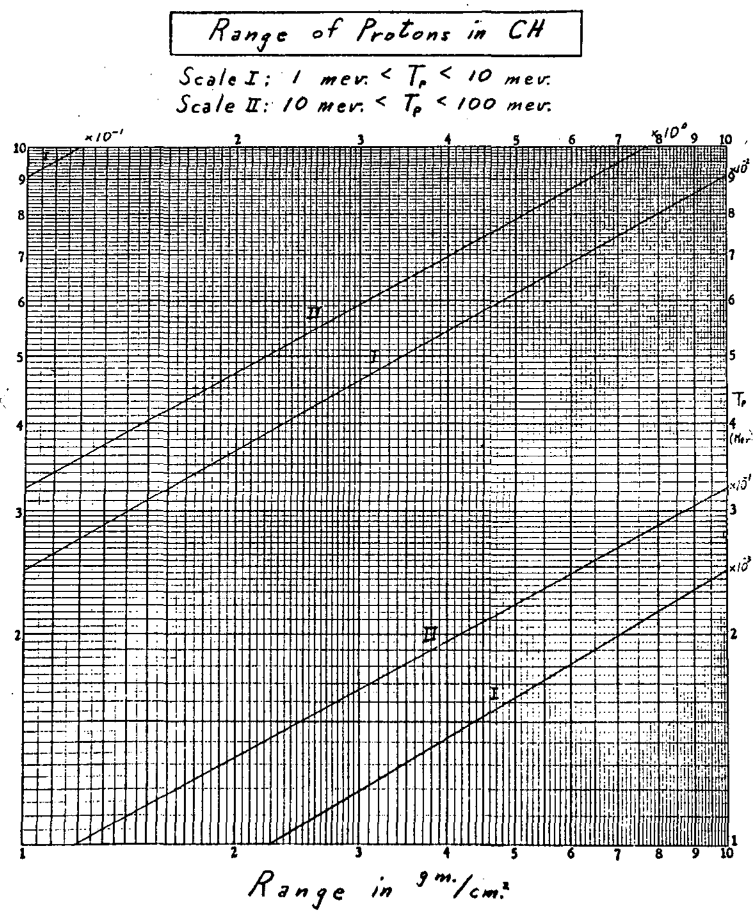
MU-6480


$-\frac{dT_p}{\rho dx}$ vs. T_p for Protons in Air
$-\frac{dT_p}{\rho dx}$
$\frac{Mev\,cm^2}{gm}$
1
2
3
4
5
6
I
II
3.0
2.05
2.0
1.95
1.9
1.85
1.8
T_p in Mev.
Scale I: 10^2 mev. $\leq T_p \leq 10^3$ mev.
Scale II: 10^3 mev. $\leq T_p \leq 10^4$ mev.

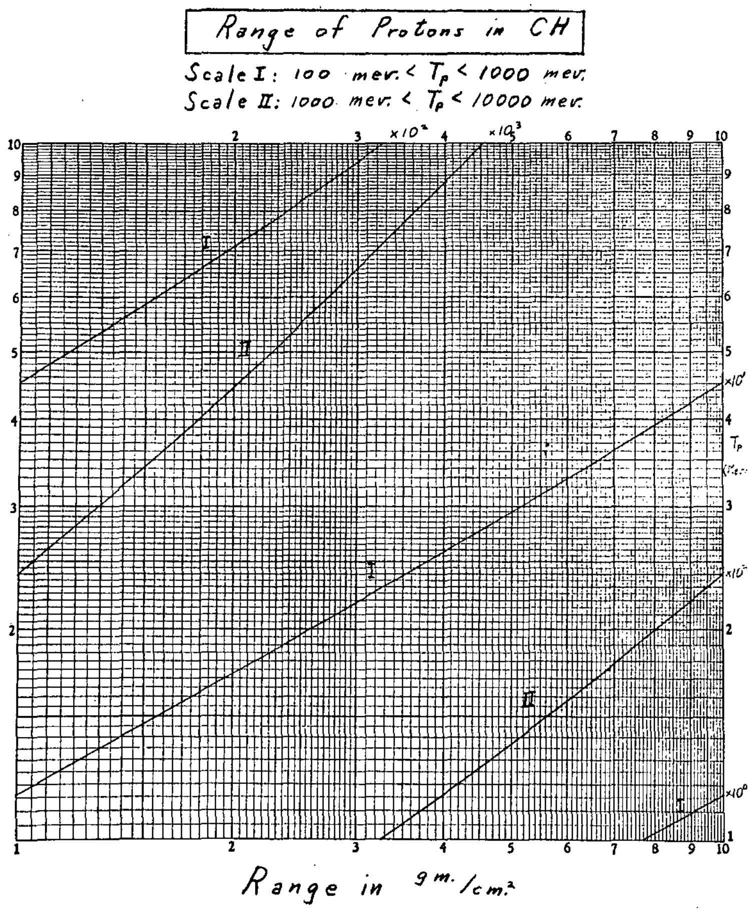
MU-6481

RANGE OF PROTONS IN CH

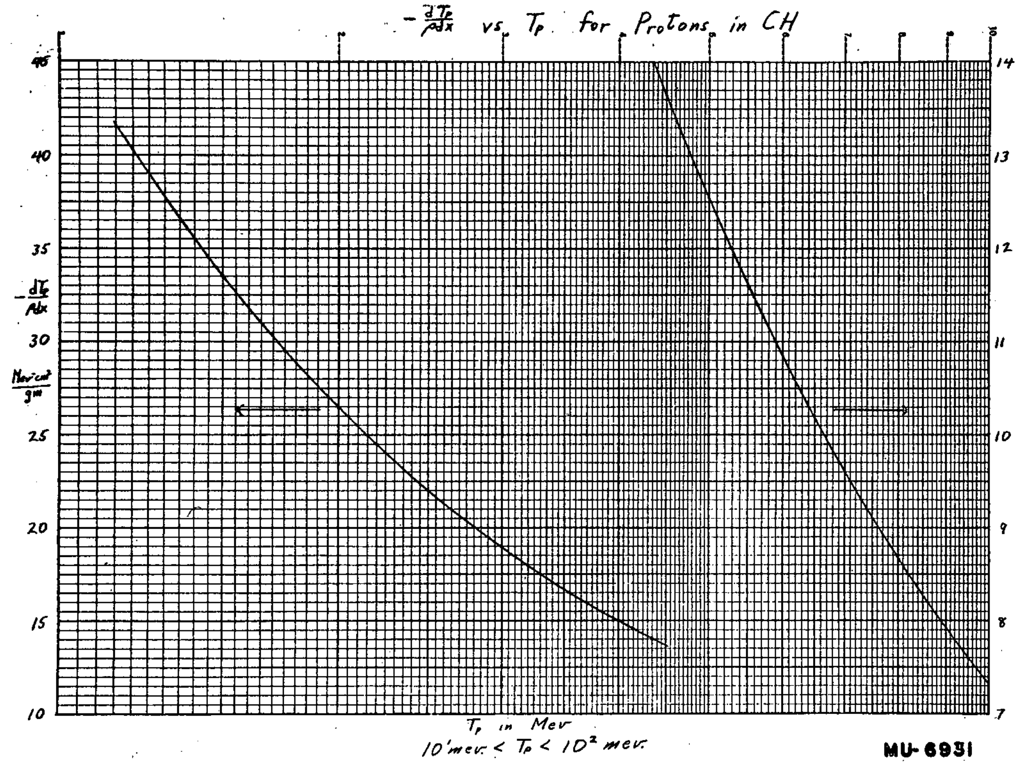
T	R	$-\frac{dT}{d\xi}$	T	R	$-\frac{dT}{d\xi}$
Mev	gm/cm^2	Mev-cm^2/gm	Mev	gm/cm^2	Mev-cm^2/gm
1	2.246×10^{-3}	276.3	200	2.586×10^{1}	4.497
2	7.038	168.6	250	3.784	3.912
3	1.407×10^{-2}	123.1	300	5.137	3.520
4	2.324	98.02	350	6.620	3.239
5	3.444	82.00	400	8.216	3.029
6	4.762	70.80	450	9.914	2.863
7	6.268	62.49	500	1.170×10^{2}	2.739
8	7.961	56.06	600	1.549	2.550
9	9.834	50.93	700	1.952	2.420
10	1.189×10^{-1}	46.72	800	2.374	2.326
12	1.651	40.24	900	2.811	2.257
15	2.472	33.50	1000	3.260	2.204
20	4.166	26.44	1500	5.606	2.074
25	6.248	22.02	2000	8.048	2.038
30	8.732	18.96	2500	1.050×10^{3}	2.034
35	1.152×10^{0}	16.72	3000	1.296	2.043
40	1.468	15.01	3500	1.539	2.059
45	1.818	13.64	4000	1.782	2.077
50	2.200	12.54	4500	2.021	2.096
60	3.061	10.85	5000	2.259	2.116
70	4.042	9.611	6000	2.727	2.155
80	5.140	8.667	7000	3.187	2.190
90	6.348	7.921	8000	3.640	2.223
100	7.663	7.317	9000	4.087	2.253
125	1.139×10^{1}	6.210	10000	4.528	2.282
150	1.570	5.456			


Range of Protons in CH
Scale I: 1 mev. < T_p < 10 mev.
Scale II: 10 mev. < T_p < 100 mev.
II
I
II
I
T_p (Mev)
Range in gm./cm.²

MU-6917

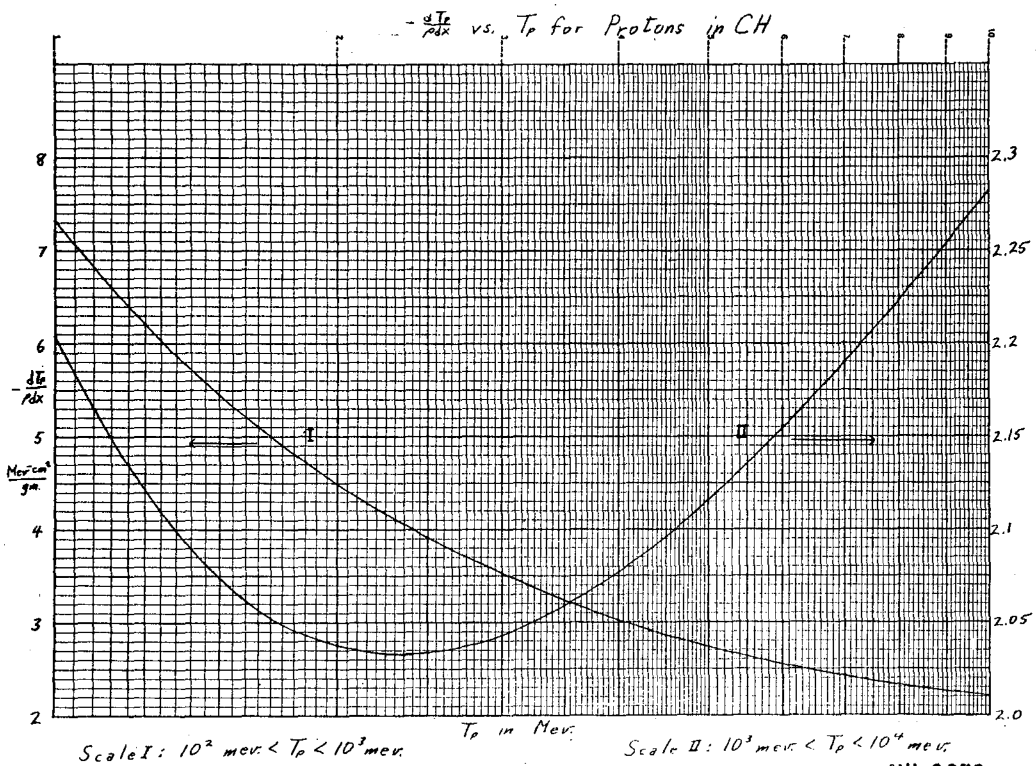

Range of Protons in CH
Scale I: 100 mev. < T_p < 1000 mev.
Scale II: 1000 mev. < T_p < 10000 mev.
×10²
×10³
×10¹
×10²
×10⁰
T_p
I
II
I
II
I
Range in gm./cm.²

MU-6918



$-\frac{dT_p}{\rho dx}$ vs. T_p for Protons in CH
45
40
35
30
25
20
15
10
$-\frac{dT_p}{\rho dx}$
$\frac{Mev\,cm^2}{gm}$
14
13
12
11
10
9
8
7
T_p in Mev
10^1 mev. < T_p < 10^2 mev.

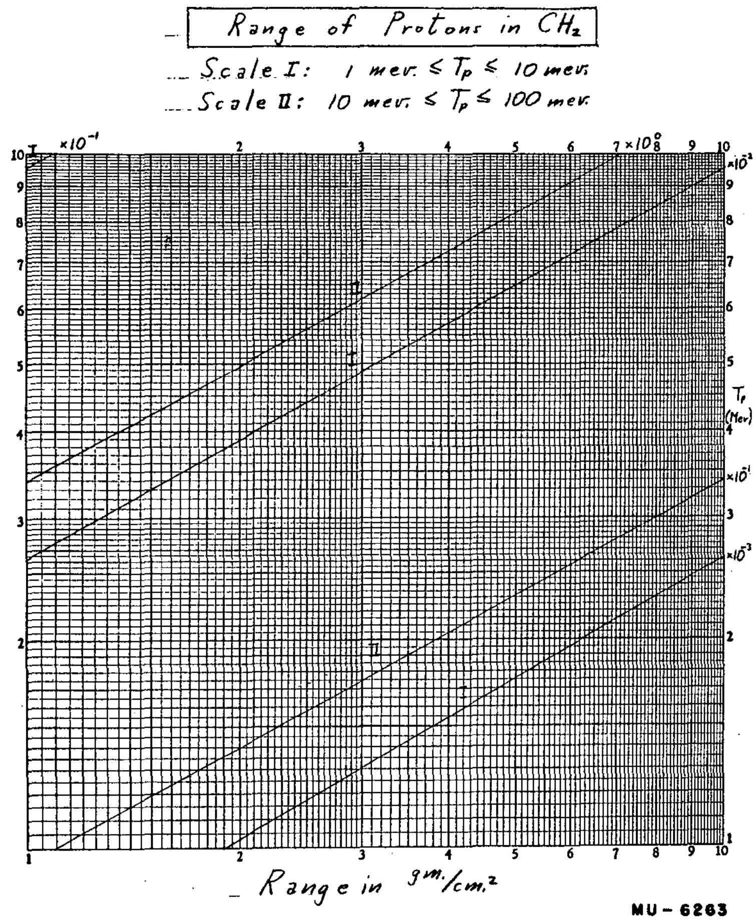
MU-6931


$-\frac{dT_p}{\rho dx}$ vs. T_p for Protons in CH
$-\frac{dT_p}{\rho dx}$
$\frac{Mev\,cm^2}{gm.}$
I
II
2.3
2.25
2.2
2.15
2.1
2.05
2.0
8
7
6
5
4
3
2
T_p in Mev.
Scale I: 10^2 mev. < T_p < 10^3 mev.
Scale II: 10^3 mev. < T_p < 10^4 mev.

MU-6932

RANGE OF PROTONS IN CH_2

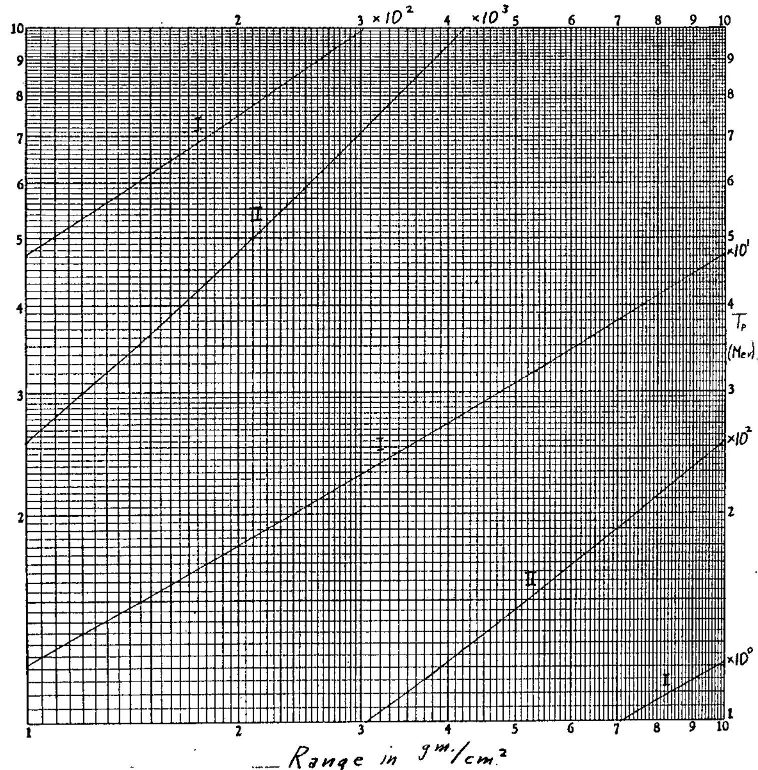
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm	T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
1	1.911×10^{-3}	305.9	200	2.396×10^{1}	4.849
2	6.258	184.8	250	3.507	4.217
3	1.268×10^{-2}	134.6	300	4.762	3.792
4	2.109	107.0	350	6.139	3.489
5	3.136	89.37	400	7.621	3.262
6	4.344	77.10	450	9.198	3.080
7	5.728	68.00	500	1.086×10^{2}	2.949
8	7.284	60.97	600	1.438	2.745
9	9.008	55.36	700	1.812	2.604
10	1.090×10^{-1}	50.77	800	2.205	2.503
12	1.516	43.69	900	2.611	2.428
15	2.272	36.34	1000	3.028	2.371
20	3.834	28.66	1500	5.210	2.229
25	5.756	23.84	2000	7.482	2.189
30	8.023	20.53	2500	9.766	2.184
35	1.062×10^{0}	18.10	3000	1.206×10^{3}	2.194
40	1.355	16.23	3500	1.432	2.210
45	1.678	14.76	4000	1.658	2.229
50	2.032	13.56	4500	1.881	2.250
60	2.828	11.72	5000	2.103	2.270
70	3.736	10.38	6000	2.539	2.312
80	4.752	9.360	7000	2.968	2.348
90	5.872	8.552	8000	3.391	2.383
100	7.090	7.898	9000	3.808	2.415
125	1.054×10^{1}	6.700	10000	4.219	2.445
150	1.454	5.886			


Range of Protons in CH_2
Scale I: 1 mev. ≤ T_p ≤ 10 mev.
Scale II: 10 mev. ≤ T_p ≤ 100 mev.
T_p (Mev)
Range in gm./cm.²

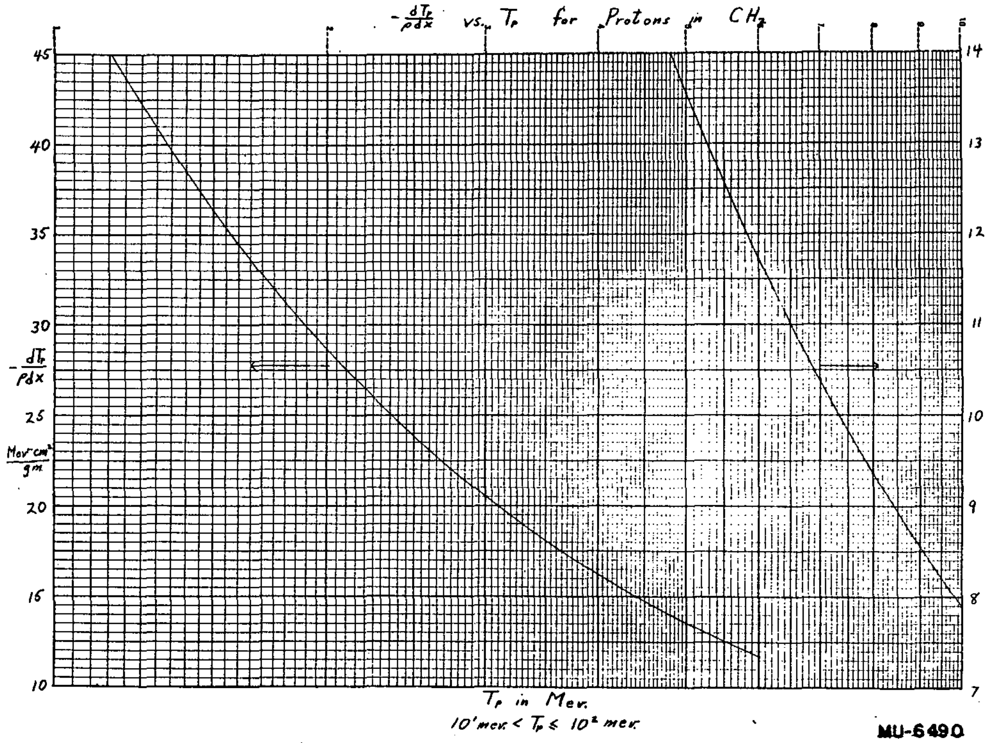
MU - 6263

Range of Protons in CH_2

Scale I: 100 mev. $\leq T_p \leq$ 1000 mev.
Scale II: 1000 mev. $\leq T_p \leq$ 10000 mev.

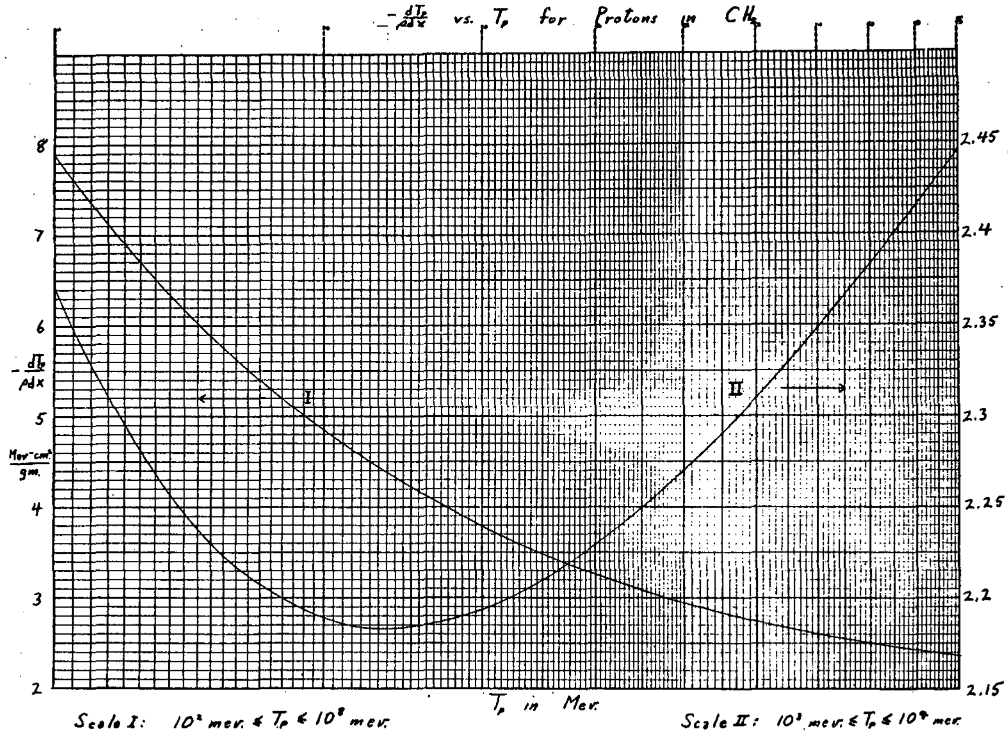


MU-6264



$-\frac{dT_p}{\rho dx}$ vs. T_p for Protons in CH_2
45
40
35
30
25
20
15
10
$-\frac{dT_p}{\rho dx}$
$\frac{Mev\ cm^2}{gm}$
14
13
12
11
10
9
8
7
T_p in Mev.
10^1 mev. < T_p ≤ 10^2 mev.

MU-6490

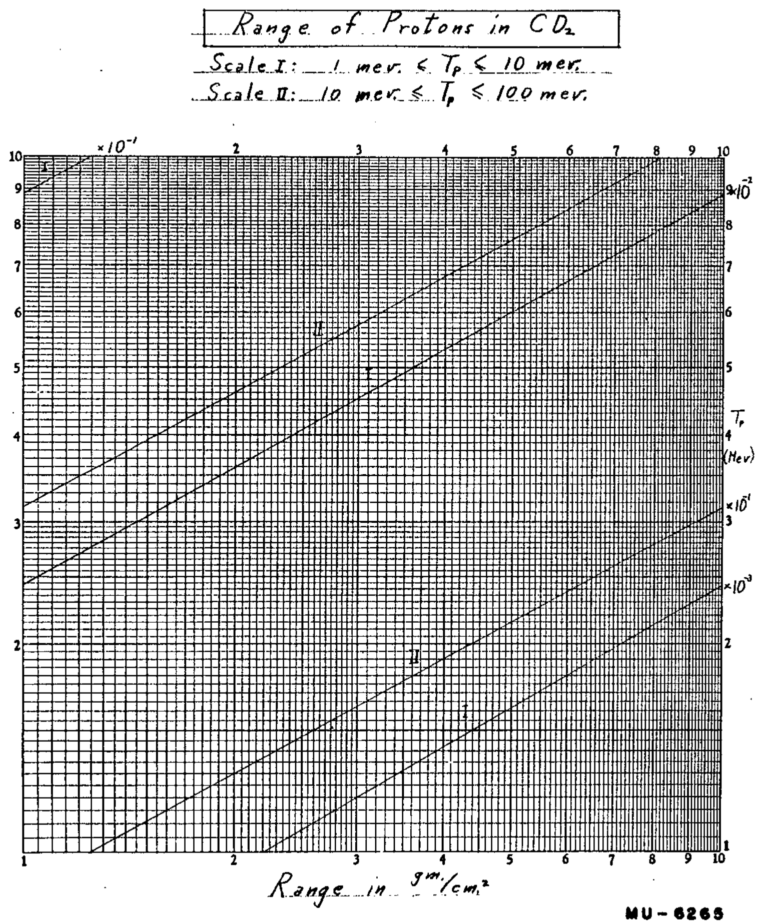

$-\frac{dT_p}{\rho dx}$ vs. T_p for Protons in CH_2
$-\frac{dT_p}{\rho dx}$
Mev-cm²/gm.
8
7
6
5
4
3
2
2.45
2.4
2.35
2.3
2.25
2.2
2.15
I
II
T_p in Mev.
Scale I: 10^2 mev. ≤ T_p ≤ 10^3 mev.
Scale II: 10^3 mev. ≤ T_p ≤ 10^4 mev.

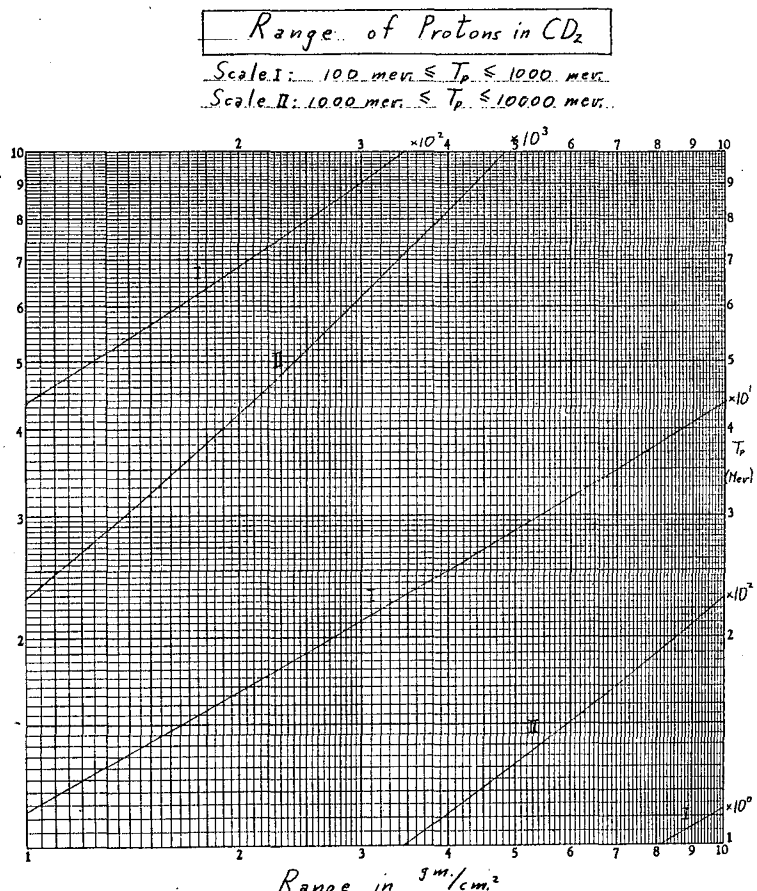
MU-6491

RANGE OF PROTONS IN CD_2

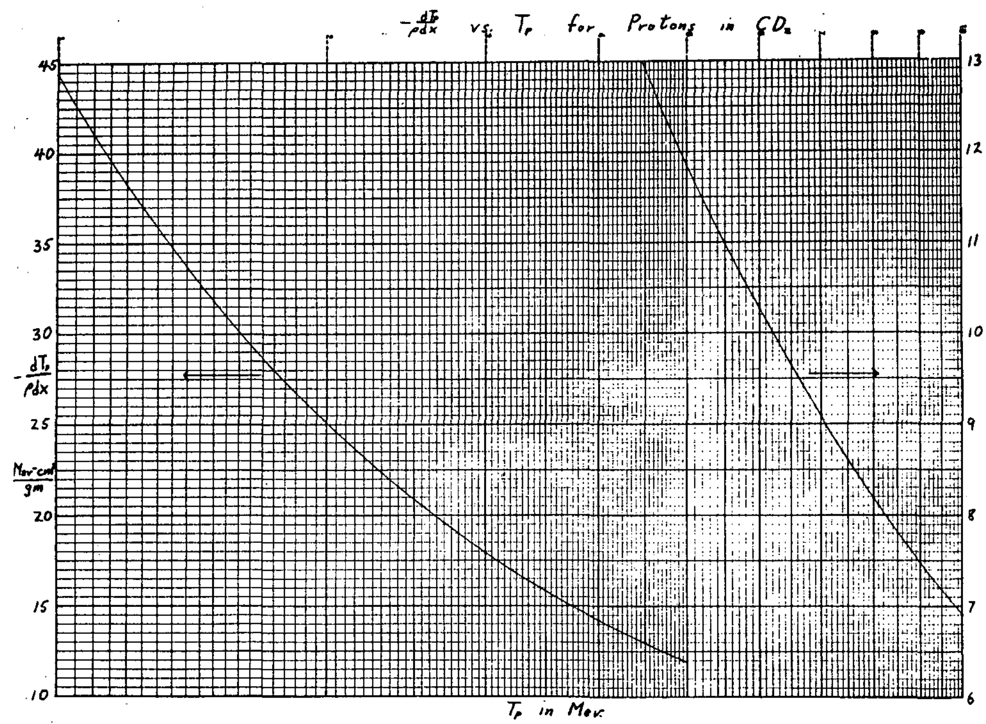
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
1	2.311×10^{-3}	267.7
2	7.196	161.7
3	1.455×10^{-2}	117.8
4	2.414	93.59
5	3.589	78.20
6	4.970	67.46
7	6.552	59.50
8	8.330	53.35
9	1.030×10^{-1}	48.44
10	1.246	44.42
12	1.733	38.23
15	2.597	31.80
20	4.382	25.08
25	6.579	20.86
30	9.170	17.96
35	1.214×10^{0}	15.83
40	1.548	14.20
45	1.918	12.91
50	2.322	11.86
60	3.232	10.26
70	4.270	9.085
80	5.432	8.190
90	6.711	7.483
100	8.103	6.911
125	1.205×10^{1}	5.863
150	1.661	5.150

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
200	2.739×10^{1}	4.243
250	4.008	3.690
300	5.443	3.318
350	7.016	3.053
400	8.710	2.855
450	1.051×10^{2}	2.696
500	1.241	2.580
600	1.643	2.402
700	2.072	2.279
800	2.520	2.190
900	2.984	2.124
1000	3.460	2.074
1500	5.955	1.951
2000	8.551	1.915
2500	1.116×10^{3}	1.911
3000	1.378	1.920
3500	1.637	1.934
4000	1.895	1.950
4500	2.150	1.968
5000	2.403	1.986
6000	2.902	2.023
7000	3.392	2.054
8000	3.875	2.085
9000	4.352	2.113
10000	4.822	2.140

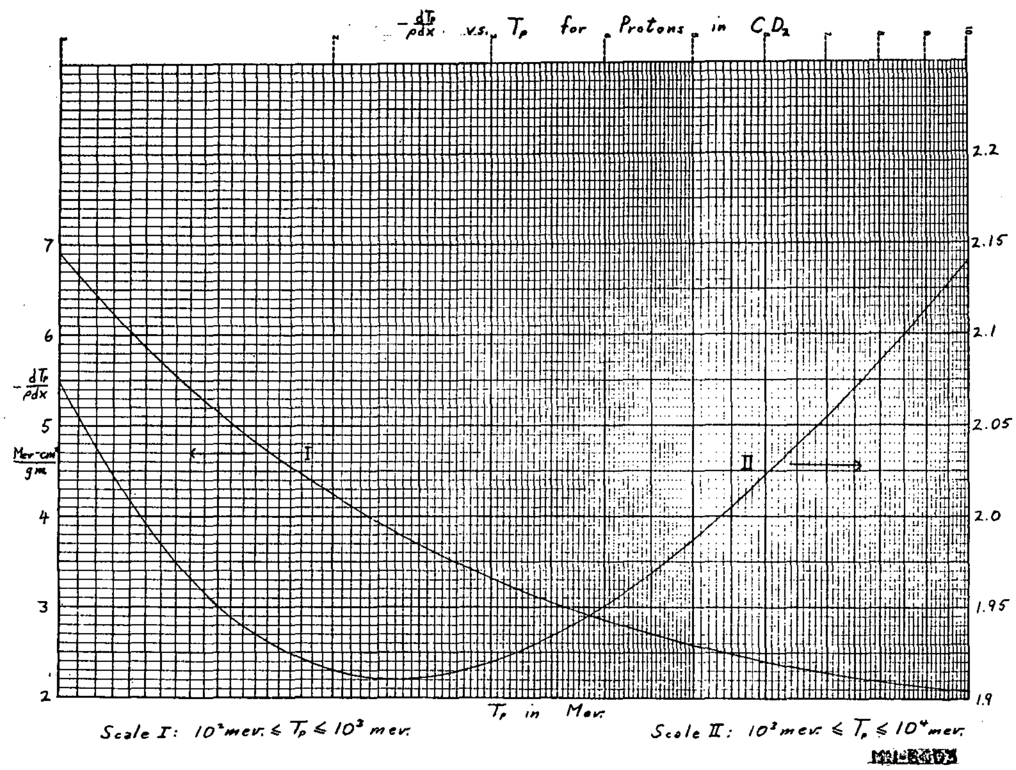

Range of Protons in CD_2
Scale I: 1 mev. ≤ T_p ≤ 10 mev.
Scale II: 10 mev. ≤ T_p ≤ 100 mev.
×10⁻¹
×10⁻²
×10⁻¹
×10⁻³
T_p (Mev)
I
II
I
II
I
Range in gm/cm²
MU-6265


Range of Protons in CD_2
Scale I: 100 mev. ≤ T_p ≤ 1000 mev.
Scale II: 1000 mev. ≤ T_p ≤ 10000 mev.
×10²
×10³
×10¹
×10²
×10⁰
T_p (Mev)
I
II
Range in gm./cm.²

MU-6266

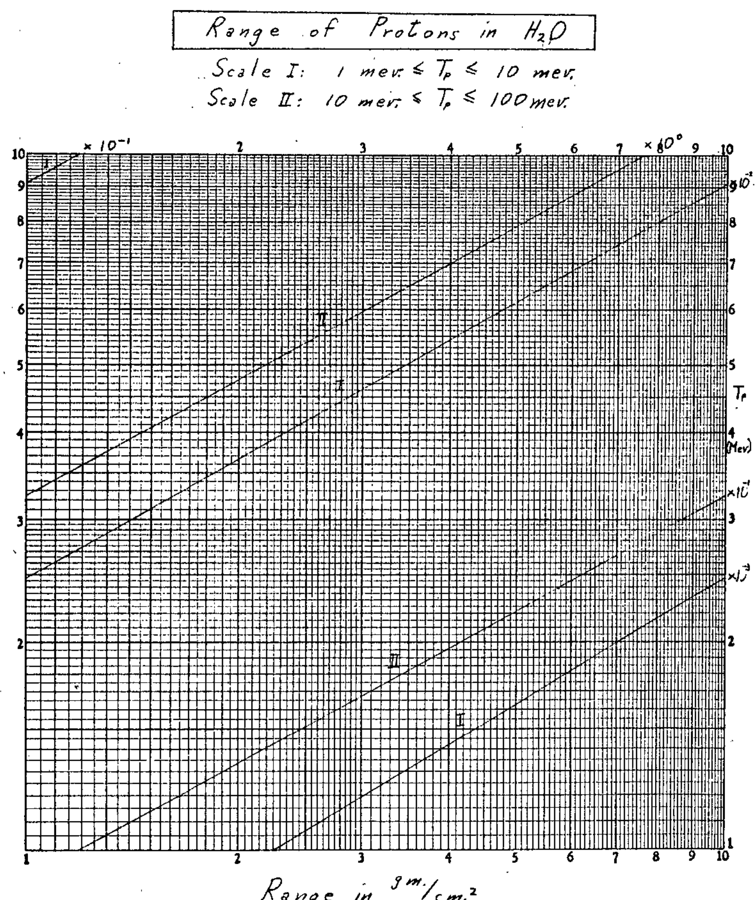

$-\frac{dT_p}{\rho dx}$ vs. T_p for Protons in CD_2
45
40
35
30
$-\frac{dT_p}{\rho dx}$
25
$\frac{Mev\text{-}cm^2}{gm}$
20
15
10
13
12
11
10
9
8
7
6
T_p in Mev.
10^1 mev. $\leq T_p \leq 10^2$ mev.

MU-6492


$-\frac{dT_p}{\rho dx}$ v.s. T_p for Protons in C_2D_2
7
6
5
4
3
2
$-\frac{dT_p}{\rho dx}$
$\frac{\text{Mev-cm}^2}{\text{gm}}$
I
II
2.2
2.15
2.1
2.05
2.0
1.95
1.9
T_p in Mev.
Scale I: 10^2 mev. ≤ T_p ≤ 10^3 mev.
Scale II: 10^3 mev. ≤ T_p ≤ 10^4 mev.

RANGE OF PROTONS IN H_2O

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
1	2.245×10^{-3}	279.4
2	7.014	167.6
3	1.411×10	122.7
4	2.327	97.93
5	3.450	82.04
6	4.763	70.90
7	6.270	62.63
8	7.955	56.22
9	9.826	51.10
10	1.187×10^{-1}	46.91
12	1.648	40.43
15	2.465	33.69
20	4.147	26.62
25	6.216	22.18
30	8.652	19.11
35	1.144×10^{0}	16.86
40	1.458	15.14
45	1.805	13.77
50	2.184	12.66
60	3.036	10.96
70	4.008	9.709
80	5.094	8.758
90	6.290	8.006
100	7.590	7.397
150	1.5531×10^{1}	5.521
200	2.558×10^{1}	4.553
250	3.740	3.962
300	5.074	3.566
350	6.538	3.282
400	8.116	3.070
450	9.792	2.901
500	1.155×10^{2}	2.777
600	1.529	2.586
700	1.927	2.455
800	2.343	2.360
900	2.773	2.290
1000	3.215	2.237
1500	5.527	2.107
2000	7.930	2.070
2500	1.034×10^{3}	2.067
3000	1.276	2.078
3500	1.516	2.094
4000	1.754	2.113
4500	1.989	2.133
5000	2.222	2.154
6000	2.682	2.193
7000	3.134	2.230
8000	3.579	2.264
9000	4.018	2.296
10000	4.451	2.325



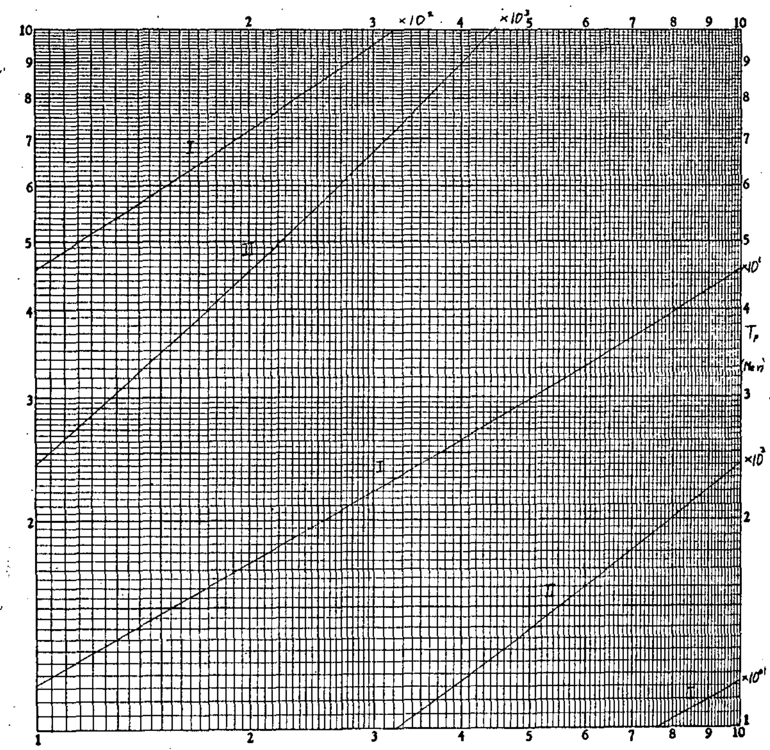
Range of Protons in H_2O
Scale I: 1 mev. ≤ T_p ≤ 10 mev.
Scale II: 10 mev. ≤ T_p ≤ 100 mev.
× 10⁻¹
× 10⁰
× 10⁻²
T_p (Mev)
I
II
Range in gm./cm.²

MU-6259

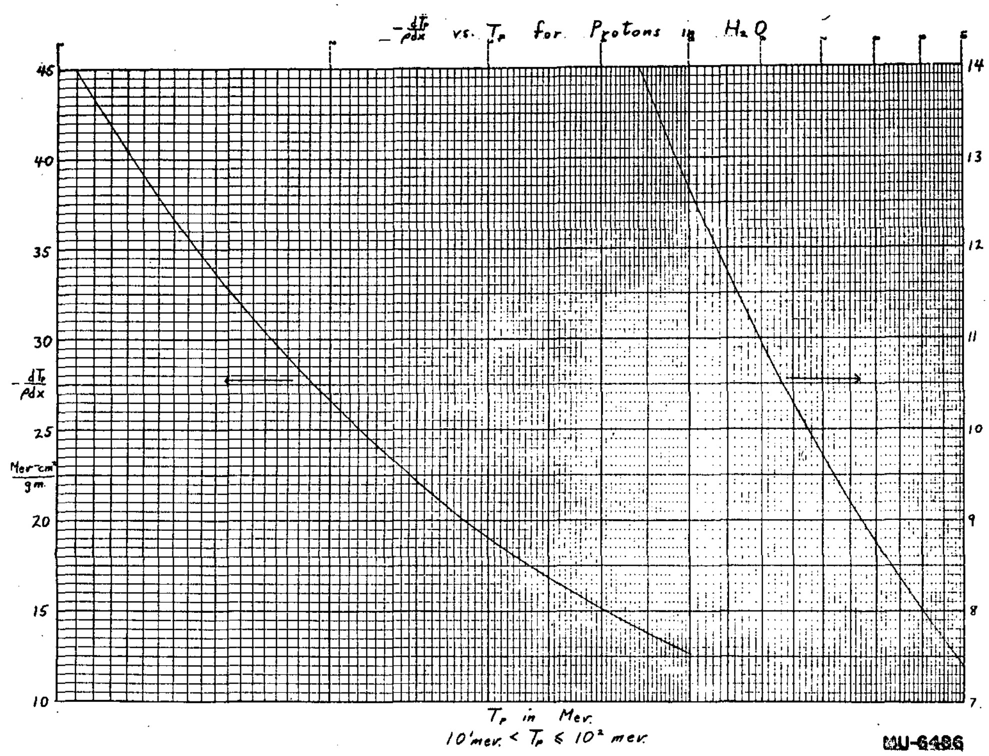
Range of Protons in H_2O

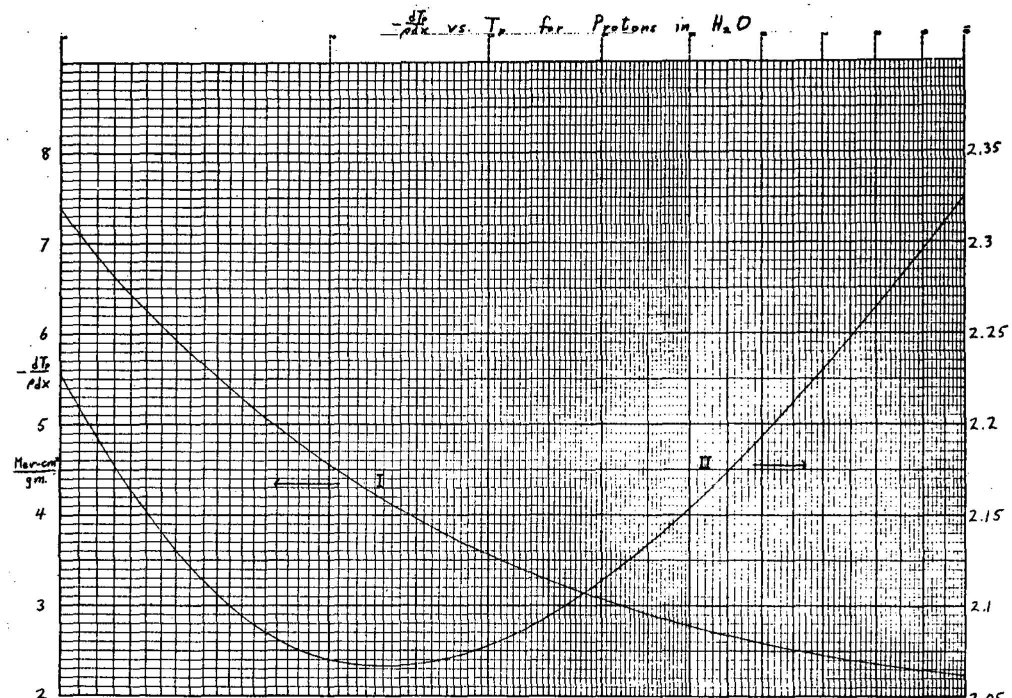
Scale I: 100 mev. $\leq T_p \leq$ 1000 mev.

Scale II: 1000 mev. $\leq T_p \leq$ 10000 mev.



MU - 6260


$-\frac{dT_p}{\rho dx}$ vs. T_p for Protons in H_2O
45
40
35
30
25
20
15
10
$-\frac{dT_p}{\rho dx}$
Mev-cm²/gm.
14
13
12
11
10
9
8
7
T_p in Mev.
10^1 mev. < T_p ≤ 10^2 mev.
MU-6486



Scale I: 10^2 mev. $\leq T_p \leq 10^3$ mev.

Scale II: 10^3 mev. $\leq T_p \leq 10^4$ mev.

MU-6487

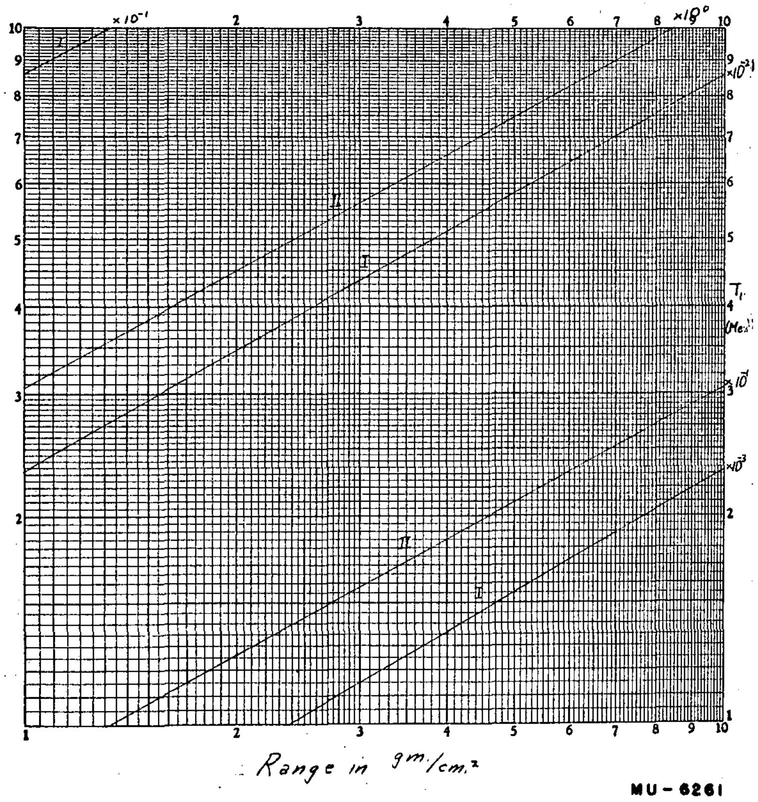
RANGE OF PROTONS IN D_2O

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
1	2.375×10^{-3}	251.4
2	7.709	150.8
3	1.556×10^{-2}	110.4
4	2.577	88.14
5	3.822	73.83
6	5.284	63.81
7	6.954	56.37
8	8.830	50.60
9	1.090×10^{-1}	45.99
10	1.318	42.22
12	1.830	36.38
15	2.737	30.32
20	4.607	23.96
25	6.905	19.96
30	9.612	17.20
35	1.271×10^{0}	15.18
40	1.620	13.62
45	2.005	12.39
50	2.426	11.39
60	3.373	9.859
70	4.453	8.738
80	5.660	7.882
90	6.9884	7.206
100	8.434	6.658
125	1.253×10^{1}	5.653
150	1.726	4.969

T Mev	R gm/cm^2	$P-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
200	2.842×10^{1}	4.098
250	4.156	3.566
300	5.638	3.209
350	7.265	2.954
400	9.017	2.763
450	1.088×10^{2}	2.611
500	1.284	2.499
600	1.699	2.328
700	2.141	2.209
800	2.603	2.124
900	3.081	2.061
1000	3.572	2.014
1500	6.141	1.896
2000	8.811	1.863
2500	1.149×10^{3}	1.861
3000	1.418	1.870
3500	1.684	1.885
4000	1.948	1.902
4500	2.210	1.920
5000	2.469	1.938
6000	2.980	1.974
7000	3.483	2.007
8000	3.977	2.038
9000	4.464	2.066
10000	4.945	2.092

Range of Protons in D_2O

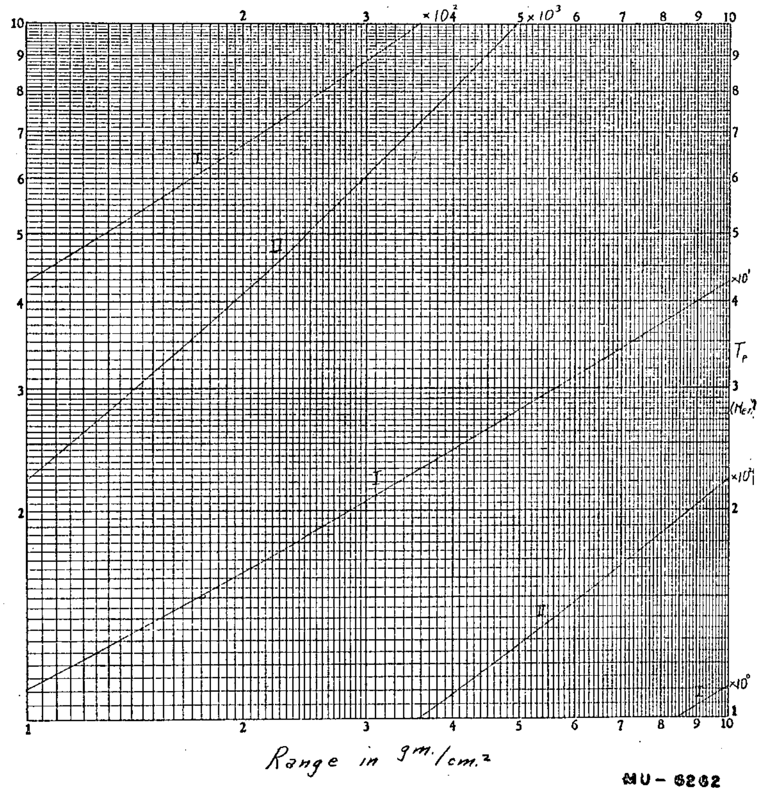
Scale I: .1 mev. $\leq T_p \leq$ 10 mev.
Scale II: 10 mev. $\leq T_p \leq$ 100 mev.



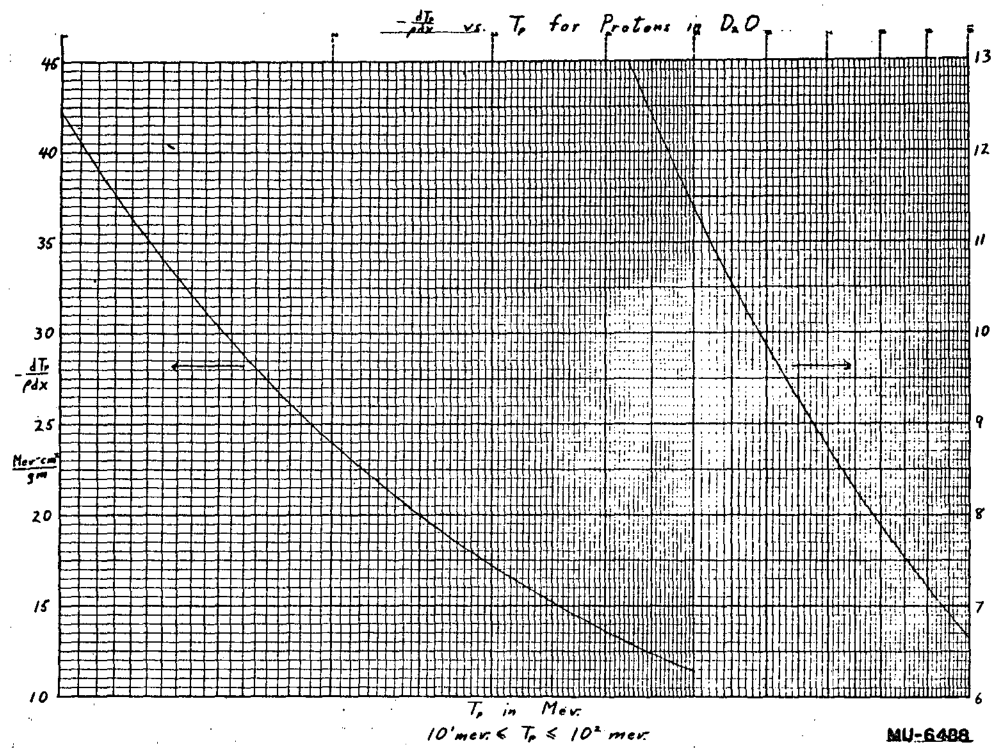
MU-6261

Range of Protons in D_2O

Scale I: 100 mev. ≤ T_p ≤ 1000 mev.
Scale II: 1000 mev. ≤ T_p ≤ 10000 mev.

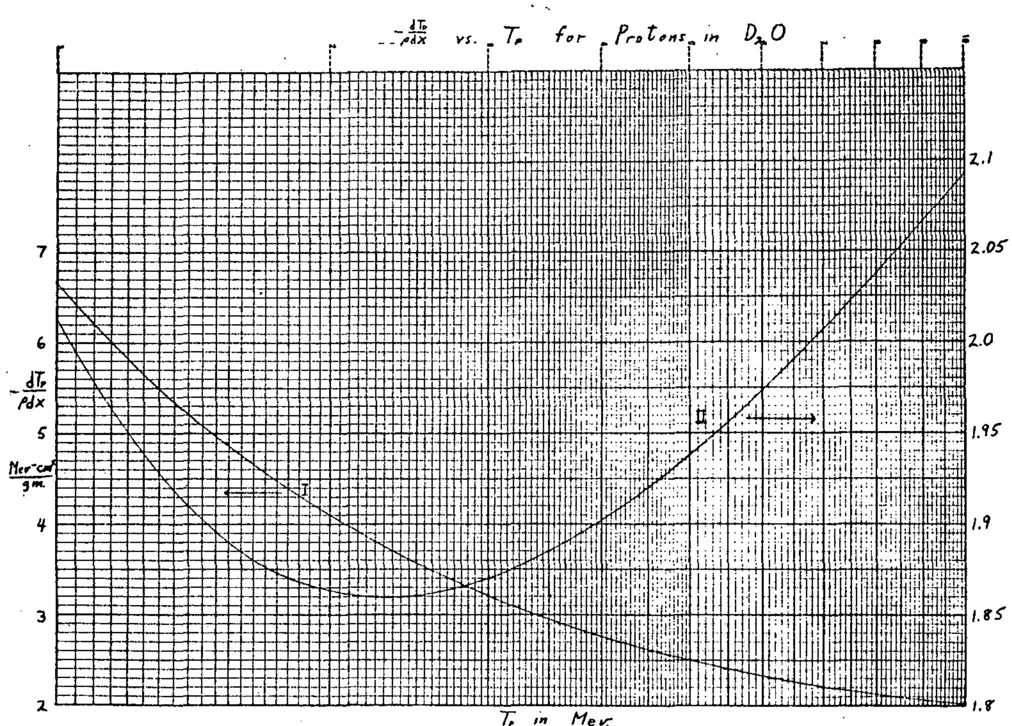


MU - 6262



$-\frac{dT_p}{\rho dx}$ vs. T_p for Protons in D_2O
46
40
35
30
25
20
15
10
$-\frac{dT_p}{\rho dx}$
$\frac{Mev\text{-}cm^2}{gm}$
13
12
11
10
9
8
7
6
T_p in Mev.
10^1 mev. $\leq T_p \leq 10^2$ mev.

MU-6488

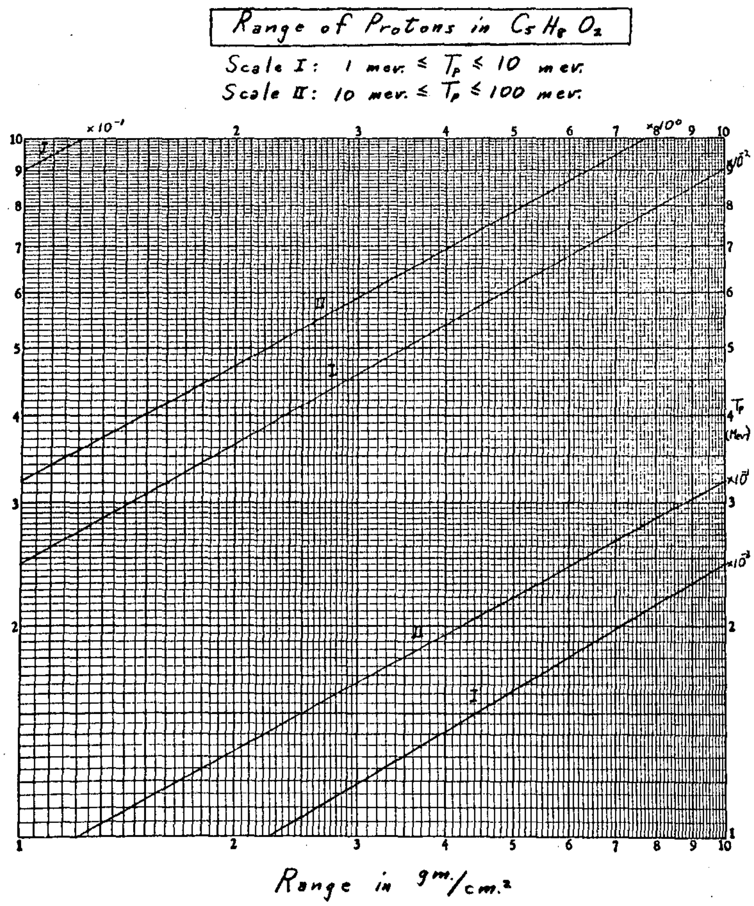


Scale I: 10^2 mev. $\leq T_p \leq 10^3$ mev. Scale II: 10^3 mev. $\leq T_p \leq 10^4$ mev.

RANGE OF PROTONS IN $C_5H_8O_2$

T (Mev)	R (gm/cm^2)	$-\frac{dT}{d\xi}$ ($Mev\text{-}cm^2/gm$)
1	2.254×10^{-3}	273.2
2	7.112	166.0
3	1.425×10^{-2}	121.4
4	2.355	96.73
5	3.490	80.98
6	4.823	69.95
7	6.347	61.77
8	8.059	55.43
9	9.954	50.37
10	1.203×10^{-1}	46.22
12	1.670	39.82
15	2.500	33.17
20	4.210	26.20
25	6.311	21.82
30	8.788	18.80
35	1.163×10^{0}	16.58
40	1.482	14.88
45	1.834	13.54
50	2.220	12.44
60	3.087	10.76
70	4.069	9.539
80	5.167	8.603
90	6.385	7.863
100	7.709	7.264
125	1.145×10^{1}	6.166
150	1.580	5.420

T (Mev)	R (gm/cm^2)	$-\frac{dT}{d\xi}$ ($Mev\text{-}cm^2/gm$)
200	2.604×10^{1}	4.468
250	3.808	3.888
300	5.169	3.498
350	6.662	3.220
400	8.268	3.011
450	9.976	2.847
500	1.177×10^{2}	2.723
600	1.559	2.536
700	1.964	2.406
800	2.388	2.314
900	2.827	2.245
1000	3.278	2.193
1500	5.637	2.064
2000	8.090	2.028
2500	1.056×10^{3}	2.025
3000	1.302	2.034
3500	1.547	2.050
4000	1.790	2.069
4500	2.030	2.088
5000	2.269	2.108
6000	2.739	2.147
7000	3.201	2.182
8000	3.656	2.215
9000	4.104	2.246
10000	4.546	2.274

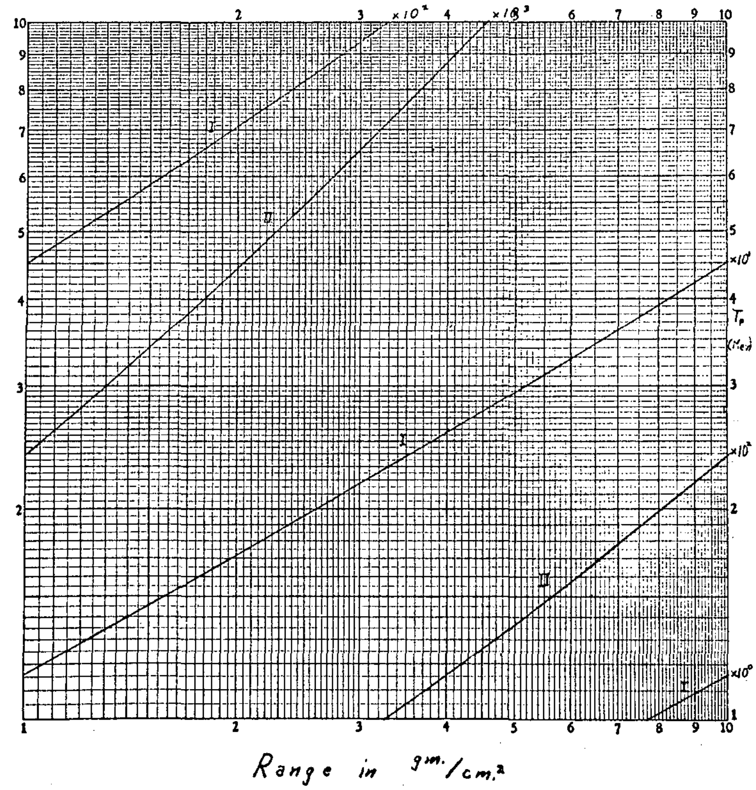

Range of Protons in $C_5H_8O_2$
Scale I: 1 mev. ≤ T_p ≤ 10 mev.
Scale II: 10 mev. ≤ T_p ≤ 100 mev.
T_p (Mev)
Range in gm./cm.²

MU-6916

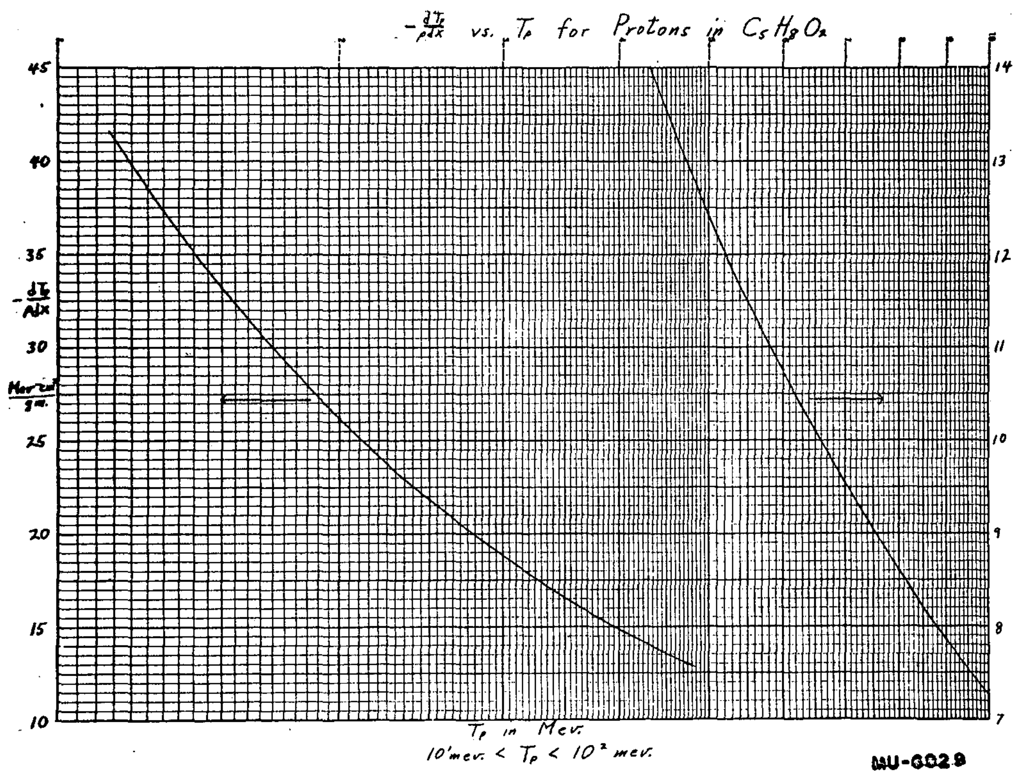
Range of Protons in $C_5H_8O_2$

Scale I: 100 mev. ≤ T_p ≤ 1000 mev.

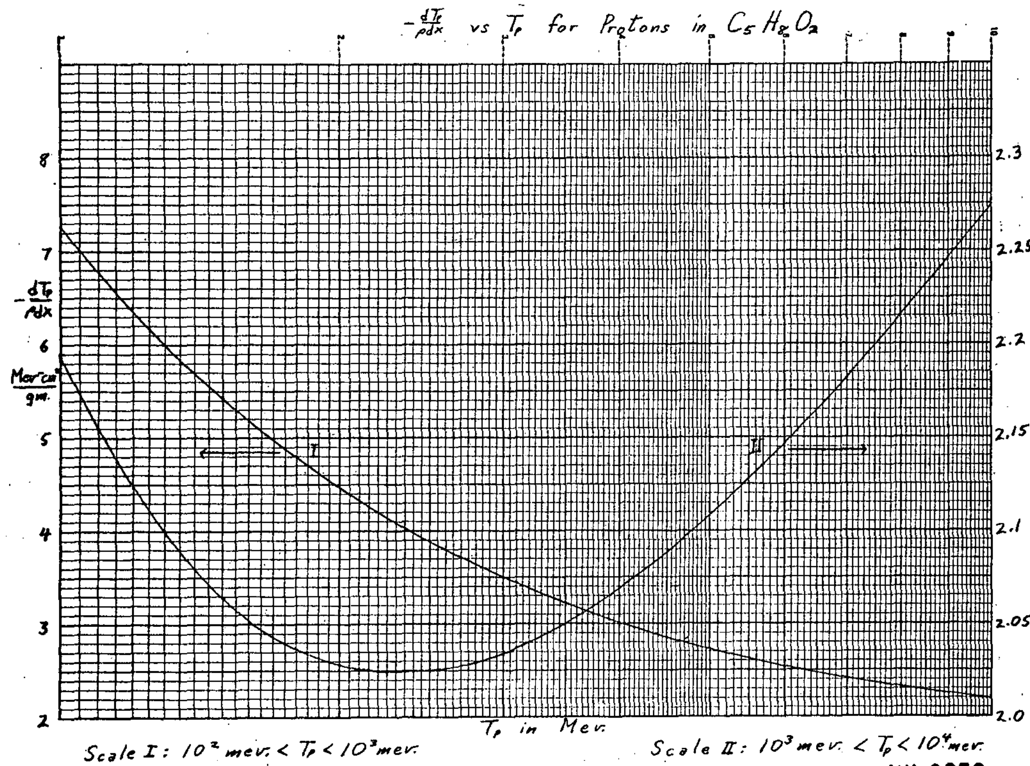
Scale II: 1000 mev. ≤ T_p ≤ 10000 mev.



MU-6915


$-\frac{dT_p}{\rho dx}$ vs. T_p for Protons in $C_5H_8O_2$
45
40
35
30
25
20
15
10
$-\frac{dT_p}{\rho dx}$
$\frac{Mev\ cm^2}{gm.}$
14
13
12
11
10
9
8
7
T_p in Mev.
10^1mev. < T_p < 10^2 mev.

MU-6029



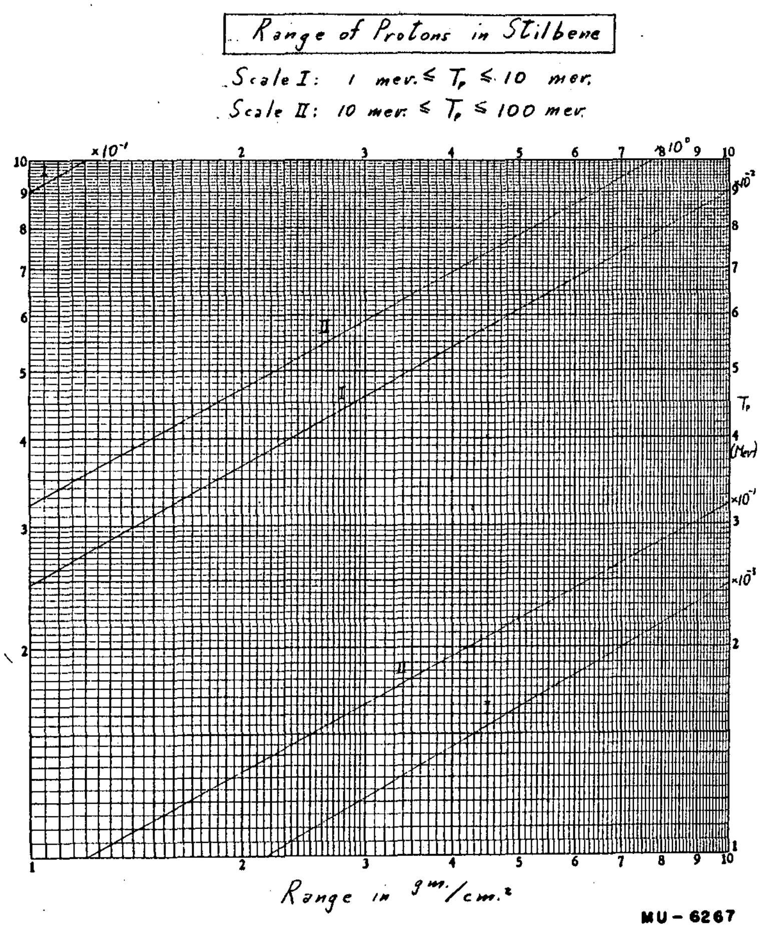
$-\frac{dT_p}{\rho dx}$ vs T_p for Protons in $C_5H_8O_2$
$-\frac{dT_p}{\rho dx}$
$\frac{Mev\ cm^2}{gm.}$
8
7
6
5
4
3
2
2.3
2.25
2.2
2.15
2.1
2.05
2.0
I
II
T_p in Mev.
Scale I: 10^2 mev. < T_p < 10^3 mev.
Scale II: 10^3 mev. < T_p < 10^4 mev.

MU-6930

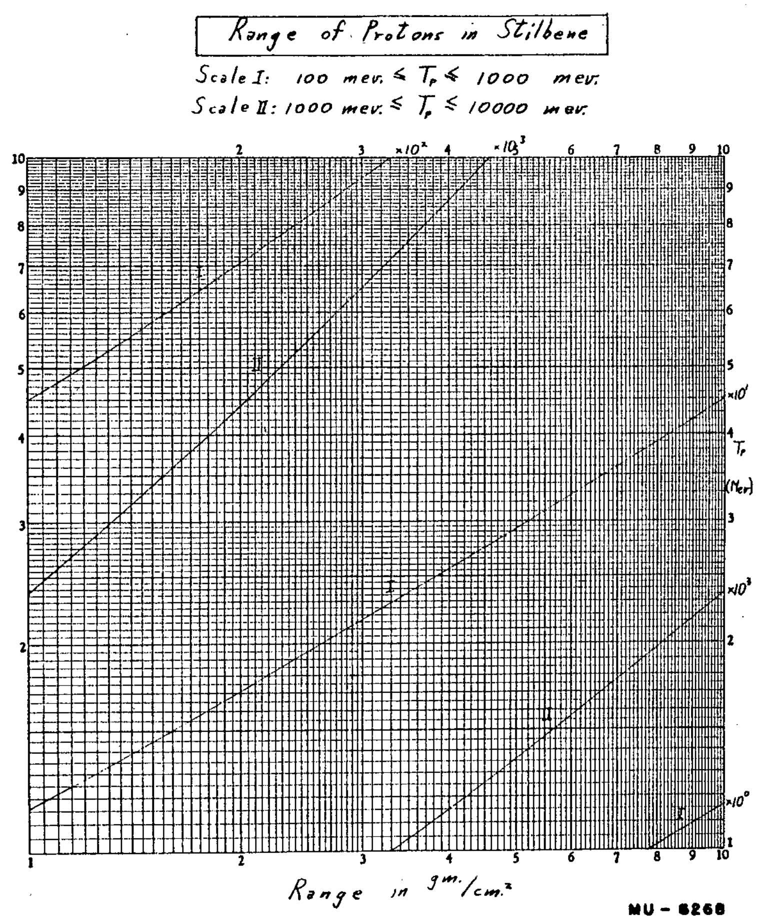
RANGE OF PROTONS IN STILBENE

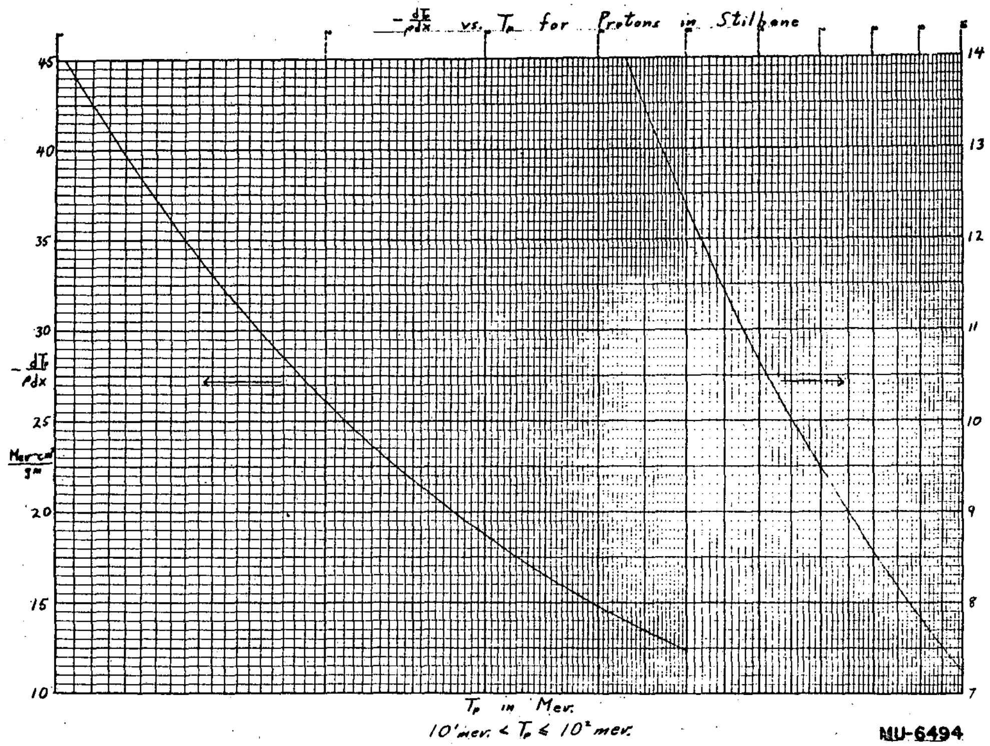
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
1	2.160×10^{-3}	271.7
2	7.035	166.1
3	1.416×10^{-2}	121.3
4	2.348	96.62
5	3.483	80.85
6	4.820	69.82
7	6.346	61.63
8	8.063	55.30
9	9.962	50.24
10	1.204×10^{-1}	46.09
12	1.673	39.70
15	2.505	33.06
20	4.221	26.10
25	6.331	21.73
30	8.818	18.72
35	1.167×10^{0}	16.51
40	1.487	14.82
45	1.842	13.47
50	2.229	12.38
60	3.100	10.71
70	4.094	9.491
80	5.206	8.559
90	6.429	7.823
100	7.761	7.226
125	1.153×10^{1}	6.133
150	1.590	5.390

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
200	2.619×10^{1}	4.443
250	3.831	3.865
300	5.200	3.477
350	6.702	3.200
400	8.316	2.993
450	1.004×10^{2}	2.830
500	1.184	2.706
600	1.568	2.520
700	1.970	2.391
800	2.403	2.299
900	2.845	2.230
1000	3.299	2.178
1500	5.674	2.050
2000	8.144	2.014
2500	1.063×10^{3}	2.010
3000	1.311	2.020
3500	1.558	2.035
4000	1.802	2.054
4500	2.044	2.073
5000	2.285	2.092
6000	2.758	2.132
7000	3.224	2.165
8000	3.682	2.198
9000	4.134	2.228
10000	4.580	2.256

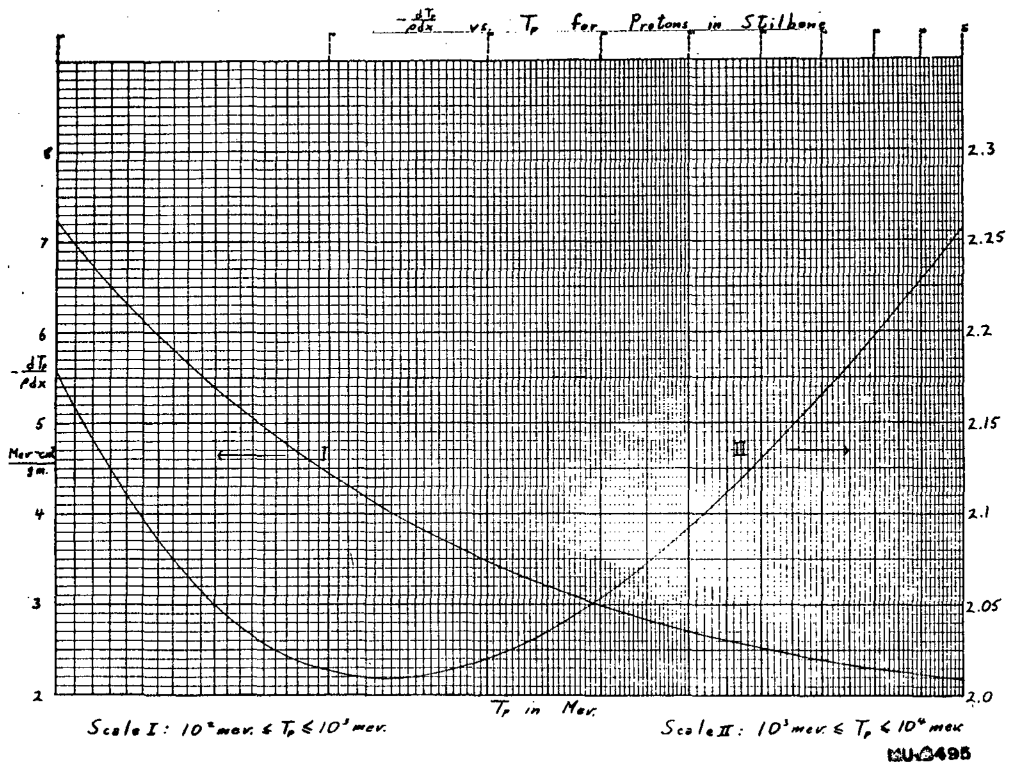

Range of Protons in Stilbene
Scale I: 1 mev. ≤ T_p ≤ 10 mev.
Scale II: 10 mev. ≤ T_p ≤ 100 mev.
×10⁻¹
×10⁰
×10⁻²
×10⁻¹
T_p (Mev)
I
II
Range in gm./cm.²

MU-6267


Range of Protons in Stilbene
Scale I: 100 mev. ≤ T_p ≤ 1000 mev.
Scale II: 1000 mev. ≤ T_p ≤ 10000 mev.
$\times 10^2$
$\times 10^3$
$\times 10^1$
$\times 10^0$
T_p (Mev)
I
II
Range in gm./cm.^{2}
MU - 6268


$-\frac{dT_p}{\rho dx}$ vs. T_p for Protons in Stilbene
45
40
35
30
25
20
15
10
$-\frac{dT_p}{\rho dx}$
$\frac{Mev\text{-}cm^2}{gm}$
14
13
12
11
10
9
8
7
T_p in Mev.
10^1 mev. < T_p ≤ 10^2 mev.

MU-6494


$-\frac{dT_p}{\rho dx}$ vs. T_p for Protons in Stilbene
$-\frac{dT_p}{\rho dx}$
Mev-cm²/gm.
2
3
4
5
6
7
8
I
II
2.0
2.05
2.1
2.15
2.2
2.25
2.3
T_p in Mev.
Scale I: 10^2 mev. ≤ T_p ≤ 10^3 mev.
Scale II: 10^3 mev. ≤ T_p ≤ 10^4 mev.
MU-3495

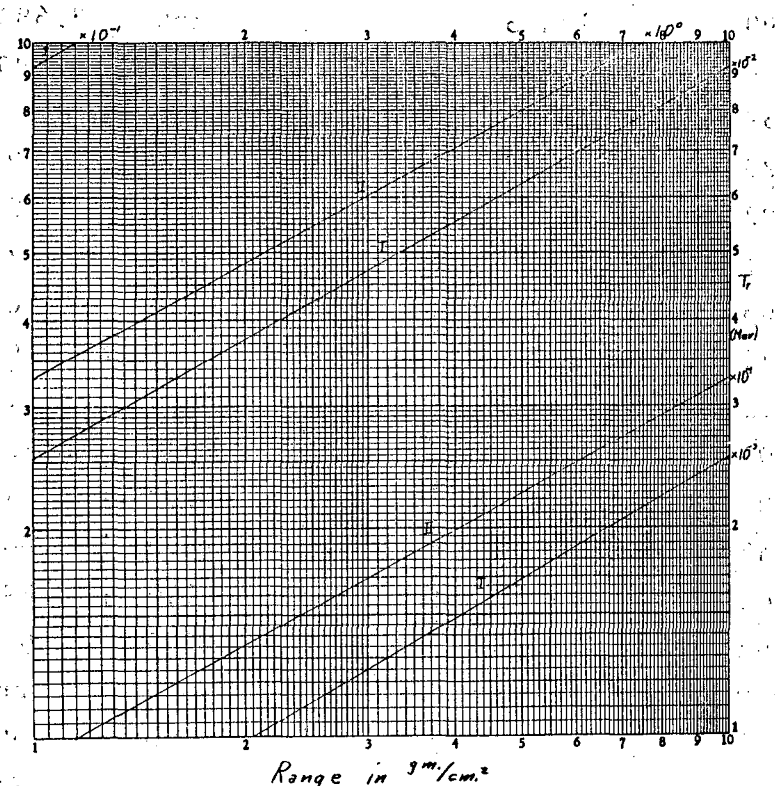
RANGE OF PROTONS IN PHENYL CYCLOHEXANE

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
1	2.046×10^{-3}	286.6
2	6.690	174.3
3	1.348×10^{-2}	127.1
4	2.239	101.2
5	3.323	84.58
6	4.602	73.00
7	6.061	64.42
8	7.705	57.78
9	9.521	52.48
10	1.152×10^{-1}	48.14
12	1.601	41.45
15	2.398	34.50
20	4.043	27.22
25	6.066	22.66
30	8.452	19.51
35	1.119×10^{0}	17.20
40	1.426	15.44
45	1.766	14.03
50	2.138	12.90
60	2.975	11.15
70	3.930	9.881
80	4.997	8.909
90	6.173	8.142
100	7.452	7.520
125	1.108×10^{1}	6.381
150	1.527	5.607

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
200	2.517×10^{1}	4.620
250	3.682	4.019
300	4.999	3.615
350	6.444	3.327
400	7.997	3.111
450	9.651	2.939
500	1.139×10^{2}	2.812
600	1.508	2.618
700	1.901	2.484
800	2.312	2.388
900	2.738	2.317
1000	3.174	2.263
1500	5.461	2.128
2000	7.840	2.090
2500	1.023×10^{3}	2.086
3000	1.263	2.096
3500	1.500	2.112
4000	1.737	2.130
4500	1.970	2.150
5000	2.202	2.170
6000	2.658	2.211
7000	3.107	2.245
8000	3.549	2.279
9000	3.985	2.310
10000	4.415	2.339

Range of Protons in Phenyl-Cyclo-Hexane

Scale I: 1 mev. ≤ T_p ≤ 10 mev.
Scale II: 10 mev. ≤ T_p ≤ 100 mev.

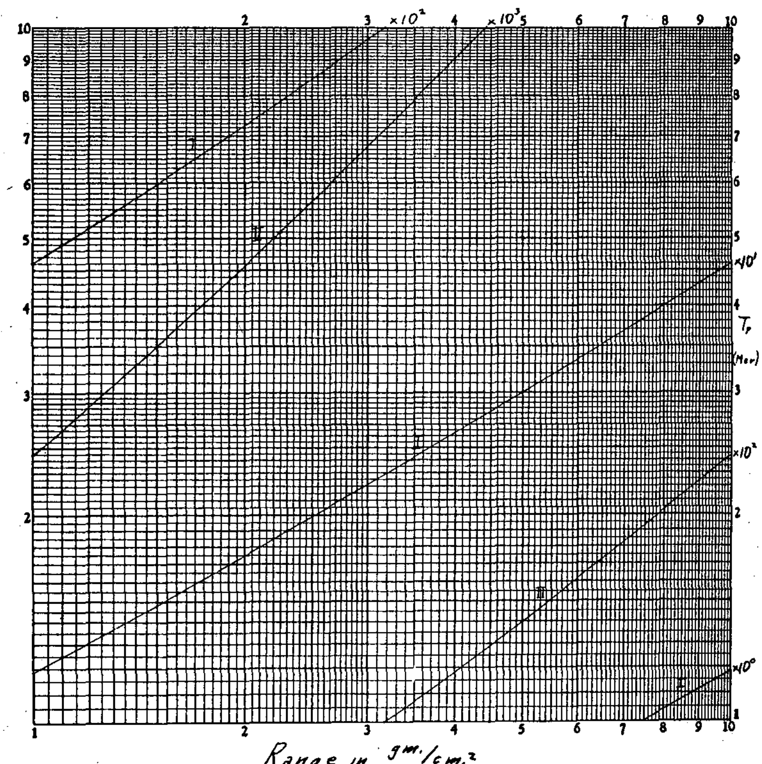


MU-5269

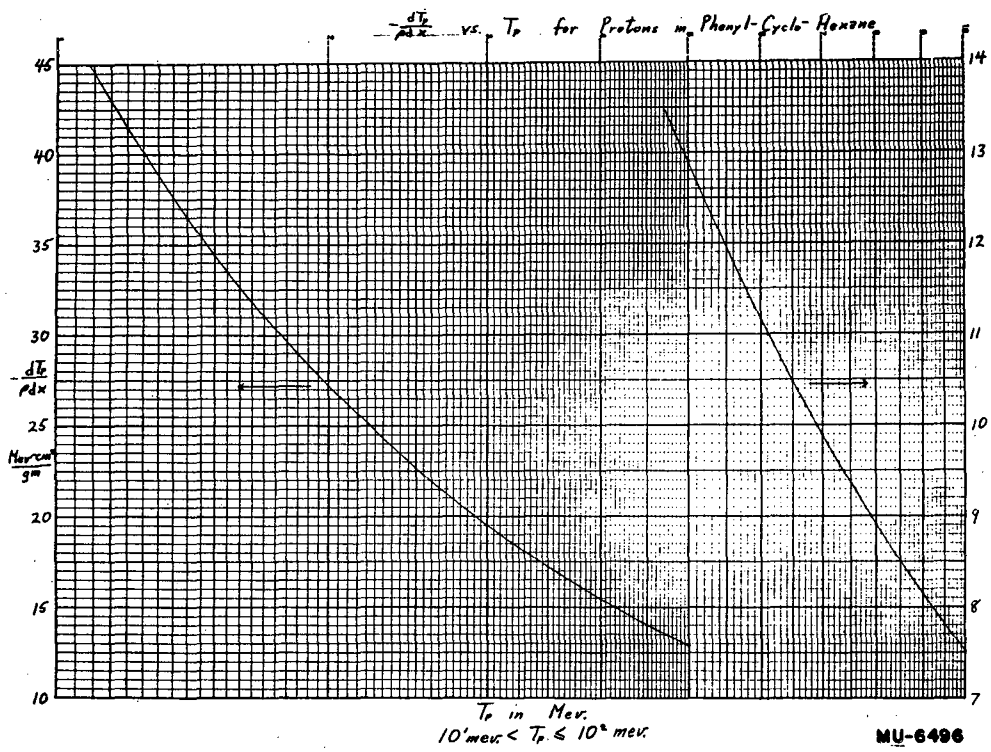
Range of Protons in Phenyl-Cyclo-Hexane

Scale I: 100 mev. ≤ T_p ≤ 1000 mev.

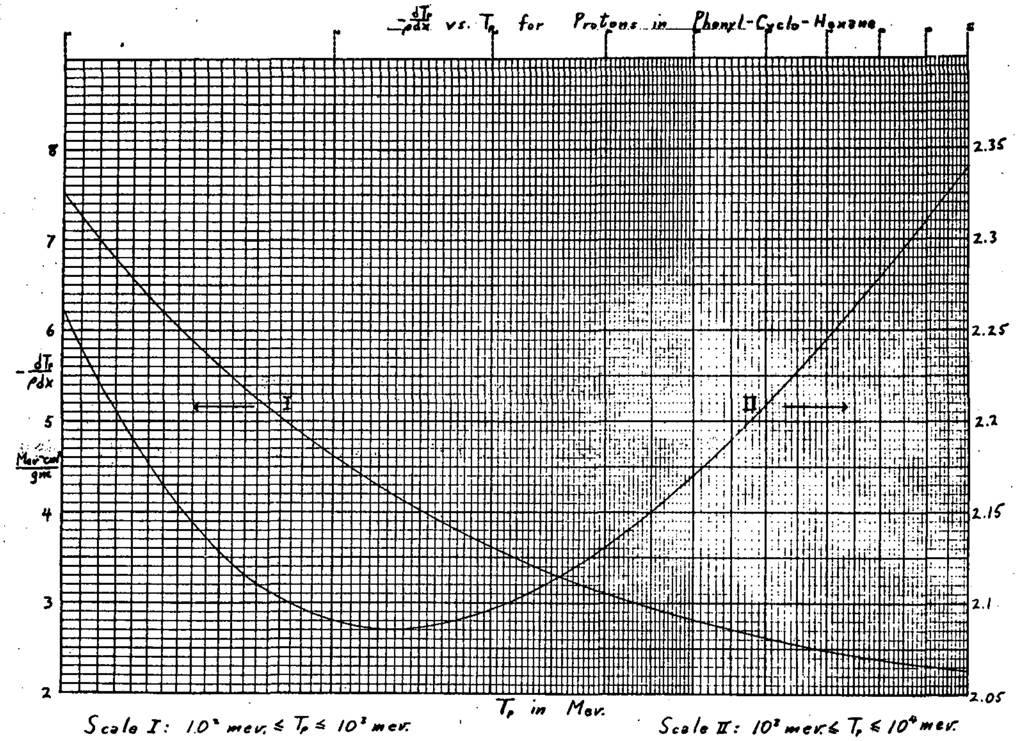
Scale II: 1000 mev. ≤ T_p ≤ 10000 mev.



MU - 6270


$-\frac{dT_p}{\rho dx}$ vs. T_p for Protons in Phenyl-Cyclo-Hexane
45
40
35
30
$-\frac{dT_p}{\rho dx}$
25
$\frac{Mev\,cm^2}{gm}$
20
15
10
14
13
12
11
10
9
8
7
T_p in Mev.
10^1 mev. < $T_p \leq 10^2$ mev.

MU-6496


$-\frac{dT_p}{\rho dx}$ vs. T_p for Protons in Phenyl-Cyclo-Hexane
8
7
6
$-\frac{dT_p}{\rho dx}$
5
$\frac{Mev\text{-}cm^2}{gm}$
4
3
2
2.35
2.3
2.25
2.2
2.15
2.1
2.05
I
II
T_p in Mev.
Scale I: 1.0^2 mev. $\leq T_p \leq 10^3$ mev.
Scale II: 10^3 mev. $\leq T_p \leq 10^4$ mev.

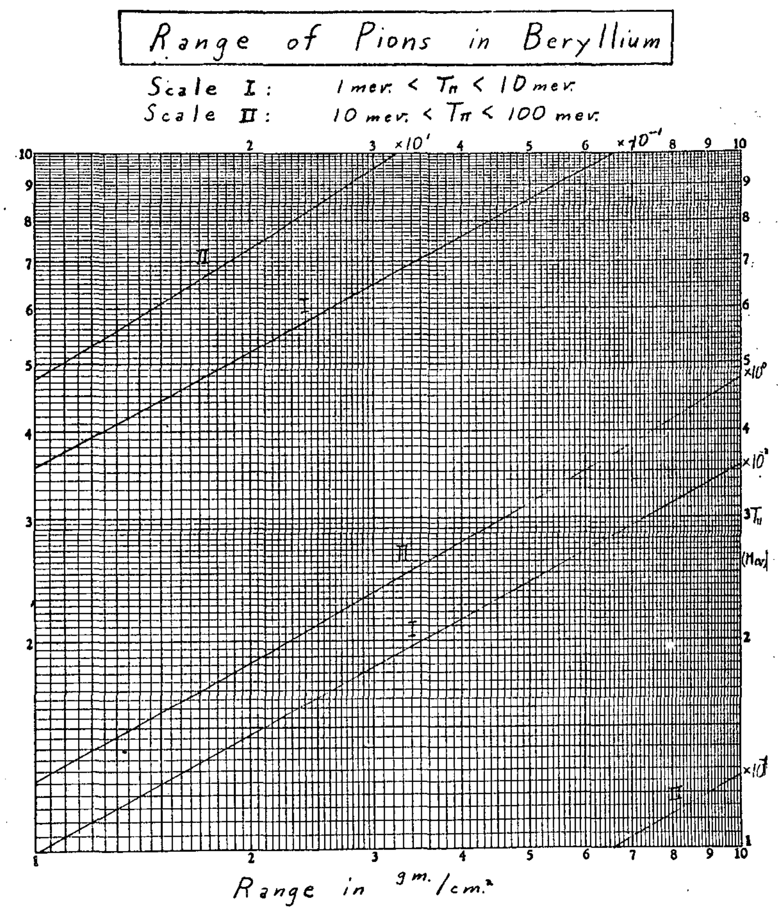
MU-6407

III. PION RANGE-ENERGY DATA

Pion Kinetic Energy Range: 1 Mev. to 10^4 Mev.

RANGE OF PIONS IN BERYLLIUM

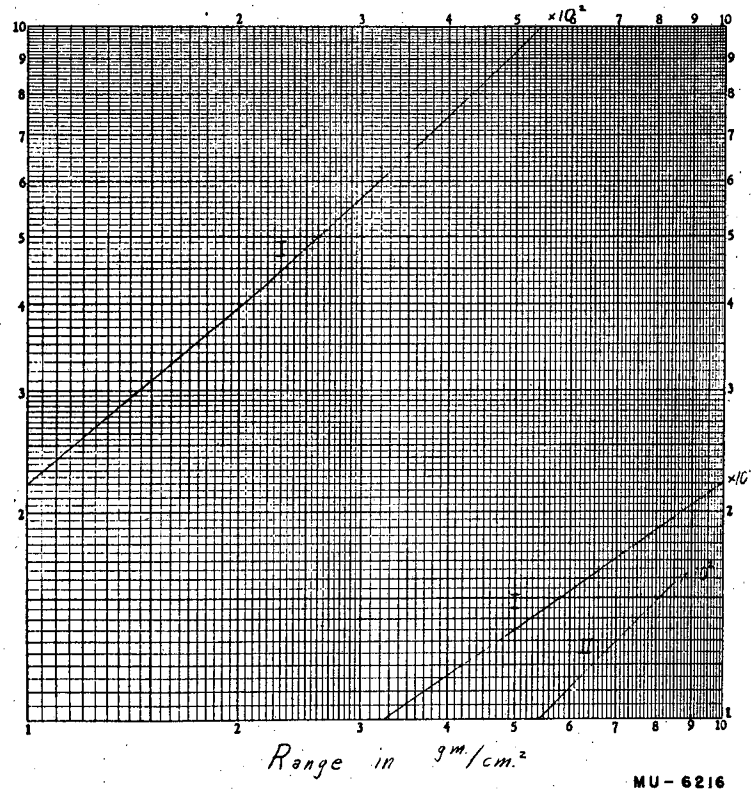
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
1.042	1.090×10^{-2}	53.51
1.191	1.384	47.96
1.340	1.711	43.54
1.489	2.068	39.92
1.787	2.875	34.35
2.085	3.801	30.24
2.383	4.844	27.08
2.680	6.000	24.56
2.978	7.268	22.51
4.468	1.521×10^{-1}	16.12
5.957	2.569	12.74
7.446	3.854	10.64
8.935	5.365	9.197
10.42	7.089	8.145
11.91	9.018	7.342
13.40	1.114×10^{0}	6.707
14.89	1.346	6.194
22.34	2.760	4.614
29.78	4.551	3.800
37.23	6.661	3.304
44.68	9.044×10^{0}	2.972
52.12	1.166×10^{1}	2.734
59.57	1.448	2.556
67.01	1.748	2.419
74.46	2.063	2.310
89.35	2.733	2.150
104.2	3.445	2.039
119.1	4.190	1.960
134.0	4.963	1.901
148.9	5.756	1.856
297.8	1.423×10^{2}	1.713
446.8	2.294	1.716
595.7	3.155	1.744
744.6	4.001	1.775
893.5	4.833	1.806
1042.0	5.650	1.836
1191.0	6.455	1.863
1340.0	7.249	1.888
1489.0	8.033	1.912


Range of Pions in Beryllium
Scale I: 1 mev. < T_π < 10 mev.
Scale II: 10 mev. < T_π < 100 mev.
T_π (Mev)
Range in gm./cm.²

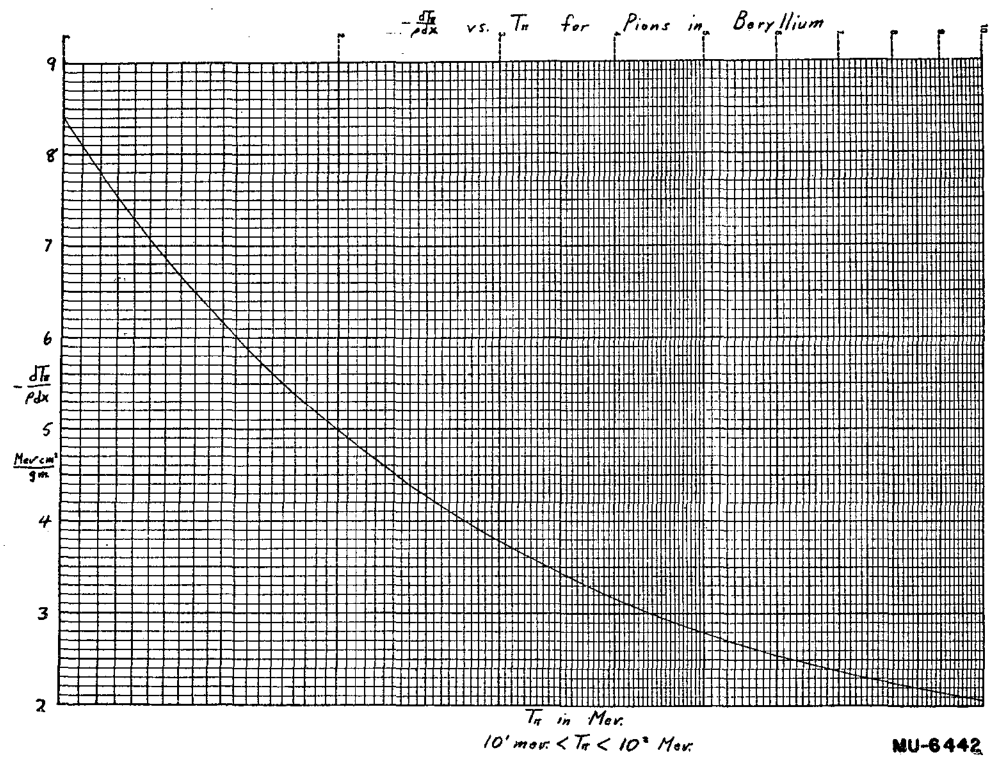
MU-6215

Range of Pions in Beryllium

Scale I: 100 mev. < T_π < 1000 mev.
Scale II: 1000 mev. < T_π < 10000 mev.

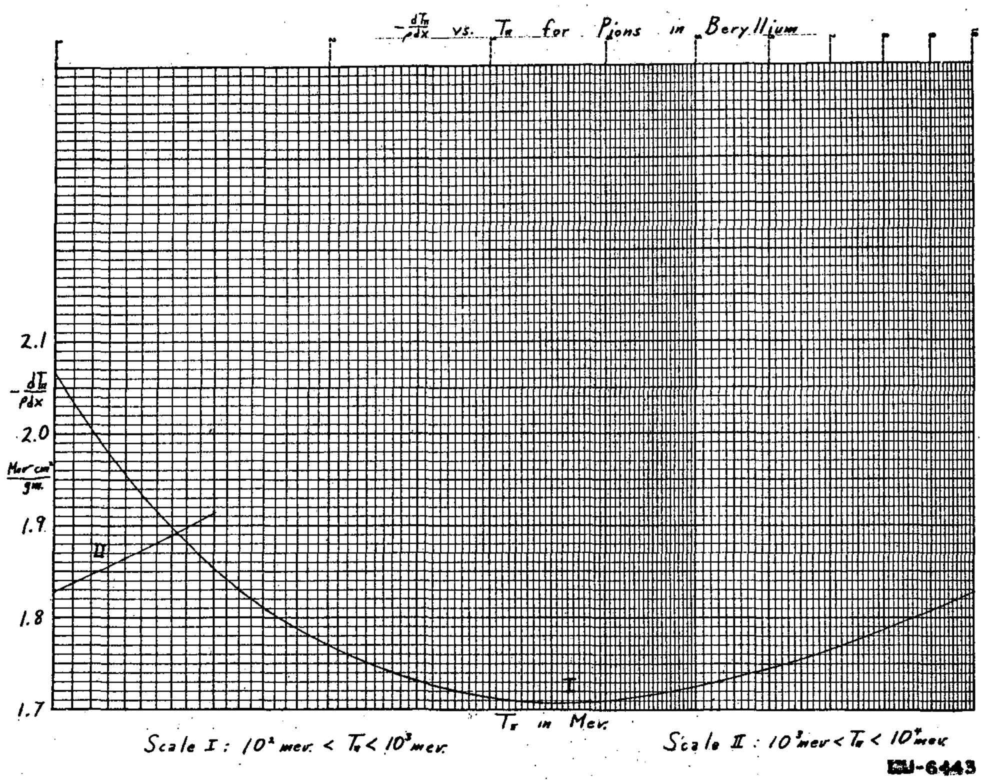


MU-6216



$-\frac{dT_\pi}{\rho dx}$ vs. T_π for Pions in Beryllium
9
8
7
6
$-\frac{dT_\pi}{\rho dx}$
5
$\frac{Mev\ cm^2}{gm}$
4
3
2
T_π in Mev.
10^1 mev. $< T_\pi < 10^2$ Mev.

MU-6442

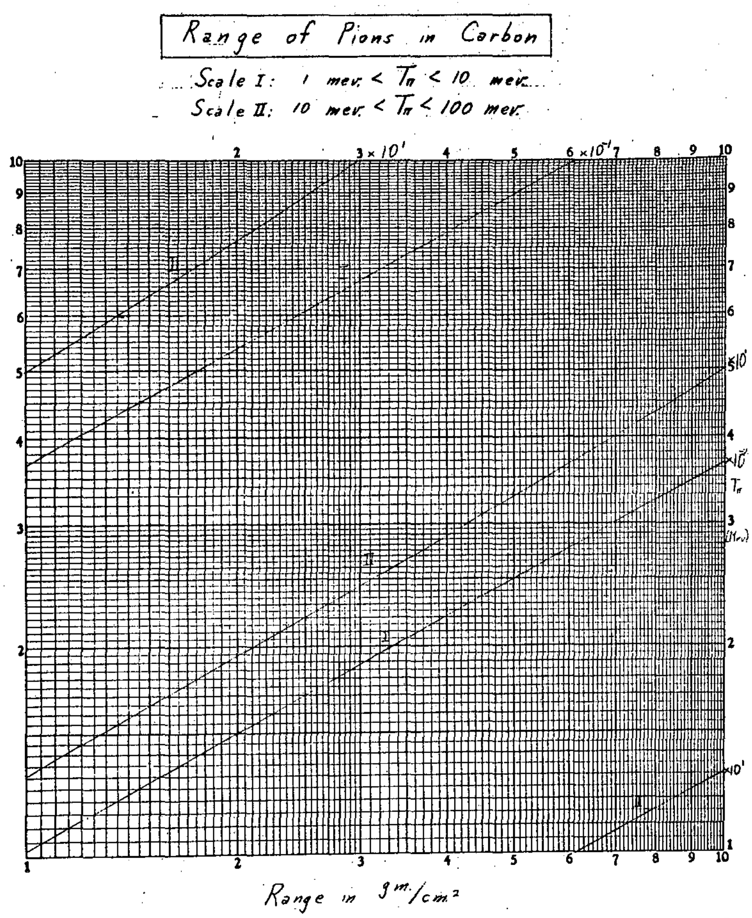


$-\frac{dT}{\rho dx}$ vs. T for Pions in Beryllium
2.1
2.0
1.9
1.8
1.7
$-\frac{dT}{\rho dx}$
Mev cm² / gm.
I
II
T in Mev.
Scale I : 10^2 mev. < T < 10^3 mev.
Scale II : 10^3 mev < T < 10^4 mev.
MU-6443

RANGE OF PIONS IN CARBON

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
1.052	1.058×10^{-2}	56.06
1.202	1.341	50.34
1.353	1.655	45.76
1.503	1.998	42.01
1.803	2.771	36.21
2.104	3.657	31.93
2.405	4.653	28.63
2.705	5.756	26.00
3.006	6.964	23.86
4.509	1.452×10^{-1}	17.14
6.012	2.445	13.58
7.514	3.661	11.35
9.017	5.088	9.827
10.52	6.717	8.711
12.02	8.536	7.858
13.53	1.054×10^{0}	7.184
15.03	1.272	6.638
22.54	2.602	4.956
30.05	4.290	4.087
37.57	6.263	3.557

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
45.09	8.499×10^{0}	3.202
52.60	1.095×10^{1}	2.947
60.12	1.358	2.757
67.63	1.639	2.610
75.14	1.934	2.494
90.17	2.559	2.323
105.2	3.224	2.205
120.2	3.920	2.120
135.3	4.640	2.057
150.3	5.380	2.010
300.6	1.326×10^{2}	1.861
450.8	2.134	1.868
601.1	2.933	1.900
751.4	3.716	1.936
901.7	4.485	1.974
1051.0	5.241	2.005
1202.0	5.984	2.036
1352.0	6.718	2.064
1503.0	7.441	2.091

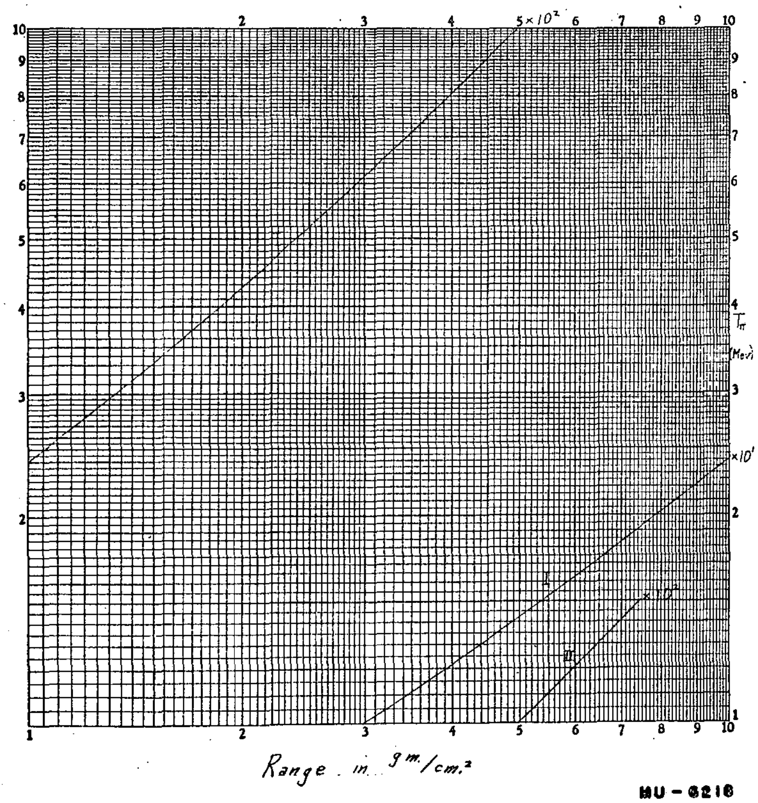

Range of Pions in Carbon
Scale I: 1 mev. < T_π < 10 mev.
Scale II: 10 mev. < T_π < 100 mev.
3×10^1
6×10^1
$5\,10^1$
10^1
T_π
(Mev)
I
II
Range in gm./cm.²

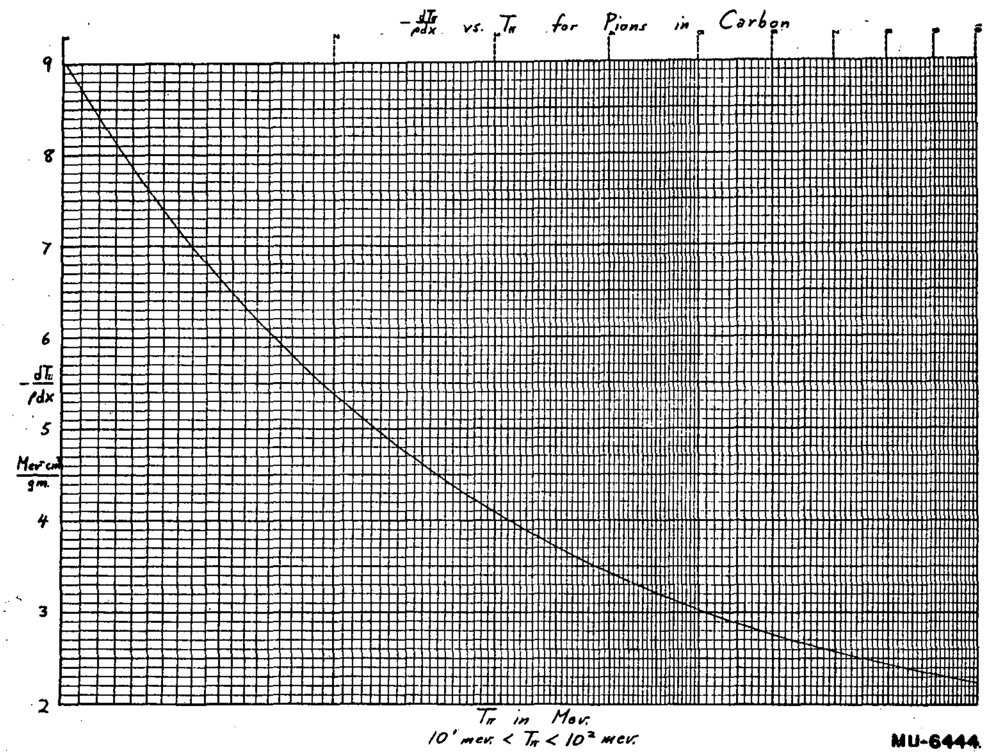
MU-6217

Range of Pions in Carbon

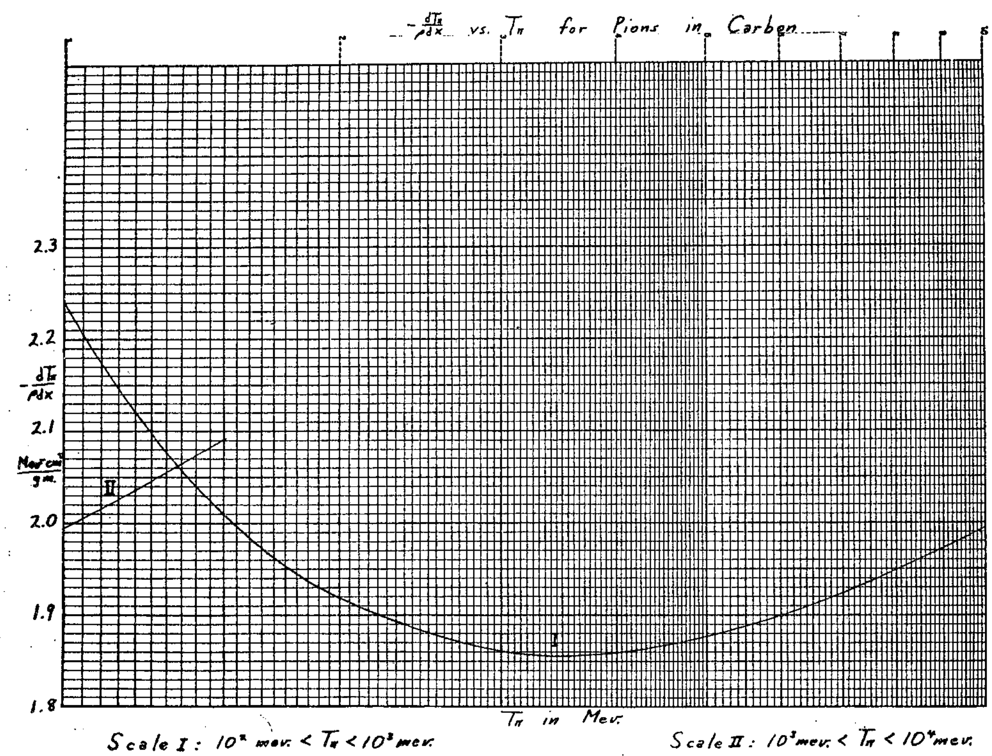
Scale I: 100 mev. < T_π < 1000 mev.

Scale II: 1000 mev. < T_π < 10000 mev.




$-\frac{dT_\pi}{\rho dx}$ vs. T_π for Pions in Carbon
9
8
7
6
$-\frac{dT_\pi}{\rho dx}$
5
$\frac{Mev\ cm^2}{gm.}$
4
3
2
T_π in Mev.
10^1 mev. < T_π < 10^2 mev.

MU-6444



$-\frac{dT_\pi}{\rho dx}$ vs. T_π for Pions in Carbon
2.3
2.2
$-\frac{dT_\pi}{\rho dx}$
2.1
$\frac{\text{Mev cm}^2}{\text{gm.}}$
2.0
1.9
1.8
II
I
T_π in Mev.
Scale I: 10^2 mev. < T_π < 10^3 mev.
Scale II: 10^3 mev. < T_π < 10^4 mev.

MU-6445

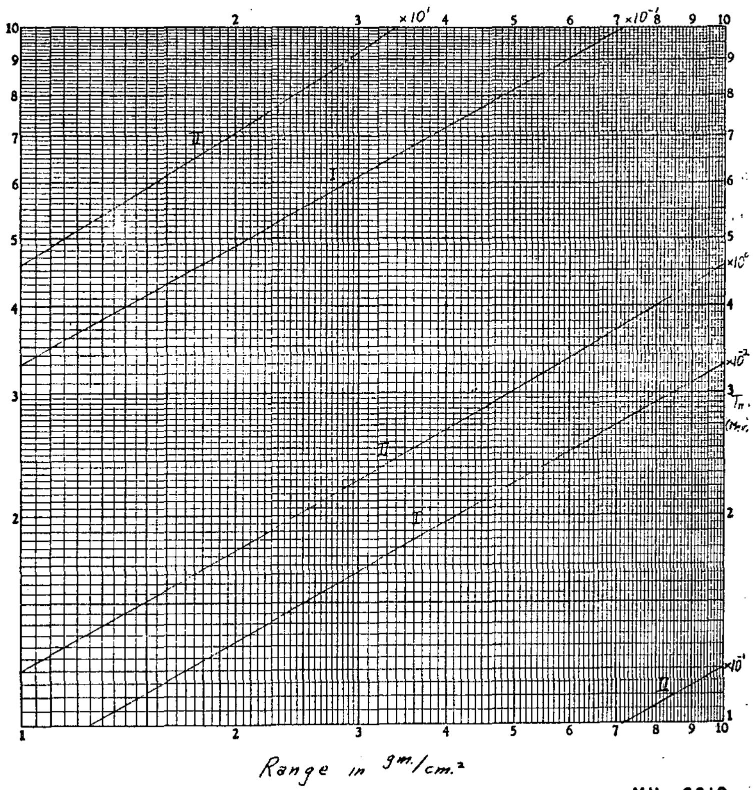
RANGE OF PIONS IN ALUMINUM

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$	T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
1.052	1.353×10^{-2}	45.5	37.57	7.194×10^{0}	3.120
1.202	1.701	41.0	45.09	9.739	2.813
1.353	2.086	37.5	52.60	1.252×10^{1}	2.593
1.503	2.505	34.5	60.12	1.552	2.428
1.803	3.442	29.9	75.14	2.205	2.201
2.254	5.099	25.18	90.17	2.913	2.054
2.555	6.354	22.81	105.2	3.664	1.952
3.156	9.232	19.30	120.2	4.450	1.879
3.757	1.258×10^{-1}	16.82	135.3	5.262	1.826
4.509	1.739	14.56	150.3	6.094	1.785
5.260	2.289	12.89	187.9	8.242	1.721
6.012	2.905	11.60	225.4	1.045×10^{2}	1.688
6.763	3.584	10.58	300.6	1.494	1.664
7.514	4.325	9.743	375.7	1.946	1.665
9.017	5.986	8.458	450.9	2.396	1.677
10.52	7.875	7.516	601.2	3.284	1.710
12.02	9.982	6.794	751.4	4.152	1.747
13.53	1.230×10^{0}	6.222	901.7	5.005	1.782
15.03	1.481	5.757	1052.0	5.840	1.815
18.04	2.041	5.047	1202.0	6.661	1.845
24.05	3.366	4.136	1353.0	7.469	1.873
30.06	4.936	3.576	1503.0	8.267	1.898

Range of Pions in Aluminum

Scale I: 1 mev. < T_π < 10 mev.

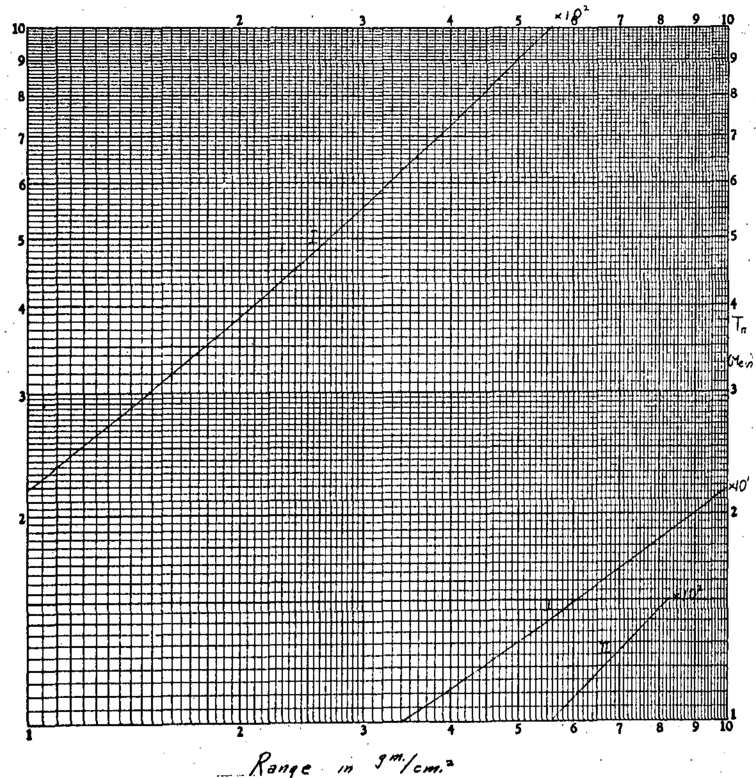
Scale II: 10 mev. < T_π < 100 mev.



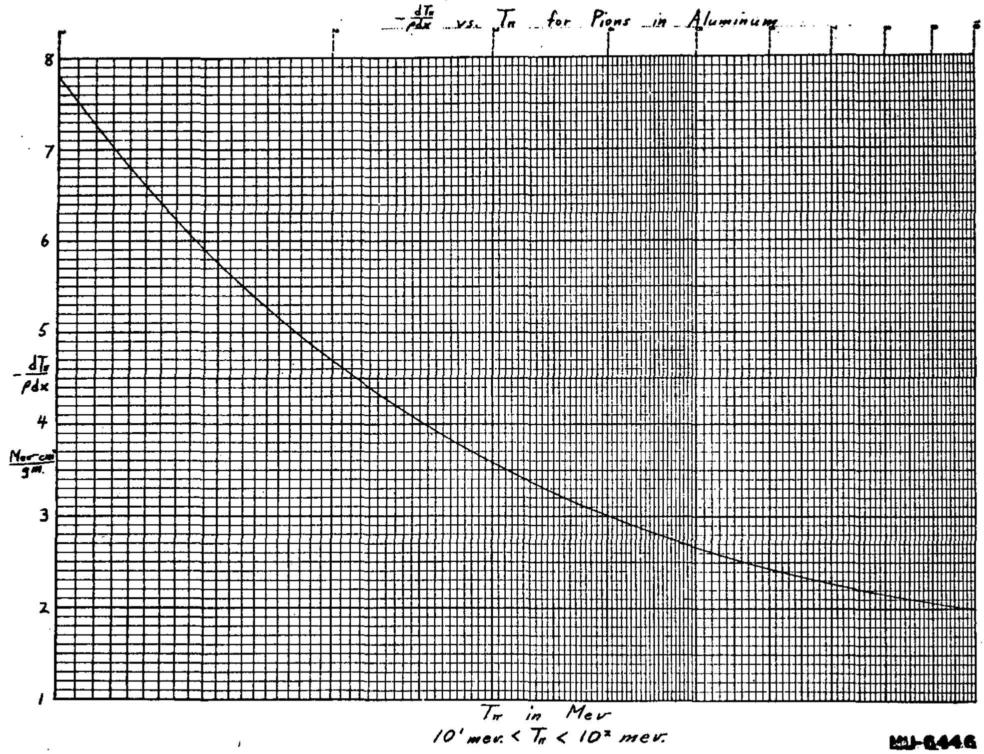
MU-6219

Range of Pions in Aluminum

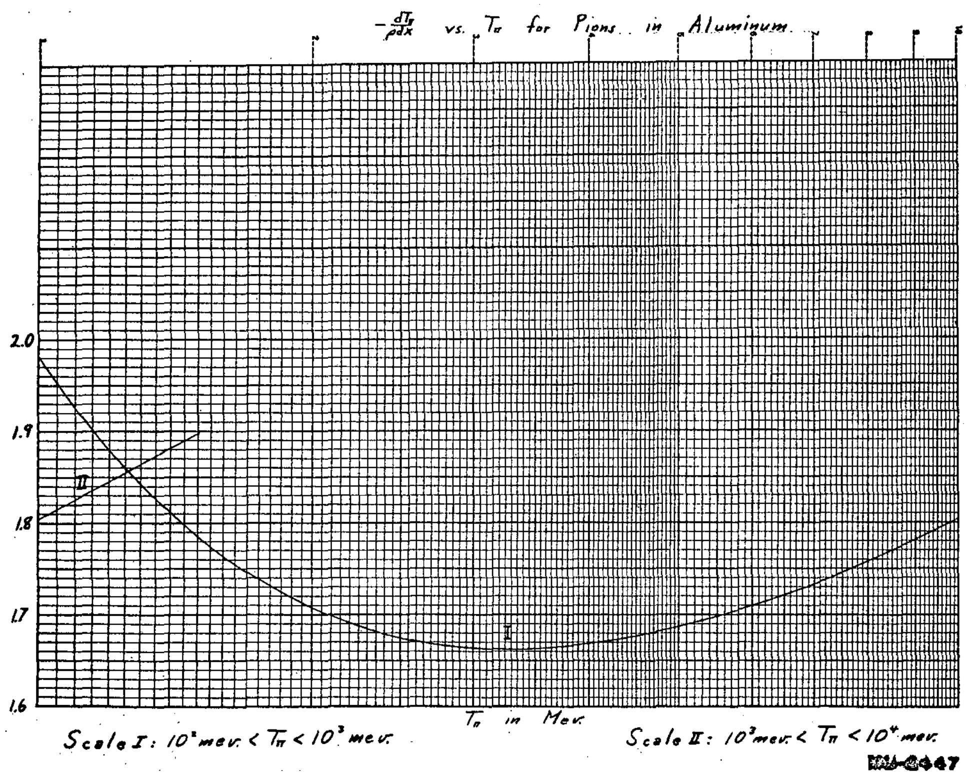
Scale I: 100 mev. < T_π < 1000 mev.
Scale II: 1000 mev. < T_π < 10000 mev.



MU-6220

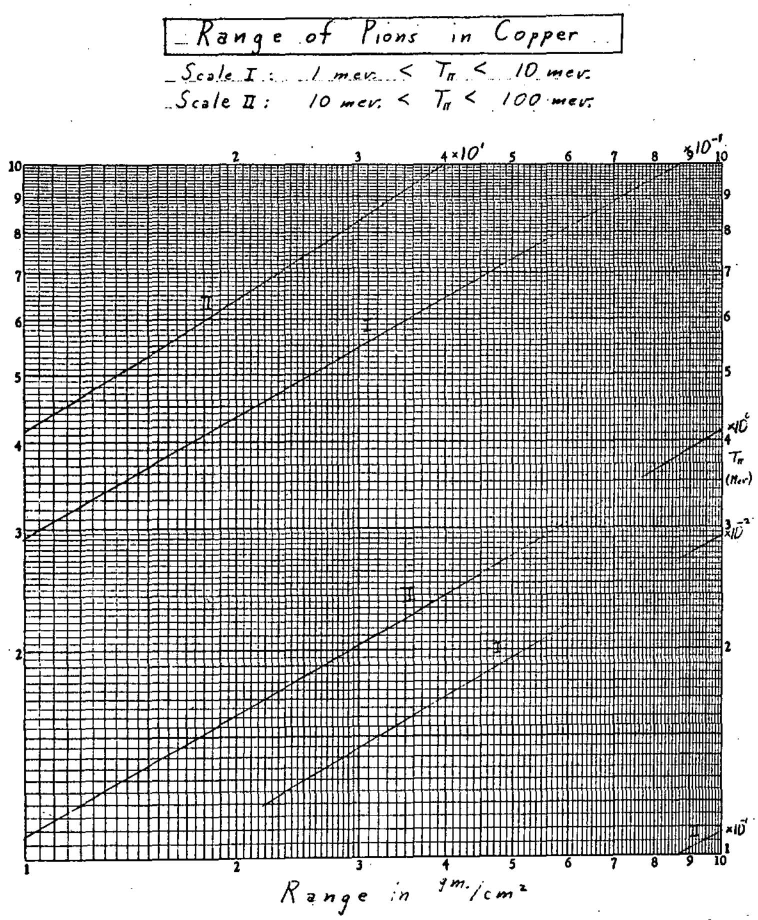


$-\frac{dT_\pi}{\rho dx}$ vs. T_π for Pions in Aluminum
8
7
6
5
4
3
2
1
$-\frac{dT_\pi}{\rho dx}$
Mev-cm²/gm.
T_π in Mev
10^1 mev. < T_π < 10^2 mev.
MU-6446

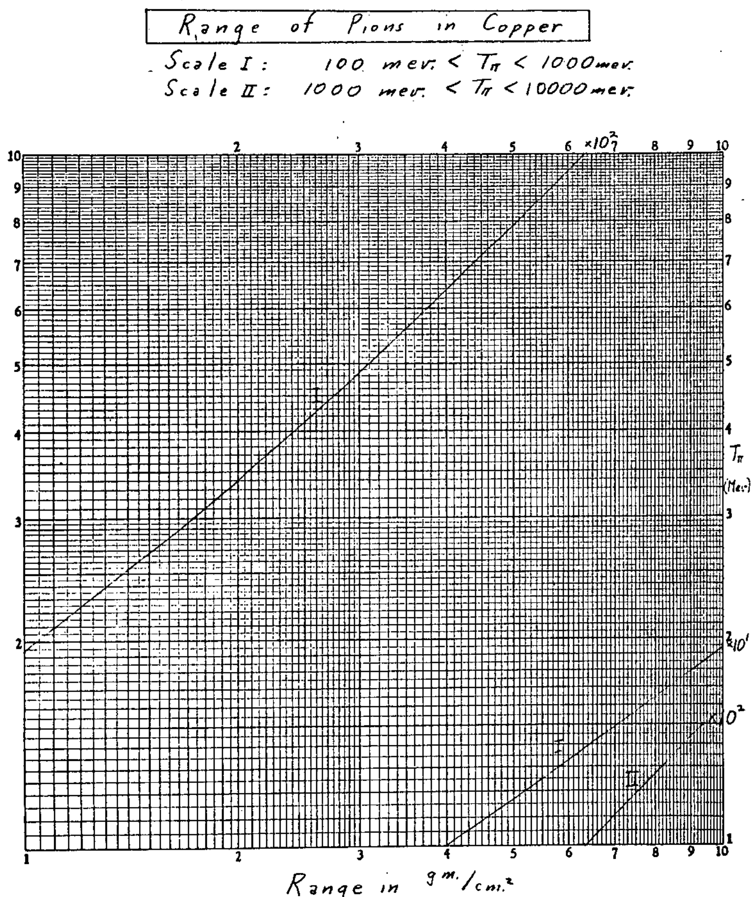

$-\frac{dT_\pi}{\rho dx}$ vs. T_π for Pions in Aluminum.
2.0
1.9
1.8
1.7
1.6
II
I
T_π in Mev.
Scale I: 10^2 mev. < T_π < 10^3 mev.
Scale II: 10^3 mev. < T_π < 10^4 mev.

RANGE OF PIONS IN COPPER

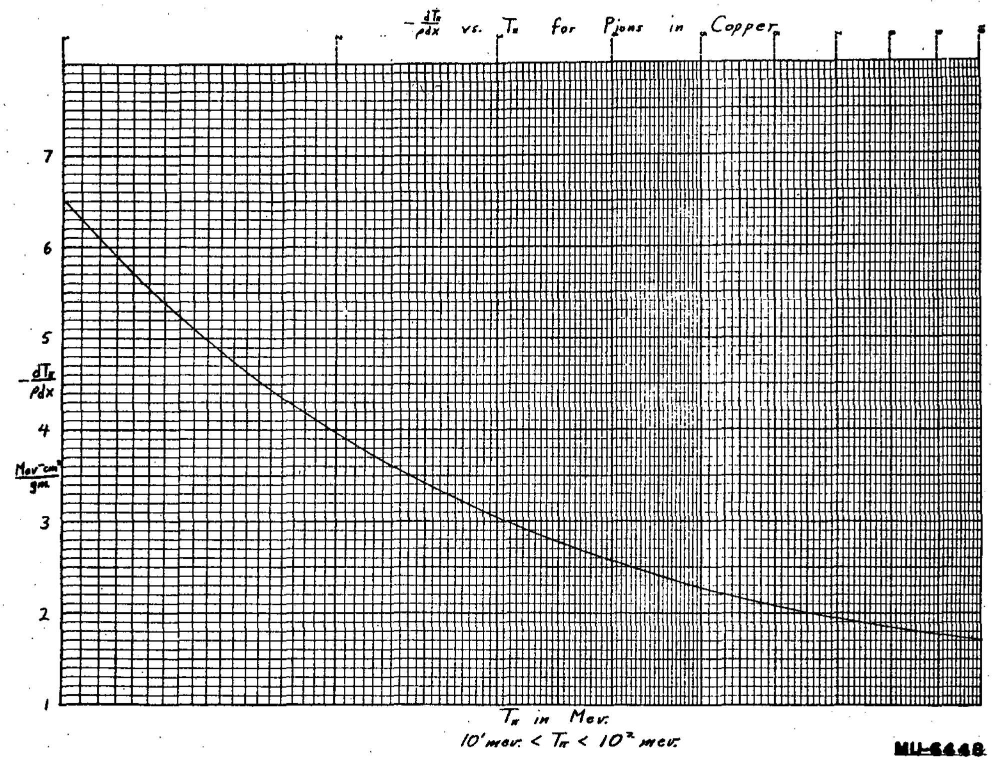
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
1.202	2.208×10^{-2}	32.81
1.503	3.208	27.80
1.803	4.369	24.24
2.405	7.155	19.48
3.006	1.053×10^{-1}	16.42
3.607	1.447	14.27
4.509	2.139	12.02
5.260	2.804	10.67
6.012	3.546	9.629
6.763	4.364	8.798
7.514	5.254	8.119
9.017	7.244	7.072
10.52	9.500	6.300
12.02	1.201×10^{0}	5.706
13.53	1.476	5.235
15.03	1.775	4.852
18.03	2.438	4.254
22.54	3.584	3.661
30.06	5.852	3.040
37.57	8.507	2.659
45.09	1.149×10^{1}	2.402
52.60	1.475	2.213
60.12	1.825×10^{1}	2.081
67.63	2.196	1.975
75.14	2.585	1.891
90.17	3.409	1.768
105.2	4.282	1.683
120.2	5.192	1.623
135.3	6.132	1.578
150.3	7.095	1.545
180.4	9.071	1.501
225.4	1.211×10^{2}	1.468
300.6	1.727	1.452
375.7	2.244	1.456
450.9	2.758	1.470
526.0	3.266	1.486
601.2	3.769	1.504
676.3	4.266	1.522
751.4	4.757	1.540
901.7	5.722	1.574
1052.0	6.667	1.605
1202.0	7.595	1.634
1353.0	8.507	1.661
1503.0	9.406	1.685

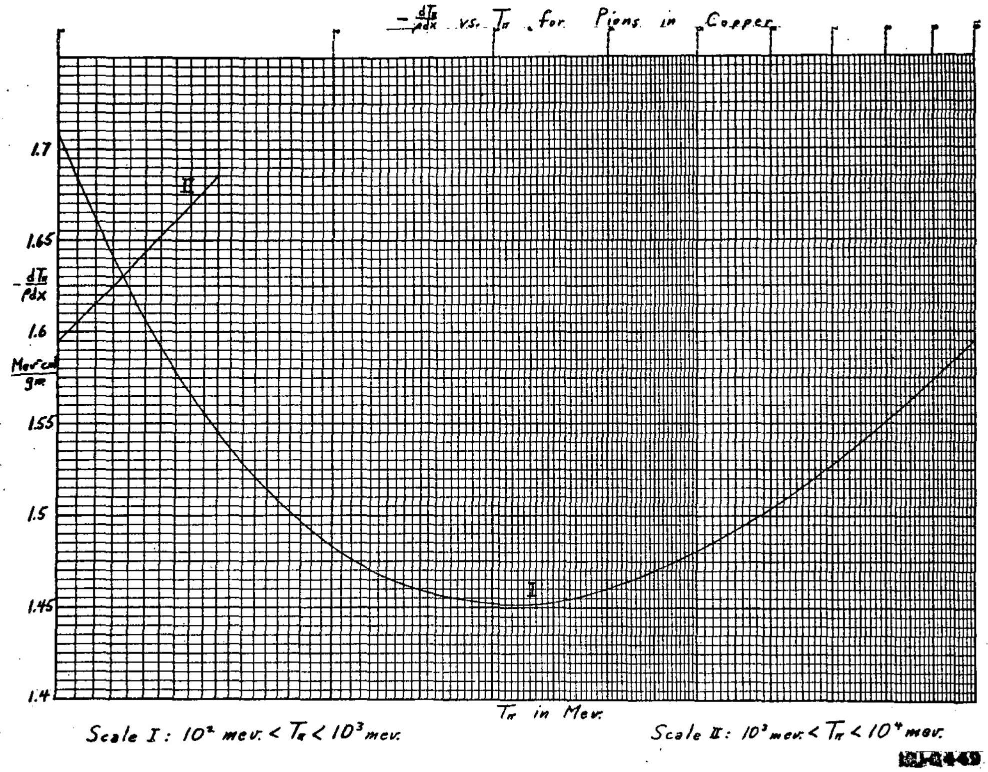

Range of Pions in Copper
Scale I : 1 mev. < T_π < 10 mev.
Scale II : 10 mev. < T_π < 100 mev.
T_π (Mev)
Range in gm./cm²

MU – 6221


Range of Pions in Copper
Scale I: 100 mev. < T_π < 1000 mev.
Scale II: 1000 mev. < T_π < 10000 mev.
×10²
T_π
(Mev)
×10¹
×10²
I
II
Range in gm./cm.²

MU-6222

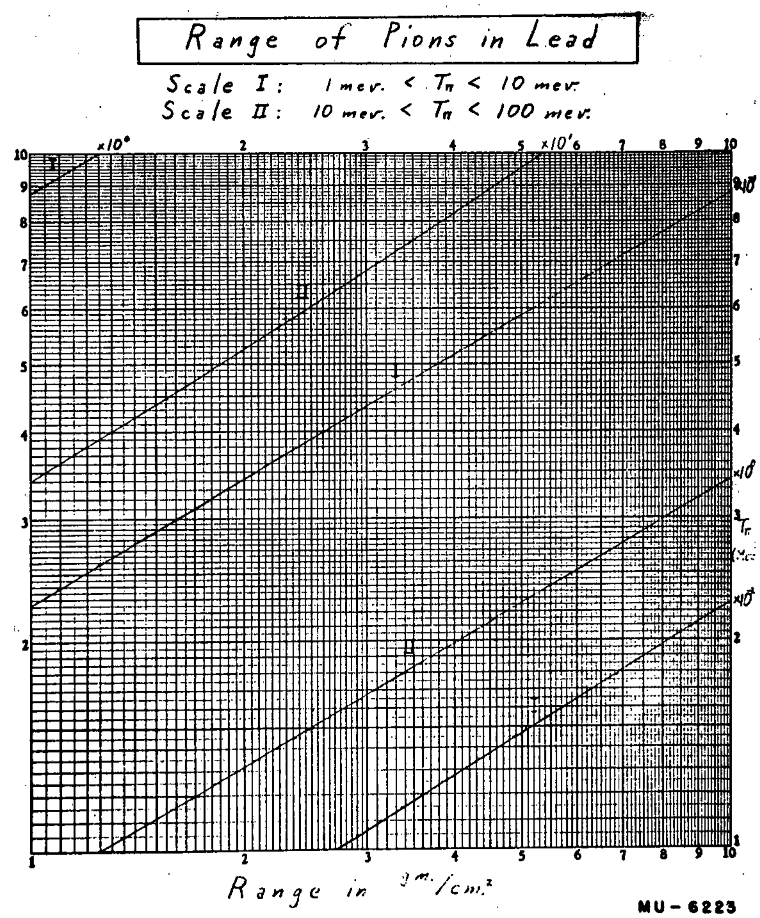

$-\frac{dT_\pi}{\rho dx}$ vs. T_π for Pions in Copper
7
6
5
$-\frac{dT_\pi}{\rho dx}$
4
$\frac{\text{Mev-cm}^2}{\text{gm}}$
3
2
1
T_π in Mev.
10^1 mev. < T_π < 10^2 mev.
MU-6448


$-\frac{dT_\pi}{\rho dx}$ vs. T_π for Pions in Copper
1.7
1.65
$-\frac{dT_\pi}{\rho dx}$
1.6
Mev cm²/gm
1.55
1.5
1.45
1.4
II
I
T_π in Mev.
Scale I: 10^2 mev. < T_π < 10^3 mev.
Scale II: 10^3 mev. < T_π < 10^4 mev.

RANGE OF PIONS IN LEAD

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
1.191	3.548×10^{-2}	21.08
1.489	5.071	18.21
1.787	6.816	16.08
2.383	1.094×10^{-1}	13.15
2.978	1.586	11.21
3.574	2.155	9.833
4.468	3.144	8.361
5.212	4.088	7.472
5.957	5.136	6.777
6.701	6.284	6.220
7.446	7.529	5.762
8.935	1.030×10^{0}	5.051
10.42	1.342	4.522
11.91	1.688	4.113
13.40	2.065	3.787
14.89	2.474	3.520
17.87	3.377	3.108
23.83	5.497	2.575
29.78	7.986	2.243
37.23	1.154×10^{1}	1.971
44.68	1.552	1.787
52.12	1.985	1.655

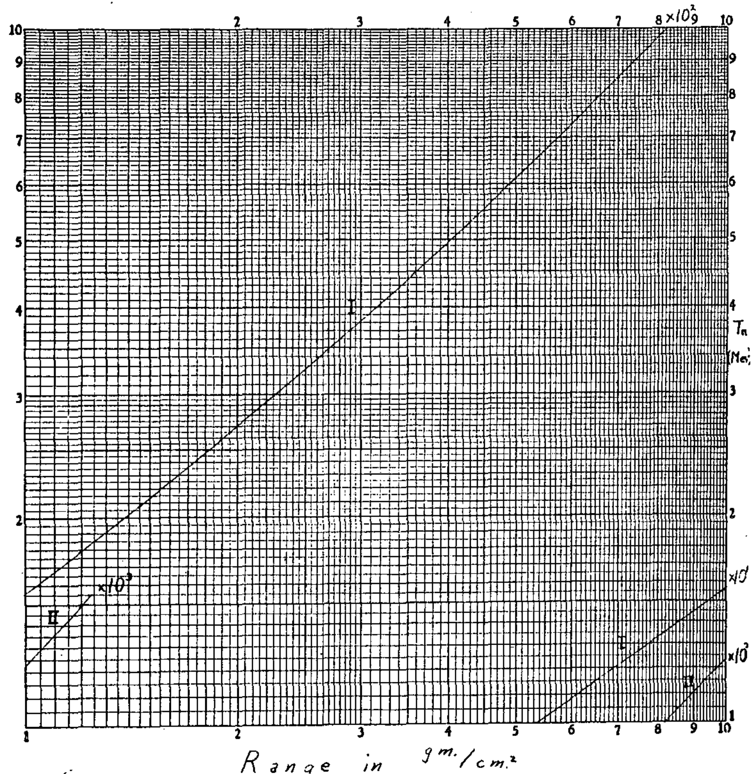
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
59.57	2.450×10^{1}	1.557
67.01	2.941	1.480
74.46	3.455	1.420
89.35	4.539	1.332
104.2	5.685	1.272
119.1	6.877	1.229
134.0	8.105	1.198
148.9	9.360	1.175
178.7	1.193×10^{2}	1.146
238.3	1.720	1.122
297.8	2.252	1.118
372.3	2.916	1.126
446.8	3.572	1.141
521.2	4.221	1.157
595.7	4.860×10^{2}	1.174
670.1	5.490	1.190
744.6	6.111	1.206
893.5	7.330	1.236
1042.0	8.521	1.264
1191.0	9.687	1.290
1340.0	1.083×10^{3}	1.313
1489.0	1.196	1.334


Range of Pions in Lead
Scale I: 1 mev. < Tπ < 10 mev.
Scale II: 10 mev. < Tπ < 100 mev.
I
II
Tπ
Mev
Range in gm./cm.²
MU-6223

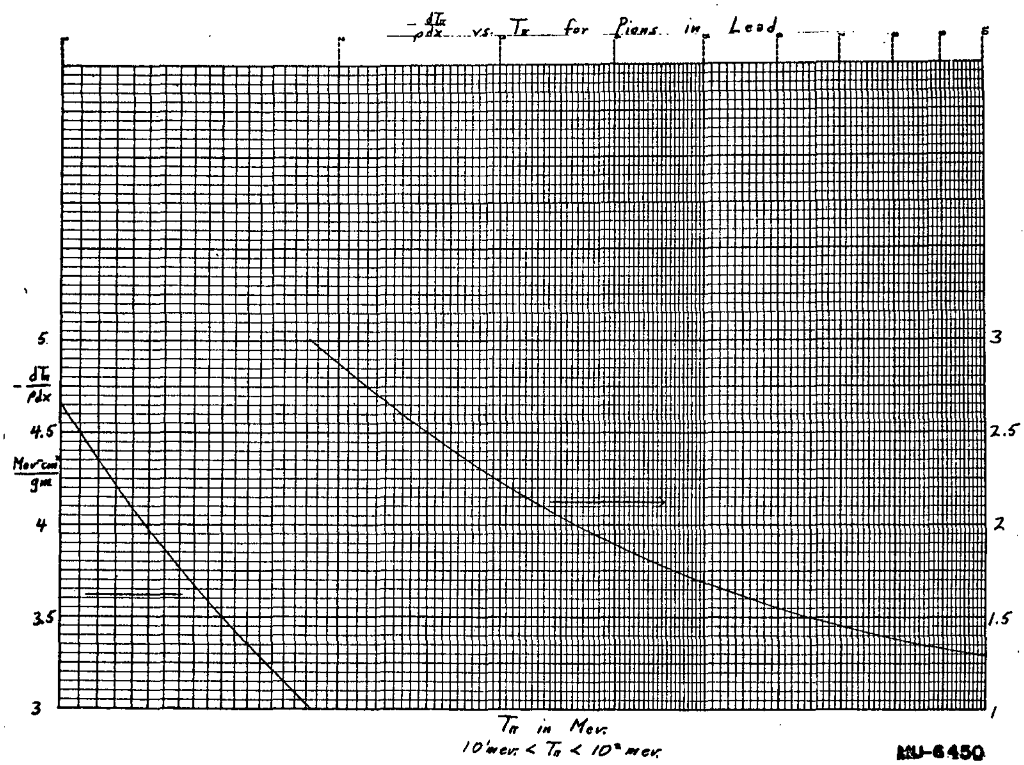
Range of Pions in Lead

Scale I: 100 mev. < T_π < 1000 mev.

Scale II: 1000 mev. < T_π < 10000 mev.

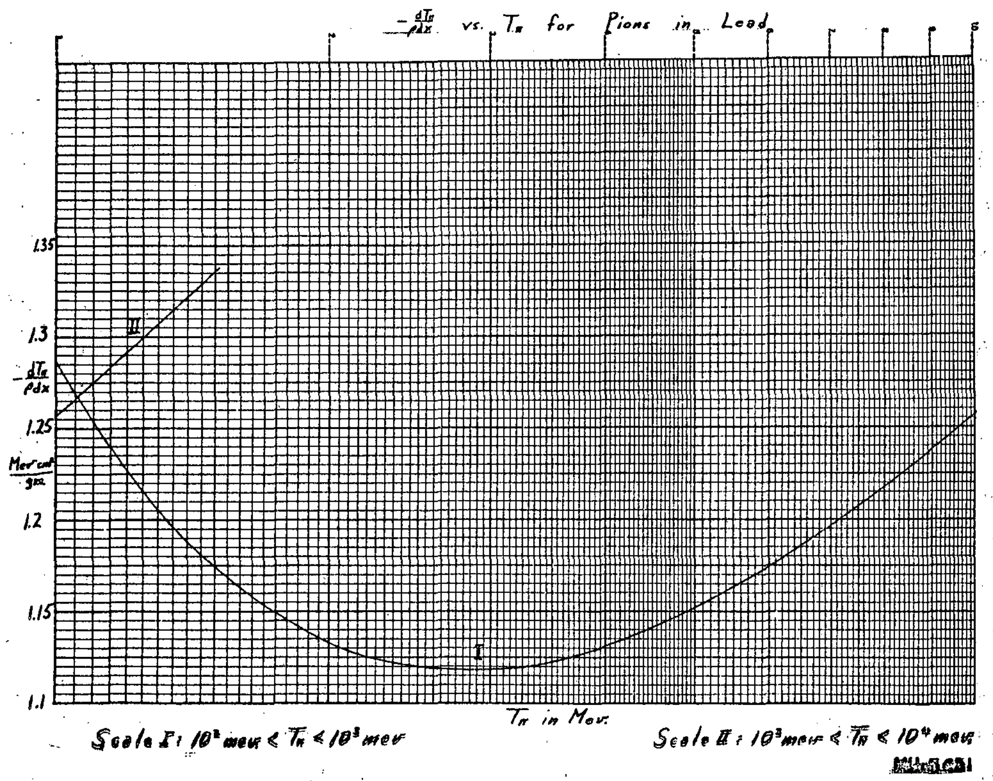


MU-6224



$-\frac{dT_\pi}{\rho dx}$ vs. T_π for Pions in Lead
5
$-\frac{dT_\pi}{\rho dx}$
4.5
$\frac{\text{Mev cm}^2}{\text{gm}}$
4
3.5
3
3
2.5
2
1.5
1
T_π in Mev.
10^1 mev. < T_π < 10^2 mev.

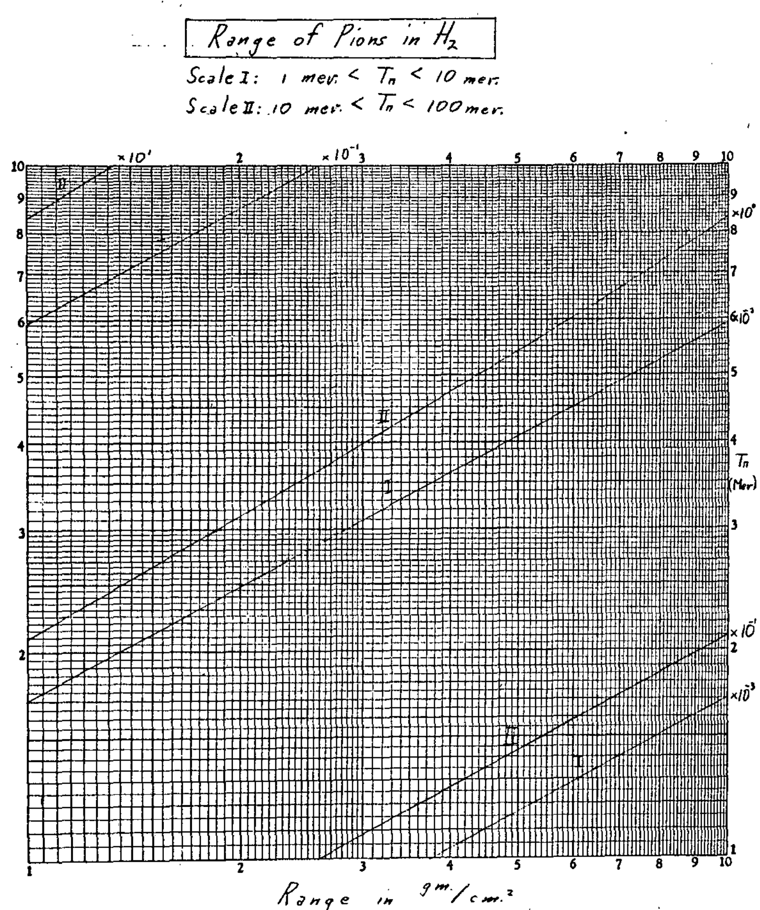
MU-6450


$-\frac{dT_\pi}{\rho dx}$ vs. T_π for Pions in Lead
1.35
1.3
$-\frac{dT_\pi}{\rho dx}$
1.25
$\frac{\text{Mev cm}^2}{\text{gm}}$
1.2
1.15
1.1
II
I
T_π in Mev.
Scale I: 10^2 mev $\leq T_\pi \leq 10^3$ mev
Scale II: 10^3 mev $\leq T_\pi \leq 10^4$ mev

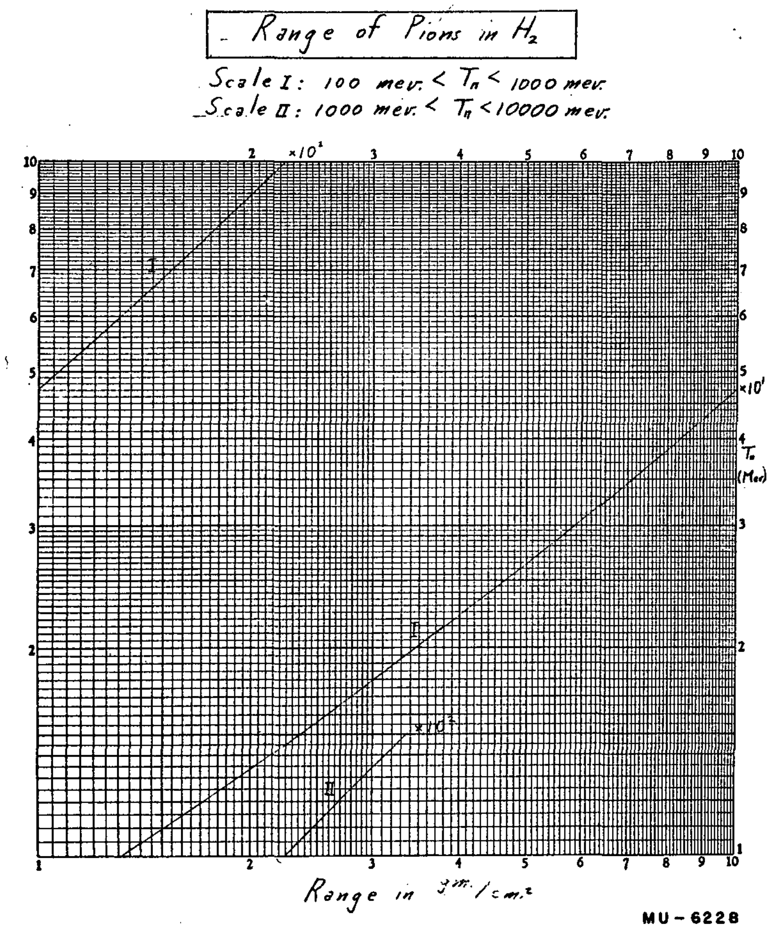
RANGE OF PIONS IN H_2

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
1.042	4.082×10^{-3}	139.6
1.191	5.212	124.8
1.340	6.468	112.9
1.489	7.848	103.3
1.787	1.097×10^{-2}	88.54
2.085	1.457	77.71
2.383	1.864	69.41
2.680	2.315	62.83
2.978	2.811	57.48
4.468	5.935	40.87
5.957	1.008×10^{-1}	32.17
7.446	1.518	26.78
8.935	2.118	23.09
10.42	2.806	20.41
11.91	3.576	18.37
13.40	4.426	16.76
14.89	5.353	15.46
29.78	1.825×10^{0}	9.418
37.23	2.678	8.172

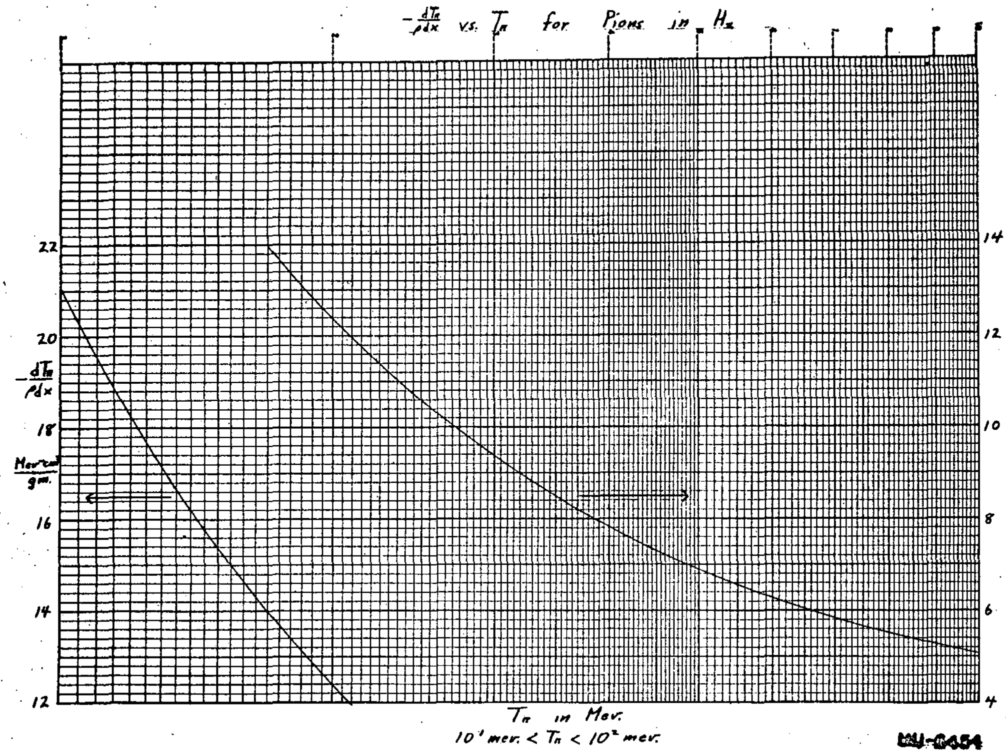
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
44.68	3.642	7.337
52.12	4.703	6.740
59.57	5.848	6.295
67.01	7.067	5.965
74.46	8.351	5.678
89.35	1.108×10^{1}	5.277
104.2	1.398	4.999
119.1	1.702	4.798
134.0	2.018	4.649
148.9	2.342	4.536
297.8	5.823	4.159
446.8	9.416	4.150
595.7	1.298×10^{2}	4.205
744.6	1.650	4.272
893.5	1.994	4.340
1042.0	2.335	4.404
1191.0	2.671	4.464
1340.0	3.002	4.520
1489.0	3.330	4.572

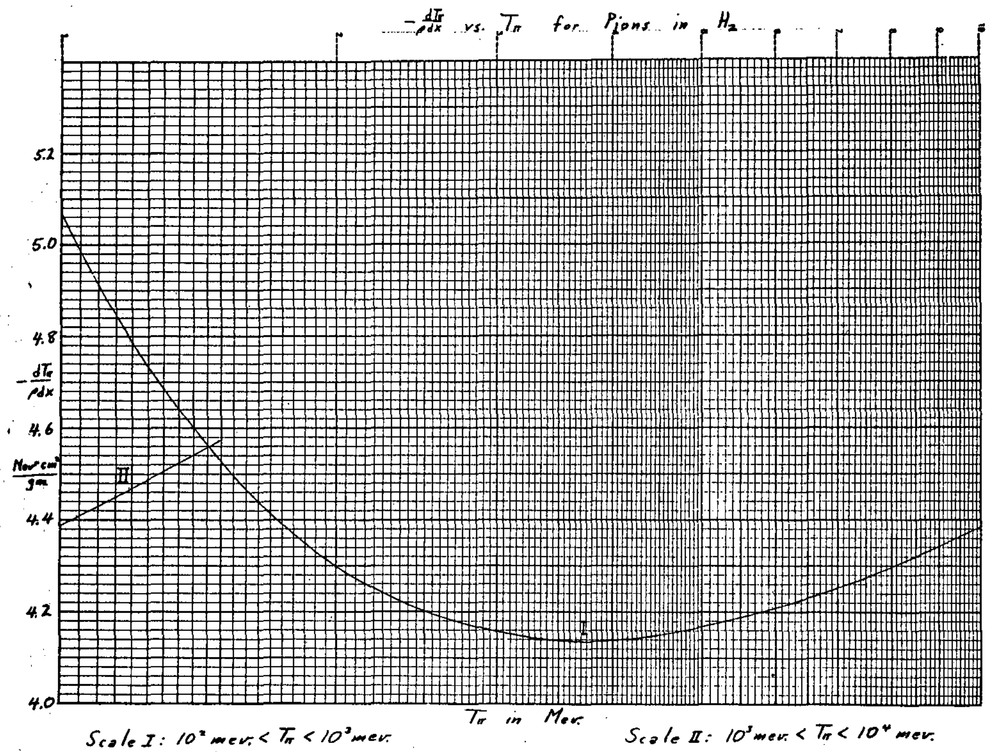

Range of Pions in H_2
Scale I: 1 mev. < T_n < 10 mev.
Scale II: 10 mev. < T_n < 100 mev.
×10¹
×10⁻¹
×10⁰
×10⁻³
×10⁻¹
×10⁻³
T_n (Mev)
I
II
Range in gm./cm.²

MU-6227


Range of Pions in H_2
Scale I: 100 mev. < T_π < 1000 mev.
Scale II: 1000 mev. < T_π < 10000 mev.
×10²
×10¹
T_π
(Mev)
I
I
II
×10³
Range in gm./cm.²
MU-6228

$-\frac{dT_\pi}{\rho dx}$ vs. T_π for Pions in H_2




$-\frac{dT_\pi}{\rho dx}$ vs. T_π for Pions in H_2
5.2
5.0
4.8
$-\frac{dT_\pi}{\rho dx}$
4.6
$\frac{Mev\ cm^2}{gm}$
II
4.4
4.2
I
4.0
T_π in Mev.
Scale I: 10^2 mev. < T_π < 10^3 mev.
Scale II: 10^3 mev. < T_π < 10^4 mev.

MU-6455

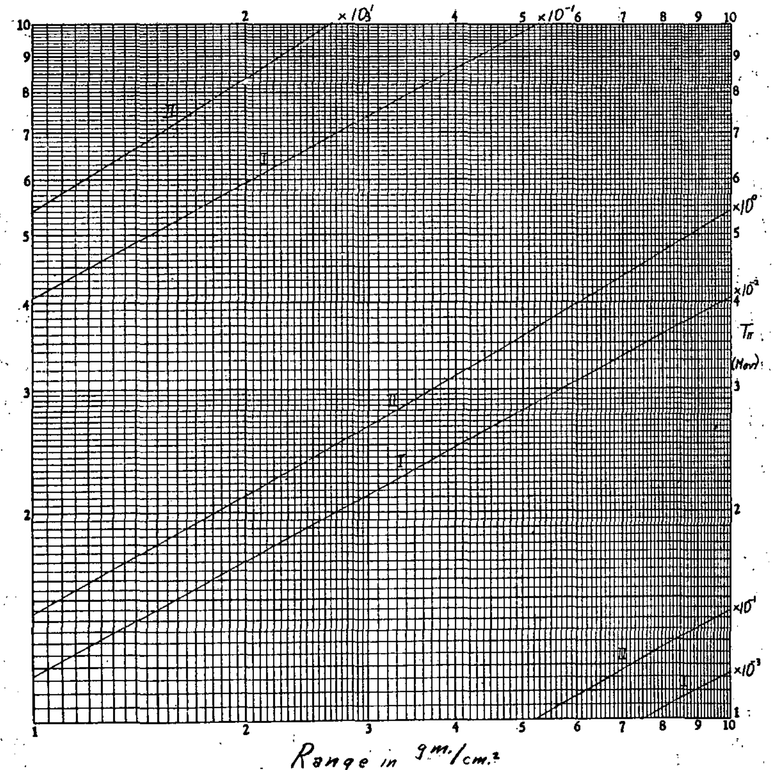
RANGE OF PIONS IN D_2

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$	T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
1.042	8.157×10^{-3}	69.86	44.68	7.276×10^{0}	3.671
1.191	1.042×10^{-2}	62.42	52.12	9.398	3.373
1.340	1.293	56.51	59.57	1.168×10^{1}	3.150
1.489	1.568	51.70	67.01	1.412	2.985
1.787	2.193	44.30	74.46	1.669	2.841
2.085	2.912	38.88	89.35	2.214	2.640
2.383	3.724	34.73	104.2	2.795	2.501
2.680	4.626	31.44	119.1	3.402	2.401
2.978	5.618	28.76	134.0	4.033	2.326
4.468	1.186×10^{-1}	20.45	148.9	4.681	2.270
5.957	2.014	16.10	297.8	1.164×10^{2}	2.081
7.446	3.033	13.40	446.8	1.882	2.077
8.935	4.234	11.56	595.7	2.594	2.104
10.42	5.608	10.21	744.6	3.297	2.138
11.91	7.147	9.191	893.5	3.986	2.172
13.40	8.846	8.386	1042.0	4.666	2.204
14.89	1.070×10^{0}	7.735	1191.0	5.338	2.234
29.78	3.648	4.712	1340.0	6.000	2.262
37.23	5.351	4.089	1489.0	6.655	2.288

Range of Pions in D_2

Scale I: 1 mev. < T_π < 10 mev.

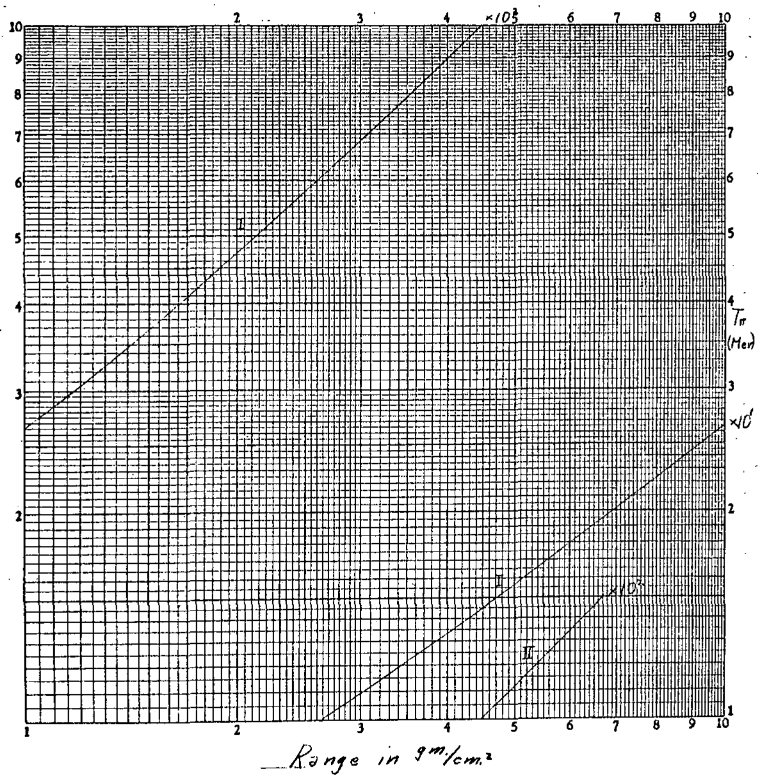
Scale II: 10 mev. < T_π < 100 mev.



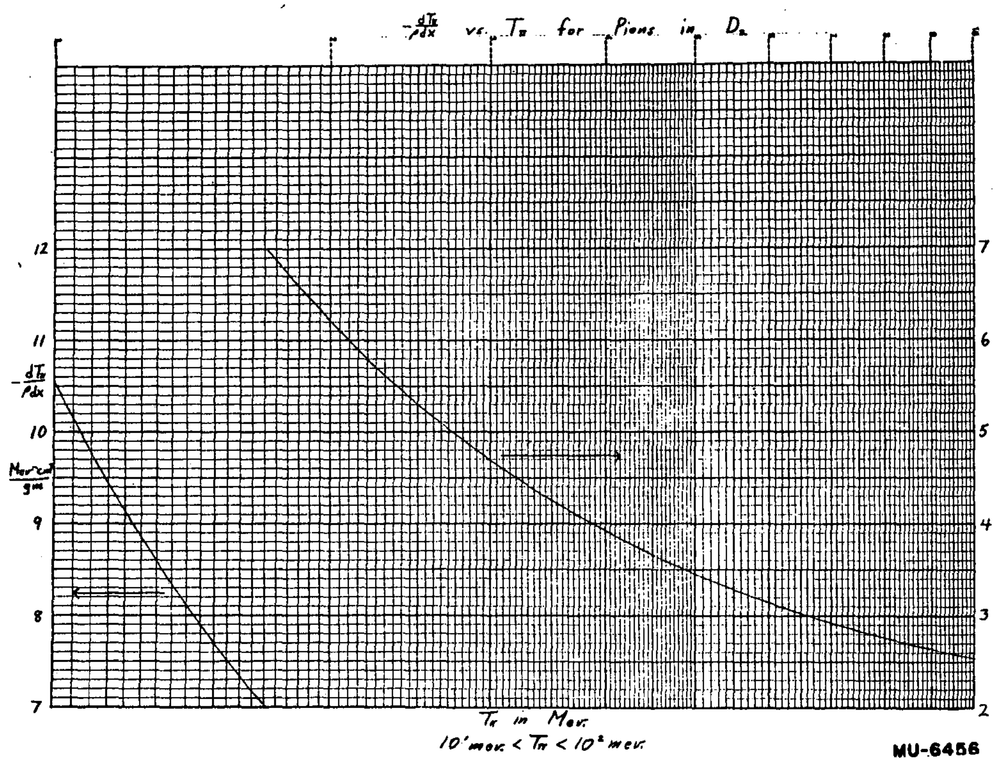
MU-6229

Range of Pions in D_2

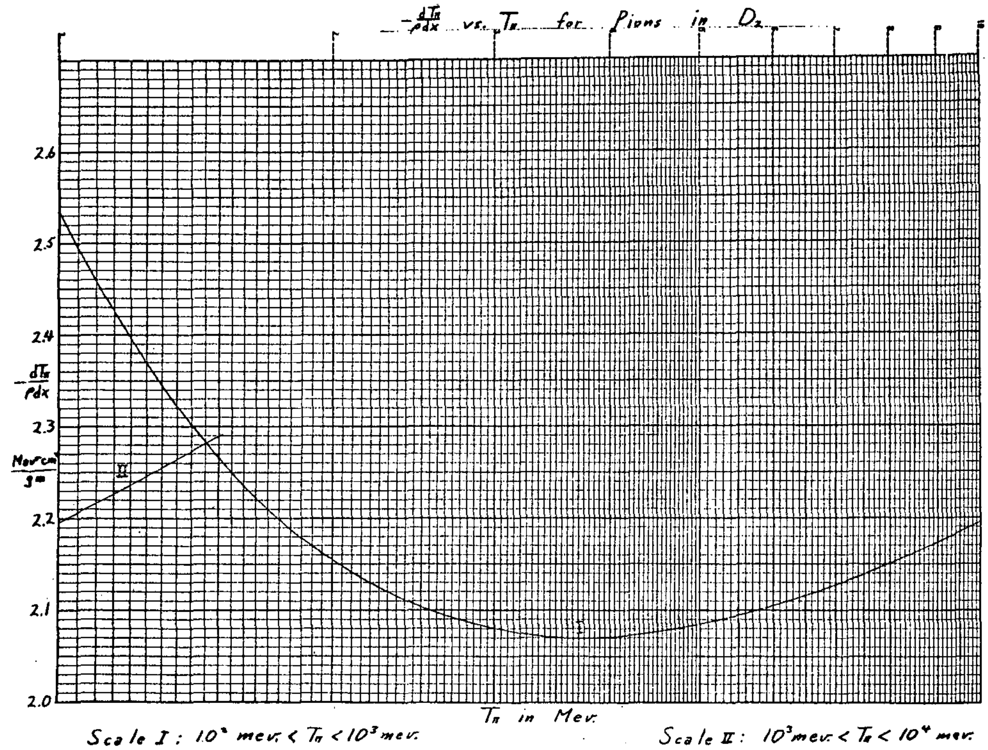
Scale I: 100 mev. < T_π < 1000 mev.
Scale II: 1000 mev. < T_π < 10000 mev.



MU-6230


$-\frac{dT_\pi}{\rho dx}$ vs. T_π for Pions in D_2
12
11
$-\frac{dT_\pi}{\rho dx}$
10
$\frac{Mev\,cm^2}{gm}$
9
8
7
2
3
4
5
6
7
T_π in Mev.
10^1 mev. < T_π < 10^2 mev.

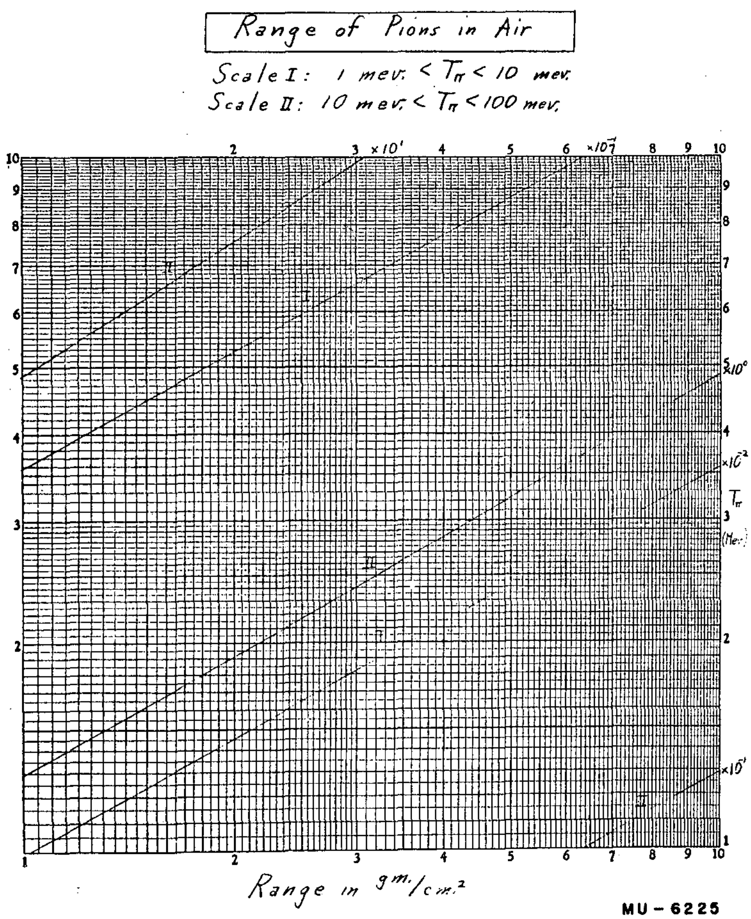
MU-6456


$-\frac{dT_\pi}{\rho dx}$ vs. T_π for Pions in D_2
2.6
2.5
2.4
$-\frac{dT_\pi}{\rho dx}$
2.3
$\frac{Mev\,cm^2}{gm}$
2.2
2.1
2.0
II
I
T_π in Mev.
Scale I: 10^2 mev. < T_π < 10^3 mev.
Scale II: 10^3 mev. < T_π < 10^4 mev.

MU-6457

RANGE OF PIONS IN AIR

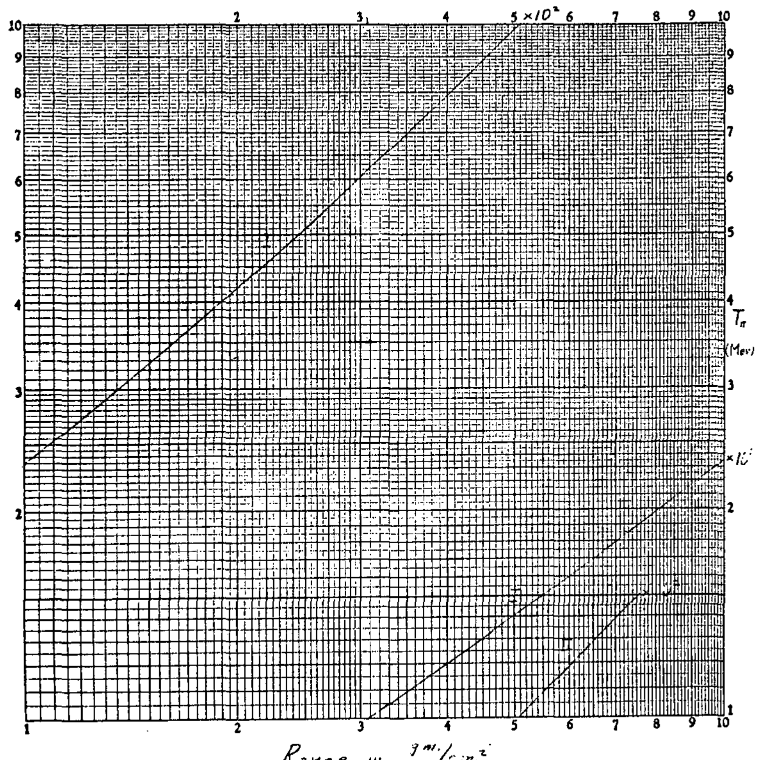
T (Mev)	R (gm/cm^2)	$-\frac{dT}{d\xi}$ (Mev-cm^2/gm)
1.042	1.109×10^{-2}	51.71
1.191	1.410	46.00
1.340	1.727	42.09
1.489	2.091	38.82
1.787	2.890	33.93
2.234	4.354	28.87
3.127	7.903	22.19
3.723	1.079×10^{-1}	19.28
4.468	1.495	16.64
5.212	1.973	14.69
5.957	2.508	13.19
6.701	3.102	12.01
7.446	3.748	11.03
8.935	5.202	9.568
10.42	6.858	8.483
11.91	8.707	7.662
13.40	1.074×10^{0}	7.010
14.89	1.295	6.479
17.87	1.788	5.669
23.83	2.959	4.631
29.78	4.351	3.996
37.23	6.357	3.479
44.68	8.619×10^{0}	3.132
52.12	1.110×10^{1}	2.876
59.57	1.377	2.698
74.46	1.958	2.442
89.35	2.593	2.275
104.2	3.264	2.161
119.1	3.969	2.077
134.0	4.695	2.016
148.9	5.444	1.971
186.1	7.371	1.896
223.4	9.358	1.857
297.8	1.341×10^{2}	1.827
372.3	1.748	1.825
446.8	2.156	1.835
595.7	2.960	1.868
744.6	3.750	1.904
893.5	4.526	1.940
1042.0	5.285	1.973
1191.0	6.036	2.004
1340.0	6.773	2.033
1489.0	7.500	2.059


Range of Pions in Air
Scale I: 1 mev. < T_π < 10 mev.
Scale II: 10 mev. < T_π < 100 mev.
T_π (Mev.)
Range in gm./cm.²
MU - 6225

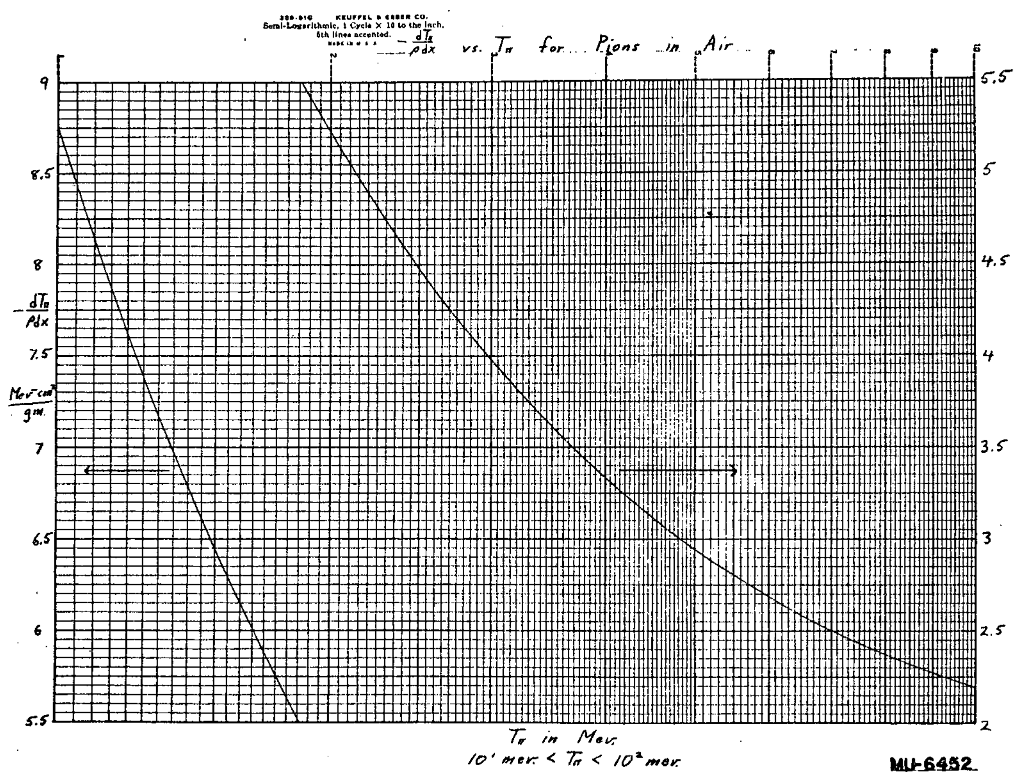
Range of Pions in Air

Scale I: 100 mev. < T_π < 1000 mev.

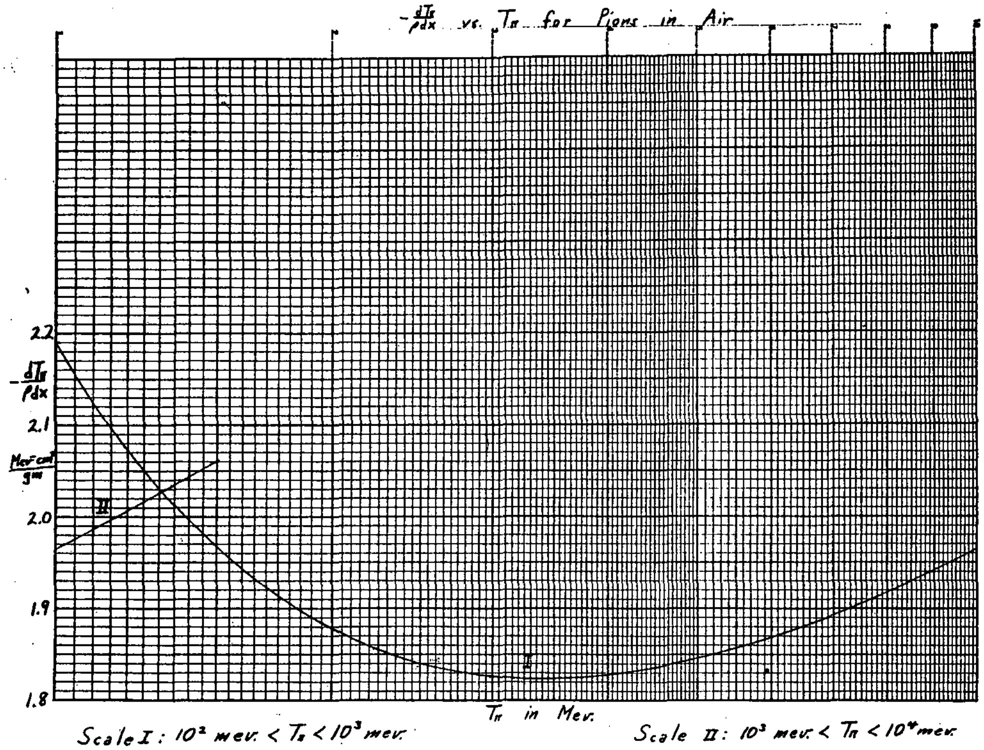
Scale II: 1000 mev. < T_π < 10000 mev.



MU - 6226


KEUFFEL & ESSER CO.
Semi-Logarithmic, 1 Cycle × 10 to the Inch, 5th lines accented.
$-\frac{dT_\pi}{\rho dx}$ vs. T_π for Pions in Air
9
8.5
8
$-\frac{dT_\pi}{\rho dx}$
7.5
$\frac{Mev\text{-}cm^2}{gm.}$
7
6.5
6
5.5
5.5
5
4.5
4
3.5
3
2.5
2
T_π in Mev.
10^1 mev. < T_π < 10^2 mev.

MU-6452

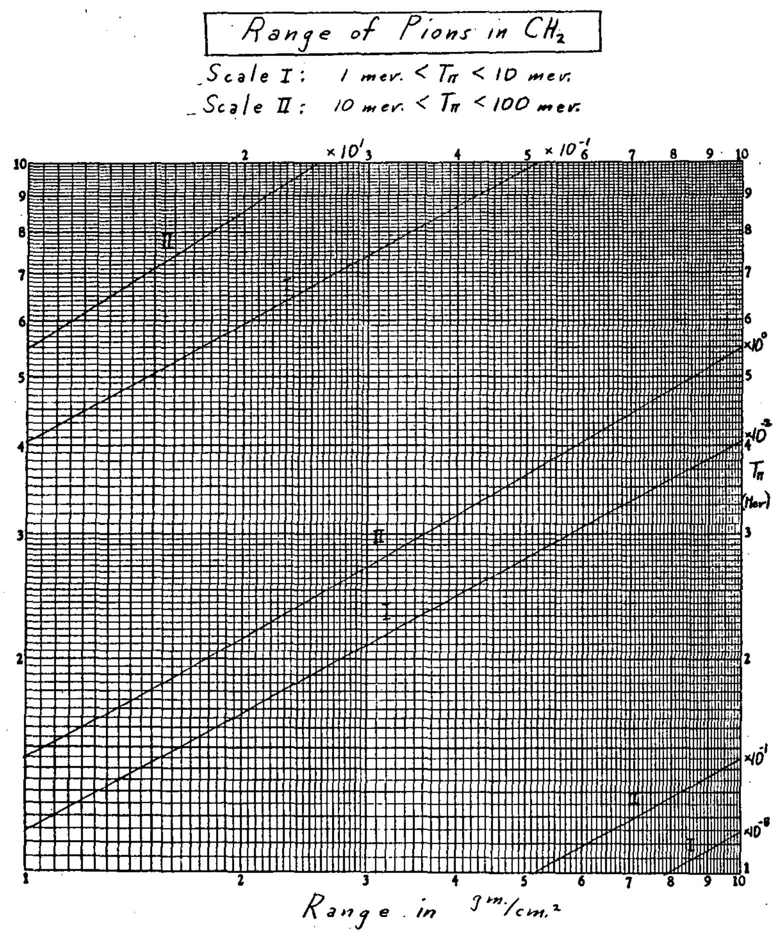

$-\frac{dT_\pi}{\rho dx}$ vs. T_π for Pions in Air
2.2
$-\frac{dT_\pi}{\rho dx}$
2.1
$\frac{Mev\,cm^2}{g^m}$
2.0
1.9
1.8
II
I
T_π in Mev.
Scale I: 10^2 mev. < T_π < 10^3 mev.
Scale II: 10^3 mev. < T_π < 10^4 mev.

MU-6453

RANGE OF PIONS IN CH_2

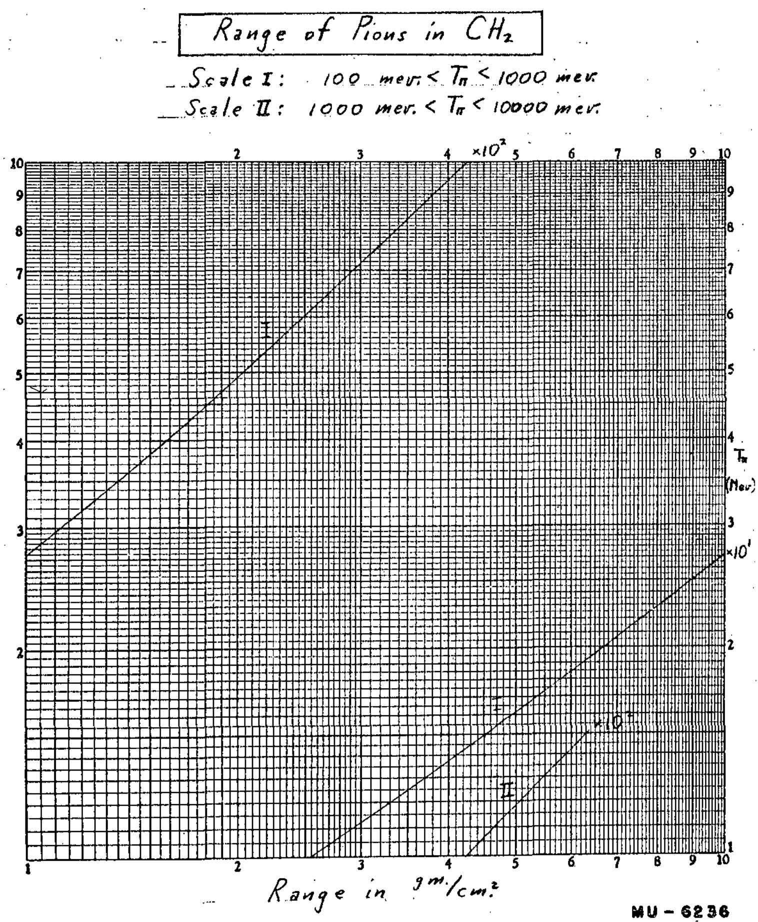
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
1.042	8.530×10^{-3}	68.00
1.191	1.085×10^{-2}	60.97
1.340	1.341	55.36
1.489	1.623	50.77
1.787	2.257	43.69
2.234	3.384	36.34
2.680	4.713	31.24
2.978	5.710	28.66
3.723	8.572	23.84
4.468	1.195×10^{-1}	20.53
5.212	1.582	18.10
5.957	2.017	16.23
6.701	2.499	14.76
7.446	3.026	13.56
8.935	4.211	11.72
10.42	5.564	10.38
11.91	7.077	9.360
13.40	8.744	8.552
14.89	1.056×10^{0}	7.898
18.61	1.570	6.700
22.34	2.165	5.886
26.06	2.833	5.296
29.78	3.569	
37.23	5.222	

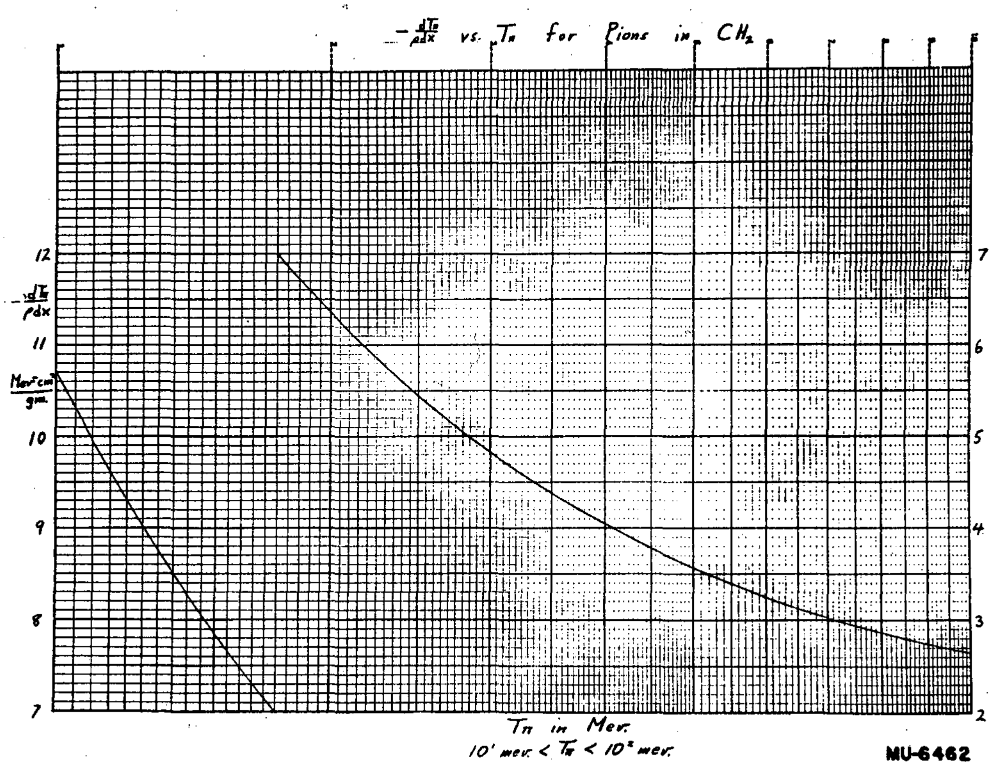
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
44.68	7.092×10^{0}	3.792
52.12	9.143	3.489
59.57	1.135×10^{1}	3.262
67.01	1.370	3.080
74.46	1.617	2.949
89.35	2.141	2.745
104.2	2.699	2.604
119.1	3.283	2.503
134.0	3.888	2.428
148.9	4.509	2.371
223.4	7.759	2.229
297.8	1.114×10^{2}	2.189
372.3	1.454	2.184
446.8	1.795	2.194
521.2	2.133	2.210
595.7	2.469	2.229
670.1	2.801	2.250
744.6	3.131	2.270
893.5	3.781	2.300
1042.0	4.420	2.348
1191.0	5.050	2.3829
1340.0	5.670	2.4153
1489.0	6.283	2.4454



Range of Pions in CH_2
Scale I: 1 mev. < T_π < 10 mev.
Scale II: 10 mev. < T_π < 100 mev.
$\times 10^1$
$\times 10^{-1}$
$\times 10^0$
$\times 10^{-2}$
T_π (Mev)
$\times 10^{-1}$
$\times 10^{-2}$
II
I
Range in gm./cm.^{2}

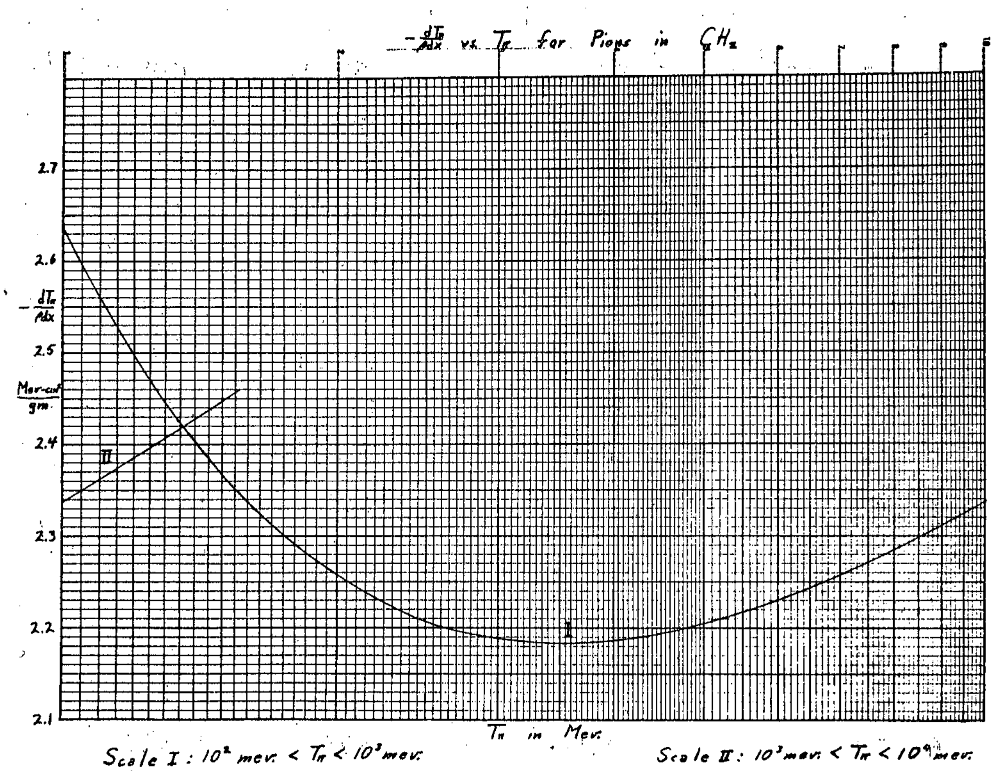
MU - 6235


Range of Pions in CH_2
Scale I: 100 mev. < T_π < 1000 mev.
Scale II: 1000 mev. < T_π < 10000 mev.
$\times 10^2$
$\times 10^1$
$\times 10^3$
I
II
T_π (Mev)
Range in gm./cm.^{2}
MU - 6236



$-\frac{dT_\pi}{\rho dx}$ vs. T_π for Pions in CH_2
$-\frac{dT_\pi}{\rho dx}$
$\frac{\text{Mev-cm}^2}{\text{gm.}}$
12
11
10
9
8
7
7
6
5
4
3
2
T_π in Mev.
10^1 mev. < T_π < 10^2 mev.

MU-6462

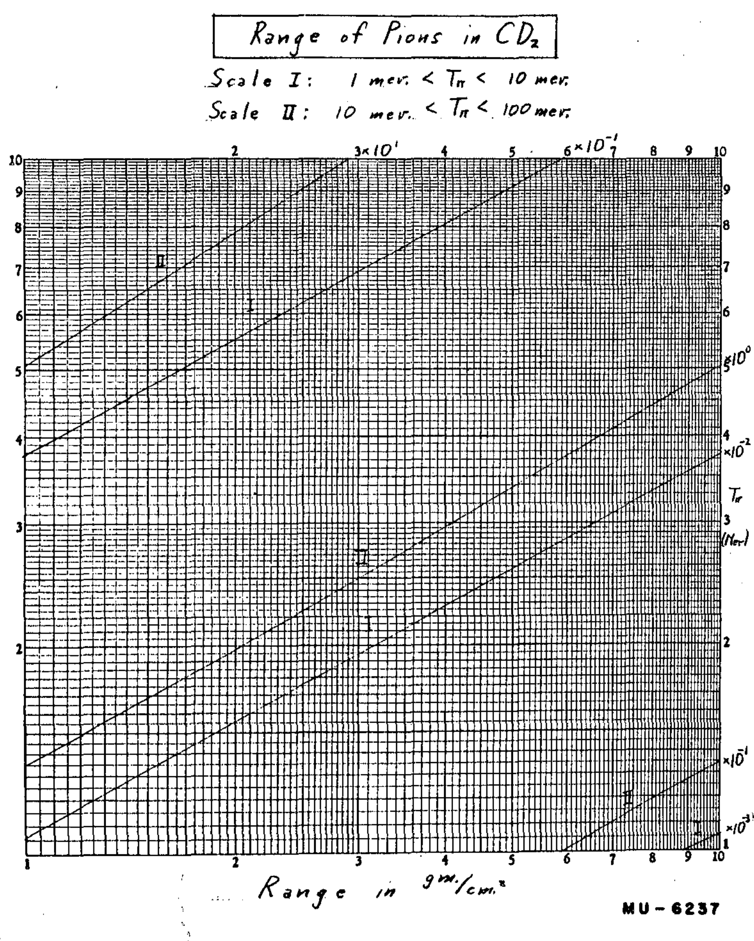


$-\frac{dT_\pi}{\rho dx}$ vs. T_π for Pions in CH_2
2.7
2.6
$-\frac{dT_\pi}{\rho dx}$
2.5
$\frac{Mev\text{-}cm^2}{gm.}$
2.4
2.3
2.2
2.1
II
I
T_π in Mev.
Scale I : 10^2 mev. < T_π < 10^3 mev.
Scale II : 10^3 mev. < T_π < 10^9 mev.

MU-6463

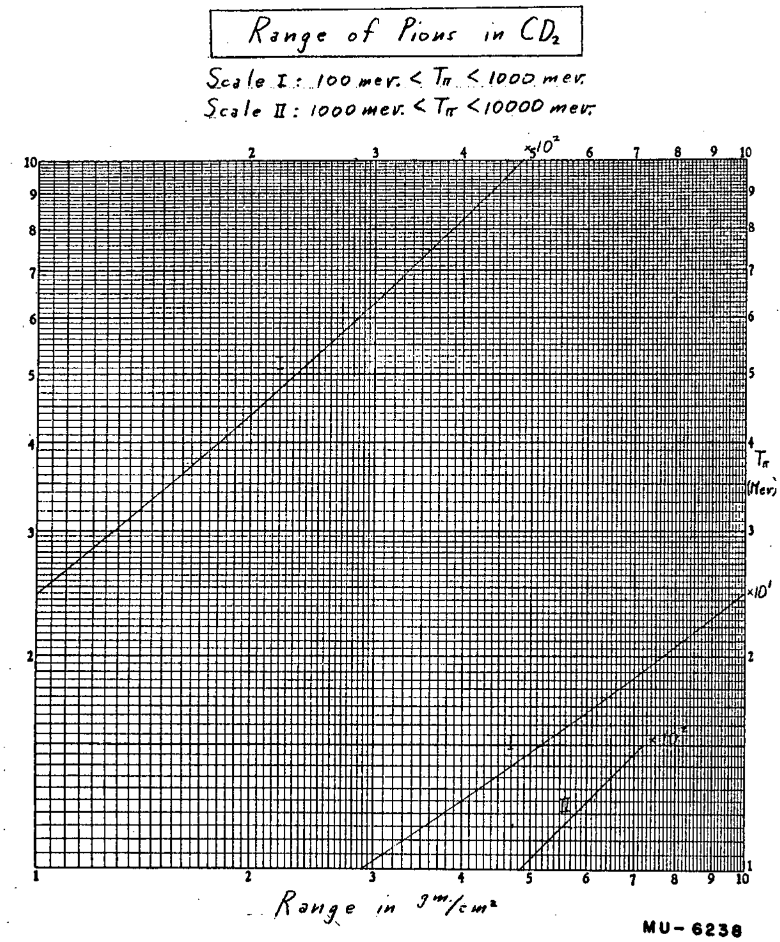
RANGE OF PIONS IN CD_2

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$	T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
1.042	9.757×10^{-3}	59.50	52.12	1.045×10^{1}	3.053
1.191	1.240×10^{-2}	53.35	59.57	1.297	2.855
1.340	1.534	48.44	67.01	1.565	2.696
1.489	1.855	44.42	74.46	1.848	2.580
1.787	2.580	38.23	89.35	2.447	2.402
2.234	3.868	31.80	104.2	3.085	2.279
2.978	6.526	25.08	119.1	3.752	2.190
3.723	9.797	20.86	134.0	4.443	2.124
4.468	1.366×10^{-1}	17.96	148.9	5.153	2.074
5.212	1.808	15.83	223.4	8.868	1.951
5.957	2.306	14.20	297.8	1.273×10^{2}	1.915
6.701	2.856	12.91	372.3	1.662	1.911
7.446	3.458	11.86	446.8	2.052	1.920
8.935	4.813	10.26	521.2	2.438	1.934
10.42	6.359	9.085	595.7	2.822	1.950
11.91	8.088	8.190	670.1	3.201	1.968
13.40	9.993	7.483	744.6	3.578	1.986
14.89	1.207×10^{0}	6.911	893.5	4.321	2.012
18.61	1.794	5.863	1042.0	5.051	2.054
22.34	2.474	5.150	1191.0	5.771	2.085
29.78	4.078	4.243	1340.0	6.480	2.113
37.23	5.969	3.690	1489.0	7.180	2.140
44.68	8.105	3.318			



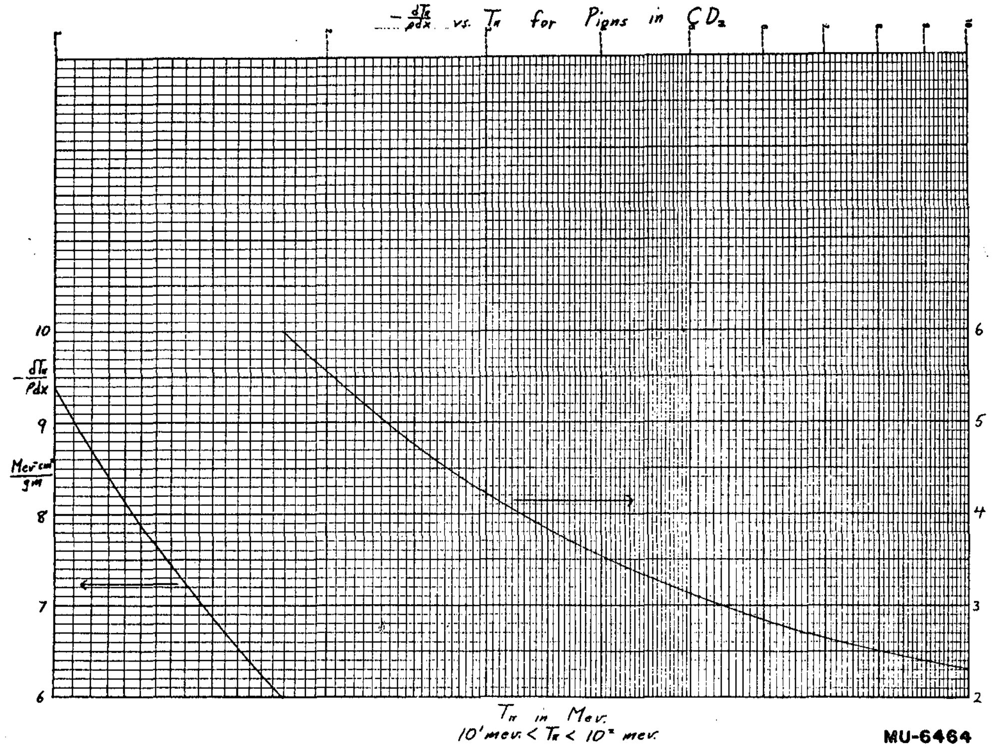
Range of Pions in CD_2
Scale I: 1 mev. < T_π < 10 mev.
Scale II: 10 mev. < T_π < 100 mev.
T_π (Mev)
Range in gm./cm.^{2}

MU-6237



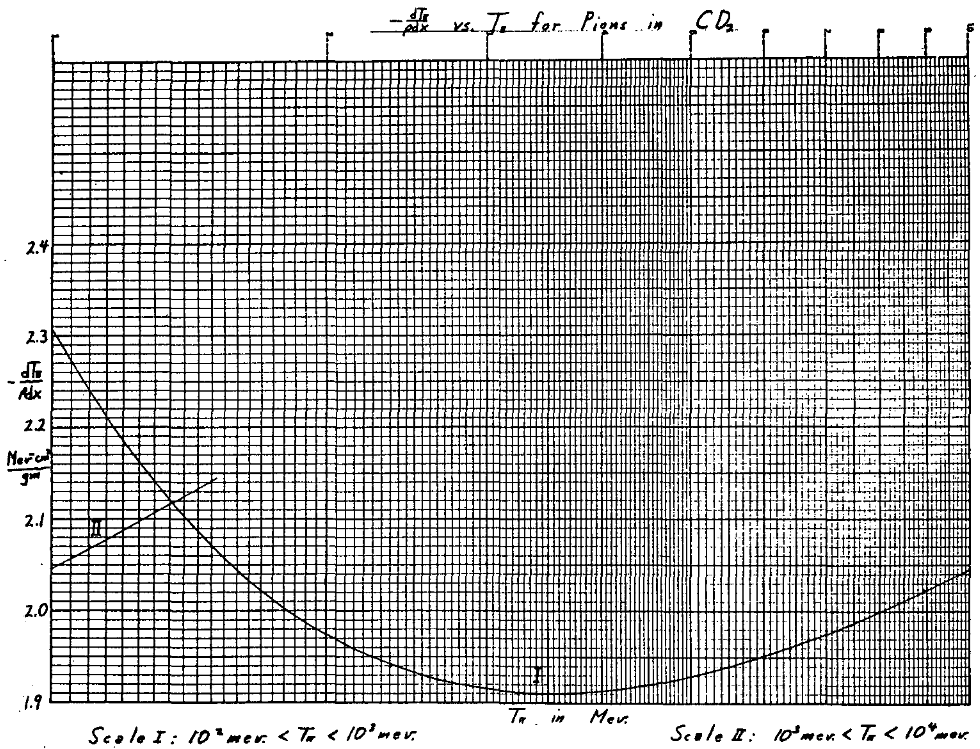
Range of Pions in CD_2
Scale I : 100 mev. < T_π < 1000 mev.
Scale II : 1000 mev. < T_π < 10000 mev.
×10^2
T_π (Mev)
×10^1
I
II
Range in gm/cm²

MU-6238



$-\frac{dT_\pi}{\rho dx}$ vs. T_π for Pions in CD_2
10
9
8
7
6
$-\frac{dT_\pi}{\rho dx}$
$\frac{Mev\ cm^2}{gm}$
6
5
4
3
2
T_π in Mev.
10^1 mev. $< T_\pi < 10^2$ mev.

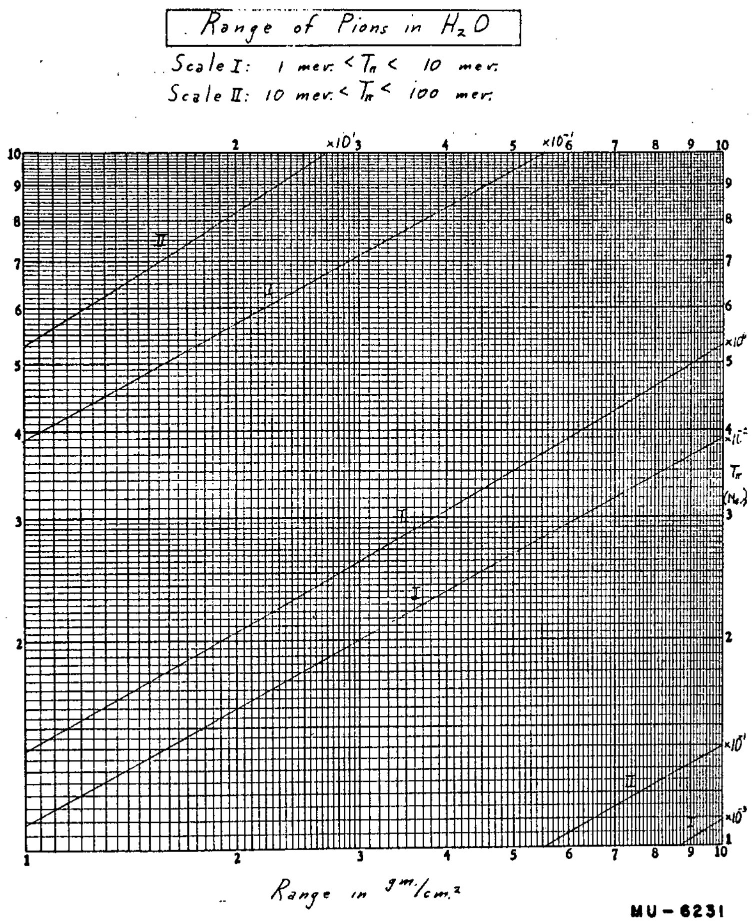
MU-6464


$-\frac{dT_\pi}{\rho dx}$ vs. T_π for Pions in CD_2
2.4
2.3
$-\frac{dT_\pi}{\rho dx}$
2.2
$\frac{Mev\text{-}cm^2}{gm}$
2.1
2.0
1.9
II
I
T_π in Mev
Scale I: 10^2 mev. < T_π < 10^3 mev.
Scale II: 10^3 mev. < T_π < 10^4 mev.

MU-6466

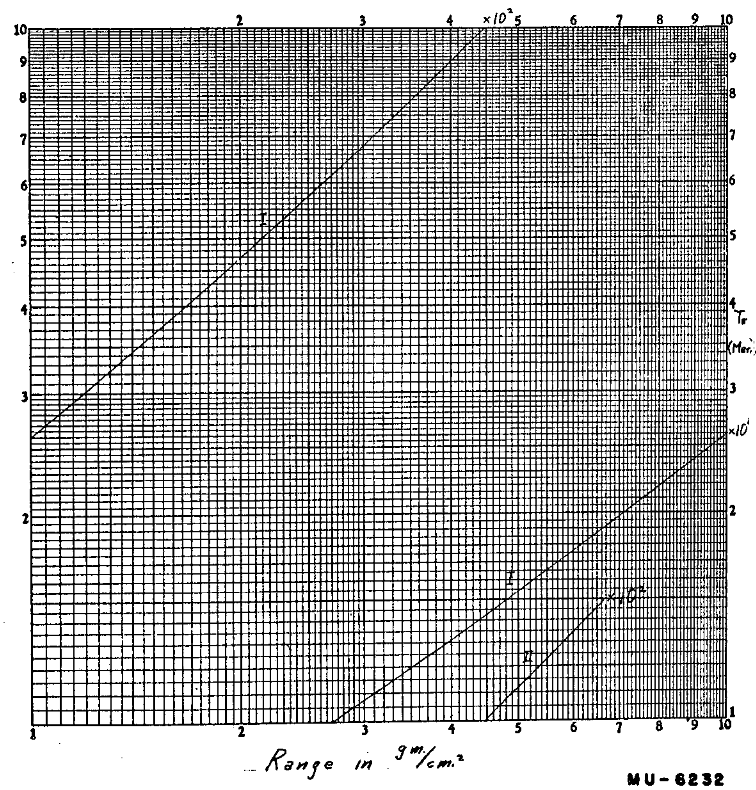
RANGE OF PIONS IN H_2O

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$	T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
1.042	9.336×10^{-3}	62.63	52.12	9.737×10^{0}	3.2822
1.191	1.185×10^{-2}	56.22	59.57	1.208×10^{1}	3.0702
1.340	1.463	51.10	67.01	1.458	2.9010
1.489	1.767	46.91	74.46	1.720	2.7768
1.787	2.453	40.43	89.35	2.278	2.5862
2.234	3.670	33.69	104.2	2.869	2.4546
2.978	6.176	26.62	119.1	3.489	2.3601
3.723	9.256	22.18	134.0	4.130	2.2902
4.468	1.288×10^{-1}	19.11	148.9	4.788	2.2373
5.212	1.704	16.86	223.4	8.230	2.1066
5.957	2.171	15.14	297.8	1.181×10^{2}	2.0705
6.701	2.687	13.77	372.3	1.540	2.0673
7.446	3.252	12.66	446.8	1.900	2.0777
8.935	4.521	10.96	521.2	2.257	2.0941
10.42	5.968	9.709	595.7	2.611	2.1132
11.91	7.586	8.758	670.1	2.962	2.1333
13.40	9.366	8.006	744.6	3.310	2.1535
14.89	1.130×10^{0}	7.3973	893.5	3.994	2.1929
22.34	2.313	5.5210	1042.0	4.668	2.2298
29.78	3.809	4.5529	1191.0	5.330	2.2640
37.29	5.570	3.9622	1340.0	5.984	2.2956
44.68	7.556	3.5657	1489.0	6.628	2.3250

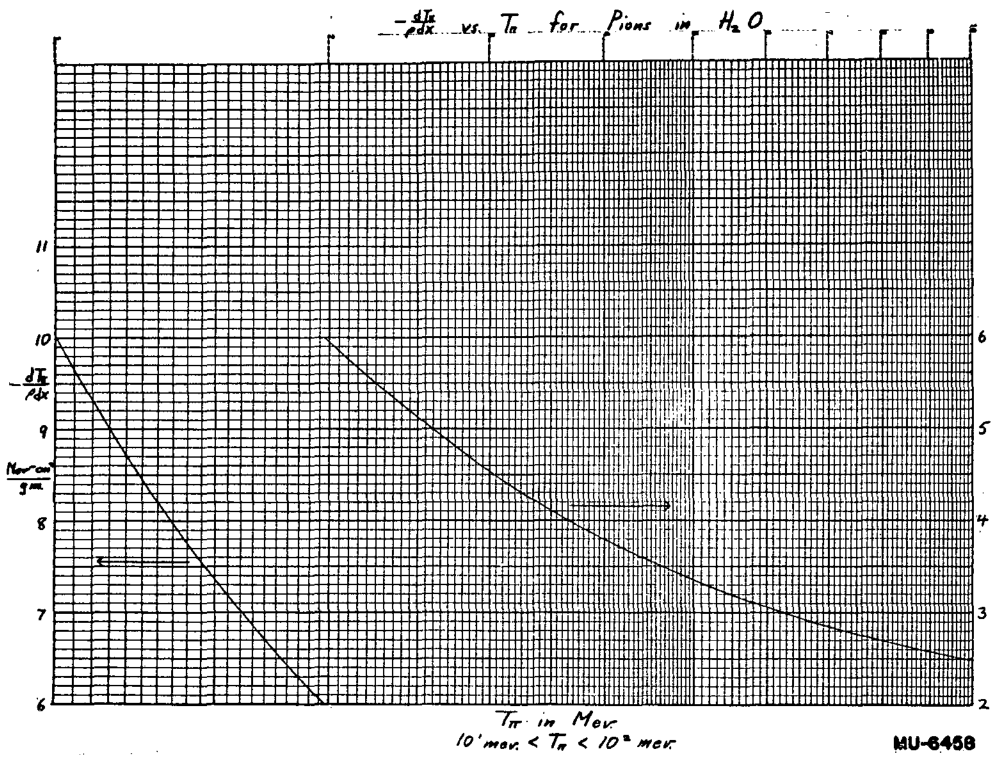

Range of Pions in H_2O
Scale I: 1 mev. < T_π < 10 mev.
Scale II: 10 mev. < T_π < 100 mev.
T_π (Mev)
Range in gm/cm.²
MU-6231

Range of Pions in H_2O

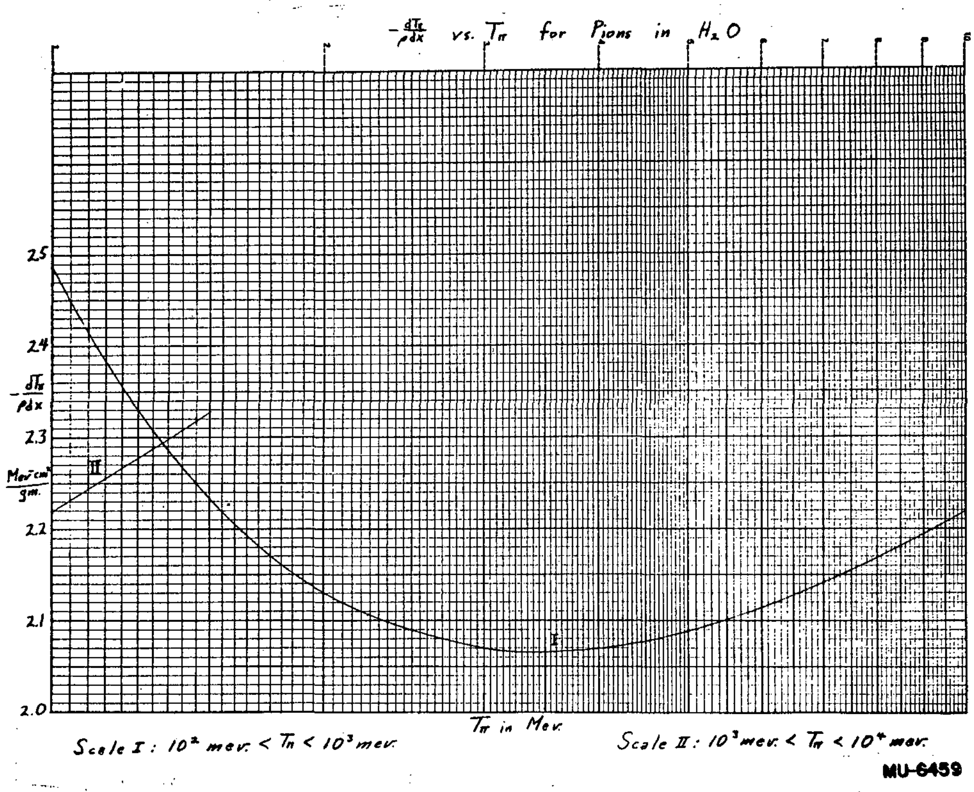
Scale I: 100 mev. < T_π < 1000 mev.
Scale II: 1000 mev. < T_π < 10000 mev.



MU-6232


$-\frac{dT_\pi}{\rho dx}$ vs. T_π for Pions in H_2O
11
10
$-\frac{dT_\pi}{\rho dx}$
9
$\frac{Mev\text{-}cm^2}{gm}$
8
7
6
6
5
4
3
2
T_π in Mev
10^1 mev. < T_π < 10^2 mev.

MU-6458


$-\frac{dT_\pi}{\rho dx}$ vs. T_π for Pions in H_2O
2.5
2.4
$-\frac{dT_\pi}{\rho dx}$
2.3
$\frac{Mev\text{-}cm^2}{gm.}$
2.2
2.1
2.0
II
I
T_π in Mev.
Scale I : 10^2 mev. < T_π < 10^3 mev.
Scale II : 10^3 mev. < T_π < 10^4 mev.
MU-6459

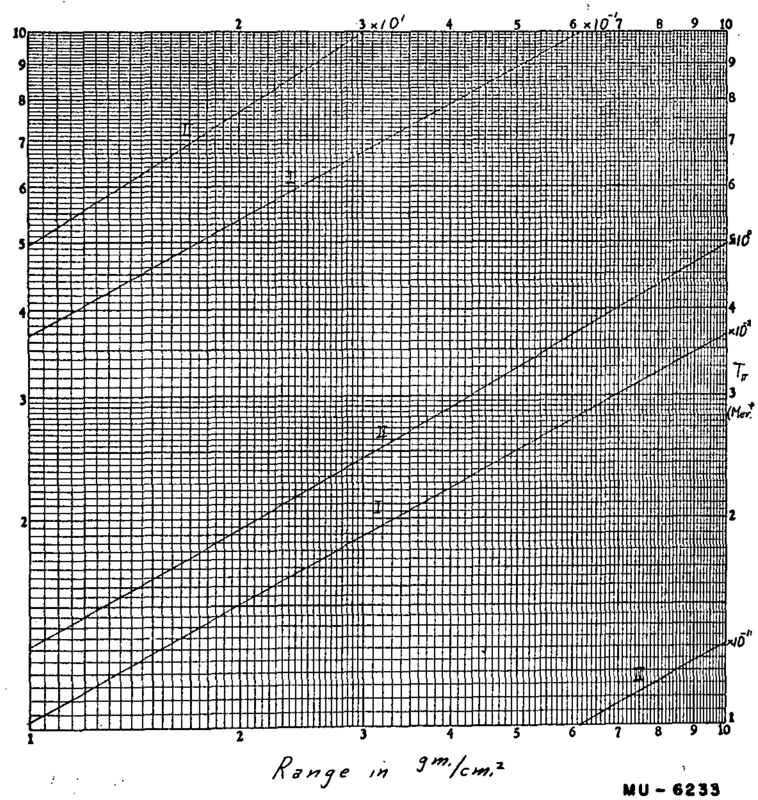
RANGE OF PIONS IN D_2O

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
1.042	1.036×10^{-2}	56.37
1.191	1.315	50.60
1.340	1.624	45.99
1.489	1.962	42.22
1.787	2.725	36.38
2.234	4.076	30.32
2.978	6.861	23.96
3.723	1.028×10^{-1}	19.96
4.468	1.431	17.20
5.212	1.893	15.18
5.957	2.412	13.62
6.701	2.986	12.39
7.446	3.613	11.39
8.935	5.023	9.859
10.42	6.631	8.738
11.91	8.428	7.882
13.40	1.041×10^{0}	7.206
14.89	1.256	6.658
18.61	1.866	5.653
22.34	2.570	4.969
29.78	4.232	4.098
37.23	6.189	4.849
44.68	8.396	4.217
52.12	1.082×10^{1}	2.954
59.57	1.343	2.763
67.01	1.620	2.611
74.46	1.912	2.499
89.35	2.530	2.328
104.2	3.188	2.209
119.1	3.876	2.124
134.0	4.589	2.061
148.9	5.320	2.014
223.4	9.144	1.896
297.8	1.312×10^{2}	1.863
372.3	1.712	1.861
446.8	2.112	1.870
521.2	2.507	1.885
595.7	2.902	1.902
670.1	3.290	1.920
744.6	3.677	1.938
893.5	4.438	1.974
1042.0	5.186	2.007
1191.0	5.923	2.038
1340.0	6.648	2.066
1489.0	7.364	2.092

Range of Pions in D_2O

Scale I: 1 mev. < T_π < 10 mev.

Scale II: 10 mev. < T_π < 100 mev.

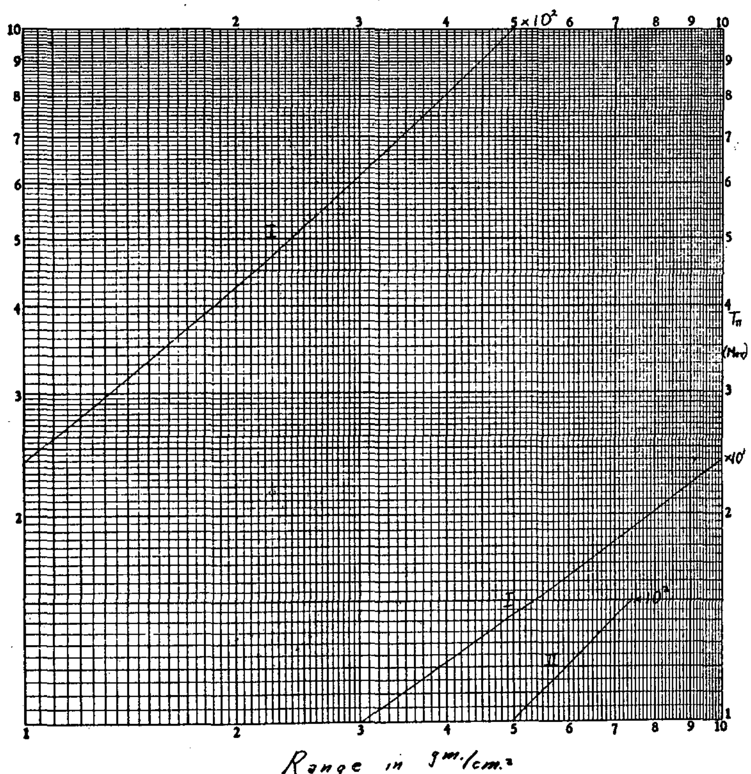


MU - 6233

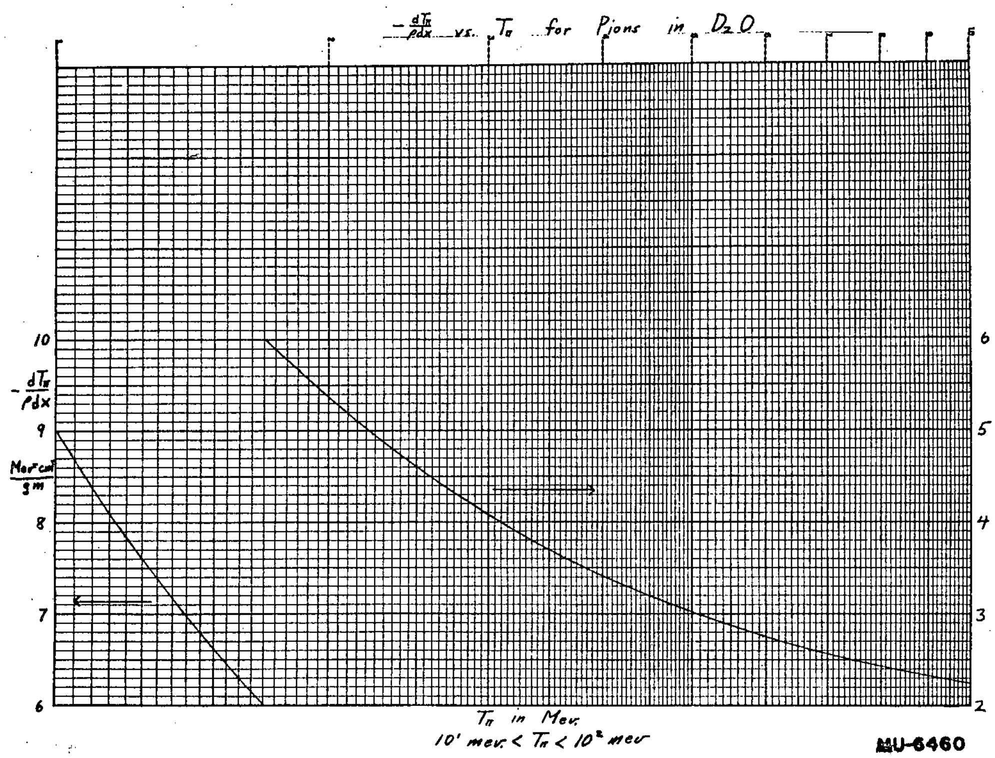
Range of Pions in D_2O

Scale I: 100 mev. < T_π < 1000 mev.

Scale II: 1000 mev. < T_π < 10000 mev.

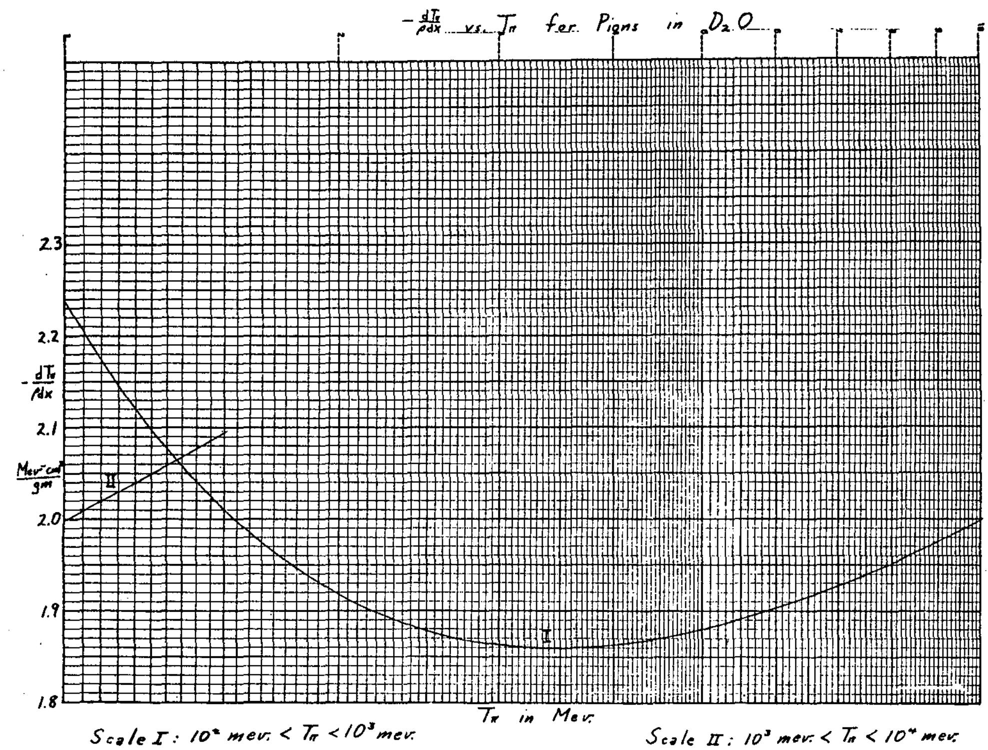


MU-6234



$-\frac{dT_\pi}{\rho dx}$ vs. T_π for Pions in D_2O
10
$-\frac{dT_\pi}{\rho dx}$
9
$\frac{Mev\,cm^2}{gm}$
8
7
6
6
5
4
3
2
T_π in Mev.
10^1 mev. < T_π < 10^2 mev

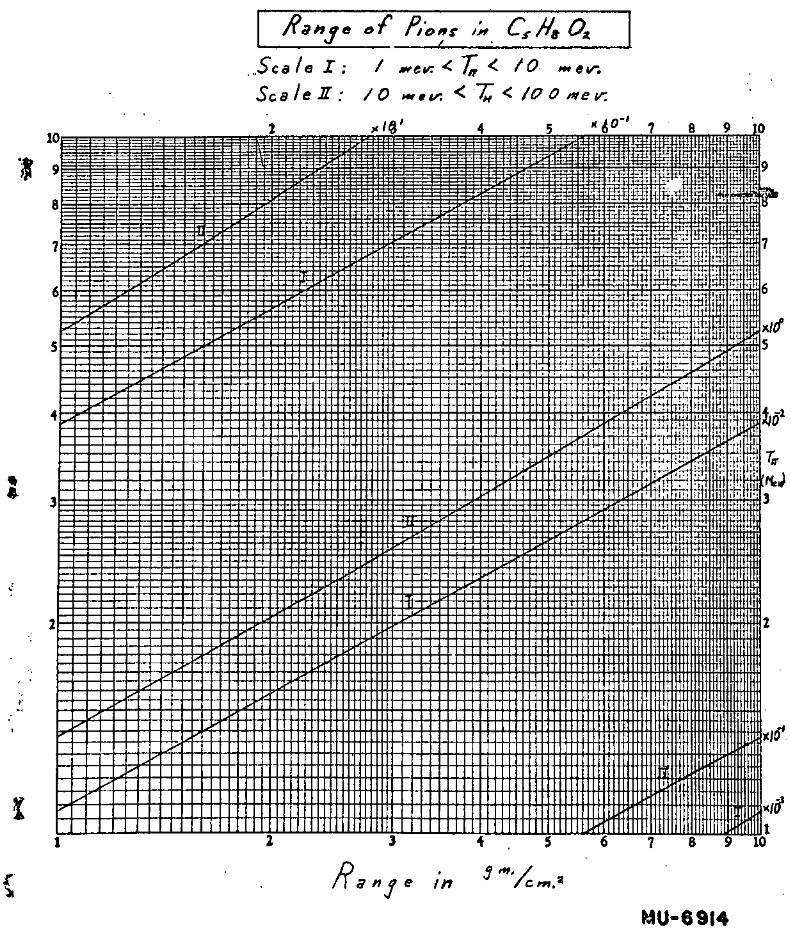
MU-6460


Scale I: 10^2 mev. < T_π < 10^3 mev.
Scale II: 10^3 mev. < T_π < 10^4 mev.
MU-6461

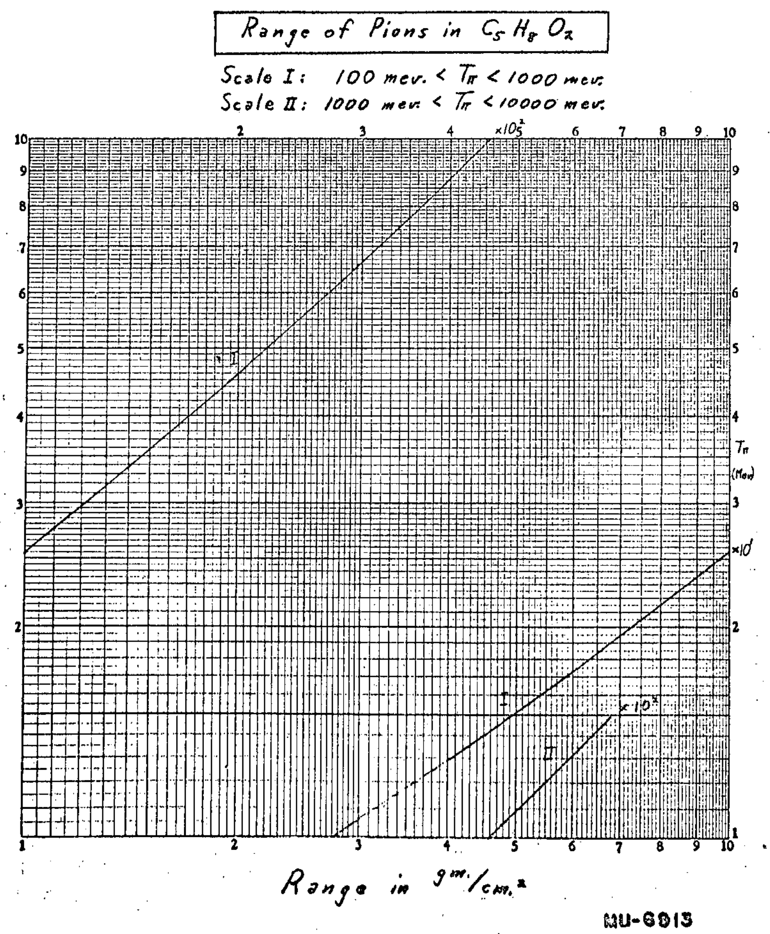
RANGE OF PIONS IN $C_5H_8O_2$

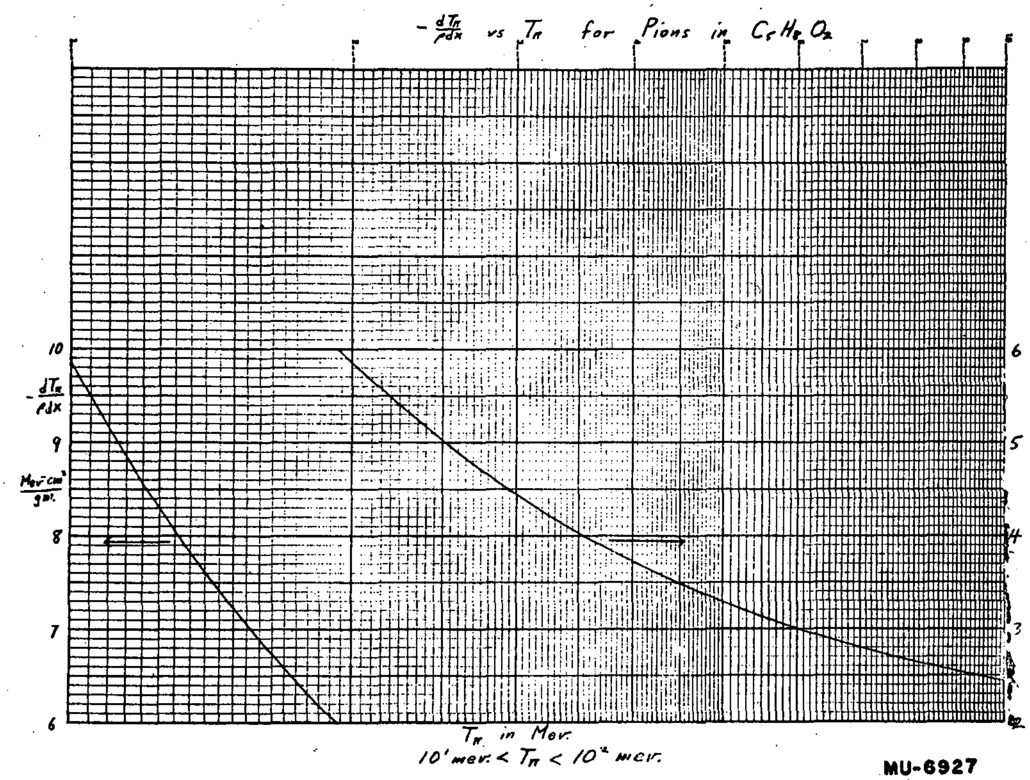
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
1.042	9.452×10^{-3}	61.77
1.191	1.200×10^{-2}	55.43
1.340	1.482	50.37
1.489	1.791	46.22
1.787	2.488	39.82
2.234	3.723	33.17
2.978	6.269	26.20
3.723	9.398	21.82
4.468	1.309×10^{-1}	18.80
5.212	1.731	16.58
5.957	2.206	14.88
6.701	2.732	13.54
7.446	3.306	12.44
8.935	4.597	10.76
10.42	6.059	9.539
11.91	7.695	8.603
13.40	9.508	7.863
14.89	1.148×10^{0}	7.264
18.61	1.705	6.166
22.34	2.353	5.420
29.78	3.877	4.468
37.23	5.671	3.888
44.68	7.698	3.498

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
52.12	9.921×10^{0}	3.220
59.57	1.231×10^{1}	3.011
67.01	1.486	2.847
74.46	1.753	2.723
89.35	2.321	2.536
104.2	2.925	2.406
119.1	3.556	2.314
134.0	4.210	2.245
148.9	4.882	2.193
223.4	8.394	2.064
297.8	1.205×10^{2}	2.028
372.3	1.572	2.025
446.8	1.940	2.034
521.2	2.303	2.050
595.7	2.666	2.069
670.1	3.023	2.088
744.6	3.379	2.108
893.5	4.078	2.147
1042.0	4.766	2.182
1191.0	5.444	2.215
1340.0	6.111	2.246
1489.0	6.770	2.274



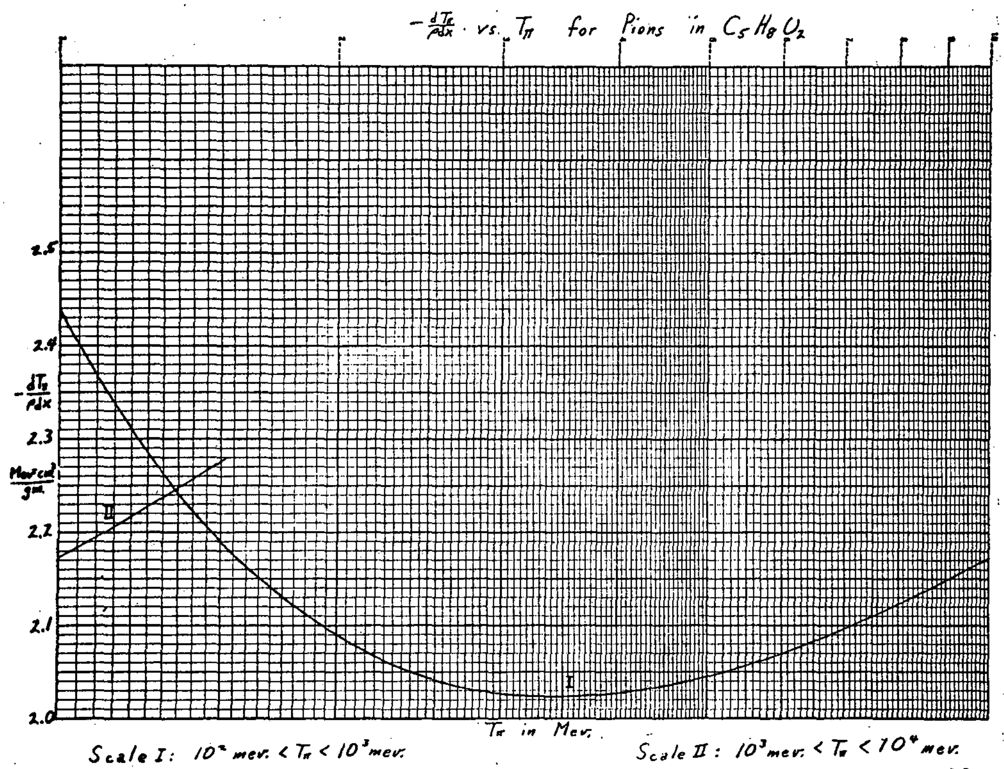
Range of Pions in $C_5H_8O_2$
Scale I: 1 mev. < T_π < 10 mev.
Scale II: 10 mev. < T_π < 100 mev.
T_π (Mev)
Range in gm./cm.²
MU-6914


Range of Pions in $C_5H_8O_2$
Scale I: 100 mev. < T_π < 1000 mev.
Scale II: 1000 mev. < T_π < 10000 mev.
$\times 10^2$
$\times 10$
$\times 10^2$
T_π (Mev)
I
II
Range in gm./cm.^{2}
MU-6913



$-\frac{dT_\pi}{\rho dx}$ vs T_π for Pions in $C_5H_8O_2$
10
$-\frac{dT_\pi}{\rho dx}$
9
$\frac{Mev\cdot cm^2}{gm}$
8
7
6
6
5
4
3
T_π in Mev
10^1 mev $< T_\pi < 10^2$ mev

MU-6927


$-\frac{dT_\pi}{\rho dx}$ vs. T_π for Pions in $C_5H_8O_2$
2.5
2.4
$-\frac{dT_\pi}{\rho dx}$
2.3
Mev cm²/gm.
2.2
2.1
2.0
II
I
T_π in Mev.
Scale I: 10^2 mev. < T_π < 10^3 mev.
Scale II: 10^3 mev. < T_π < 10^4 mev.

MU-6928

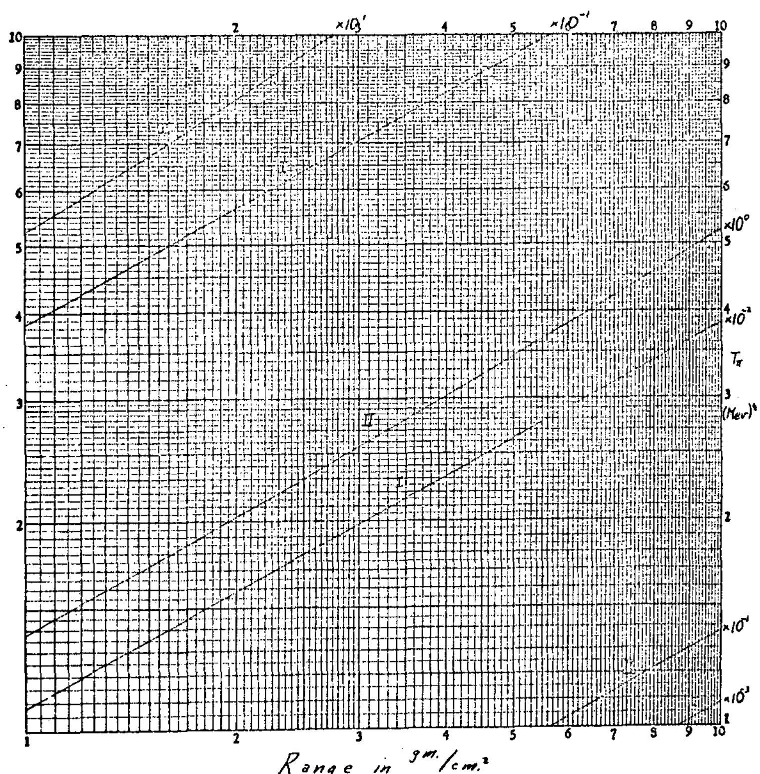
RANGE OF PIONS IN STILBENE

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
1.042	9.450×10^{-3}	61.63
1.191	1.201×10^{-2}	55.30
1.340	1.484	50.24
1.489	1.793	46.09
1.787	2.492	39.70
2.234	3.731	33.06
2.978	6.286	26.10
3.723	9.428	21.73
4.468	1.313×10^{-1}	18.72
5.212	1.738	16.51
5.957	2.214	14.82
6.701	2.742	13.47
7.446	3.319	12.38
8.935	4.617	10.71
10.42	6.097	9.491
11.91	7.752	8.559
13.40	9.574	7.828
14.89	1.156	7.226
18.61	1.718×10^{0}	6.133
22.34	2.367	5.390
29.78	3.900	4.443
37.23	5.704	3.865
44.68	7.744	3.477
52.12	9.980×10^{0}	3.200
59.57	1.238×10^{1}	2.993
67.01	1.494	2.830
74.46	1.764	2.706
89.35	2.335	2.520
104.2	2.943	2.391
119.1	3.578	2.299
134.0	4.236	2.230
148.9	4.913	2.178
223.4	8.449	2.050
297.8	1.213×10^{2}	2.014
372.3	1.582	2.010
446.8	1.953	2.020
521.2	2.319	2.035
595.7	2.684	2.054
670.1	3.044	2.073
744.6	3.403	2.092
893.5	4.108	2.130
1042.0	4.801	2.165
1191.0	5.484	2.198
1340.0	6.156	2.228
1489.0	6.820	2.256

Range of Pions in Stilbene

Scale I: 1 mev. < T_π < 10 mev.

Scale II: 10 mev. < T_π < 100 mev.

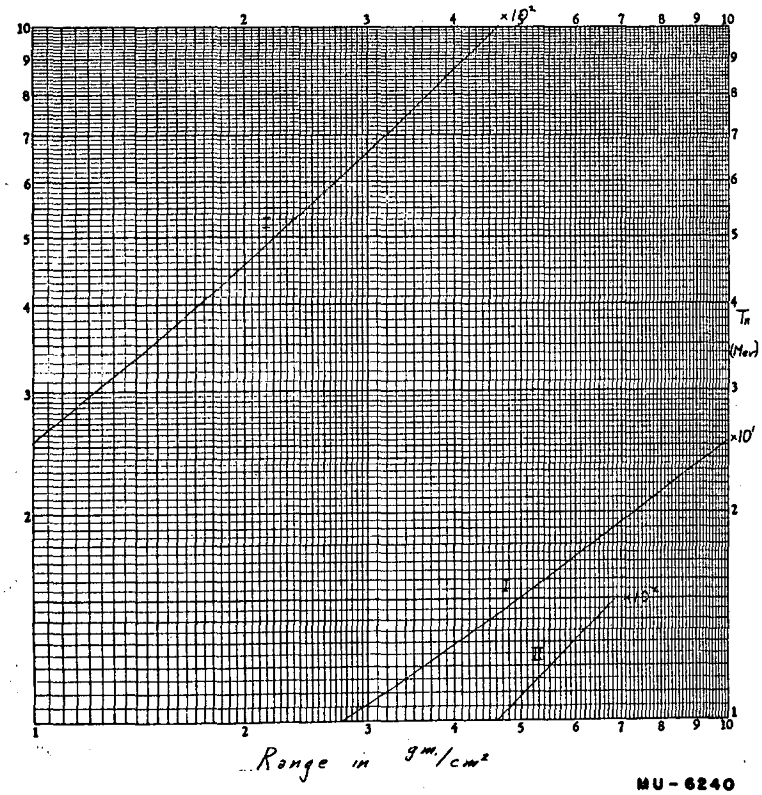


MU-6239

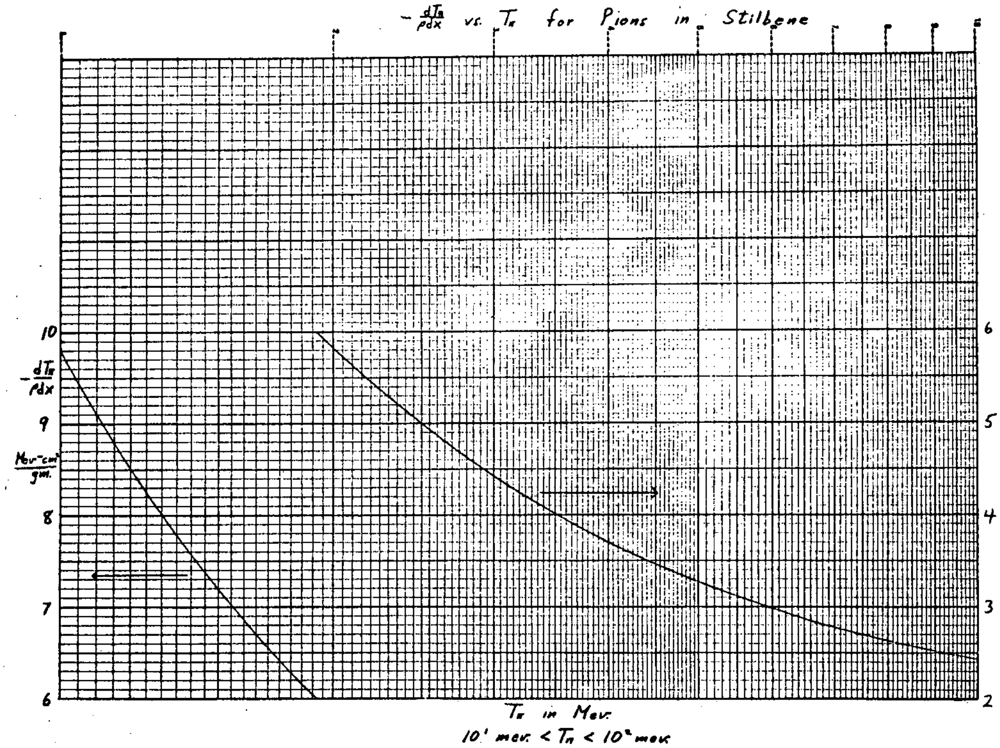
Range of Pions in Stilbene

Scale I: 100 mev. < T_π < 1000 mev.

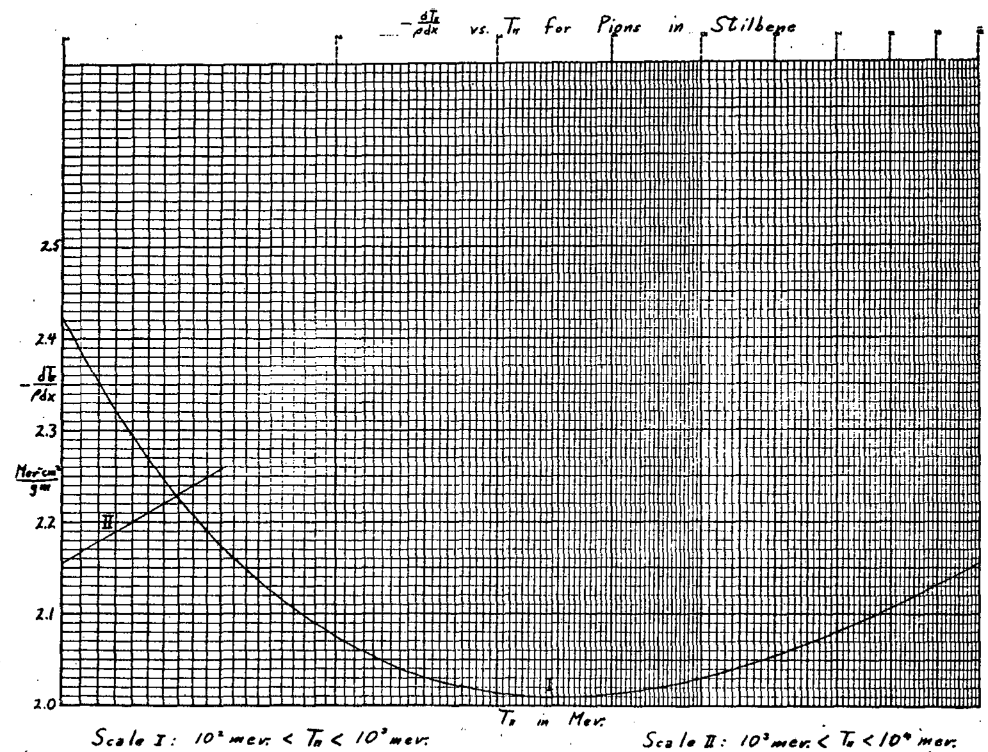
Scale II: 1000 mev. < T_π < 10000 mev.



MU-6240


$-\frac{dT_\pi}{\rho dx}$ vs. T_π for Pions in Stilbene
10
$-\frac{dT_\pi}{\rho dx}$
9
$\frac{Mev\text{-}cm^2}{gm.}$
8
7
6
6
5
4
3
2
T_π in Mev.
10^1 mev. < T_π < 10^2 mev.

MU-6466


$-\frac{dT_\pi}{\rho dx}$ vs. T_π for Pions in Stilbene
2.5
2.4
$-\frac{dT_\pi}{\rho dx}$
2.3
$\frac{Mev\,cm^2}{gm}$
2.2
II
2.1
2.0
I
T_π in Mev.
Scale I: 10^2 mev. < T_π < 10^3 mev.
Scale II: 10^3 mev. < T_π < 10^4 mev.

MU-6467

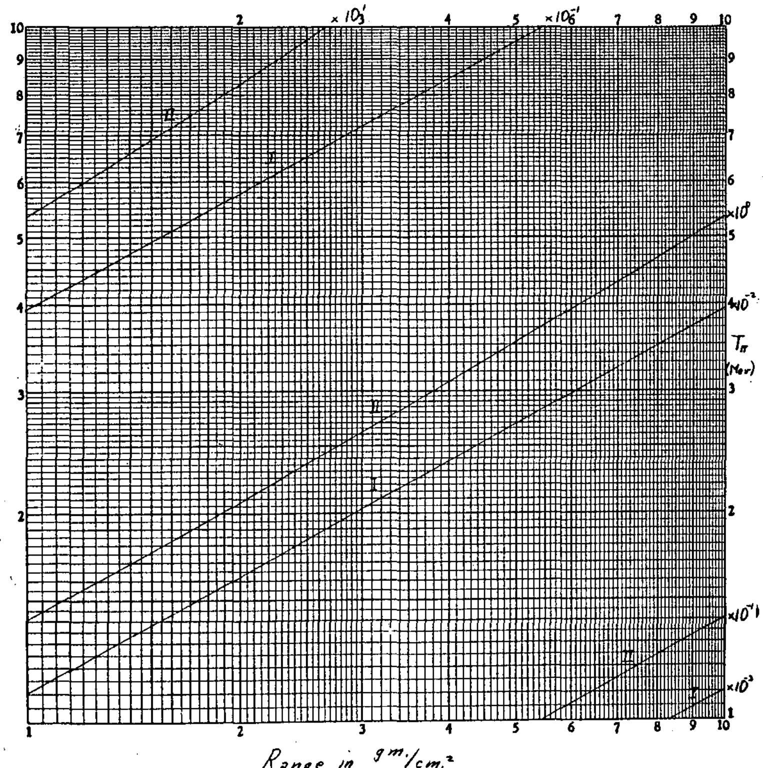
RANGE OF PIONS IN PHENYL CYCLOHEXANE

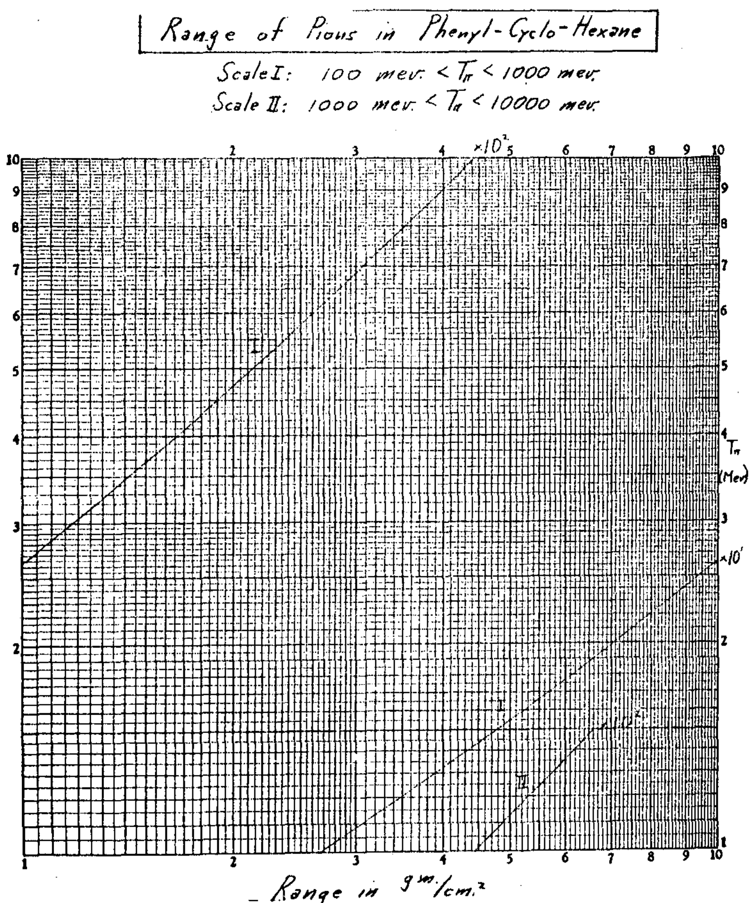
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm	T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
1.042	9.025×10^{-3}	64.42	52.12	9.596×10^{0}	3.327
1.191	1.147×10^{-2}	57.78	59.57	1.191×10^{1}	3.111
1.340	1.418	52.48	67.01	1.437	2.939
1.489	1.715	48.14	74.46	1.696	2.812
1.787	2.384	41.45	89.35	2.246	2.618
2.234	3.571	34.50	104.2	2.831	2.484
2.978	6.020	27.22	119.1	3.443	2.388
3.723	9.033	22.66	134.0	4.077	2.317
4.468	1.259×10^{-1}	19.51	148.9	4.727	2.263
5.212	1.666	17.20	223.4	8.133	2.128
5.957	2.124	15.44	297.8	1.168×10^{2}	2.090
6.701	2.630	14.03	372.3	1.524	2.086
7.446	3.184	12.90	446.8	1.880	2.096
8.935	4.430	11.15	521.2	2.234	2.112
10.42	5.852	9.881	595.7	2.587	2.130
11.91	7.442	8.909	670.1	2.933	2.150
13.40	9.192	8.142	744.6	3.278	2.170
14.89	1.110	7.520	893.5	3.958	2.208
18.61	1.650	6.381	1042.0	4.626	2.245
22.34	2.274	5.607	1191.0	5.285	2.279
29.78	3.748	4.620	1340.0	5.934	2.310
37.23	5.483	4.019	1489.0	6.574	2.339
44.68	7.444	3.615			

Range of Pions in Phenyl-Cyclo-Hexane

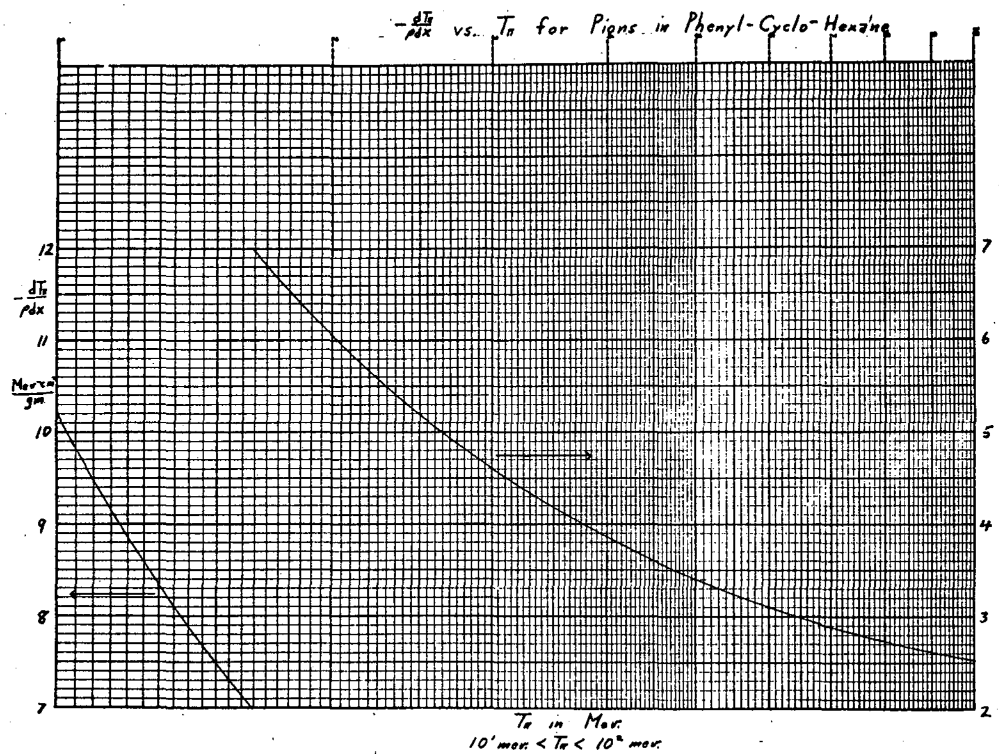
Scale I: 1 mev. < T_π < 10 mev.

Scale II: 10 mev. < T_π < 100 mev.



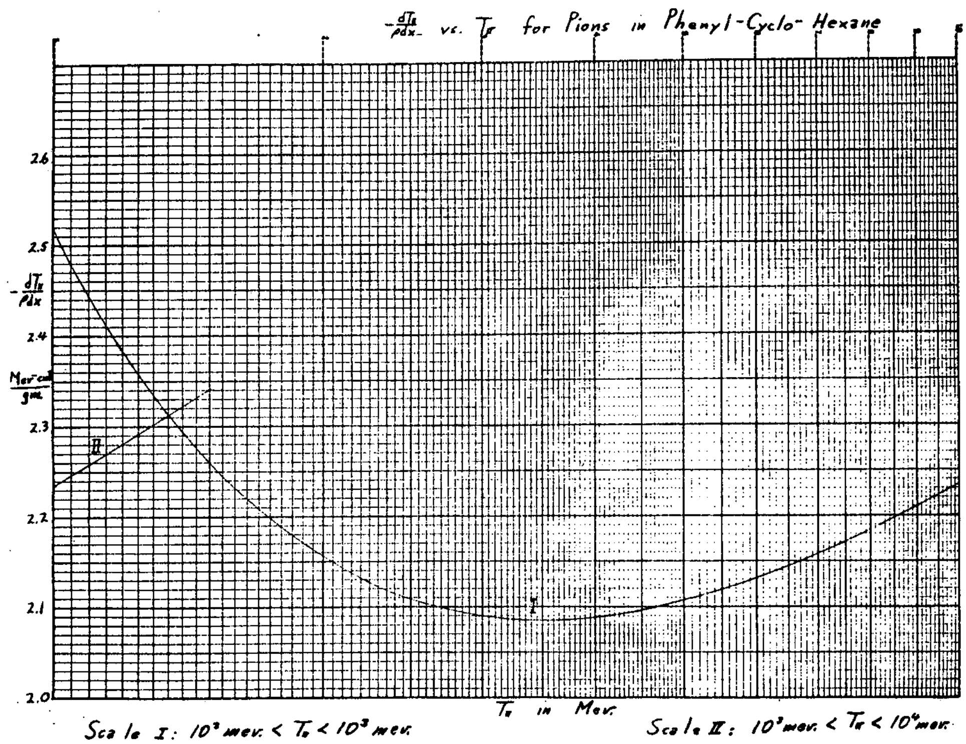

Range of Pions in Phenyl-Cyclo-Hexane
Scale I: 100 mev. < T_π < 1000 mev.
Scale II: 1000 mev. < T_π < 10000 mev.
×10²
×10¹
T_π (Mev)
I
II
Range in gm./cm.²

MU-6242



$-\frac{dT_\pi}{\rho dx}$ vs. T_π for Pions in Phenyl-Cyclo-Hexane
$-\frac{dT_\pi}{\rho dx}$
$\frac{Mev\text{-}cm^2}{gm}$
12
11
10
9
8
7
T_π in Mev.
10^1 mev. $< T_\pi <$ 10^2 mev.

MU-6468



$-\frac{dT_\pi}{\rho dx}$ vs. T_π for Pions in Phenyl-Cyclo-Hexane
2.6
2.5
$-\frac{dT_\pi}{\rho dx}$
2.4
$\frac{\text{Mev-cm}^2}{\text{gm.}}$
2.3
2.2
2.1
2.0
II
I
T_π in Mev.
Scale I: 10^2 mev. < T_π < 10^3 mev.
Scale II: 10^3 mev. < T_π < 10^4 mev.

MU-6469

IV. DEUTERON RANGE-ENERGY DATA

Deuteron Kinetic Energy Range: 1 Mev. to 10^5 Mev.

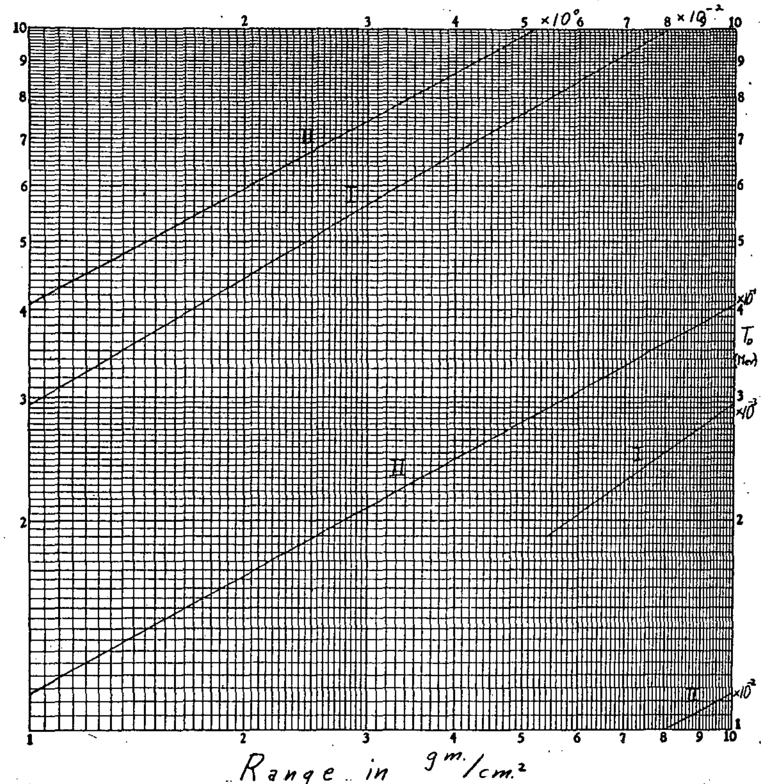
RANGE OF DEUTERONS IN BERYLLIUM

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$	T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
1.999	5.817×10^{-3}	247.0	299.8	3.704×10^{1}	4.614
3.998	1.685×10^{-2}	145.9	399.8	6.109	3.800
5.997	3.307	106.0	499.7	8.941	3.304
7.996	5.435	84.27	599.7	1.214×10^{2}	2.972
9.995	8.045	70.38	699.6	1.565	2.734
11.99	1.111×10^{-1}	60.69	799.6	1.944	2.556
13.99	1.463	53.51	899.5	2.346	2.419
15.99	1.858	47.96	999.5	2.769	2.310
17.99	2.296	43.54	1199.0	3.668	2.150
19.99	2.776	39.92	1399.0	4.624	2.039
23.99	3.859	34.35	1599.0	5.625	1.960
27.98	5.103	30.24	1799.0	6.661	1.901
31.98	6.502	27.08	1999.0	7.726	1.856
35.98	8.055	24.56	3998.0	1.910×10^{3}	1.713
39.98	9.756	22.51	5997.0	3.079	1.716
59.97	2.042×10^{0}	16.12	7996.0	4.235	1.734
79.96	3.448	12.74	9995.0	5.371	1.775
99.95	5.174	10.64	11990.0	6.487	1.806
119.9	7.201	9.197	13990.0	7.584	1.836
139.9	9.516	8.145	15990.0	8.665	1.863
159.9	1.210×10^{1}	7.342	17990.0	9.731	1.888
179.9	1.496	6.707	19990.0	1.078×10^{4}	1.912
199.9	1.806	6.194			

Range of Deuterons in Beryllium

Scale I: 1 mev. < T_0 < 10 mev.

Scale II: 10 mev. < T_0 < 100 mev.



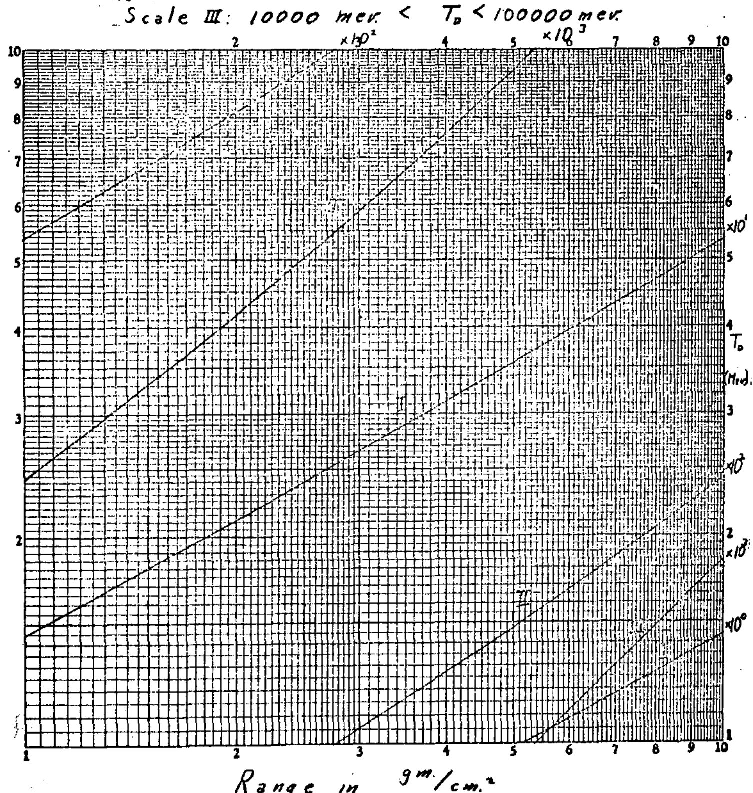
MU-6271

Range of Deuterons in Beryllium

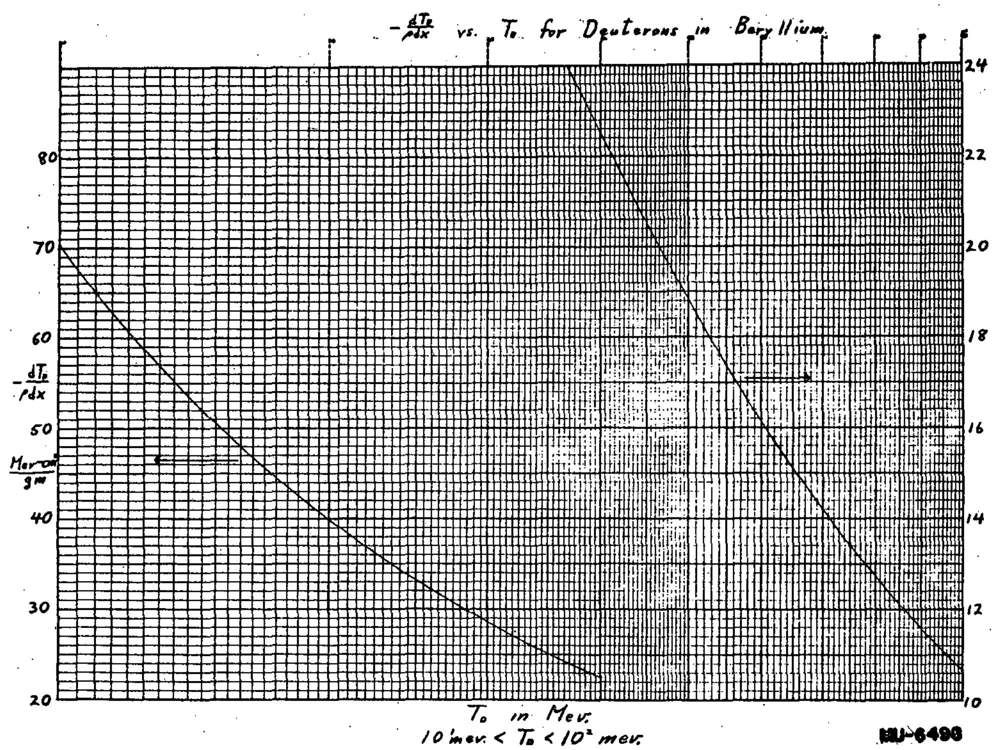
Scale I: 100 mev. < T_o < 1000 mev.

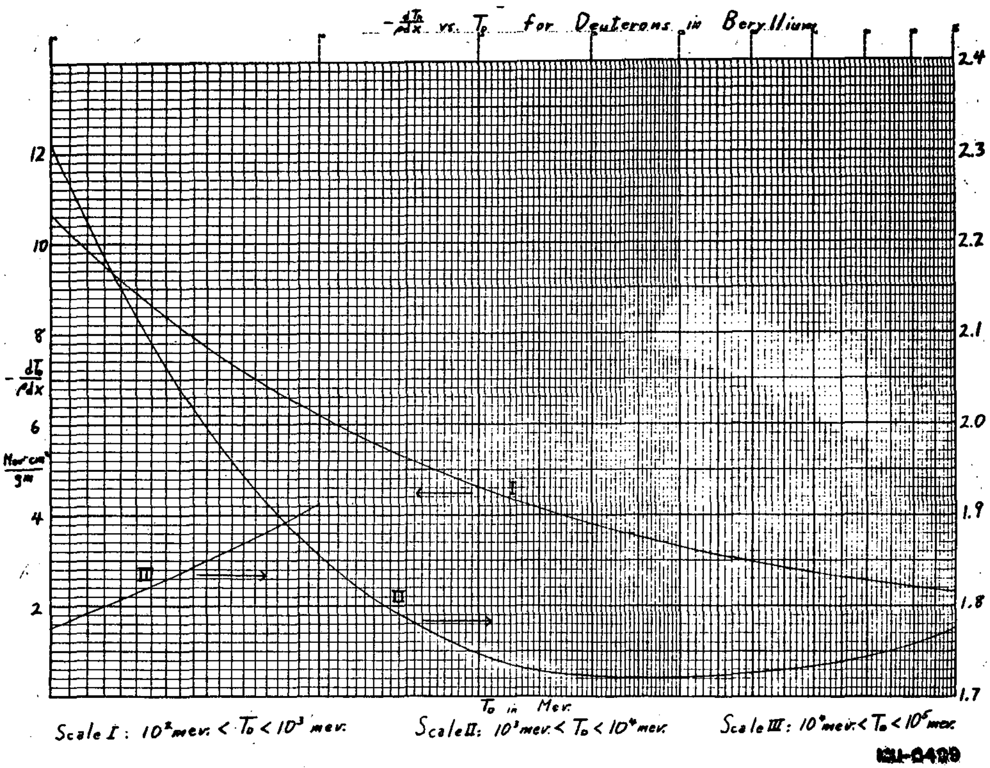
Scale II: 1000 mev. < T_o < 10000 mev.

Scale III: 10000 mev. < T_o < 100000 mev.



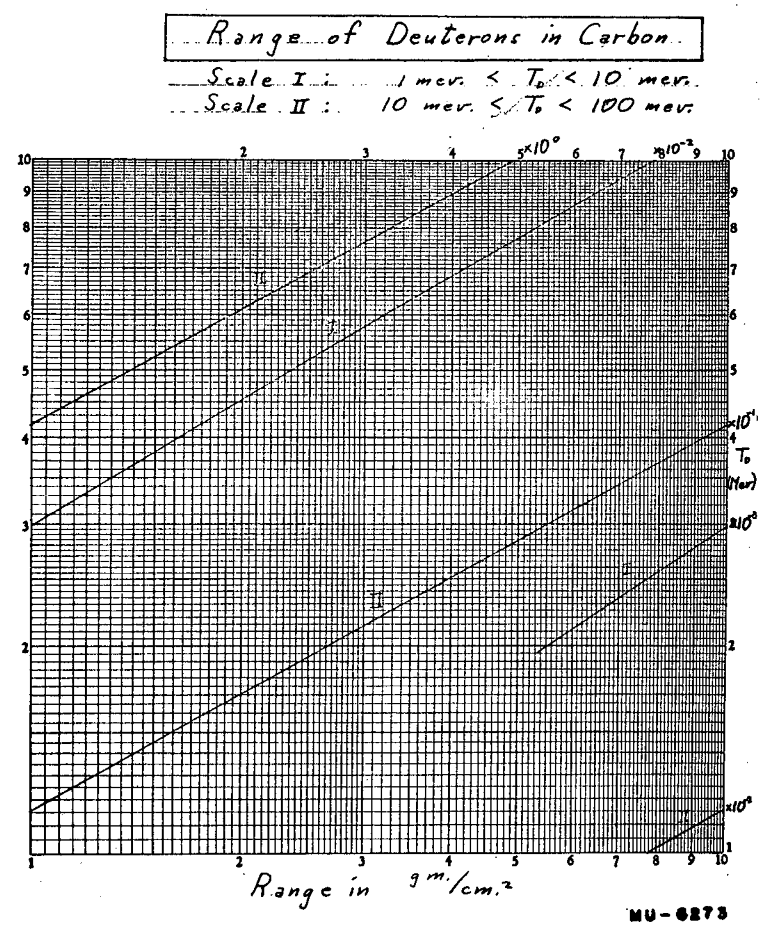
MU-6272

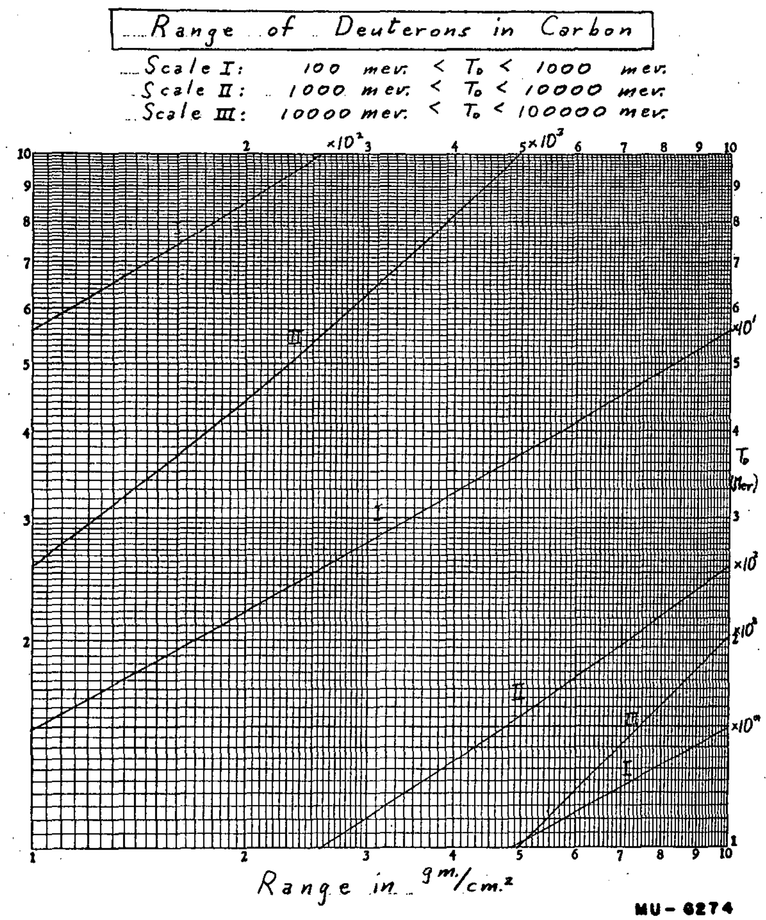

$-\frac{dT_o}{\rho dx}$ vs. T_o for Deuterons in Beryllium
$-\frac{dT_o}{\rho dx}$
$\frac{Mev\ cm^2}{gm}$
20
30
40
50
60
70
80
10
12
14
16
18
20
22
24
T_o in Mev.
10 mev. < T_o < 10^2 mev.
MU-6498

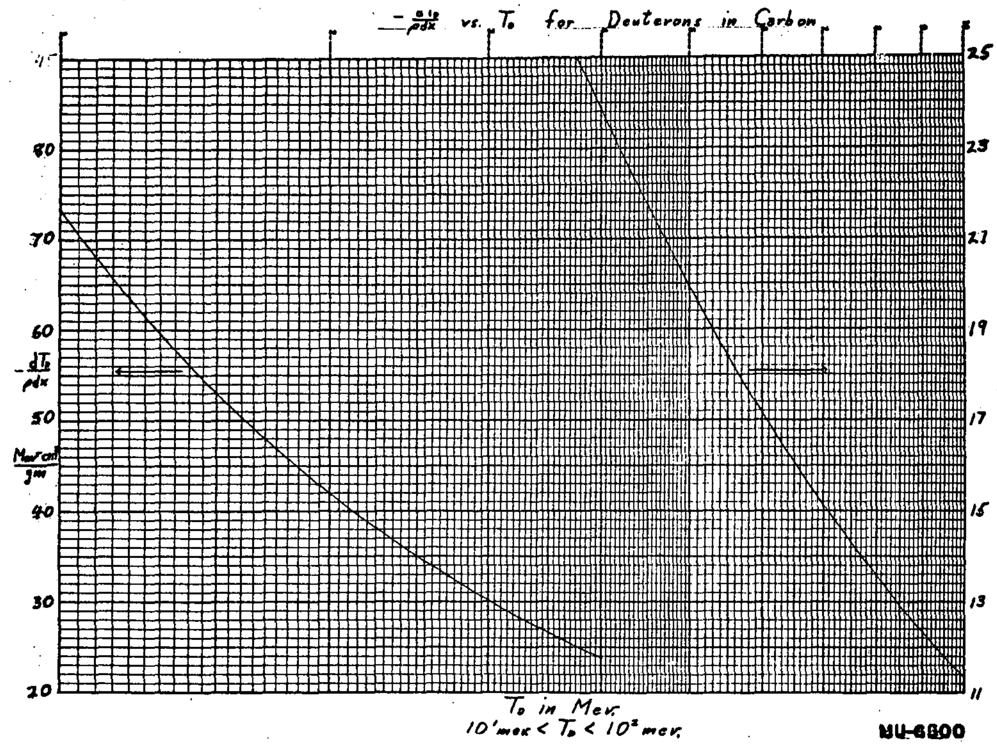

$-\frac{dT_0}{\rho dx}$ vs. T_0 for Deuterons in Beryllium
12
10
8
$-\frac{dT_0}{\rho dx}$
6
$\frac{Mev\ cm^2}{gm}$
4
2
2.4
2.3
2.2
2.1
2.0
1.9
1.8
1.7
I
II
III
T_0 in Mev.
Scale I: 10^2 mev. < T_0 < 10^3 mev.
Scale II: 10^3 mev. < T_0 < 10^4 mev.
Scale III: 10^4 mev. < T_0 < 10^5 mev.
MU-8429

RANGE OF DEUTERONS IN CARBON

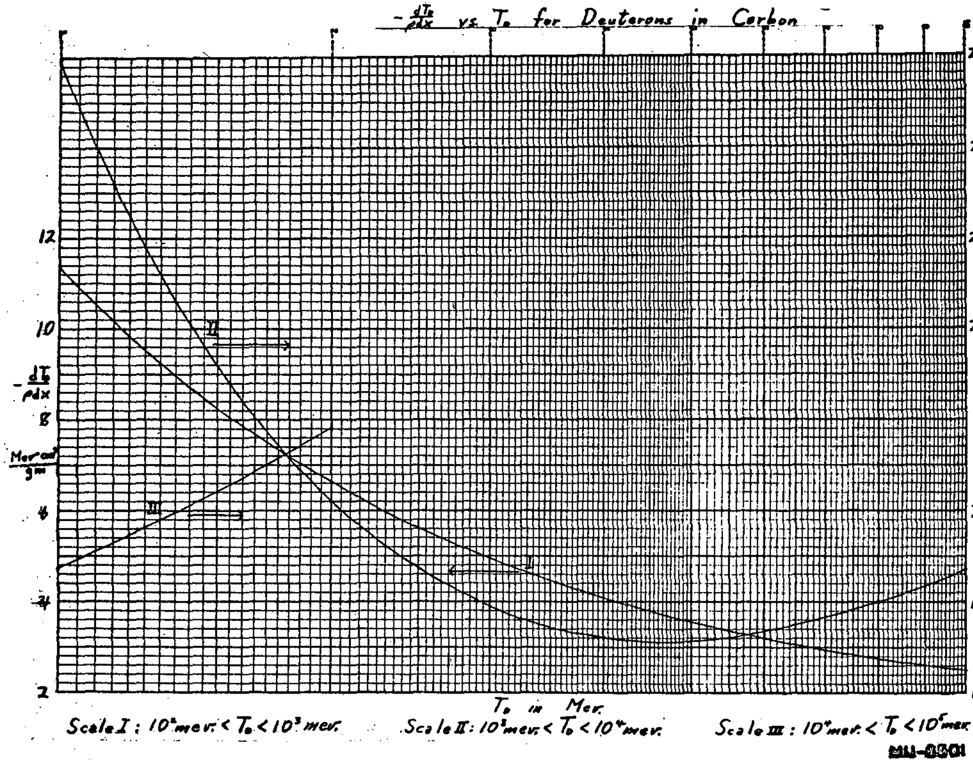
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
1.999	5.517×10^{-3}	241.8
3.998	1.622×10^{-2}	149.7
5.997	3.195	109.8
7.996	5.256	87.58
9.995	7.773	73.40
11.99	1.071×10^{-1}	63.45
13.99	1.407	56.06
15.99	1.784	50.34
17.99	2.201	45.76
19.99	2.657	42.01
23.99	3.685	36.21
27.98	4.864	31.93
31.98	6.188	28.63
35.98	7.655	26.00
39.98	9.262	23.86
59.97	1.930×10^{0}	17.14
79.96	3.252	13.58
99.95	4.869	11.35
119.9	6.768	9.827
139.9	8.934	8.711
159.9	1.135×10^{1}	7.858
179.9	1.402	7.184
199.9	1.692	6.638
299.8	3.460×10^{1}	4.956
399.8	5.706	4.087
499.7	8.330	3.557
599.7	1.130×10^{2}	3.202
699.6	1.456	2.947
799.6	1.807	2.757
899.5	2.180	2.610
999.5	2.572	2.494
1199.0	3.404	2.323
1399.0	4.288	2.205
1599.0	5.214	2.120
1799.0	6.172	2.057
1999.0	7.155	2.010
3998.0	1.764×10^{3}	1.861
5997.0	2.839	1.868
7996.0	3.900	1.900
9995.0	4.943	1.936
11990.0	5.966	1.974
13990.0	6.970	2.005
15990.0	7.960	2.036
17990.0	8.935	2.064
19990.0	9.897	2.091


Range of Deuterons in Carbon
Scale I : 1 mev. < T_D < 10 mev.
Scale II : 10 mev. ≤ T_D < 100 mev.
T_D (Mev)
Range in gm./cm.²
MU-6273


Range of Deuterons in Carbon
Scale I: 100 mev. < T₀ < 1000 mev.
Scale II: 1000 mev. < T₀ < 10000 mev.
Scale III: 10000 mev. < T₀ < 100000 mev.
T₀ (Mev)
Range in gm./cm.²
MU-6274


$-\frac{dT_0}{\rho dx}$ vs. T_0 for Deuterons in Carbon
80
70
60
$-\frac{dT_0}{\rho dx}$
50
Mev cm²/gm
40
30
20
25
23
21
19
17
15
13
11
T_0 in Mev.
10^1 mev < T_0 < 10^2 mev.
MU-6600

$-\frac{dT_o}{\rho dx}$ vs. T_o for Deuterons in Carbon



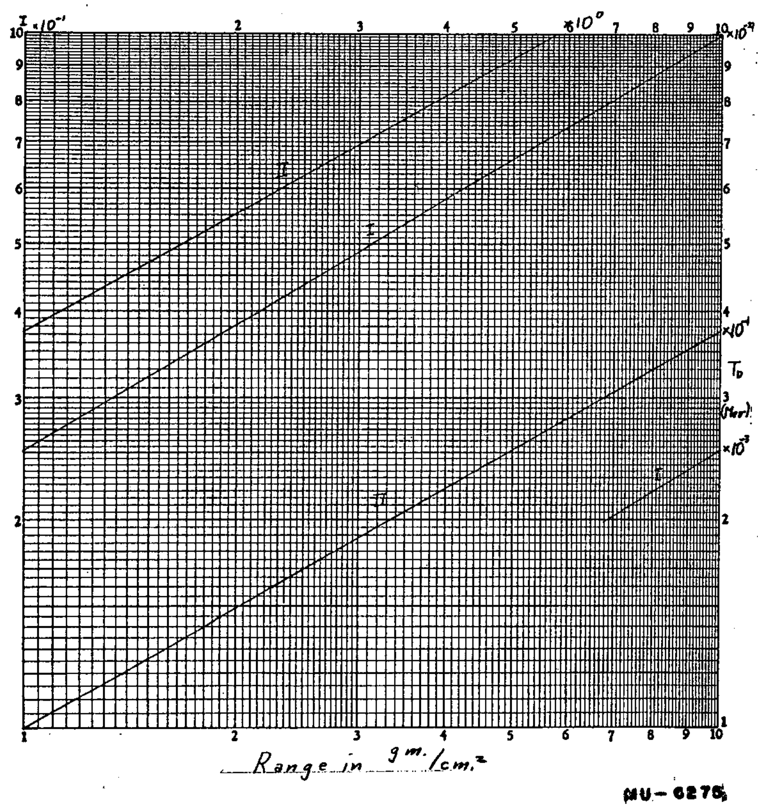
RANGE OF DEUTERONS IN ALUMINUM

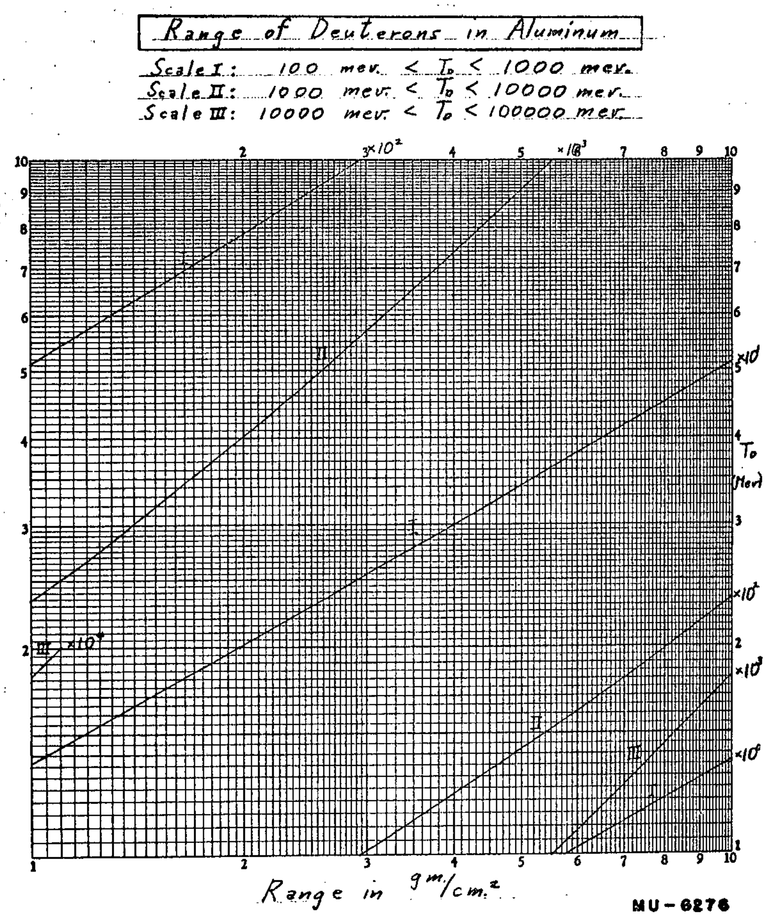
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$	T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
1.999	6.896×10^{-3}		199.9	1.970×10^{1}	5.757
2.998	1.337×10^{-2}		239.9	2.714	5.047
3.998	2.159	115	319.8	4.478	4.136
4.997	3.118	98.5	399.8	6.564	3.576
5.997	4.198	86.2	499.7	9.569	3.120
7.996	6.896	69.6	599.7	1.295×10^{2}	2.813
9.995	1.005×10^{-1}	58.8	699.6	1.666	2.593
11.99	1.381	51.2	799.6	2.065	2.428
13.99	1.799	45.5	999.5	2.932	2.201
15.99	2.263	41.0	1199.0	3.874	2.054
17.99	2.774	37.5	1399.0	4.873	1.952
19.99	3.332	34.5	1599.0	5.920	1.879
23.99	4.578	29.9	1799.0	6.998	1.826
29.98	6.782	25.18	1999.0	8.106	1.785
41.98	1.228×10^{0}	19.30	2499.0	1.096×10^{3}	1.721
49.97	1.673	16.82	2998.0	1.390	1.688
59.97	2.313	14.56	3998.0	1.987	1.664
69.96	3.044	12.89	5997.0	3.186	1.677
79.96	3.864	11.60	7996.0	4.368	1.710
89.95	4.767	10.58	9995.0	5.523	1.747
99.95	5.753	9.743	11990.0	6.656	1.782
119.9	7.962	8.458	13990.0	7.768	1.815
139.9	1.047×10^{1}	7.516	15990.0	8.859	1.845
159.9	1.328	6.794	17990.0	9.935	1.873
179.9	1.636	6.222	19990.0	1.100×10^{4}	1.898

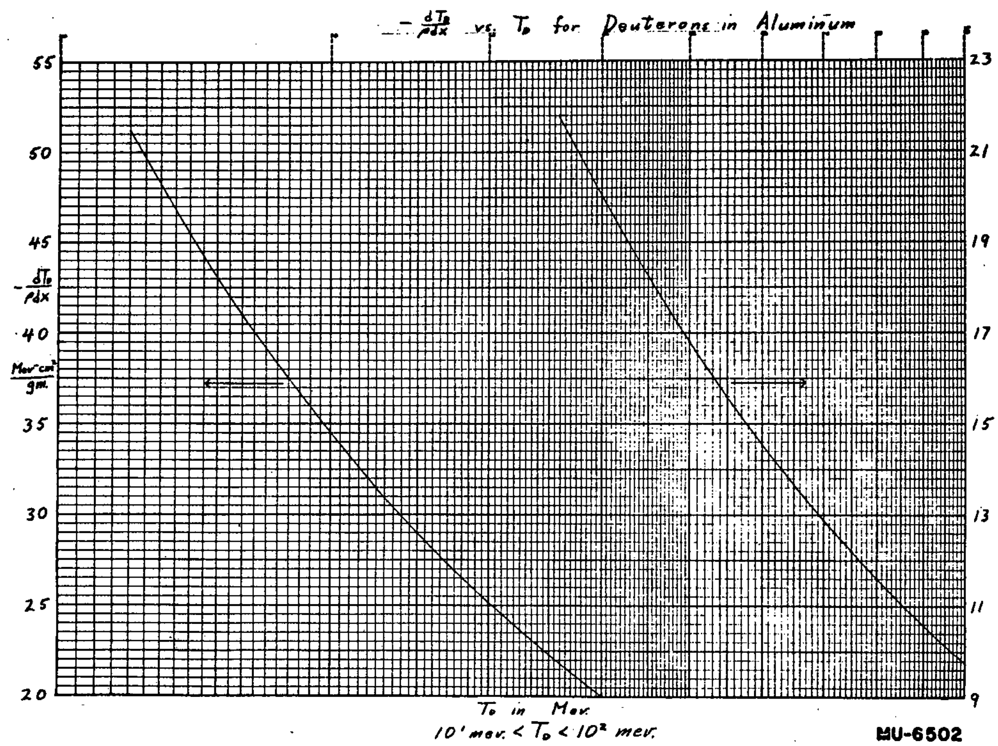
Range of Deuterons in Aluminum

Scale I: 1 mev. < T_D < 10 mev.

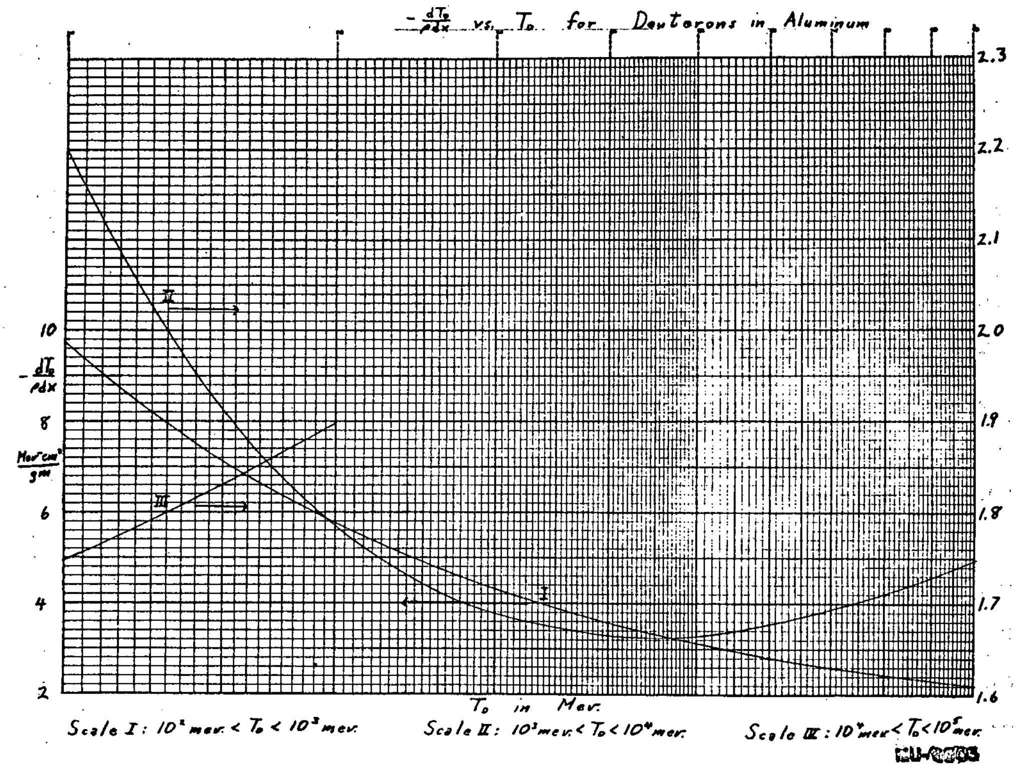
Scale II: 10 mev. < T_D < 100 mev.




Range of Deuterons in Aluminum
Scale I: 100 mev. < T₀ < 1000 mev.
Scale II: 1000 mev. < T₀ < 10000 mev.
Scale III: 10000 mev. < T₀ < 100000 mev.
T₀ (Mev)
Range in gm/cm²
MU-6276



$-\frac{dT_0}{\rho dx}$ vs. T_0 for Deuterons in Aluminum
55
50
45
$-\frac{dT_0}{\rho dx}$
40
$\frac{Mev\ cm^2}{gm.}$
35
30
25
20
23
21
19
17
15
13
11
9
T_0 in Mev.
10^1 mev. < T_0 < 10^2 mev.
MU-6502



$-\frac{dT_0}{\rho dx}$ vs. T_0 for Deuterons in Aluminum
10
8
6
4
2
$-\frac{dT_0}{\rho dx}$
Mev cm²/gm
2.3
2.2
2.1
2.0
1.9
1.8
1.7
1.6
I
II
III
T_0 in Mev.
Scale I: 10^2 mev. < T_0 < 10^3 mev.
Scale II: 10^3 mev. < T_0 < 10^4 mev.
Scale III: 10^4 mev. < T_0 < 10^5 mev.

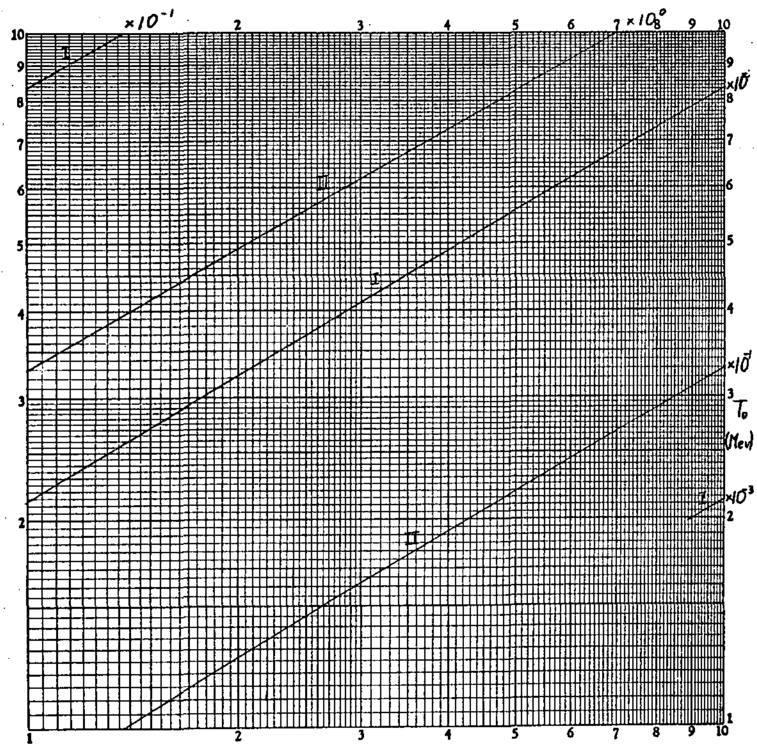
RANGE OF DEUTERONS IN COPPER

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
1.999	8.995×10^{-3}	
3.998	2.858×10^{-2}	
5.997	5.677	
7.996	9.327	
9.995	1.369×10^{-1}	46.08
11.99	1.833	40.46
15.99	2.937	32.81
19.99	4.267	27.80
23.99	5.811	24.24
31.98	9.517	19.48
39.98	1.401×10^{0}	16.42
51.97	2.214	13.42
59.97	2.845	12.02
69.96	3.729	10.67
79.96	4.717	9.629
89.95	5.804	8.798
99.95	6.988	8.119
119.9	9.634	7.072
139.9	1.264	6.300
159.9	1.598×10^{1}	5.706
179.9	1.964	5.235
199.9	2.361	4.852
239.9	3.242	4.254
299.8	4.767	3.661
399.8	7.784	3.040
499.7	1.131×10^{2}	2.659
599.7	1.528	2.402
699.6	1.962	2.213
799.6	2.428	2.081
899.5	2.921	1.975
999.5	3.439	1.891
1199.0	4.534	1.768
1399.0	5.695	1.683
1599.0	6.906	1.623
1799.0	8.156	1.578
1999.0	9.436	1.545
2399.0	1.206×10^{3}	1.501
2998.0	1.610	1.468
3998.0	2.297	1.452
4997.0	2.985	1.456
5997.0	3.668	1.470
6996.0	4.345	1.486
7996.0	5.013	1.504
8995.0	5.674	1.522
9995.0	6.327	1.540
11990.0	7.611	1.574
13990.0	8.868	1.605
15990.0	1.010×10^{4}	1.634
17990.0	1.132	1.661
19990.0	1.251	1.685

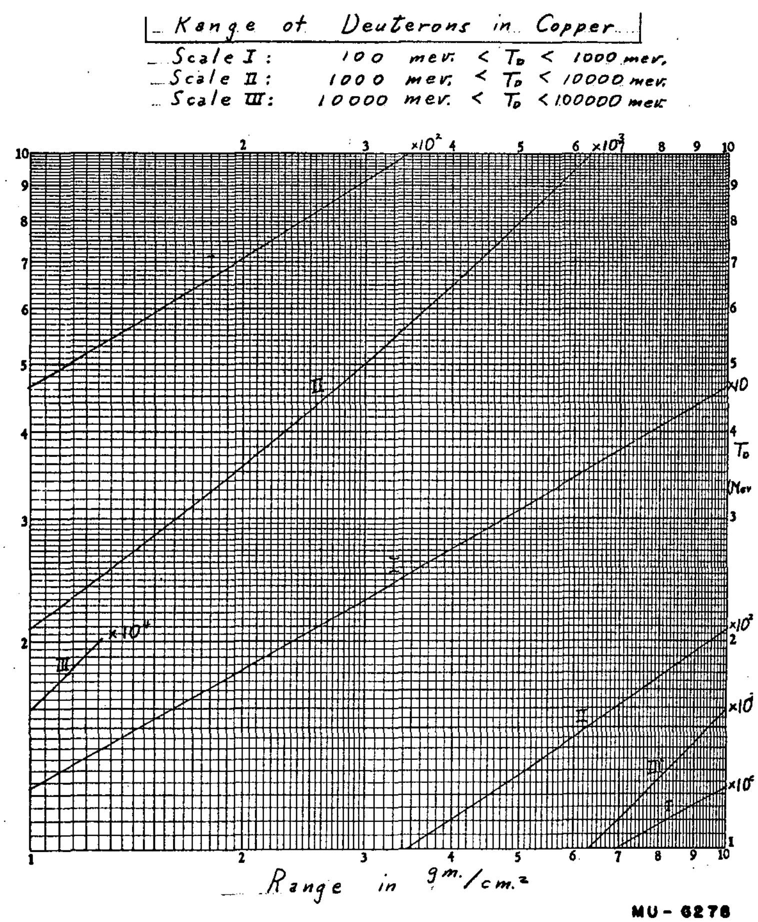
Range of Deuterons in Copper

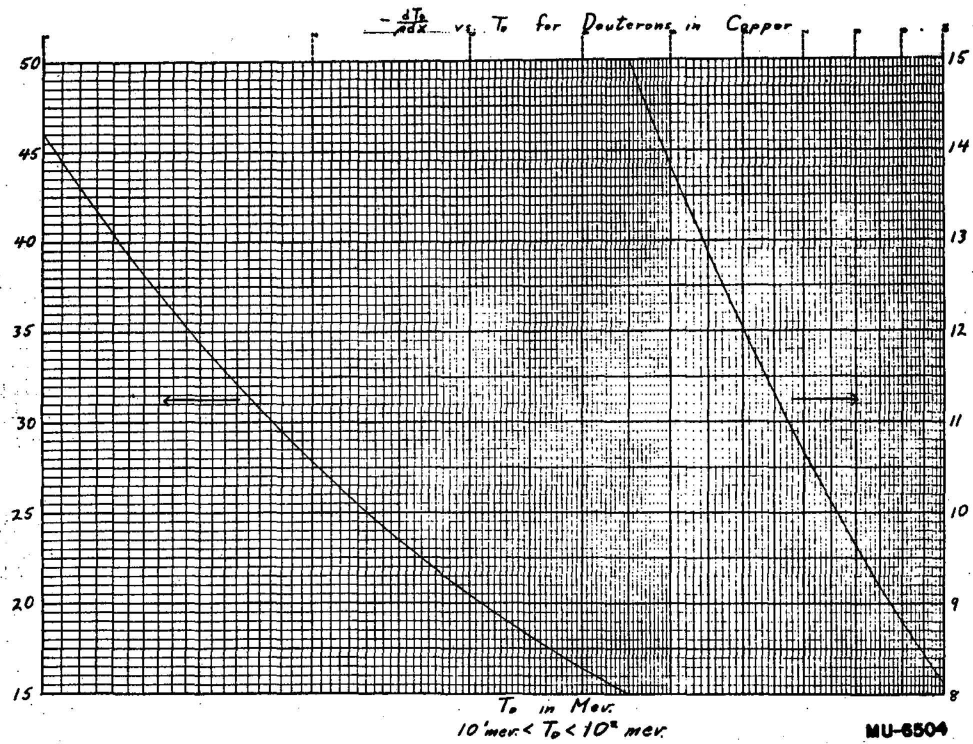
Scale I: 1 mev. < T_0 < 10 mev.

Scale II: 10 mev. < T_0 < 100 mev.



MU-6277

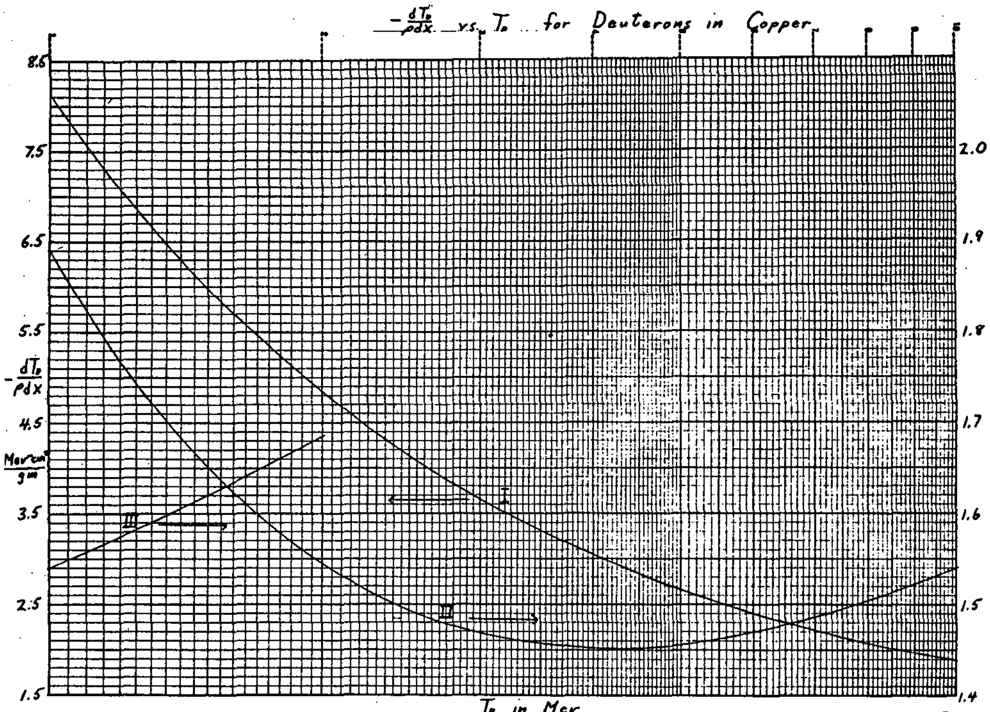

Range of Deuterons in Copper
Scale I: 100 mev. < T_D < 1000 mev.
Scale II: 1000 mev. < T_D < 10000 mev.
Scale III: 10000 mev. < T_D < 100000 mev.
T_D
Mev
Range in gm./cm.²
MU-6278



$-\frac{dT_0}{\rho dx}$ vs. T_0 for Deuterons in Copper
50
45
40
35
30
25
20
15
15
14
13
12
11
10
9
8
T_0 in Mev.
10^1 mev. < T_0 < 10^2 mev.

MU-6504

$-\frac{dT_0}{\rho dx}$ vs. T_0 for Deuterons in Copper



Scale I: 10^2 mev. $< T_0 < 10^3$ mev. Scale II: 10^3 mev. $< T_0 < 10^4$ mev. Scale III: 10^4 mev. $< T_0 < 10^5$ mev.

MU-6505

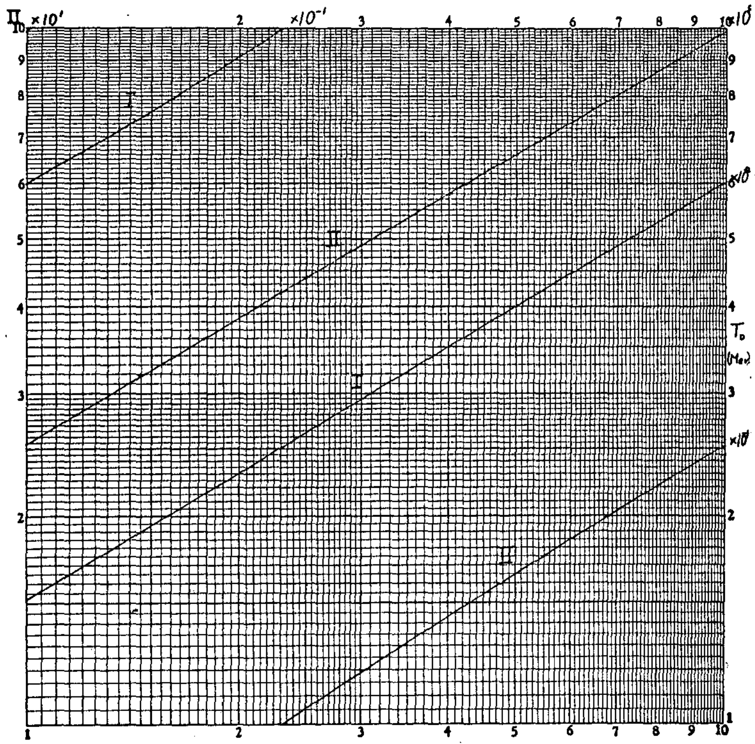
RANGE OF DEUTERONS IN LEAD

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
1.999	1.579×10^{-2}	61.81
3.998	5.007	46.98
5.997	9.955	38.53
7.996	1.632×10^{-1}	32.76
11.99	3.029	25.50
15.99	4.762	21.08
19.99	6.807	18.21
23.99	9.150	16.08
31.98	1.468×10^{0}	13.15
39.98	2.129	11.21
47.98	2.893	9.833
59.97	4.221	8.361
68.96	5.488	7.472
79.96	6.894	6.777
89.95	8.436	6.220
99.95	1.011×10^{1}	5.762
119.9	1.382	5.051
139.9	1.801	4.522
159.9	2.265	4.113
179.9	2.772	3.787
199.9	3.321	3.520
239.9	4.533	3.108
319.8	7.378	2.575
399.8	1.072×10^{2}	2.243
499.7	1.549	1.971
599.7	2.083×10^{2}	1.787
699.6	2.665	1.655
799.6	3.288	1.557
899.5	3.948	1.480
999.5	4.637	1.420
1199.0	6.093	1.332
1399.0	7.631	1.272
1599.0	9.231	1.229
1799.0	1.088×10^{3}	1.198
1999.0	1.256	1.175
2399.0	1.601	1.146
3198.0	2.309	1.122
3998.0	3.023	1.118
4997.0	3.914	1.127
5997.0	4.796	1.141
6996.0	5.665	1.157
7996.0	6.523	1.174
8995.0	7.369	1.190
9995.0	8.203	1.206
11990.0	9.839	1.236
13990.0	1.144×10^{4}	1.264
15990.0	1.300	1.290
17990.0	1.454	1.313
19990.0	1.605	1.334

Range of Deuterons in Lead

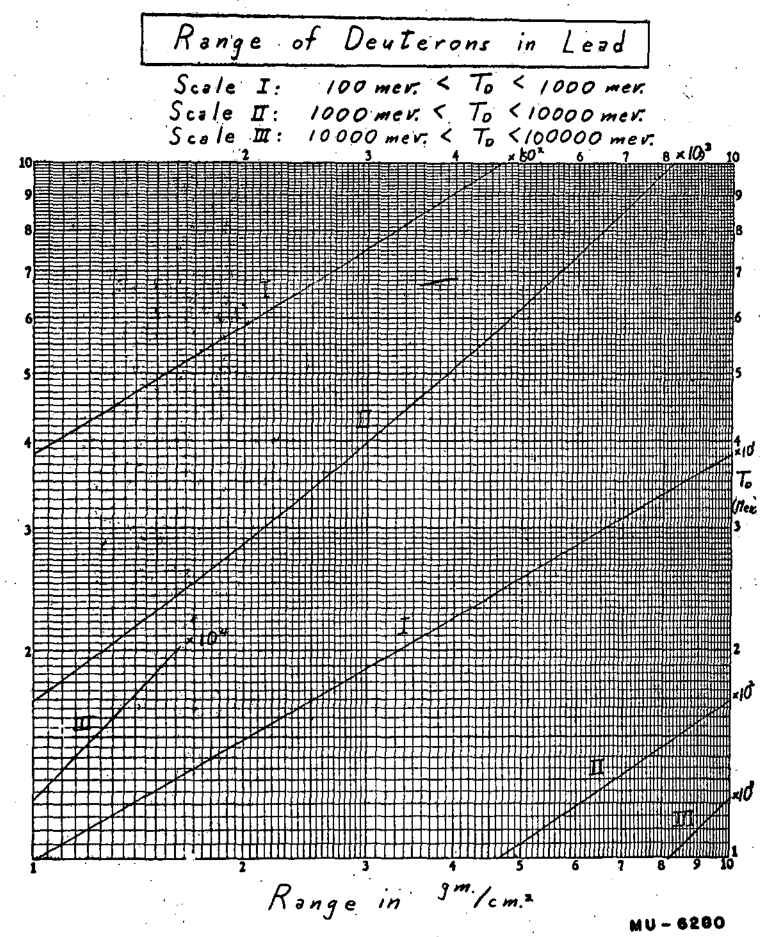
Scale I: 1 mev. < T_0 < 10 mev.

Scale II: 10 mev. < T_0 < 100 mev.

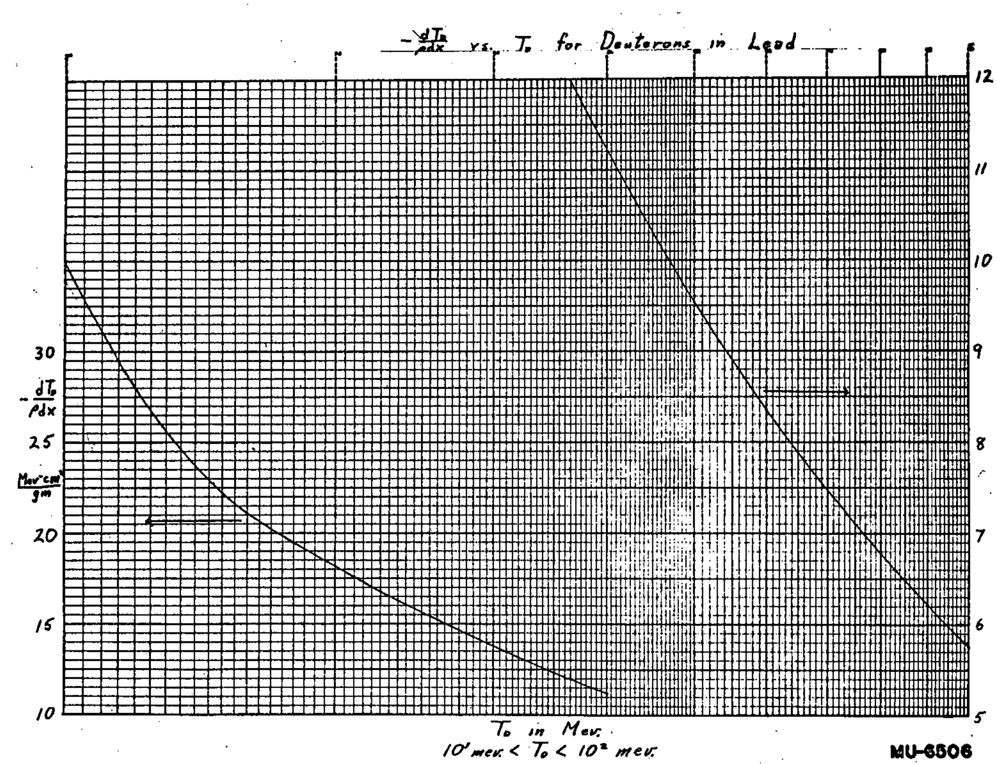


Range in gm./cm.²

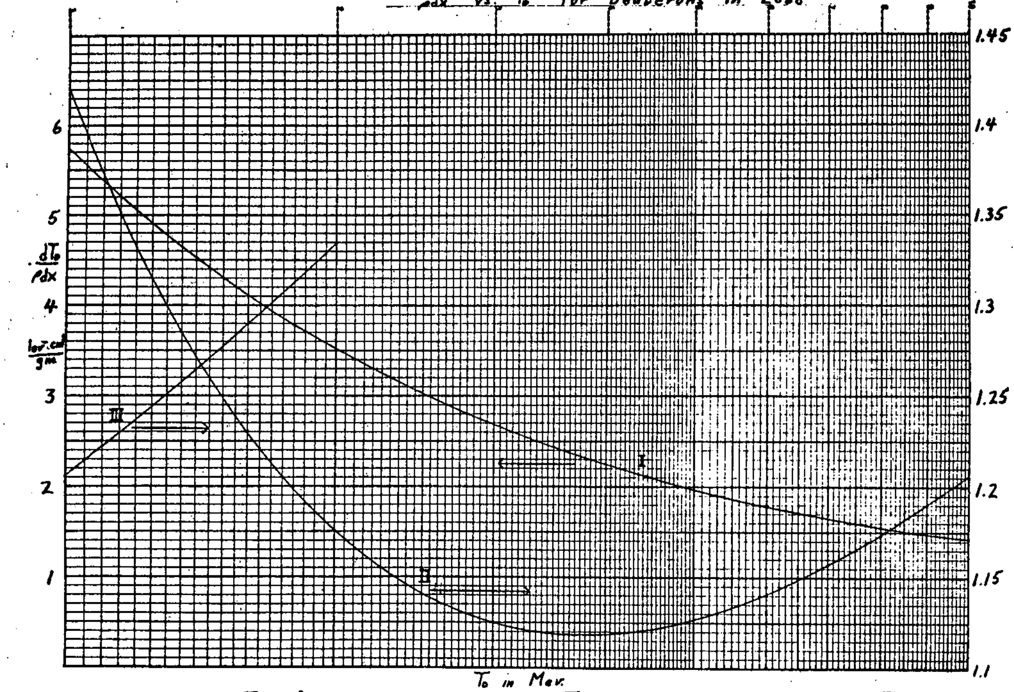
MU - 6279



Range of Deuterons in Lead
Scale I: 100 mev. < T_D < 1000 mev.
Scale II: 1000 mev. < T_D < 10000 mev.
Scale III: 10000 mev. < T_D < 100000 mev.
T_o (Mev)
Range in gm./cm.²
MU-6260


$-\frac{dT_0}{\rho dx}$ vs. T_0 for Deuterons in Lead
12
11
10
9
8
7
6
5
30
$-\frac{dT_0}{\rho dx}$
25
$\frac{\text{Mev-cm}^2}{\text{gm}}$
20
15
10
T_0 in Mev.
10^1 mev. < T_0 < 10^2 mev.
MU-6506

$-\frac{dT_0}{\rho dx}$ vs. T_0 for Deuterons in Lead



Scale I: 10^2 mev. $< T_0 < 10^3$ mev. Scale II: 10^3 mev. $< T_0 < 10^4$ mev. Scale III: 10^4 mev. $< T_0 < 10^5$ mev.

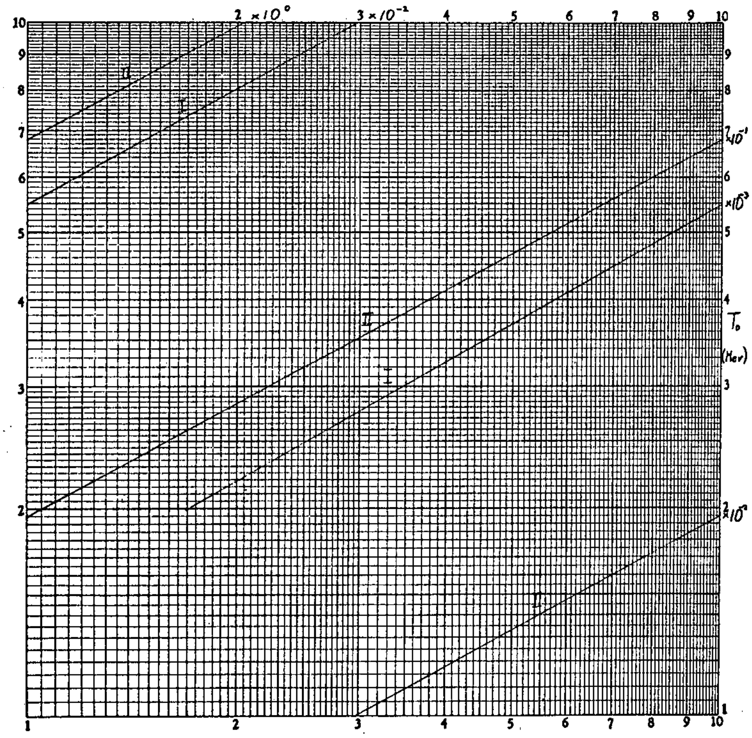
MU-6507

RANGE OF DEUTERONS IN H_2

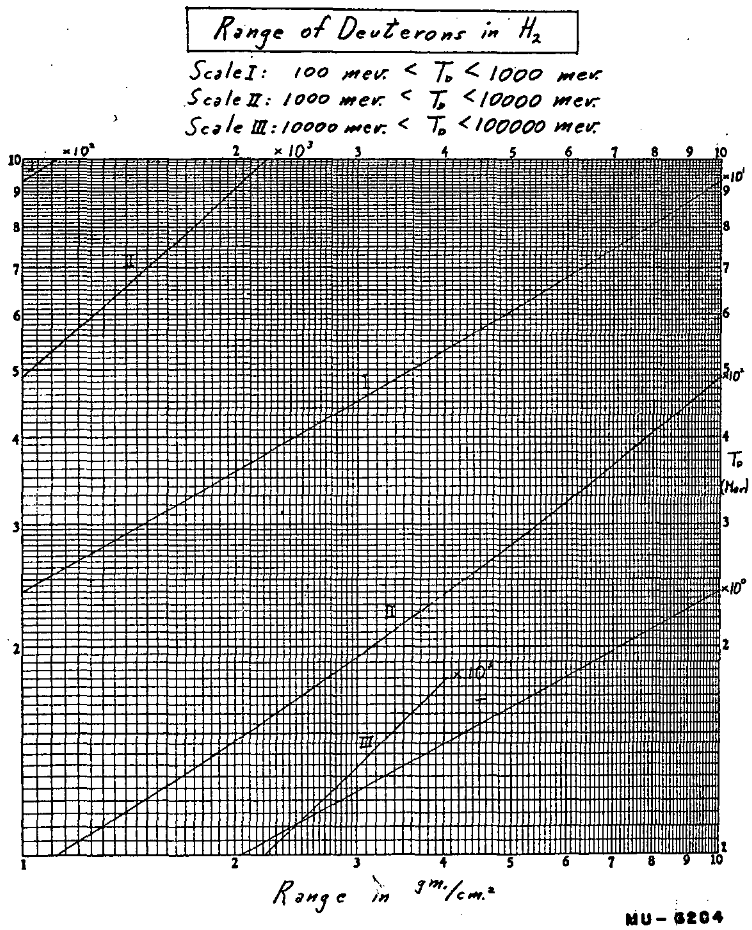
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
1.999	1.707×10^{-3}	690.7
5.997	1.176×10^{-2}	283.4
9.995	2.965	185.2
11.99	4.133	159.0
13.99	5.479	139.6
15.99	6.996	124.8
17.99	8.683	112.9
19.99	1.053×10^{-1}	103.3
23.99	1.473	88.54
27.98	1.956	77.71
31.98	2.501	69.41
35.98	3.107	62.83
39.98	3.774	57.48
59.97	7.967	40.87
79.96	1.352×10^{0}	32.17
99.95	2.037	26.78
119.9	2.844	23.09
139.9	3.767	20.41
159.9	4.801	18.37
179.9	5.942	16.76
199.9	7.185	15.46
399.8	2.450×10^{1}	9.418
499.7	3.594	8.172
599.7	4.889	7.337
699.6	6.313	6.740
799.6	7.849	6.295
899.5	9.486	5.902
999.5	1.121×10^{2}	5.678
1199.0	1.487	5.277
1399.0	1.877	4.999
1599.0	2.285	4.798
1799.0	2.709	4.649
1999.0	3.144	4.536
3998.0	7.817	4.159
5997.0	1.264×10^{3}	4.150
7996.0	1.743	4.205
9995.0	2.214	4.272
11990.0	2.677	4.340
13990.0	3.134	4.404
15990.0	3.585	4.464
17990.0	4.030	4.520
19990.0	4.470	4.5720

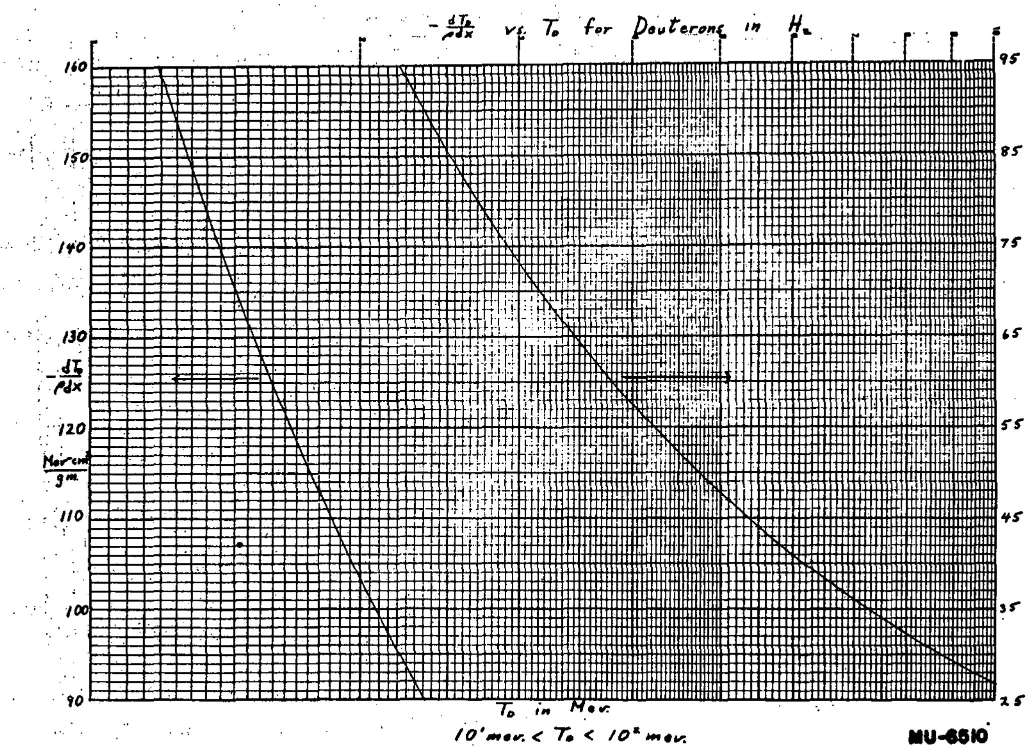
Range of Deuterons in H_2

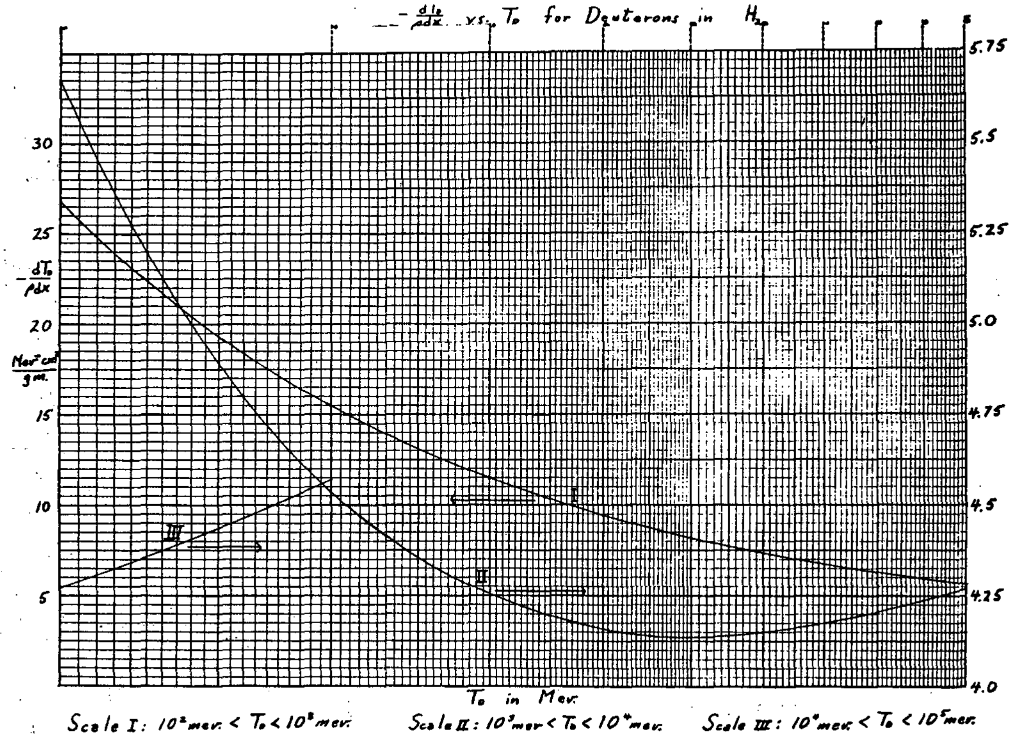
Scale I: 1 mev. < T_0 < 10 mev.
Scale II: 10 mev. < T_0 < 100 mev.



MU - 6263


Range of Deuterons in H_2
Scale I: 100 mev. < T_D < 1000 mev.
Scale II: 1000 mev. < T_D < 10000 mev.
Scale III: 10000 mev. < T_D < 100000 mev.
T_D (Mev)
Range in gm./cm.²
MU-8204


$-\frac{dT_0}{\rho dx}$ vs. T_0 for Deuterons in H_2
160
150
140
130
$-\frac{dT_0}{\rho dx}$
120
$\frac{Mev\text{-}cm^2}{gm}$
110
100
90
95
85
75
65
55
45
35
25
T_0 in Mev.
10^1 mev. < T_0 < 10^2 mev.
MU-6510


$-\frac{dT_0}{\rho dx}$ vs. T_0 for Deuterons in H_2
30
25
$-\frac{dT_0}{\rho dx}$
20
$\frac{\text{Mev cm}^2}{\text{gm.}}$
15
10
5
5.75
5.5
5.25
5.0
4.75
4.5
4.25
4.0
I
II
III
T_0 in Mev.
Scale I: 10^2 mev. < T_0 < 10^3 mev.
Scale II: 10^3 mev < T_0 < 10^4 mev.
Scale III: 10^4 mev. < T_0 < 10^5 mev.

MU-6511

RANGE OF DEUTERONS IN D_2

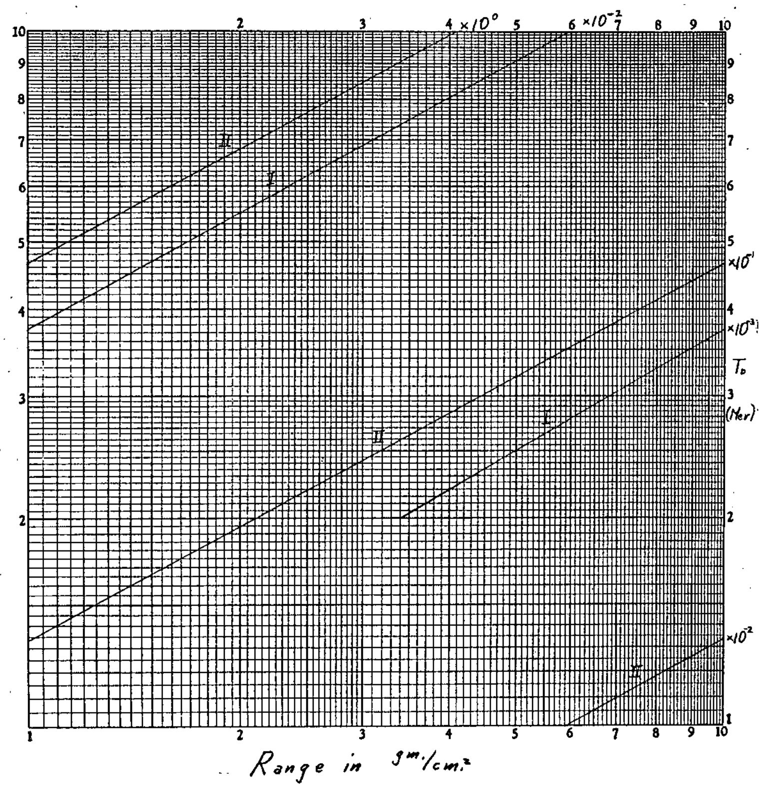
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
1.999	3.412×10^{-3}	345.6
5.997	2.350×10^{-2}	141.8
9.995	5.926	92.69
11.99	8.261	79.54
13.99	1.095×10^{-1}	69.86
15.99	1.398	62.42
17.99	1.737	56.51
19.99	2.105	51.70
23.99	2.944	44.30
27.98	3.909	38.88
31.98	4.999	34.73
35.98	6.210	31.44
39.98	7.541	28.76
59.97	1.592×10^{0}	20.45
79.96	2.703	16.10
99.95	4.071	13.40
119.9	5.683	11.56
139.9	7.527	10.21
159.9	9.594	9.191
179.9	1.187×10^{1}	8.386
199.9	1.436	7.735

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
399.8	4.896×10^{1}	4.712
499.7	7.183	4.089
599.7	9.770	3.671
699.6	1.262×10^{2}	3.373
799.6	1.569	3.150
899.5	1.896	2.953
999.5	2.240	2.841
1199.0	2.971	2.640
1399.0	3.751	2.501
1599.0	4.567	2.401
1799.0	5.413	2.326
1999.0	6.283	2.270
3998.0	1.562×10^{3}	2.081
5997.0	2.526	2.077
7996.0	3.482	2.104
9995.0	4.425	2.138
11990.0	5.350	2.172
13990.0	6.264	2.204
15990.0	7.164	2.234
17990.0	8.054	2.262
19990.0	8.933	2.288

Range of Deuterons in D_2

Scale I: 1 mev. < T_D < 10 mev.

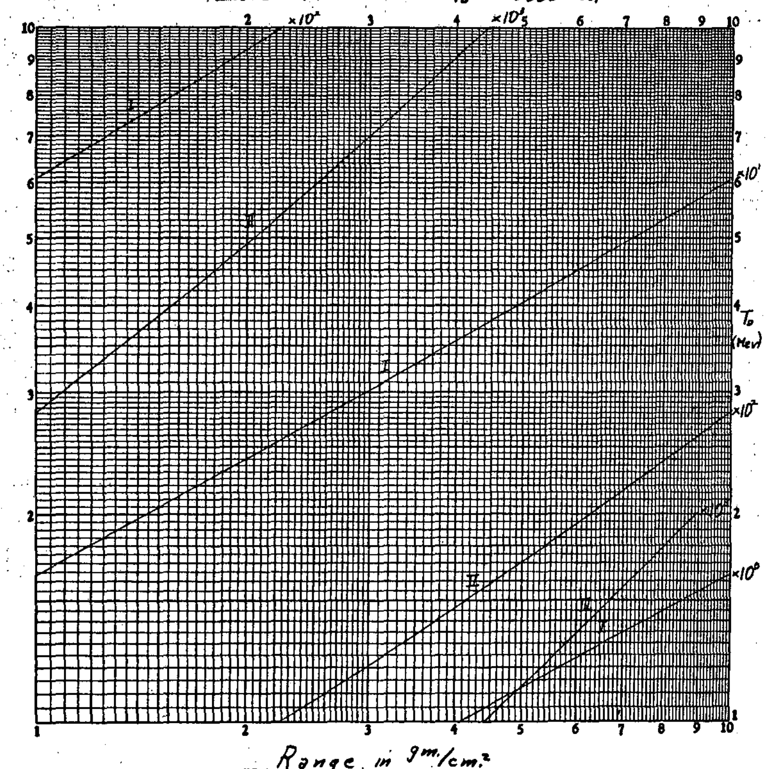
Scale II: 10 mev. < T_D < 100 mev.



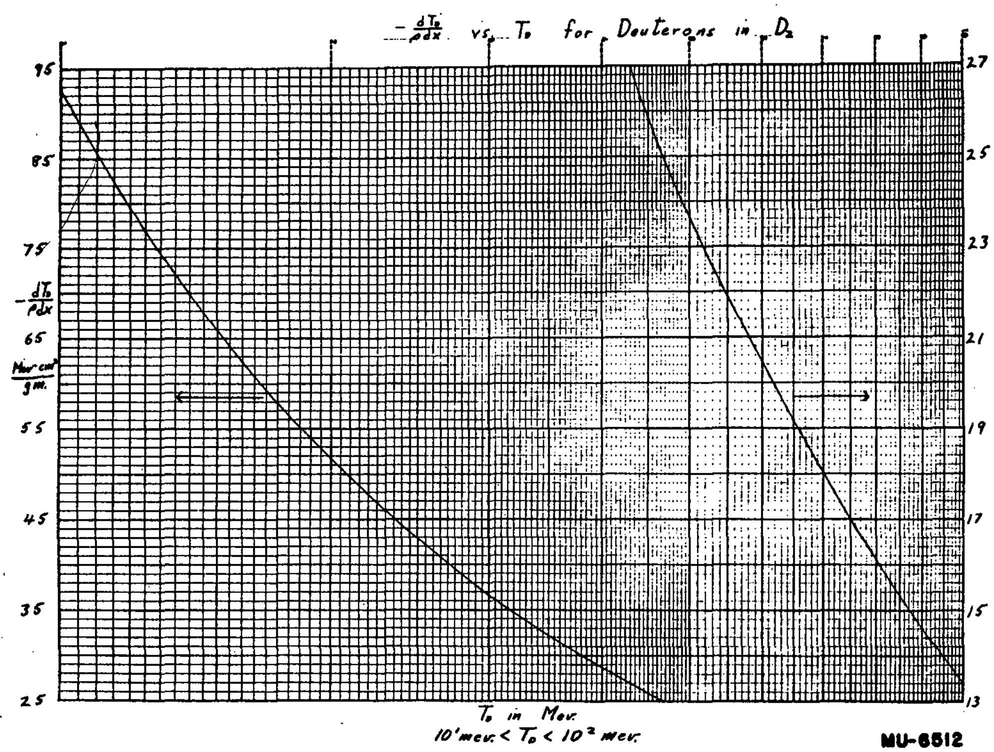
MU - 6285

Range of Deuterons in D_2

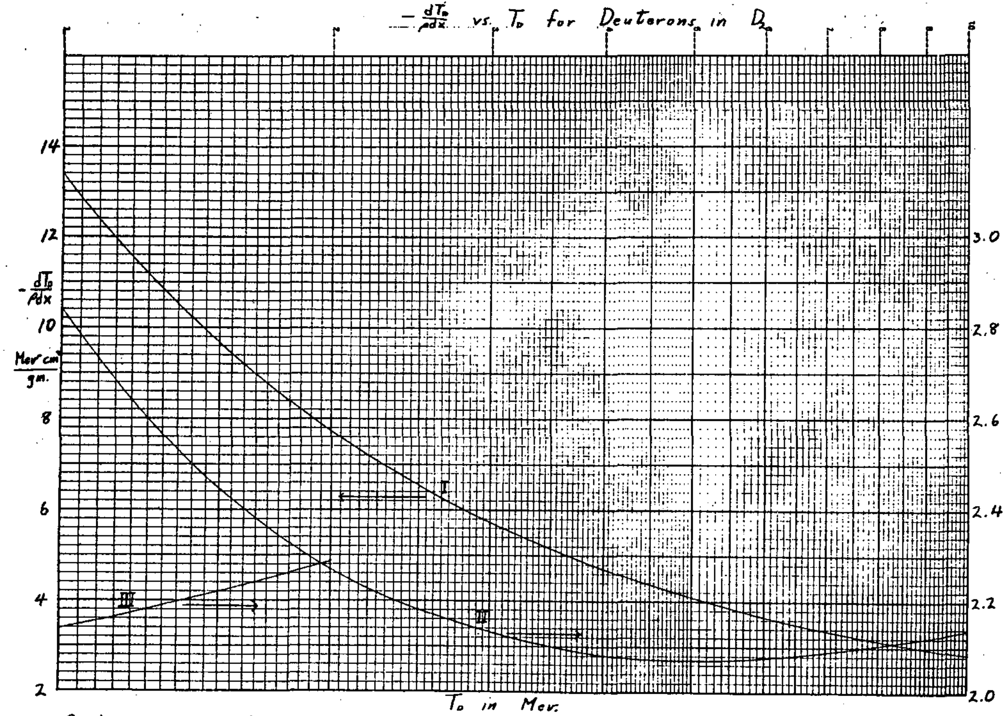
Scale I: 100 mev. < T_0 < 1000 mev.
Scale II: 1000 mev. < T_0 < 10000 mev.
Scale III: 10000 mev. < T_0 < 100000 mev.



HU - 8286


$-\frac{dT_0}{\rho dx}$ vs. T_0 for Deuterons in D_2
95
85
75
$-\frac{dT_0}{\rho dx}$
65
$\frac{\text{Mev cm}^2}{\text{gm.}}$
55
45
35
25
27
25
23
21
19
17
15
13
T_0 in Mev.
10^1 mev. < T_0 < 10^2 mev.

MU-6512

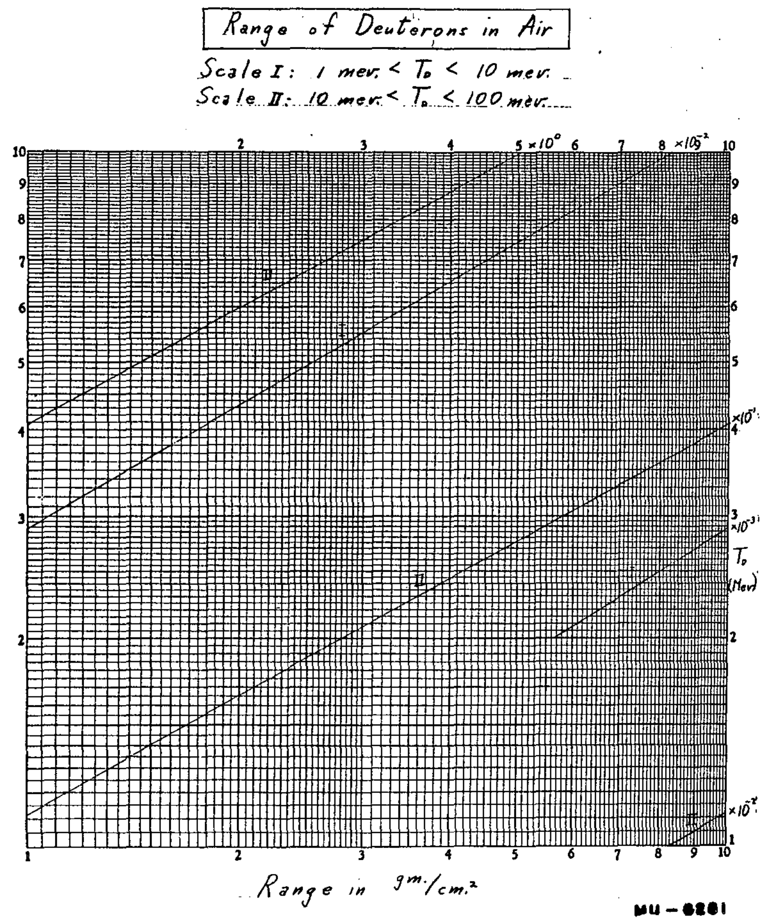


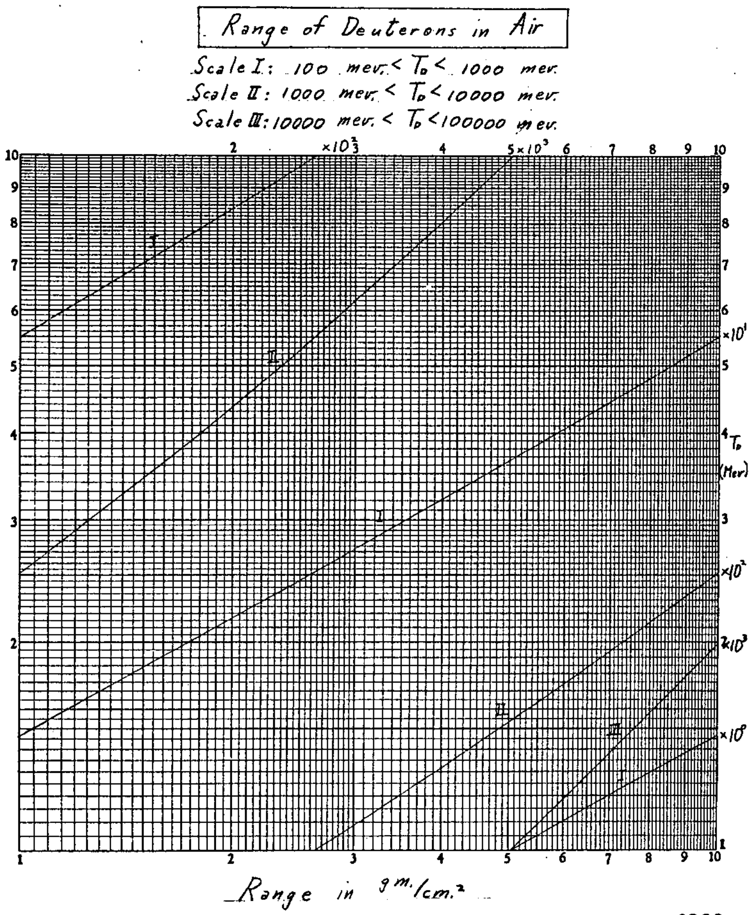
Scale I: 10^2 mev. < T_0 < 10^3 mev. Scale II: 10^3 mev. < T_0 < 10^4 mev. Scale III: 10^4 mev. < T_0 < 10^5 mev.

RANGE OF DEUTERONS IN AIR

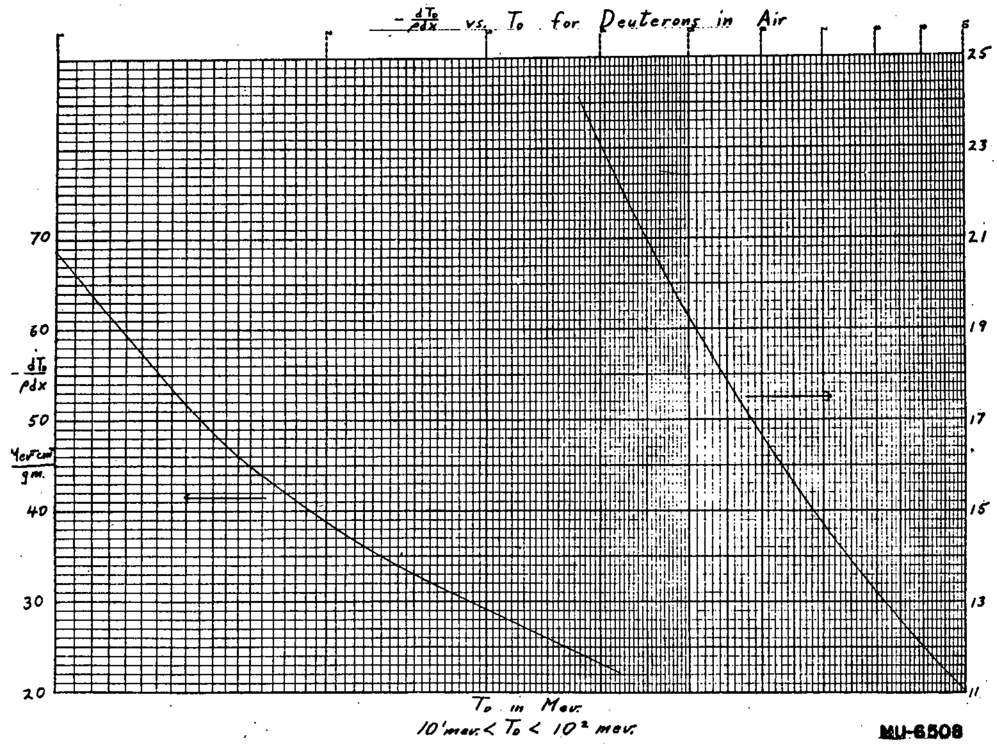
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
1.999	5.637×10^{-3}	
3.998	1.739×10^{-2}	
5.997	3.456	102.0
7.996	5.661	81.73
9.995	8.272	68.68
11.99	1.140×10^{-1}	59.38
13.99	1.489	51.71
15.99	1.892	46.00
17.99	2.319	42.09
19.99	2.806	38.82
23.99	3.880	33.93
29.98	5.845	29.15
41.98	1.061×10^{0}	22.19
49.97	1.448	19.28
59.97	2.007	16.64
69.96	2.648	14.69
79.96	3.366	13.19
89.95	4.164	12.01
99.95	5.031	11.03
119.9	6.982	9.568
139.9	9.205	8.483
159.9	1.169×10^{1}	7.662
179.9	1.442	7.010
199.9	1.739	6.479
239.9	2.401	5.669

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
319.8	3.972×10^{1}	4.631
399.8	5.841	3.996
499.7	8.533	3.479
599.7	1.157×10^{2}	3.132
699.6	1.490	2.876
799.6	1.849	2.698
999.5	2.629	2.442
1199.0	3.480	2.275
1399.0	4.382	2.161
1599.0	5.327	2.077
1799.0	6.303	2.016
1999.0	7.308	1.971
2499.0	9.895	1.896
2998.0	1.256×10^{3}	1.857
3998.0	1.800	1.827
4997.0	2.347	1.825
5997.0	2.894	1.835
7996.0	3.974	1.868
9995.0	5.033	1.904
11990.0	6.075	1.940
13990.0	7.094	1.973
15990.0	8.102	2.004
17990.0	9.091	2.033
19990.0	1.007×10^{4}	2.059

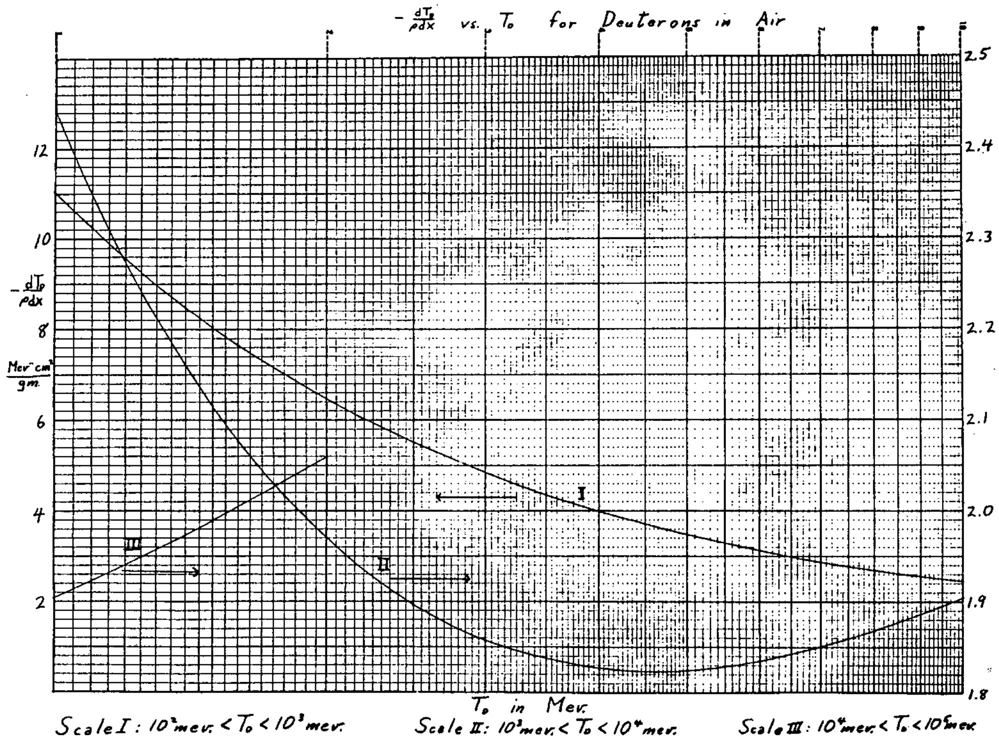

Range of Deuterons in Air
Scale I: 1 mev. < T_D < 10 mev.
Scale II: 10 mev. < T_D < 100 mev.
T_D (Mev)
Range in gm./cm.²
MU-6281


Range of Deuterons in Air
Scale I: 100 mev. < T_D < 1000 mev.
Scale II: 1000 mev. < T_D < 10000 mev.
Scale III: 10000 mev. < T_D < 100000 mev.
T_D (Mev)
Range in gm./cm.²

MU-6262

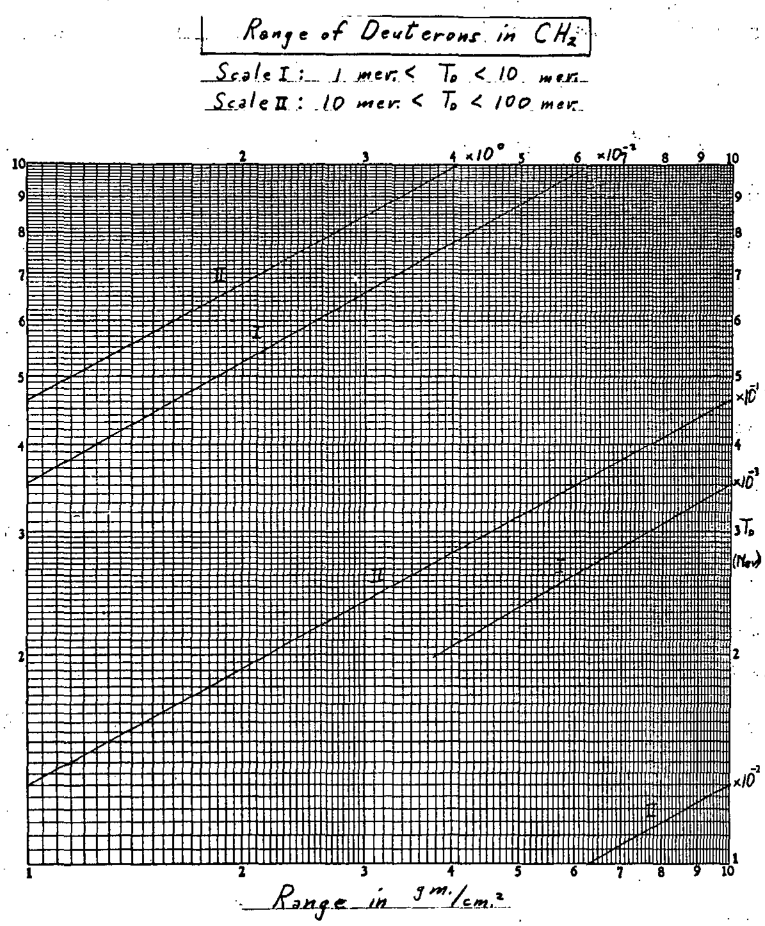

$-\frac{dT_0}{\rho dx}$ vs. T_0 for Deuterons in Air
70
60
$-\frac{dT_0}{\rho dx}$
50
Mev cm²/gm.
40
30
20
25
23
21
19
17
15
13
11
T_0 in Mev.
10^1 mev. < T_0 < 10^2 mev.

MU-6508

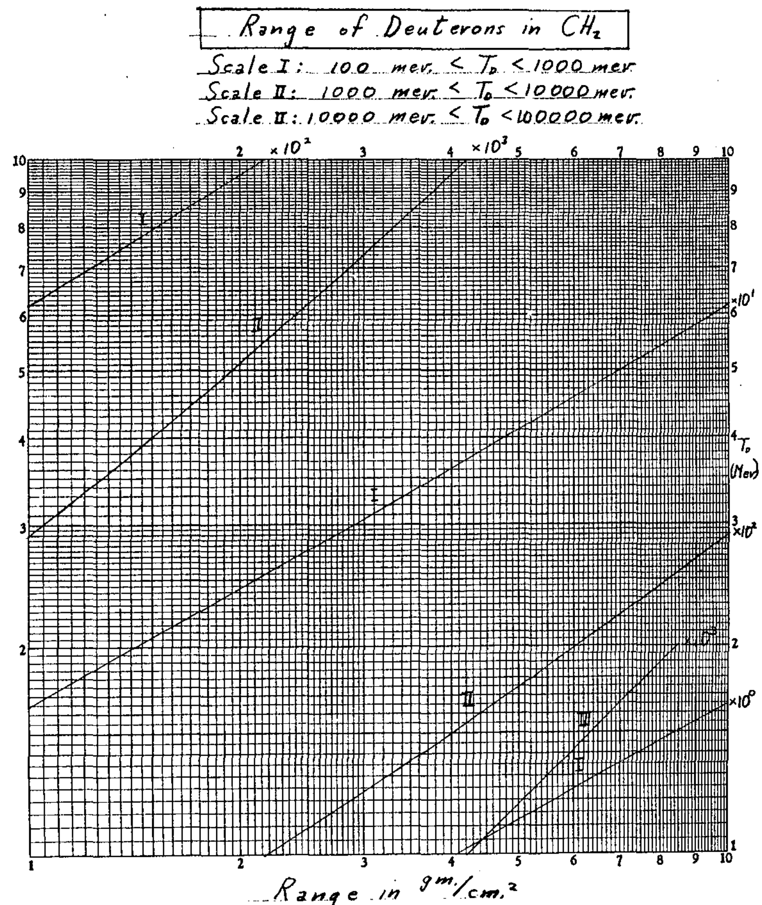

$-\frac{dT_0}{\rho dx}$ vs. T_0 for Deuterons in Air
$-\frac{dT_0}{\rho dx}$
$\frac{Mev\text{-}cm^2}{gm}$
12
10
8
6
4
2
2.5
2.4
2.3
2.2
2.1
2.0
1.9
1.8
I
II
III
T_0 in Mev.
Scale I: 10^2 mev. $< T_0 < 10^3$ mev.
Scale II: 10^3 mev. $< T_0 < 10^4$ mev.
Scale III: 10^4 mev. $< T_0 < 10^5$ mev.

RANGE OF DEUTERONS IN CH_2

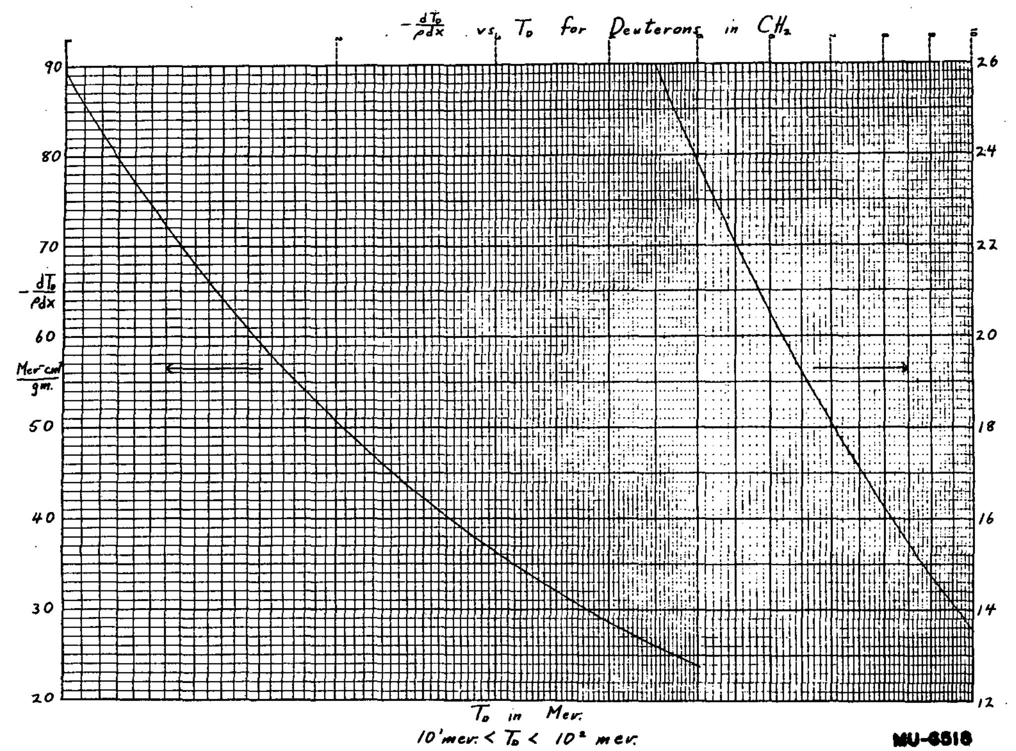
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
1.999	3.819×10^{-3}	305.9
3.998	1.251×10^{-2}	184.8
5.997	2.536	134.6
7.996	4.215	107.0
9.995	6.268	89.37
11.99	8.684	77.10
13.99	1.145×10^{-1}	68.00
15.99	1.456	60.97
17.99	1.801	55.36
19.99	2.178	50.77
23.99	3.030	43.69
29.98	4.542	36.34
39.98	7.664	28.66
49.97	1.150×10^{0}	23.84
59.97	1.604	20.53
69.96	2.123	18.10
79.96	2.708	16.23
89.95	3.354	14.76
99.95	4.062	13.56
119.9	5.653	11.72
139.9	7.469	10.38
159.9	9.500	9.360
179.9	1.174×10^{1}	8.552
199.9	1.417	7.898
249.9	2.107	6.700
299.8	2.906	5.886
399.8	4.790×10^{1}	4.849
499.7	7.010	4.217
599.7	9.520	3.792
699.6	1.227×10^{2}	3.489
799.6	1.523	3.262
899.5	1.839	3.080
999.5	2.170	2.949
1199.0	2.874	2.745
1399.0	3.623	2.604
1599.0	4.407	2.503
1799.0	5.218	2.428
1999.0	6.052	2.371
2998.0	1.042×10^{3}	2.229
3998.0	1.496	2.189
4997.0	1.952	2.184
5997.0	2.410	2.194
6996.0	2.863	2.210
7996.0	3.314	2.229
8995.0	3.760	2.250
9995.0	4.203	2.270
11990.0	5.075	2.312
13990.0	5.933	2.348
15990.0	6.778	2.383
17990.0	7.611	2.415
19990.0	8.433	2.445


Range of Deuterons in CH_2
Scale I: 1 mev. < T_D < 10 mev.
Scale II: 10 mev. < T_D < 100 mev.
$\times 10^{0}$
$\times 10^{-2}$
$\times 10^{-1}$
$\times 10^{-3}$
$\times 10^{-2}$
T_D (Mev)
Range in gm./cm.^{2}

MU- 6291

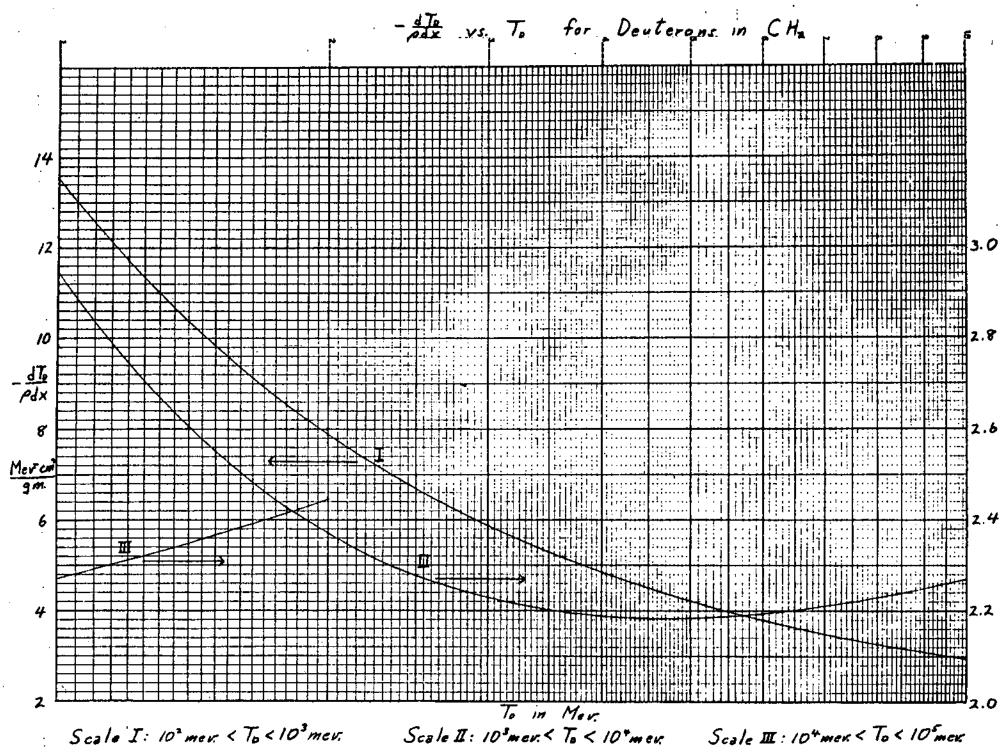

Range of Deuterons in CH_2
Scale I: 100 mev. ≤ T_D < 1000 mev.
Scale II: 1000 mev. ≤ T_D < 10000 mev.
Scale III: 10000 mev. ≤ T_D < 100000 mev.
T_D (Mev)
Range in gm./cm.²

MU-6292



$-\frac{dT_D}{\rho dx}$ vs. T_D for Deuterons in CH_2
90
80
70
$-\frac{dT_D}{\rho dx}$
60
Mev cm²/gm.
50
40
30
20
26
24
22
20
18
16
14
12
T_D in Mev.
10^1 mev. < T_D < 10^2 mev.

MU-6518


$-\frac{dT_0}{\rho dx}$ vs. T_0 for Deuterons in CH_2
$-\frac{dT_0}{\rho dx}$
$\frac{Mev\,cm^2}{gm.}$
14
12
10
8
6
4
2
3.0
2.8
2.6
2.4
2.2
2.0
I
II
III
T_0 in Mev.
Scale I: 10^2 mev. < T_0 < 10^3 mev.
Scale II: 10^3 mev. < T_0 < 10^4 mev.
Scale III: 10^4 mev. < T_0 < 10^5 mev.

MU-6519

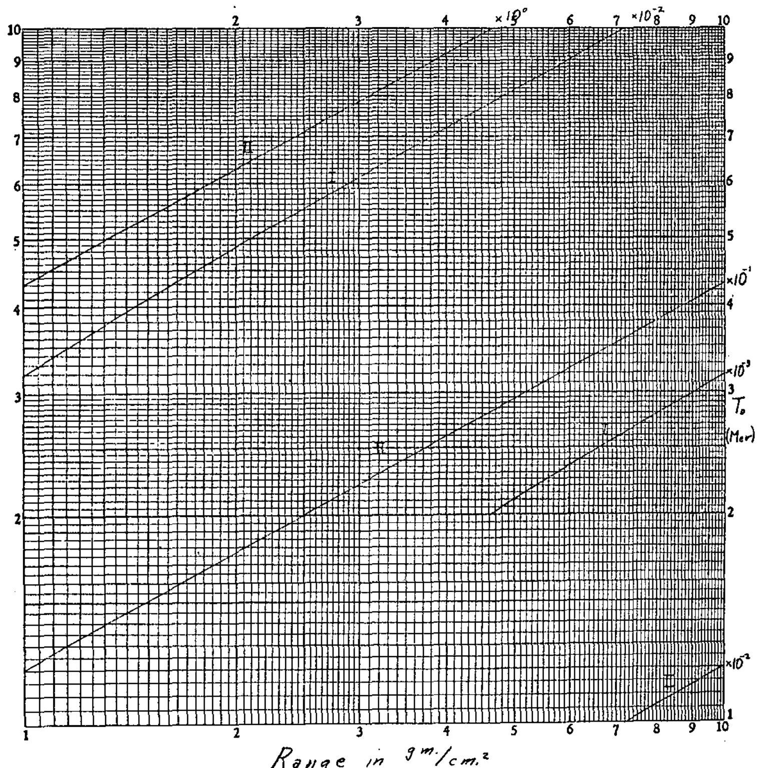
RANGE OF DEUTERONS IN CD_2

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$	T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
1.999	4.620×10^{-3}	267.7	399.8	5.475×10^{1}	4.243
3.998	1.438×10^{-2}	161.7	499.7	8.012	3.690
5.997	2.909	117.8	599.7	1.088×10^{2}	3.318
7.996	4.826	93.59	699.6	1.402	3.053
9.995	7.175	78.20	799.6	1.741	2.855
11.99	9.934	67.46	899.5	2.101	2.696
13.99	1.310×10^{-1}	59.50	999.5	2.480	2.580
15.99	1.665	53.35	1199.0	3.285	2.402
17.99	2.059	48.44	1399.0	4.141	2.279
19.99	2.490	44.42	1599.0	5.036	2.190
23.99	3.463	38.23	1799.0	5.964	2.124
29.98	5.192	31.80	1999.0	6.917	2.074
39.98	8.760	25.08	2998.0	1.190×10^{3}	1.951
49.97	1.315×10^{0}	20.86	3998.0	1.709	1.915
59.97	1.833	17.96	4997.0	2.231	1.911
69.96	2.427	15.83	5997.0	2.754	1.920
79.96	3.095	14.20	6996.0	3.272	1.934
89.95	3.834	12.91	7996.0	3.788	1.950
99.95	4.642	11.86	8995.0	4.297	1.968
119.9	6.460	10.26	9995.0	4.803	1.986
139.9	8.536	9.085	11990.0	5.800	2.023
159.9	1.086×10^{1}	8.190	13990.0	6.781	2.054
179.9	1.341	7.483	15990.0	7.746	2.085
199.9	1.620	6.911	17990.0	8.698	2.113
249.9	2.408	5.863	19990.0	9.638	2.140
299.8	3.321	5.150			

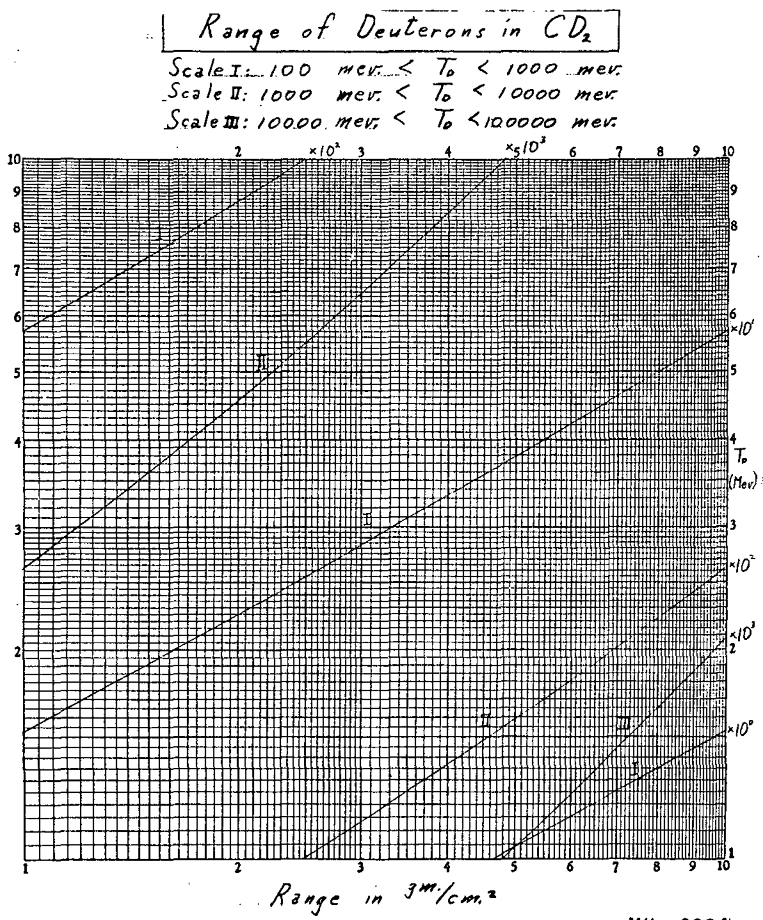
Range of Deuterons in CD_2

Scale I: 1 mev. < T_0 < 10 mev.

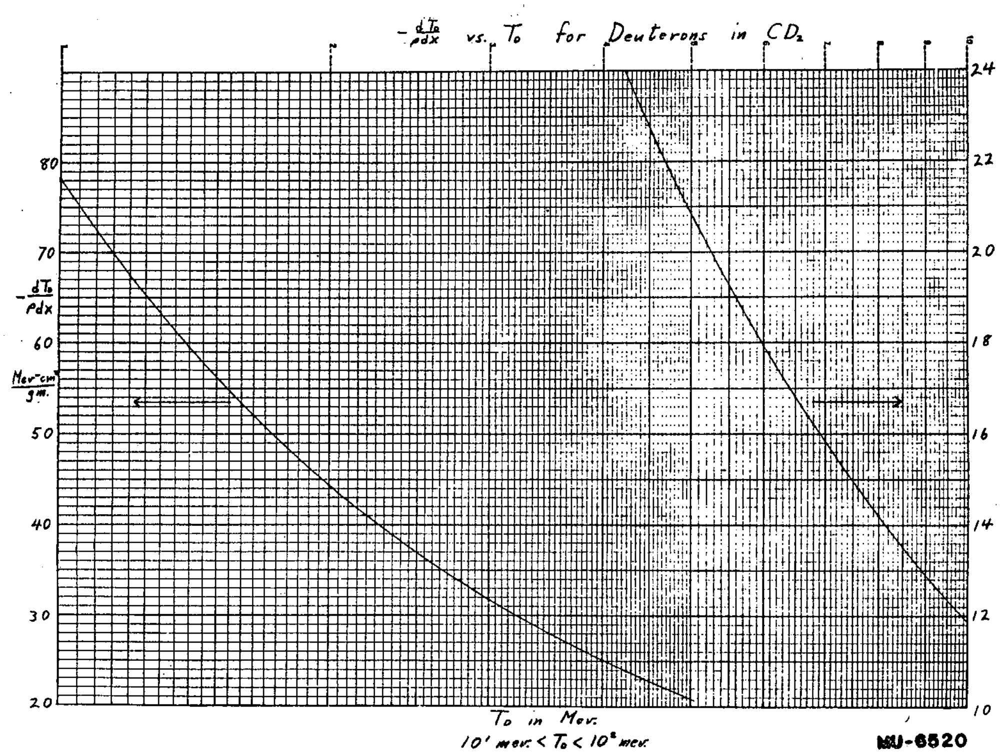
Scale II: 10 mev. < T_0 < 100 mev.



MU - 6293

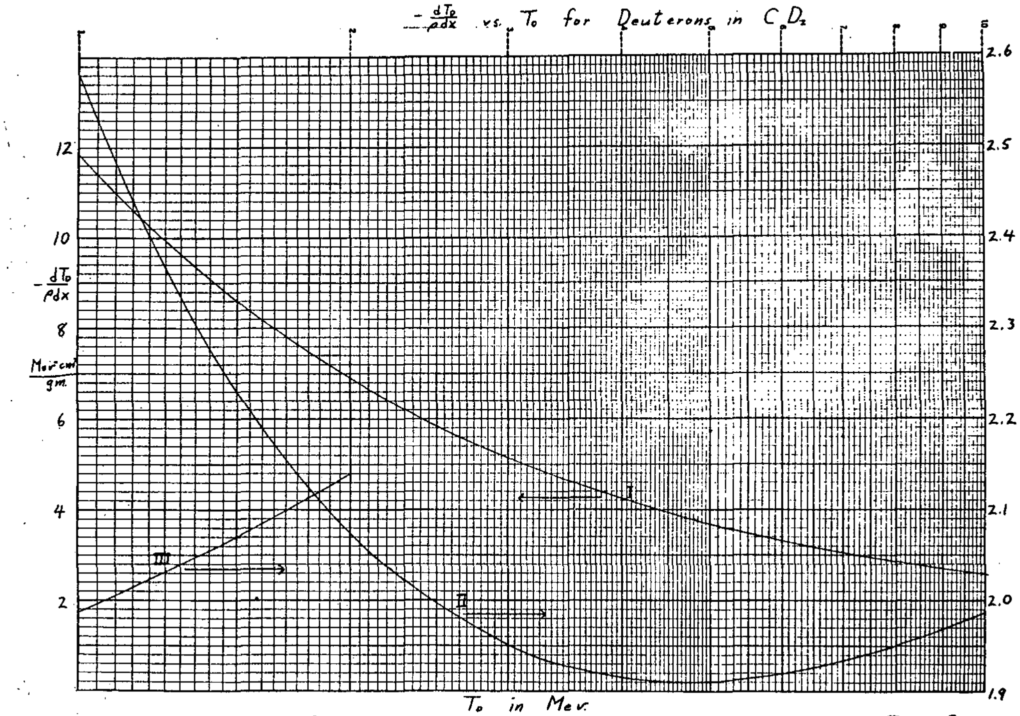

Range of Deuterons in CD_2
Scale I: 100 mev. < T_D < 1000 mev.
Scale II: 1000 mev. < T_D < 10000 mev.
Scale III: 100.00 mev. < T_D < 10.0000 mev.
×10²
×5 10³
×10¹
T_D (Mev)
×10²
×10³
×10⁰
Range in gm./cm.²

MU - 6294


$-\frac{dT_0}{\rho dx}$ vs. T_0 for Deuterons in CD_2
80
70
$-\frac{dT_0}{\rho dx}$
60
$\frac{Mev\text{-}cm^2}{gm.}$
50
40
30
20
24
22
20
18
16
14
12
10
T_0 in Mev.
10^1 mev. < T_0 < 10^2 mev.

MU-6520

$-\frac{dT_0}{\rho dx}$ vs. T_0 for Deuterons in CD_2



Scale I: 10^2 mev. $\leq T_0 < 10^3$ mev. Scale II: 10^3 mev. $< T_0 < 10^4$ mev. Scale III: 10^4 mev. $< T_0 < 10^5$ mev.

MU-6521

RANGE OF DEUTERONS IN H_2O

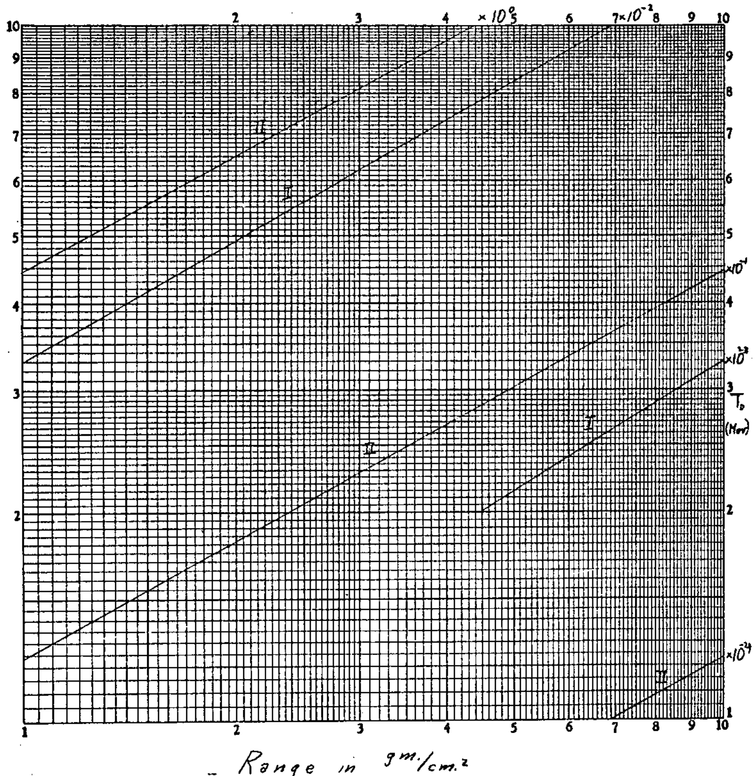
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
1.999	4.487×10^{-3}	279.4
3.998	1.402×10^{-2}	167.6
5.997	2.820	122.7
7.996	4.652	97.93
9.995	6.897	82.04
11.99	9.521	70.90
13.99	1.253×10^{-1}	62.63
15.99	1.590	56.22
17.99	1.964	51.10
19.99	2.372	46.91
23.99	3.293	40.43
29.98	4.927	33.69
39.98	8.290	26.62
49.97	1.242×10^{0}	22.18
59.97	1.729	19.11
69.96	2.287	16.86
79.96	2.914	15.14
89.95	3.607	13.77
99.95	4.365	12.66
119.9	6.068	10.96
139.9	8.011	9.709
159.9	1.018×10^{1}	8.758
179.9	1.257	8.006
199.9	1.517	7.397
299.8	3.105	5.521

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
399.8	5.113×10^{1}	4.553
499.7	7.486	3.962
599.7	1.014×10^{2}	3.566
699.6	1.307	3.282
799.6	1.622	3.070
899.5	1.957	2.901
999.5	2.309	2.777
1199.0	3.057	2.586
1399.0	3.851	2.455
1599.0	4.683	2.360
1799.0	5.543	2.290
1999.0	6.427	2.237
2998.0	1.105×10^{3}	2.107
3998.0	1.585	2.070
4997.0	2.068	2.067
5997.0	2.551	2.078
6996.0	3.029	2.094
7996.0	3.505	2.113
8995.0	3.975	2.133
9995.0	4.442	2.154
11990.0	5.361	2.193
13990.0	6.266	2.230
15990.0	7.155	2.264
17990.0	8.032	2.296
19990.0	8.897	2.325

Range of Deuterons in H_2O

Scale I: 1 mev. $< T_D <$ 10 mev.

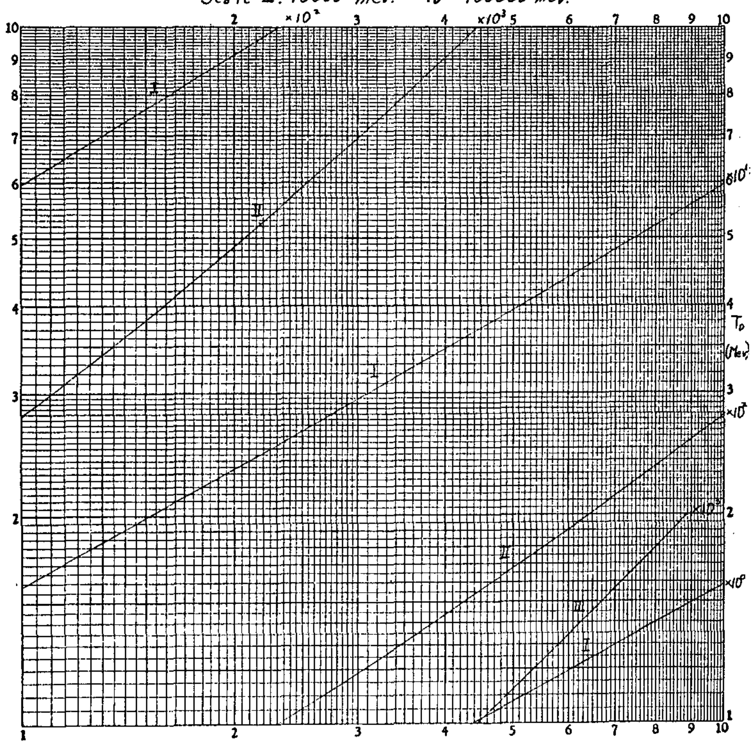
Scale II: 10 mev. $< T_D <$ 100 mev.

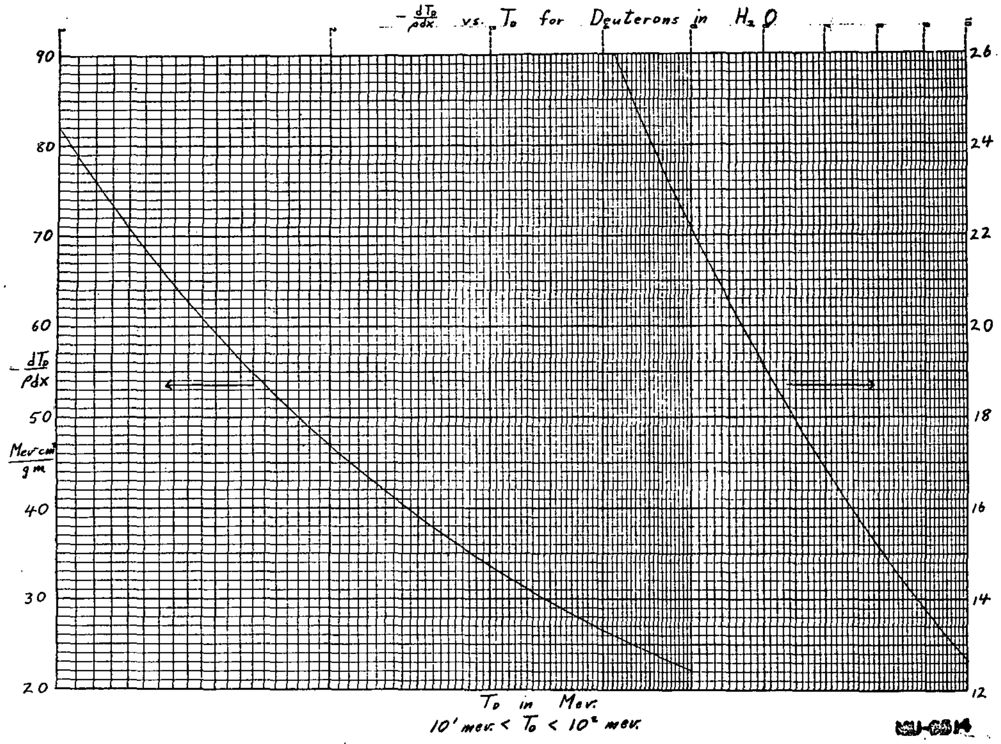


MU-6287

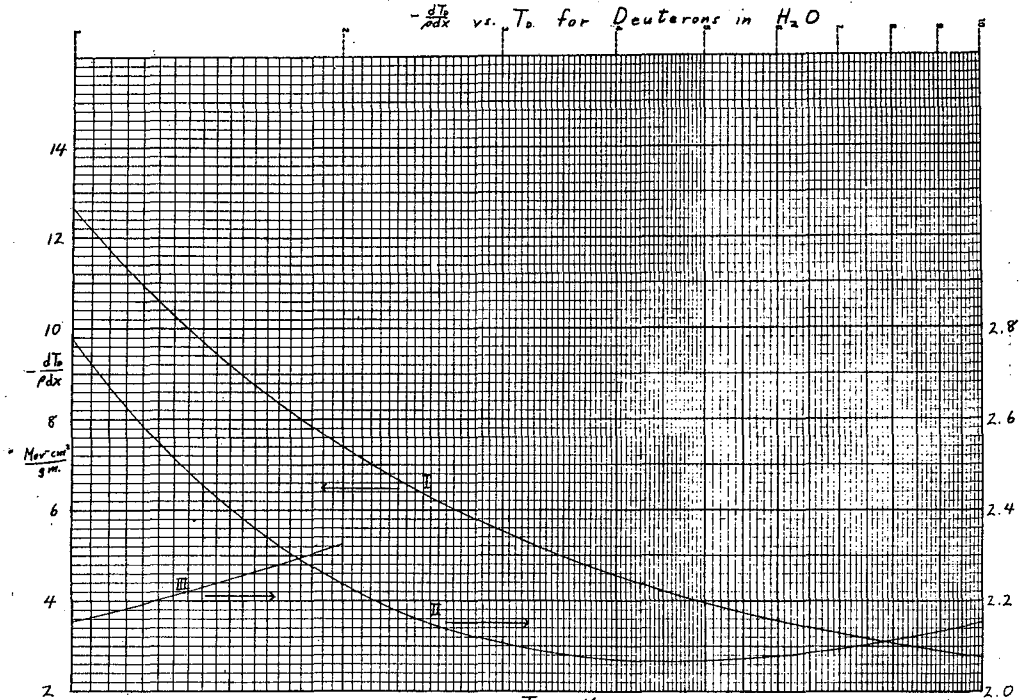
Range of Deuterons in H_2O

Scale I: 100 mev. < T_0 < 1000 mev.
Scale II: 1000 mev. < T_0 < 10000 mev.
Scale III: 10000 mev. < T_0 < 100000 mev.




$-\frac{dT_D}{\rho dx}$ vs. T_D for Deuterons in H_2O
90
80
70
60
50
40
30
20
26
24
22
20
18
16
14
12
$-\frac{dT_D}{\rho dx}$
$\frac{Mev\text{-}cm^2}{gm}$
T_D in Mev.
10^1 mev. < T_D < 10^2 mev.

$-\frac{dT_0}{\rho dx}$ vs. T_0 for Deuterons in H_2O



Scale I: 10^2 mev. < T_0 < 10^3 mev. Scale II: 10^3 mev. < T_0 < 10^4 mev. Scale III: 10^4 mev. < T_0 < 10^5 mev.

MU-6515

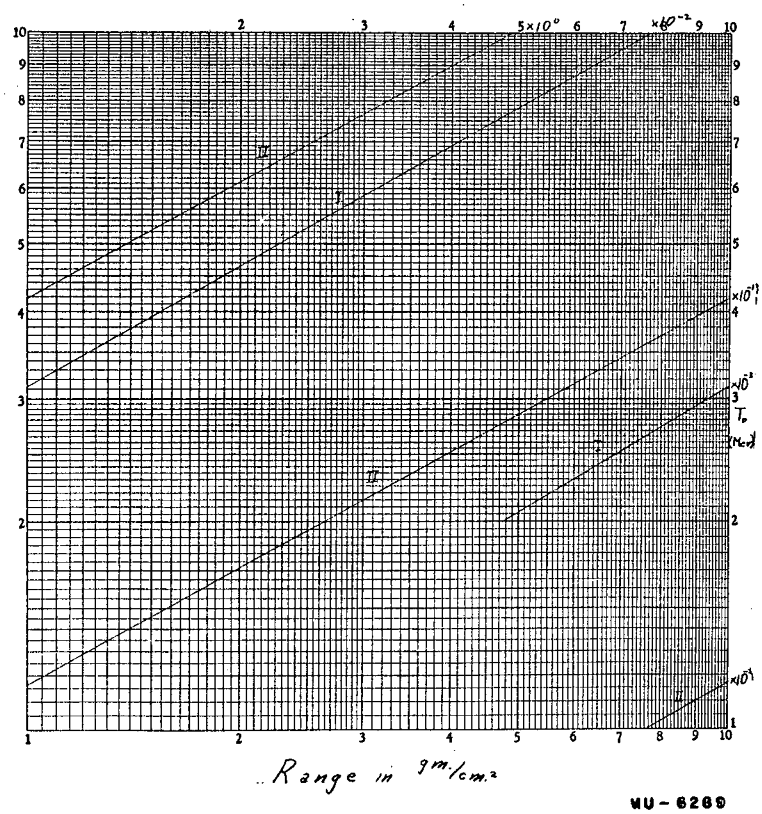
RANGE OF DEUTERONS IN D_2O

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
1.999	4.747×10^{-3}	251.4
3.998	1.541×10^{-2}	150.8
5.997	3.110	110.4
7.996	5.152	88.14
9.995	7.640	73.83
11.99	1.056×10^{-1}	63.81
13.99	1.390	56.37
15.99	1.765	50.60
17.99	2.180	45.99
19.99	2.634	42.22
23.99	3.657	36.38
29.98	5.472	30.32
39.98	9.210	23.96
49.97	1.380×10^{0}	19.96
59.97	1.921	17.20
69.96	2.541	15.18
79.96	3.238	13.62
89.95	4.008	12.39
99.95	4.850	11.39
119.9	6.742	9.859
139.9	8.901	8.738
159.9	1.131×10^{1}	7.882
179.9	1.397	7.200
199.9	1.686	6.658
249.9	2.504	5.653
299.8	3.450	4.969
399.8	5.681×10^{1}	4.098
499.7	8.307	3.566
599.7	1.127×10^{2}	3.209
699.6	1.452	2.954
799.6	1.802	2.763
899.5	2.175	2.611
999.5	2.566	2.499
1199.0	3.397	2.328
1399.0	4.279	2.209
1599.0	5.203	2.124
1799.0	6.159	2.061
1999.0	7.141	2.014
2998.0	1.227×10^{3}	1.896
3998.0	1.761	1.863
4997.0	2.297	1.861
5997.0	2.834	1.870
6996.0	3.366	1.885
7996.0	3.895	1.902
8995.0	4.417	1.920
9995.0	4.936	1.938
11990.0	5.957	1.974
13990.0	6.961	2.007
15990.0	7.950	2.038
17990.0	8.924	2.066
19990.0	9.886	2.092

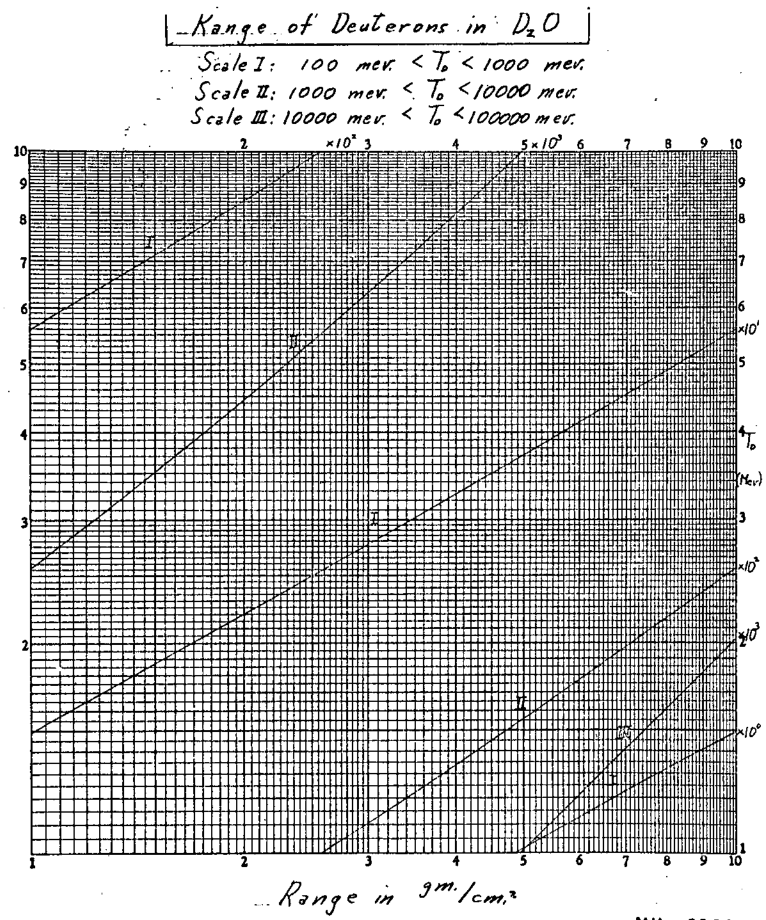
Range of Deuterons in D_2O

Scale I: 1 mev. < T_D < 10 mev.

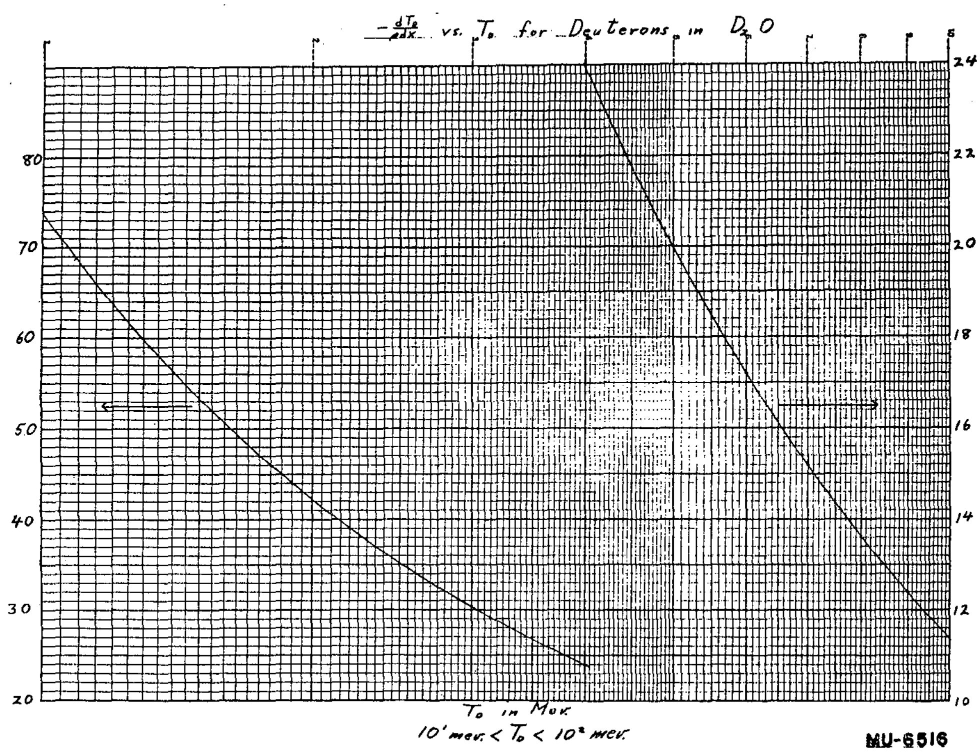
Scale II: 10 mev. < T_D < 100 mev.



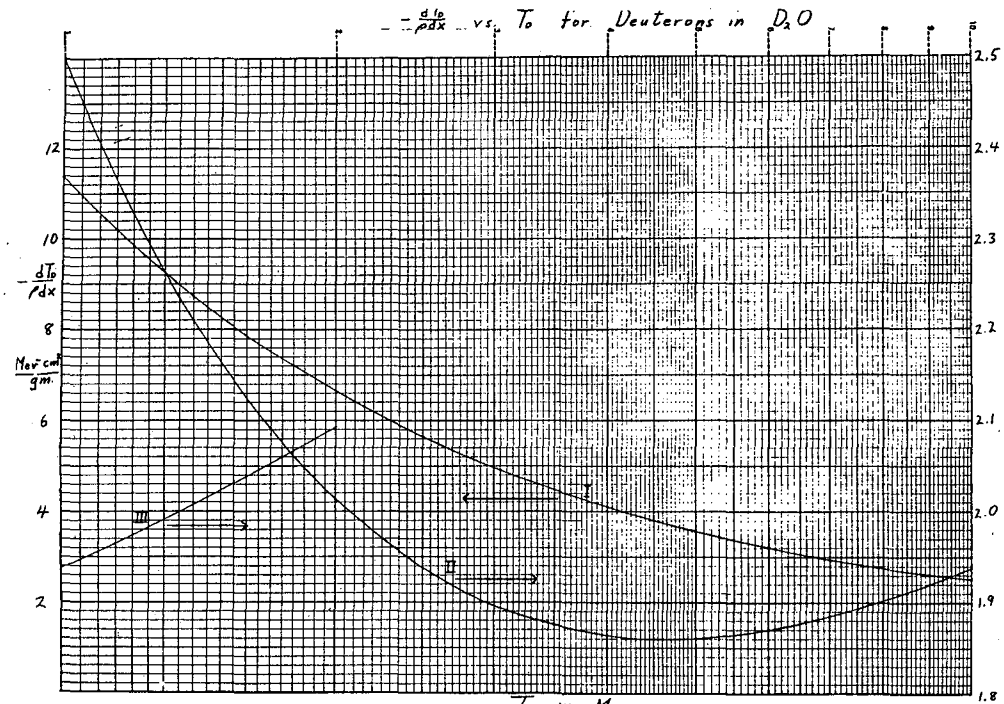
MU-6269


Range of Deuterons in D_2O
Scale I: 100 mev. < T_0 < 1000 mev.
Scale II: 1000 mev. < T_0 < 10000 mev.
Scale III: 10000 mev. < T_0 < 100000 mev.
T_0
(Mev)
Range in gm./cm.²

MU – 6290


$-\frac{dT_0}{\rho dx}$ vs. T_0 for Deuterons in D_2O
80
70
60
50
40
30
20
24
22
20
18
16
14
12
10
T_0 in Mev.
10^1 mev. < T_0 < 10^2 mev.

MU-6516



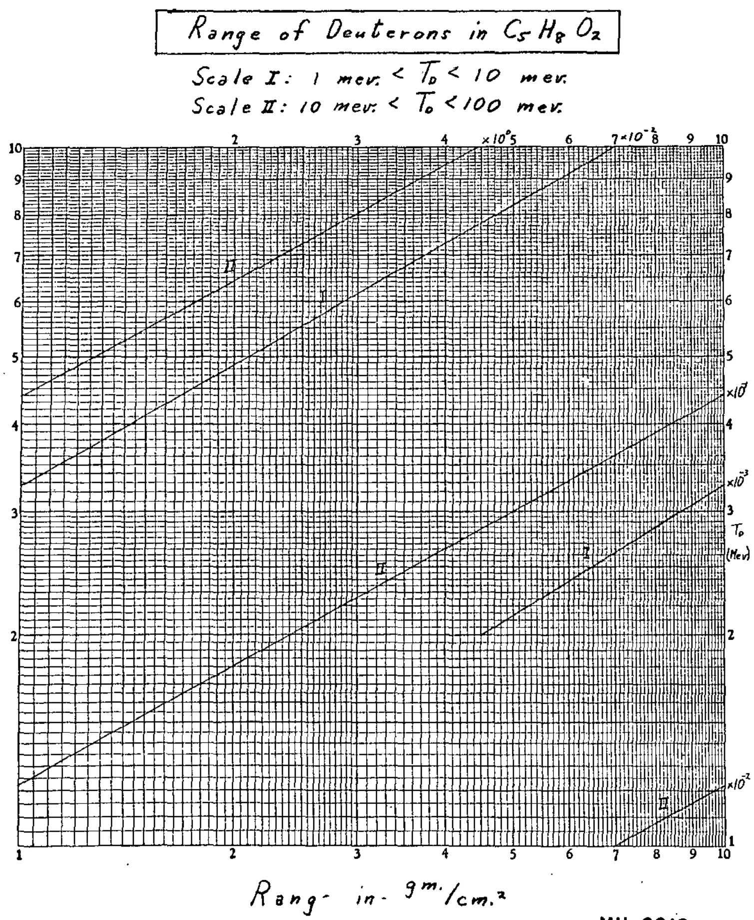
Scale I: 10^2 mev. $< T_0 < 10^3$ mev. Scale II: 10^3 mev. $< T_0 < 10^4$ mev. Scale III: 10^4 mev. $< T_0 < 10^5$ mev.

MU-6517

RANGE OF DEUTERONS IN $C_5H_8O_2$

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
1.999	4.506×10^{-3}	273.2
3.998	1.422×10^{-2}	1.660
5.997	2.849	121.4
7.996	4.708	96.73
9.995	6.976	80.98
11.99	9.640	69.95
13.99	1.269×10^{-1}	61.77
15.99	1.611	55.43
17.99	1.990	50.37
19.99	2.404	46.22
23.99	3.339	39.82
29.98	4.997	33.17
39.98	8.415	26.20
49.97	1.262×10^{0}	21.82
59.97	1.757	18.80
69.96	2.324	16.58
79.96	2.961	14.88
89.95	3.667	13.54
99.95	4.438	12.44
119.9	6.171	10.76
139.9	8.133	9.539
159.9	1.033×10^{1}	8.603
179.9	1.276	7.863
199.9	1.541	7.264
249.9	2.288	6.166
299.8	3.158	5.420

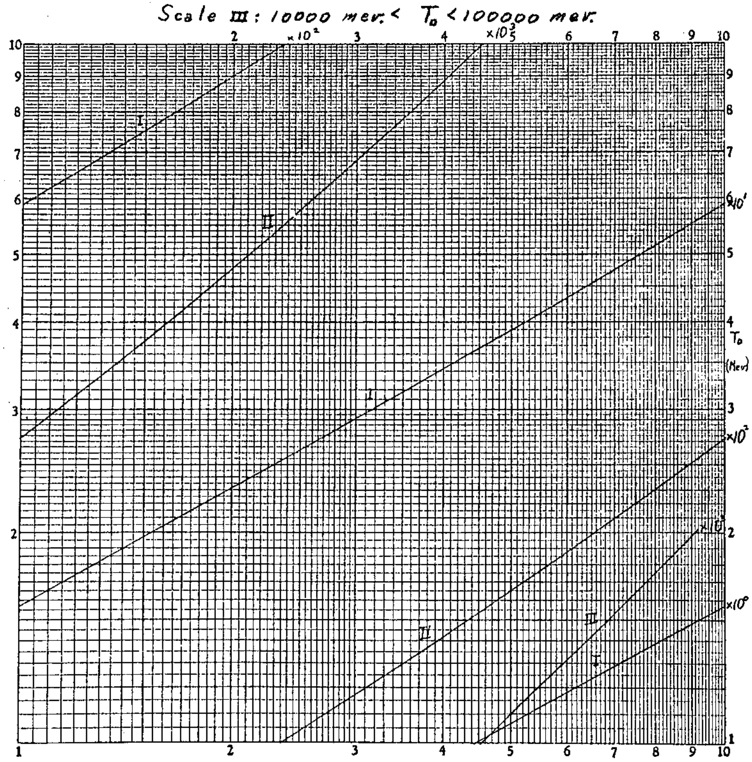
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
399.8	5.204×10^{1}	4.468
499.7	7.613	3.888
599.7	1.033×10^{2}	3.498
699.6	1.332	3.220
799.6	1.653	3.011
899.5	1.994	2.847
999.5	2.353	2.723
1199.0	3.116	2.536
1399.0	3.926	2.406
1599.0	4.774	2.314
1799.0	5.652	2.245
1999.0	6.553	2.193
2998.0	1.127×10^{3}	2.064
3998.0	1.617	2.028
4997.0	2.110	2.025
5997.0	2.603	2.034
6996.0	3.092	2.050
7996.0	3.578	2.069
8995.0	4.058	2.088
9995.0	4.535	2.108
11990.0	5.474	2.148
13990.0	6.398	2.182
15990.0	7.307	2.215
17990.0	8.203	2.246
19990.0	9.088	2.274


Range of Deuterons in C5 H8 O2
Scale I: 1 mev. < T_D < 10 mev.
Scale II: 10 mev. < T_D < 100 mev.
×10⁻⁵
7×10⁻²
×10⁻¹
×10⁻³
×10⁻²
T_D (Mev)
Range in gm./cm.²

MU-6912

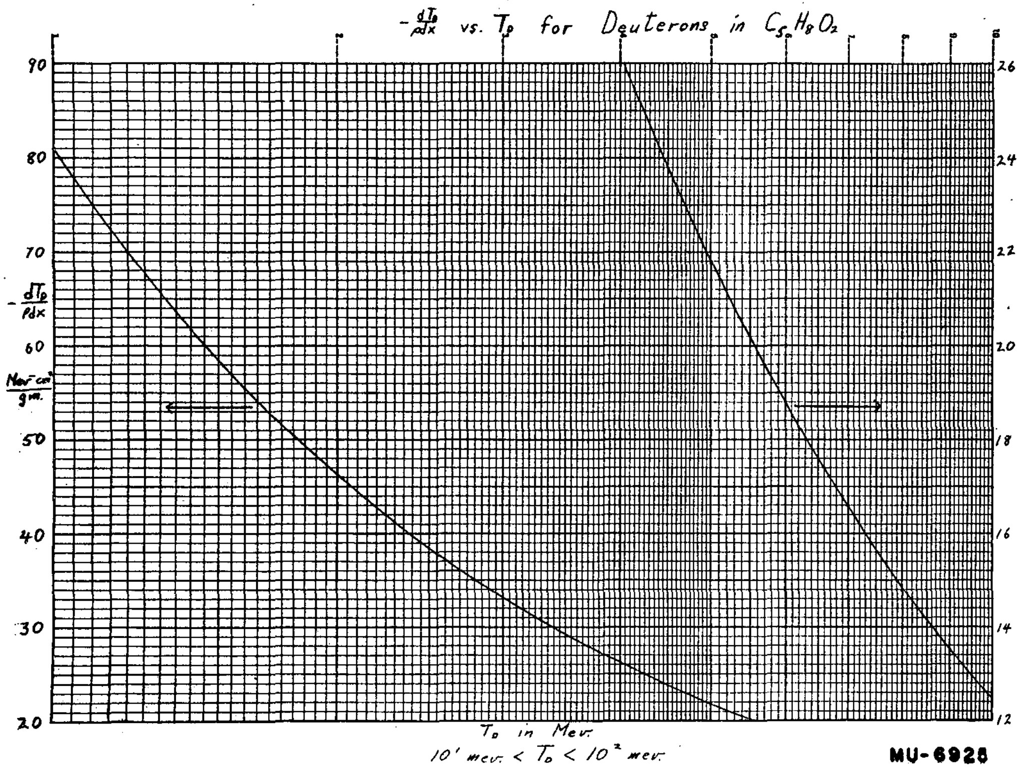
Range of Deuterons in $C_5H_8O_2$

Scale I: .100 mev. < T_D < 1000 mev.
Scale II: 1000 mev. < T_D < 10000 mev.
Scale III: 10000 mev. < T_D < 100000 mev.



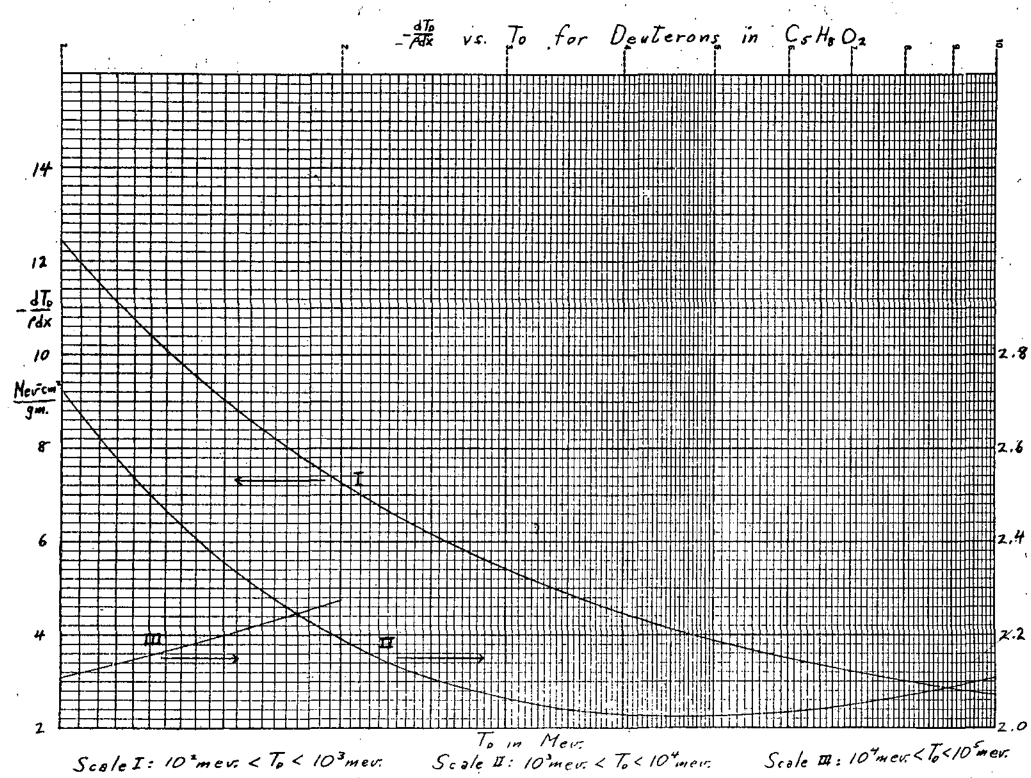
Range in gm./cm.²

MU-6911



$-\frac{dT_p}{\rho dx}$ vs. T_p for Deuterons in $C_5H_8O_2$
90
80
70
60
50
40
30
20
$-\frac{dT_p}{\rho dx}$
$\frac{Mev\ cm^2}{gm.}$
26
24
22
20
18
16
14
12
T_o in Mev.
10^1 mev. < T_o < 10^2 mev.

MU-6928

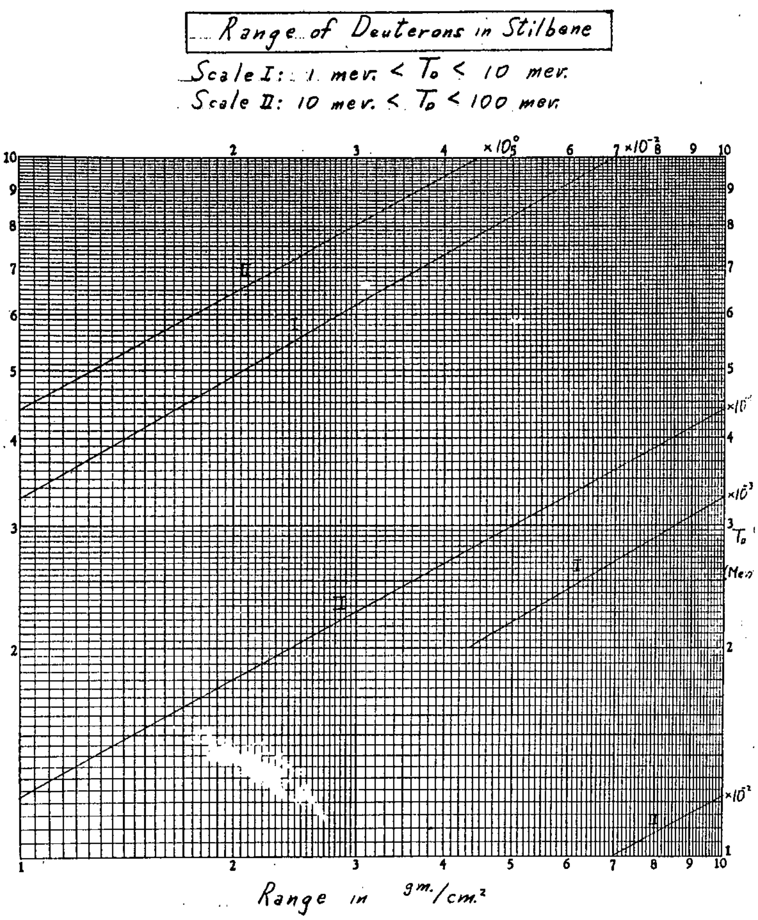

$-\frac{dT_0}{\rho dx}$ vs. T_0 for Deuterons in $C_5H_8O_2$
$-\frac{dT_0}{\rho dx}$
Mev-cm²/gm.
14
12
10
8
6
4
2
2.8
2.6
2.4
2.2
2.0
I
II
III
T_0 in Mev.
Scale I: 10^2 mev. < T_0 < 10^3 mev.
Scale II: 10^3 mev. < T_0 < 10^4 mev.
Scale III: 10^4 mev. < T_0 < 10^5 mev.

MU-6926

RANGE OF DEUTERONS IN STILBENE

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
1.999	4.318×10^{-3}	271.7
3.998	1.406×10^{-2}	166.1
5.997	2.830	121.3
7.996	4.694	96.62
9.995	6.962	80.85
11.99	9.635	69.82
13.99	1.268×10^{-1}	61.63
15.99	1.612	55.30
17.99	1.991	50.24
19.99	2.407	46.09
23.99	3.345	39.70
29.98	5.008	33.06
39.98	8.438	26.10
49.97	1.266×10^{0}	21.73
59.97	1.763	18.72
69.96	2.332	16.51
79.96	2.973	14.82
89.95	3.681	13.47
99.95	4.456	12.38
119.9	6.197	10.71
139.9	8.184	9.491
159.9	1.040×10^{1}	8.559
179.9	1.285	7.823
199.9	1.551	7.226
249.9	2.306	6.133
299.8	3.177	5.390

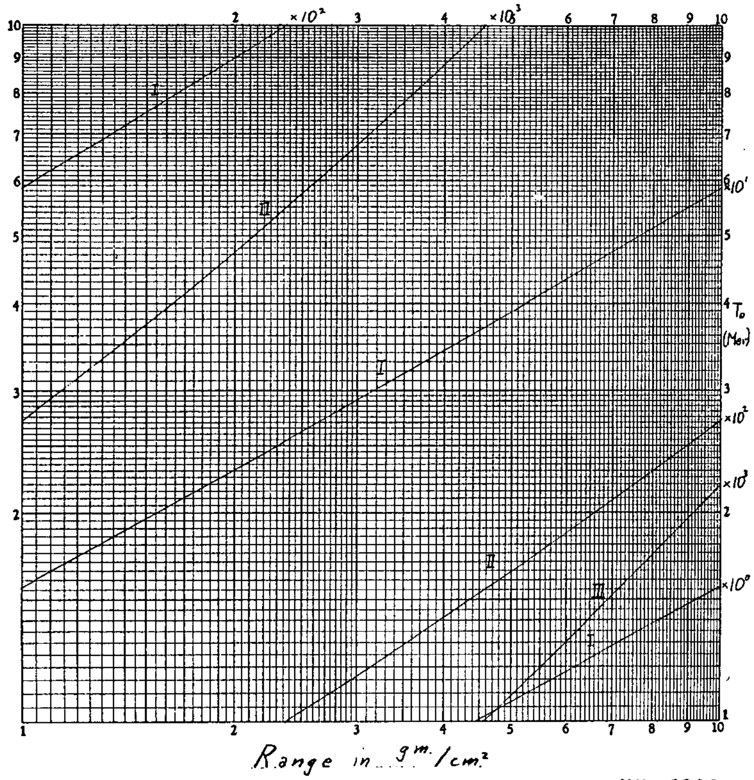
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
399.8	5.235×10^{1}	4.443
499.7	7.657	3.865
599.7	1.039×10^{2}	3.477
699.6	1.340	3.200
799.6	1.662	2.993
899.5	2.006	2.830
999.5	2.367	2.706
1199.0	3.135	2.520
1399.0	3.938	2.391
1599.0	4.804	2.299
1799.0	5.687	2.230
1999.0	6.594	2.178
2998.0	1.134×10^{3}	2.050
3998.0	1.628	2.014
4997.0	2.124	2.010
5997.0	2.621	2.020
6996.0	3.113	2.035
7996.0	3.603	2.054
8995.0	4.087	2.073
9995.0	4.568	2.092
11990.0	5.514	2.132
13990.0	6.445	2.165
15990.0	7.361	2.198
17990.0	8.264	2.228
19990.0	9.155	2.256


Range of Deuterons in Stilbene
Scale I: 1 mev. < T_o < 10 mev.
Scale II: 10 mev. < T_o < 100 mev.
T_o (Mev)
Range in gm./cm.²

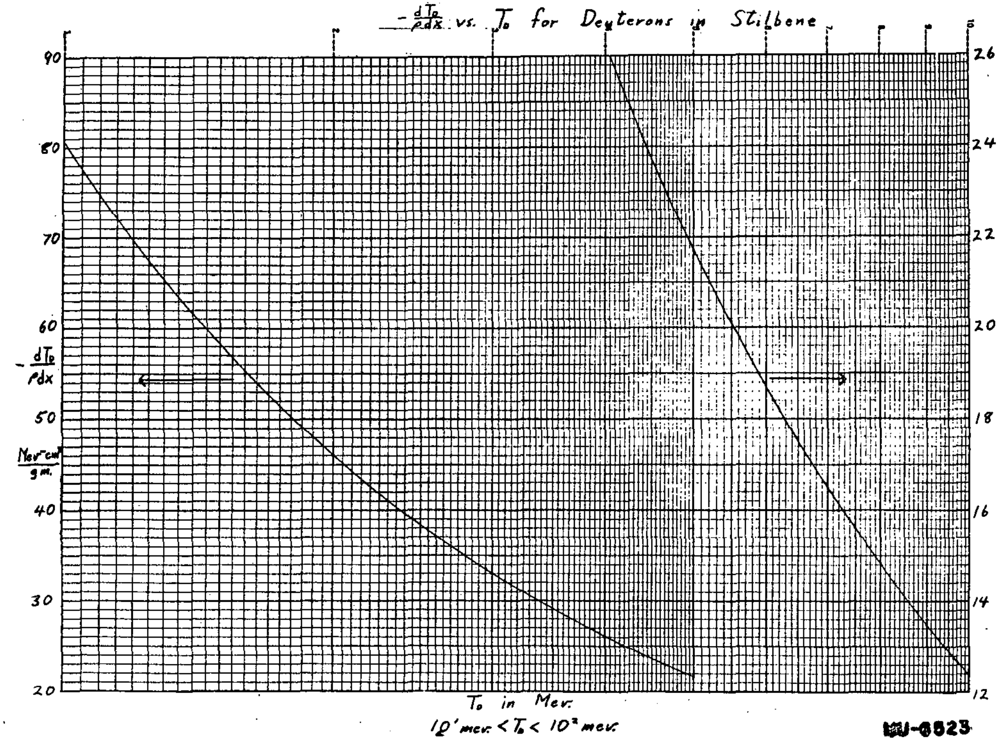
MU-6295

Range of Deuterons in Stilbene

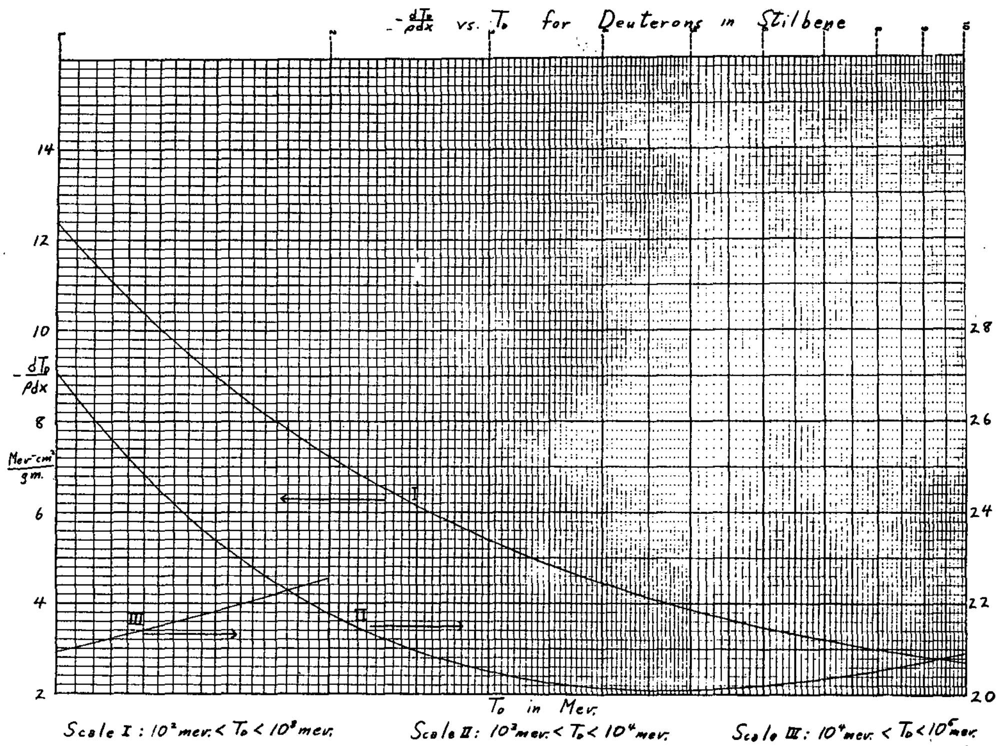
Scale I: 100 mev. < T_0 < 1000 mev.
Scale II: 1000 mev. < T_0 < 10000 mev.
Scale III: 10000 mev. < T_0 < 100000 mev.



MU - 6296


$-\frac{dT_0}{\rho dx}$ vs. T_0 for Deuterons in Stilbene
90
80
70
60
$-\frac{dT_0}{\rho dx}$
50
Mev-cm²/gm.
40
30
20
26
24
22
20
18
16
14
12
T_0 in Mev.
10^1 mev. < T_0 < 10^2 mev.

MU-6523


$-\frac{dT_0}{\rho dx}$ vs. T_0 for Deuterons in Stilbene
14
12
10
$-\frac{dT_0}{\rho dx}$
8
$\frac{Mev\text{-}cm^2}{gm.}$
6
4
2
28
26
24
22
20
I
II
III
T_0 in Mev.
Scale I : 10^2 mev. < T_0 < 10^3 mev.
Scale II : 10^3 mev. < T_0 < 10^4 mev.
Scale III : 10^4 mev. < T_0 < 10^5 mev.

MU-6522

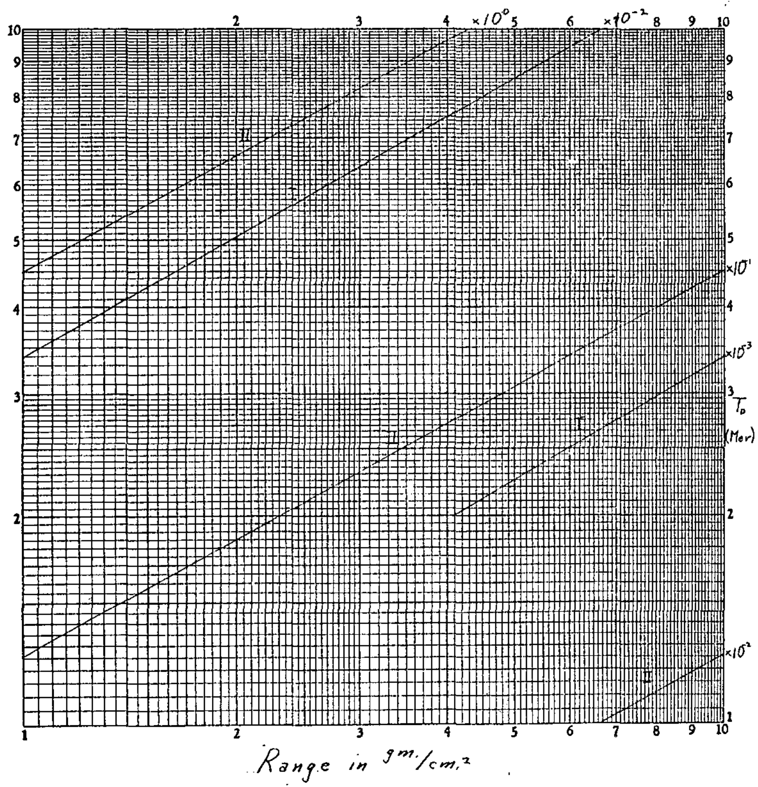
RANGE OF DEUTERONS IN PHENYL-CYCLOHEXANE

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
1.999	4.090×10^{-3}	286.6
3.998	1.337×10^{-2}	174.3
5.997	2.695	127.1
7.996	4.475	101.2
9.995	6.642	84.58
11.99	9.198	73.00
13.99	1.212×10^{-1}	64.42
15.99	1.540	57.78
17.99	1.903	52.48
19.99	2.302	48.14
23.99	3.200	41.45
29.98	4.793	34.50
39.98	8.081	27.22
49.97	1.212×10^{0}	22.66
59.97	1.690	19.51
69.96	2.236	17.20
79.96	2.851	15.44
89.95	3.531	14.03
99.95	4.274	12.90
119.9	5.946	11.15
139.9	7.855	9.881
159.9	9.989	8.909
179.9	1.234×10^{1}	8.142
199.9	1.490	7.520
249.9	2.214	6.381
299.8	3.052	5.607
399.8	5.031×10^{1}	4.620
499.7	7.360	4.019
599.7	9.993	3.615
699.6	1.288×10^{2}	3.327
799.6	1.598	3.111
899.5	1.929	2.939
999.5	2.277	2.812
1199.0	3.015	2.618
1399.0	3.800	2.484
1599.0	4.621	2.388
1799.0	5.472	2.317
1999.0	6.346	2.263
2998.0	1.092×10^{3}	2.128
3998.0	1.567	2.090
4997.0	2.045	2.086
5997.0	2.524	2.096
6996.0	2.999	2.112
7996.0	3.473	2.130
8995.0	3.937	2.150
9995.0	4.401	2.170
11990.0	5.313	2.211
13990.0	6.210	2.245
15990.0	7.094	2.279
17990.0	7.965	2.310
19990.0	8.825	2.339

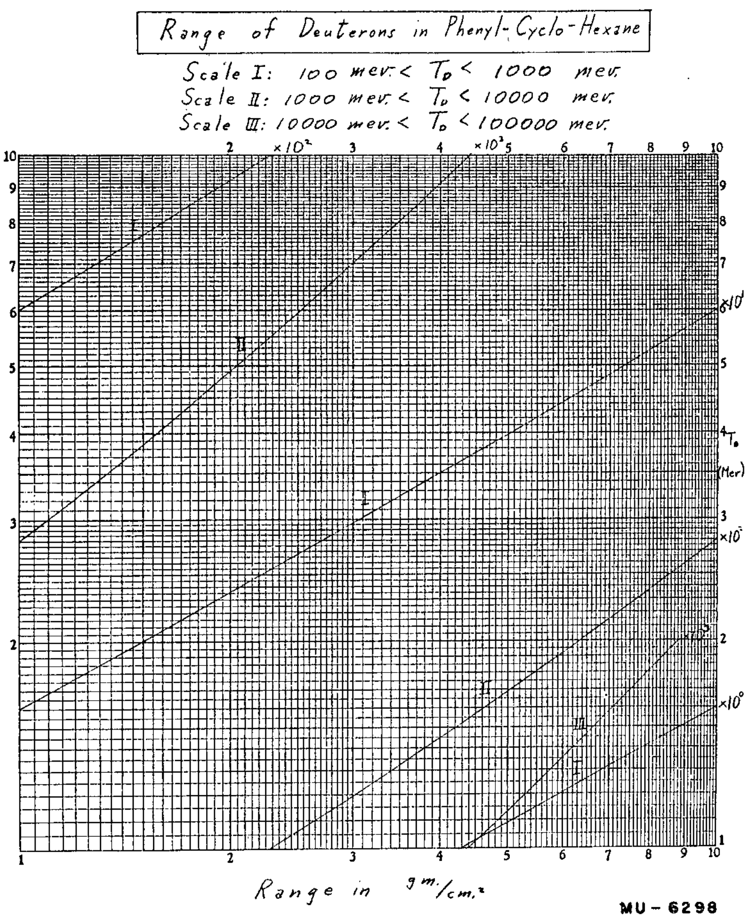
Range of Deuterons in Phenyl-Cyclo-Hexane

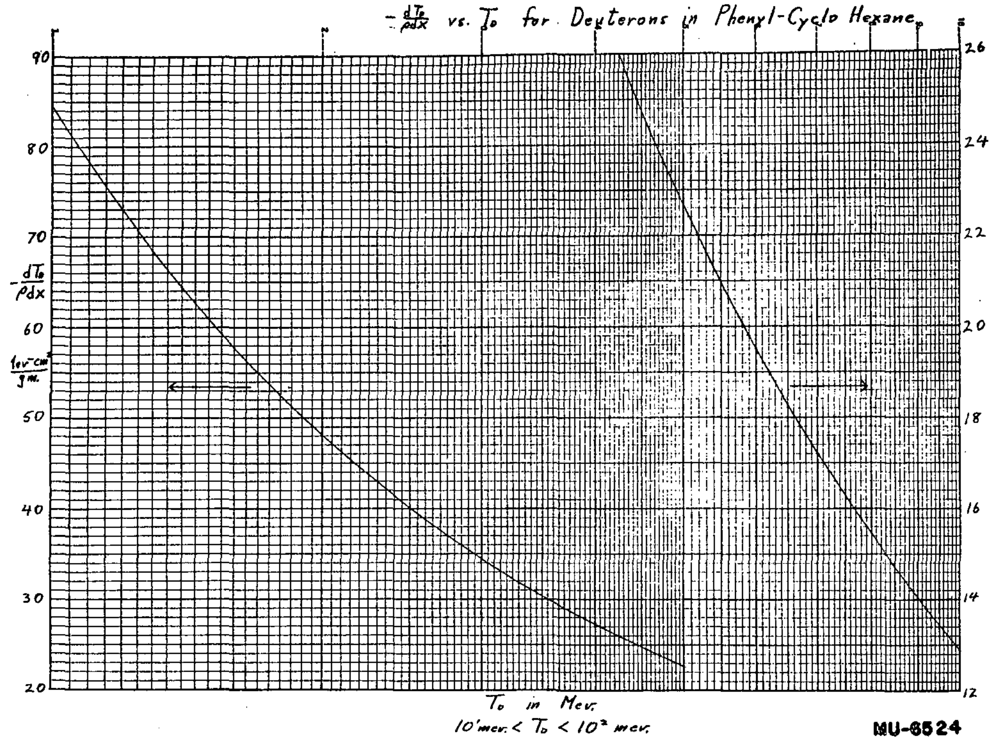
Scale I: 1 mev. < T_D < 10 mev.

Scale II: 10 mev. < T_D < 100 mev.



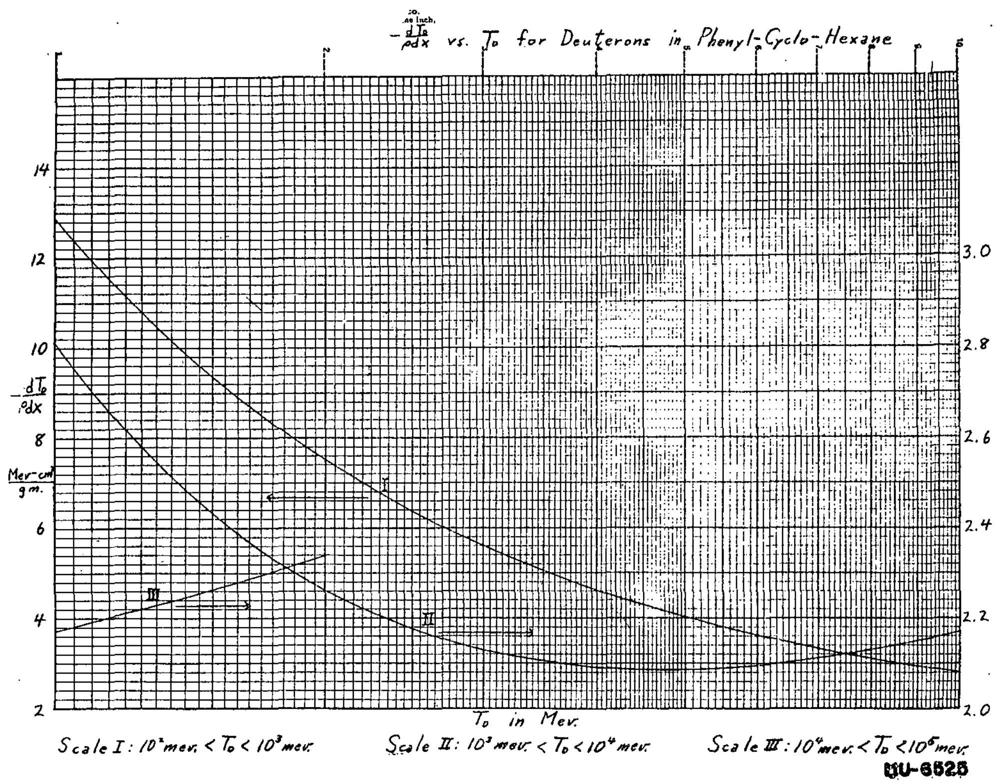
MU-6297


Range of Deuterons in Phenyl-Cyclo-Hexane
Scale I: 100 mev. < T_D < 1000 mev.
Scale II: 1000 mev. < T_D < 10000 mev.
Scale III: 10000 mev. < T_D < 100000 mev.
T_D (Mev)
Range in gm./cm.²
MU-6298



$-\frac{dT_0}{\rho dx}$ vs. T_0 for Deuterons in Phenyl-Cyclo Hexane
90
80
70
60
50
40
30
20
$-\frac{dT_0}{\rho dx}$
$\frac{Mev\text{-}cm^2}{gm.}$
26
24
22
20
18
16
14
12
T_0 in Mev.
10^1 mev. < T_0 < 10^2 mev.

MU-6524


$-\frac{dT_0}{\rho dx}$ vs. T_0 for Deuterons in Phenyl-Cyclo-Hexane
14
12
10
$-\frac{dT_0}{\rho dx}$
8
Mev-cm²/gm.
6
4
2
3.0
2.8
2.6
2.4
2.2
2.0
I
II
III
T_0 in Mev.
Scale I: 10^2 mev. < T_0 < 10^3 mev.
Scale II: 10^3 mev. < T_0 < 10^4 mev.
Scale III: 10^4 mev. < T_0 < 10^5 mev.
MU-6525

V. H^3 RANGE-ENERGY DATA

H^3 Kinetic Energy Range: 1 Mev. to 10^5 Mev.

RANGE OF H^3 IN BERYLLIUM

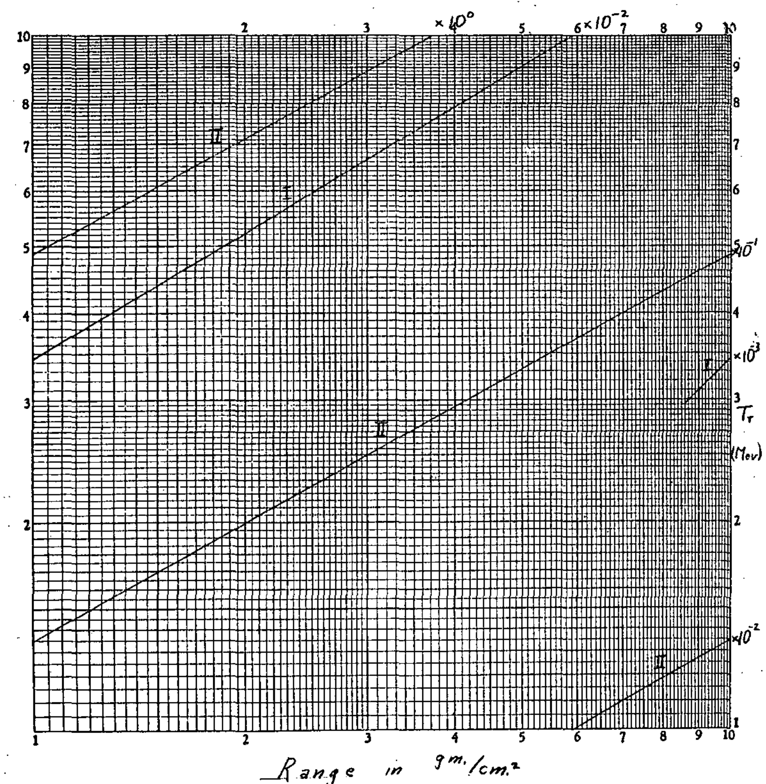
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
2.994	8.712×10^{-3}	247.0
5.987	2.523×10^{-2}	145.9
8.981	4.953	106.0
11.97	8.139	84.27
14.97	1.205×10^{-1}	70.38
17.96	1.664	60.69
20.96	2.191	53.51
23.95	2.783	47.96
26.94	3.439	43.54
29.94	4.158	39.92
35.92	5.779	34.35
41.91	7.642	30.24
47.90	9.738	27.08
53.88	1.206×10^{0}	24.56
59.87	1.461	22.51
89.81	3.058	16.12
119.7	5.164	12.74
149.7	7.748	10.64
179.6	1.078×10^{1}	9.197
209.6	1.425	8.145
239.5	1.813	7.342
269.4	2.240	6.707

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
299.4	2.705×10^{1}	6.194
449.0	5.548	4.614
598.7	9.149	3.800
748.4	1.339×10^{2}	3.304
898.1	1.818	2.972
1048.0	2.344	2.734
1197.0	2.911	2.556
1497.0	4.147	2.310
1796.0	5.494	2.150
2096.0	6.925	2.039
2395.0	8.424	1.960
2694.0	9.976	1.901
2994.0	1.157×10^{3}	1.856
5987.0	2.861	1.713
8981.0	4.611	1.716
11970.0	6.341	1.744
14970.0	8.043	1.775
17960.0	9.715	1.806
20960.0	1.136×10^{4}	1.836
23950.0	1.298	1.863
26940.0	1.457	1.888
29940.0	1.615	1.912

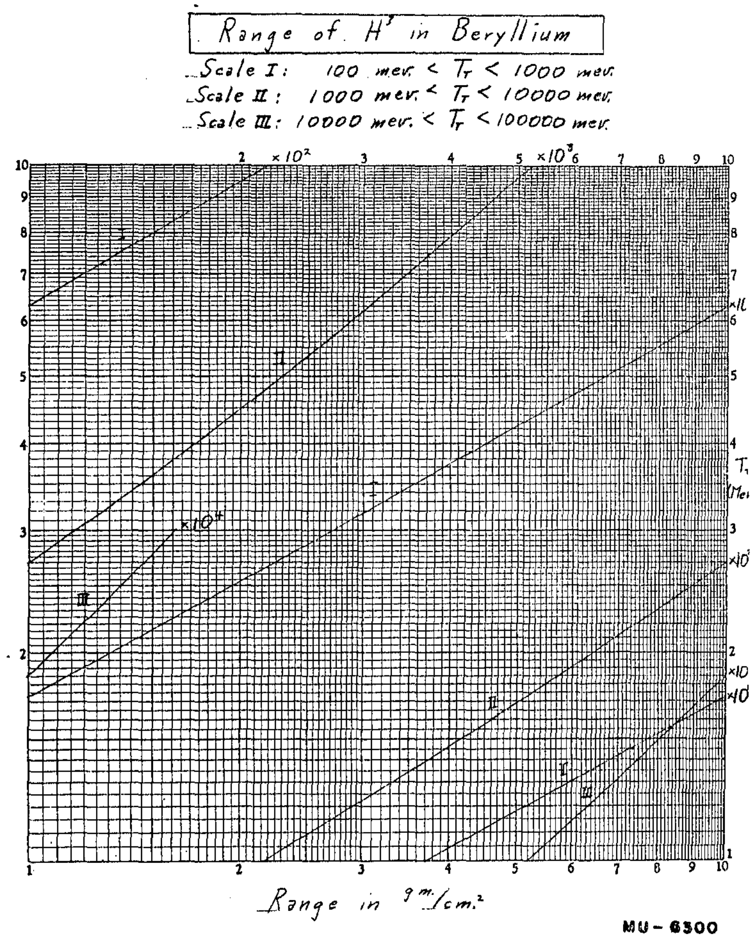
Range of H^3 in Beryllium

Scale I: 1 mev. < T_T < 10 mev.

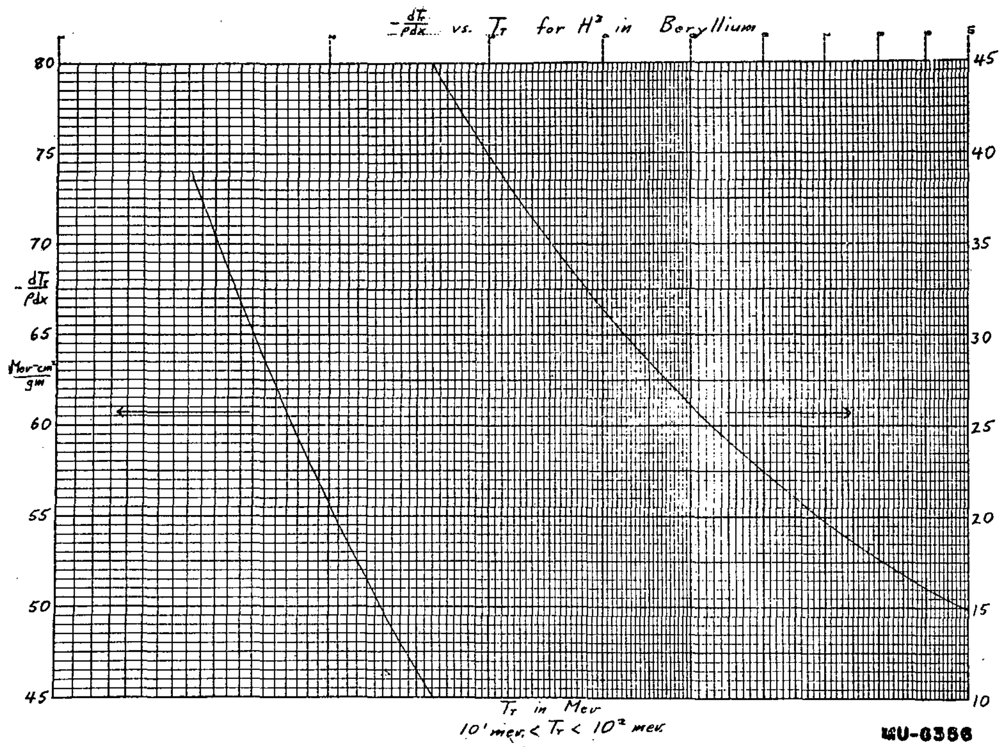
Scale II: 10 mev. < T_T < 100 mev.



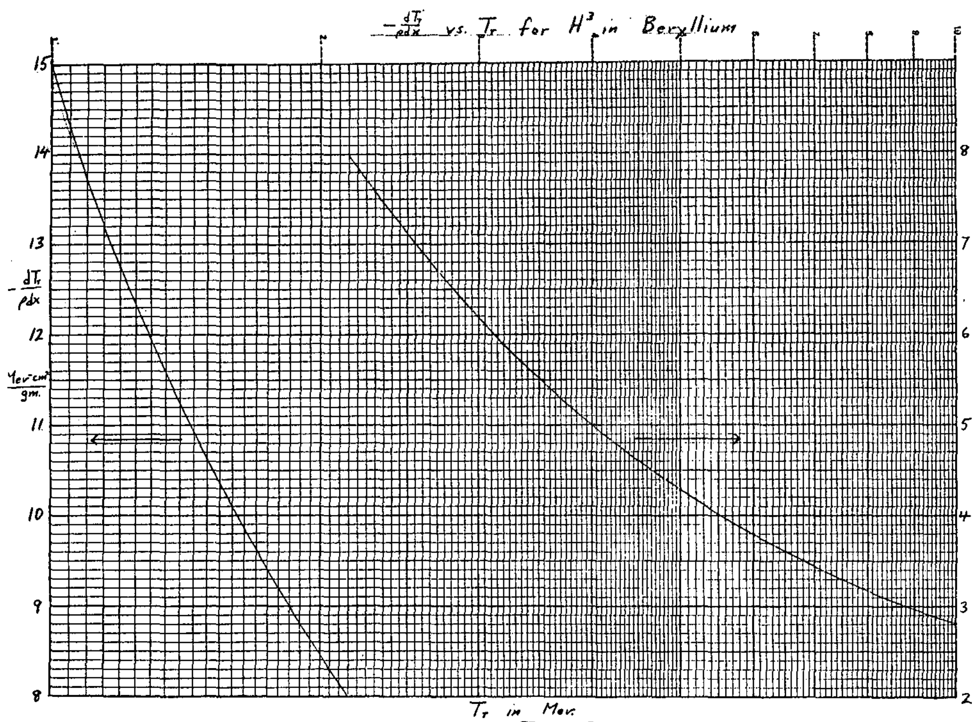
MU – 6299



Range of H^3 in Beryllium
Scale I: 100 mev. < T_T < 1000 mev.
Scale II: 1000 mev. < T_T < 10000 mev.
Scale III: 10000 mev. < T_T < 100000 mev.
T_T Mev
Range in gm./cm.²
MU-6300

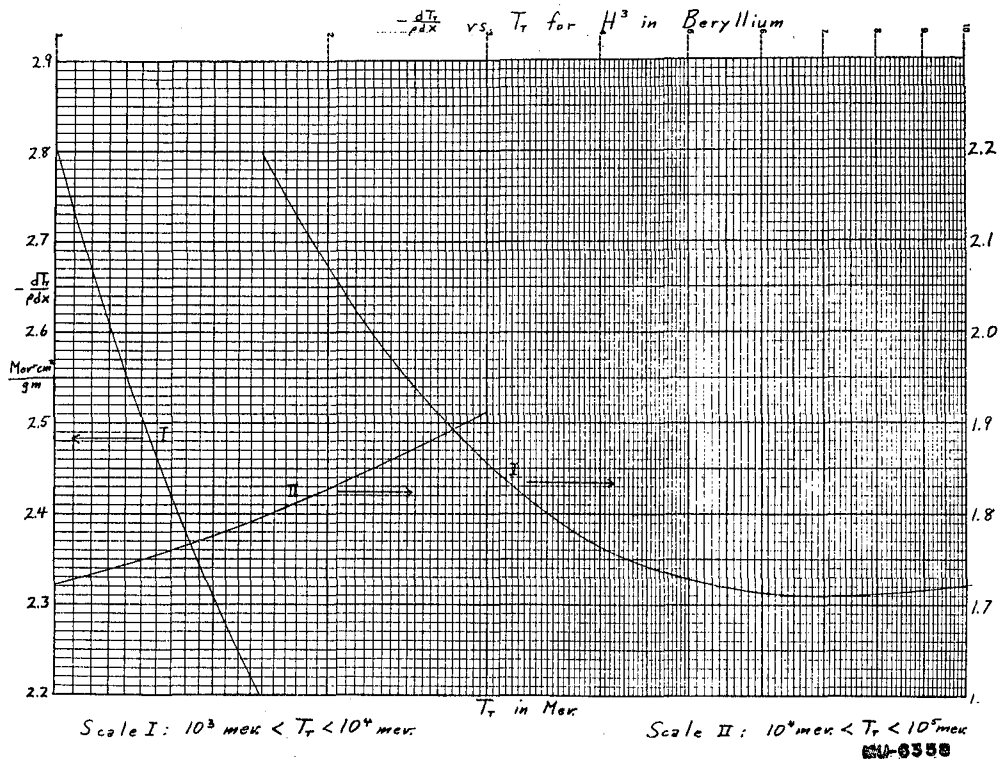

$-\frac{dT_T}{\rho dx}$ vs. T_T for H^3 in Beryllium
80
75
70
65
60
55
50
45
$-\frac{dT_T}{\rho dx}$
Mev-cm²/gm
45
40
35
30
25
20
15
10
T_T in Mev
10^1 mev. < T_T < 10^2 mev.

MU-6356



$-\frac{dT_T}{\rho dx}$ vs. T_T for H^3 in Beryllium
15
14
13
$-\frac{dT_T}{\rho dx}$
12
$\frac{Mev\text{-}cm^2}{gm.}$
11
10
9
8
8
7
6
5
4
3
2
T_T in Mev.
10^2 mev. < T_T < 10^3 mev.

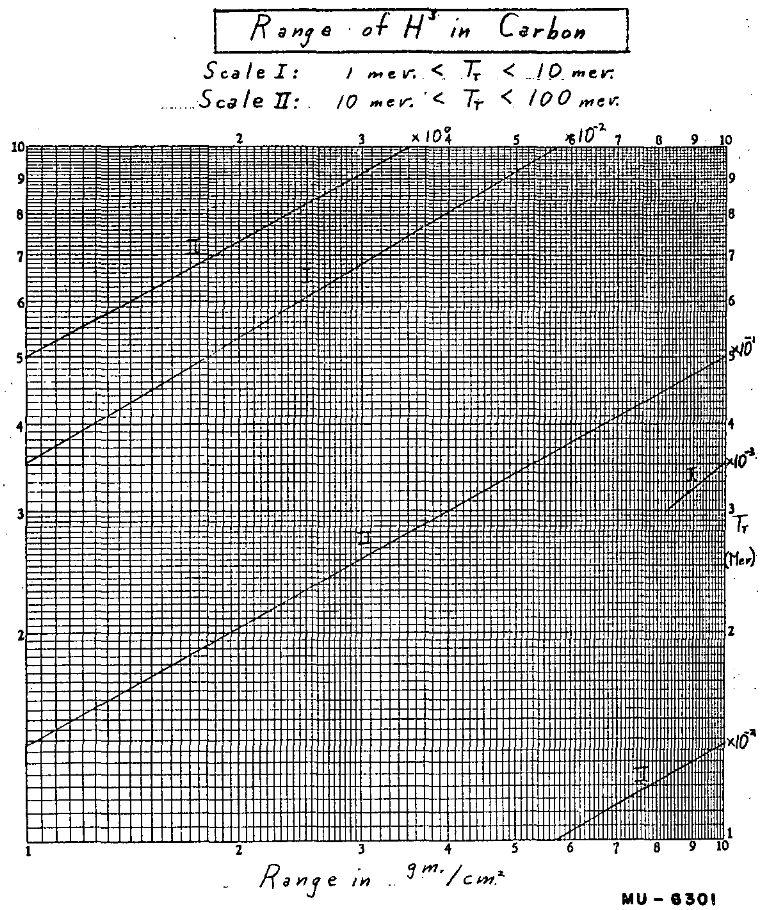
MU-6357

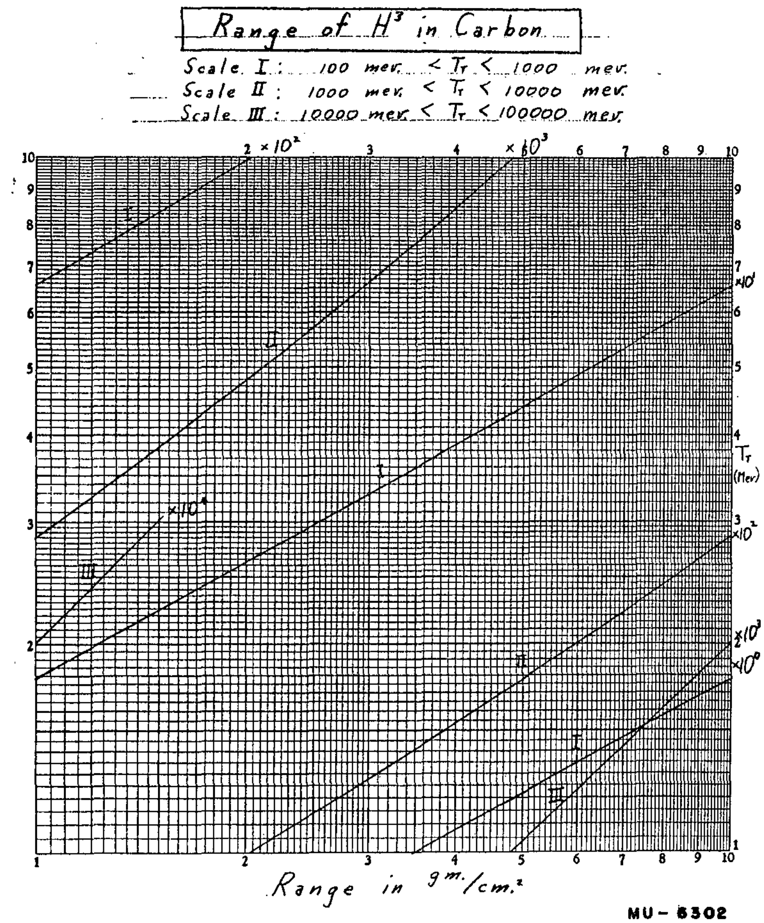


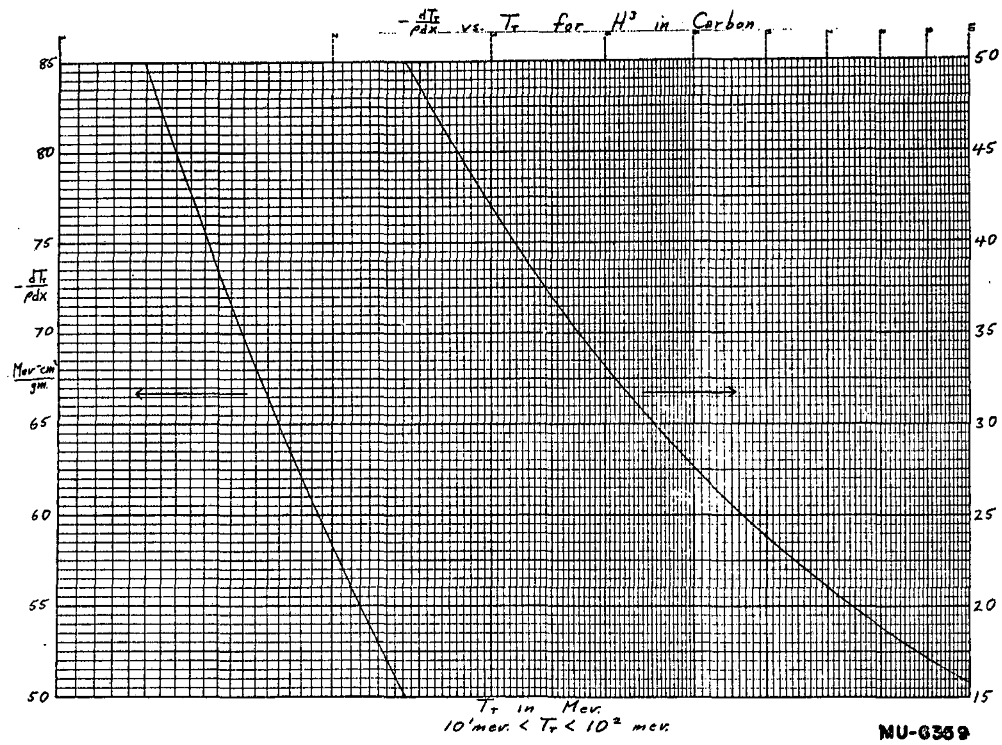
$-\frac{dT_T}{\rho dx}$ vs. T_T for H^3 in Beryllium
$-\frac{dT_T}{\rho dx}$
$\frac{Mev\,cm^2}{gm}$
2.9
2.8
2.7
2.6
2.5
2.4
2.3
2.2
2.2
2.1
2.0
1.9
1.8
1.7
1.
I
II
T_T in Mev
Scale I: 10^3 mev < T_T < 10^4 mev
Scale II: 10^4 mev < T_T < 10^5 mev
MU-6358

RANGE OF H^3 IN CARBON

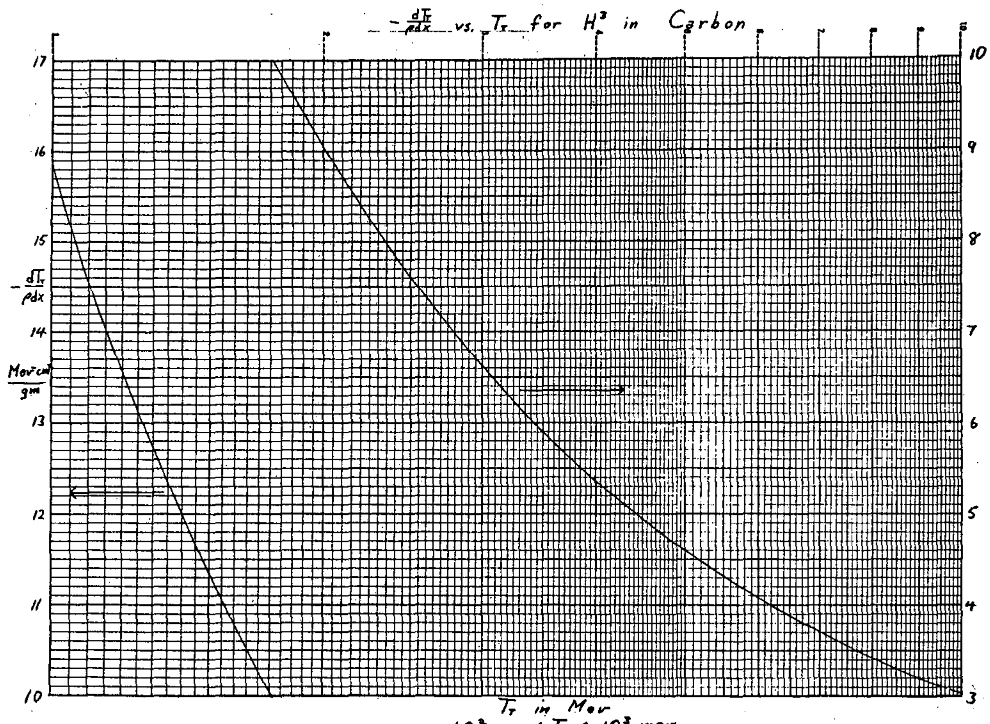
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
2.994	8.262×10^{-3}	241.8
5.987	2.429×10^{-2}	149.7
8.981	4.785	109.8
11.97	7.870	87.58
14.97	1.164×10^{-1}	73.40
17.96	1.604	63.45
20.96	2.107	56.06
23.95	2.671	50.34
26.94	3.296	45.76
29.94	3.979	42.01
35.92	5.519	36.21
41.91	7.284	31.93
47.90	9.268	28.63
53.88	1.146×10^{0}	26.00
59.87	1.387	23.86
89.81	2.891	17.14
119.7	4.869	13.58
149.7	7.292	11.35
179.6	1.014×10^{1}	9.827
209.6	1.338	8.711
239.5	1.700	7.858
269.4	2.099	7.184
299.4	2.533×10^{1}	6.638
449.0	5.182	4.956
598.7	8.545	4.087
748.4	1.248×10^{2}	3.557
898.1	1.693	3.202
1048.0	2.181	2.947
1197.0	2.705	2.757
1497.0	3.851	2.494
1796.0	5.098	2.323
2096.0	6.422	2.205
2395.0	7.808	2.120
2694.0	9.243	2.057
2994.0	1.072×10^{3}	2.010
5987.0	2.642	1.861
8981.0	4.252	1.868
11970.0	5.842	1.900
14970.0	7.402	1.936
17960.0	8.934	1.974
20960.0	1.044×10^{4}	2.005
23950.0	1.192	2.036
26940.0	1.338	2.065
29940.0	1.482	2.091


Range of H^3 in Carbon
Scale I: 1 mev. < T_T < 10 mev.
Scale II: 10 mev. < T_T < 100 mev.
$\times 10^0_4$
$\times 10^{-2}$
$\times 10^{-1}$
$\times 10^{-3}$
$\times 10^{-2}$
T_T (Mev)
I
II
Range in gm./cm.²
MU-6301


Range of H^3 in Carbon
Scale I: 100 mev < T_T < 1000 mev
Scale II: 1000 mev < T_T < 10000 mev
Scale III: 10000 mev < T_T < 100000 mev
T_T (Mev)
Range in gm./cm.²
MU-8302

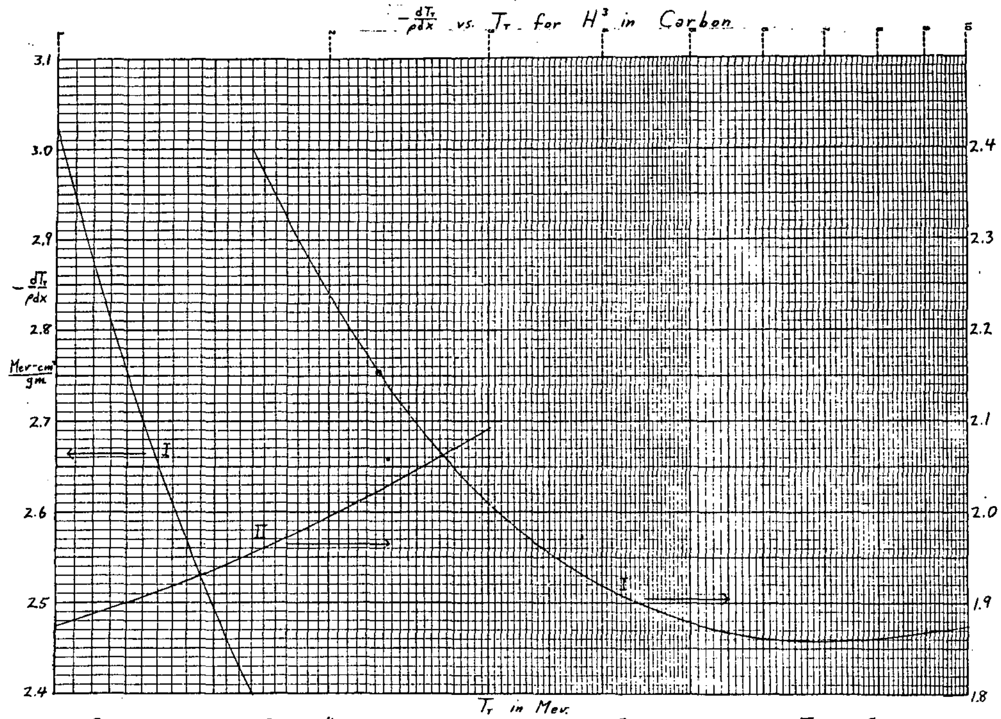

$-\frac{dT_T}{\rho dx}$ vs. T_T for H^3 in Carbon
85
80
75
$-\frac{dT_T}{\rho dx}$
70
$\frac{Mev\text{-}cm^2}{gm.}$
65
60
55
50
50
45
40
35
30
25
20
15
T_T in Mev.
10^1 mev. < T_T < 10^2 mev.

MU-6369


$-\frac{dT_T}{\rho dx}$ vs. T_T for H^3 in Carbon
17
16
15
$-\frac{dT_T}{\rho dx}$
14
Mev cm²/gm
13
12
11
10
10
9
8
7
6
5
4
3
T_T in Mev
10^2 mev < T_T < 10^3 mev

MU-6360

$-\frac{dT_r}{\rho dx}$ vs. T_r for H^3 in Carbon

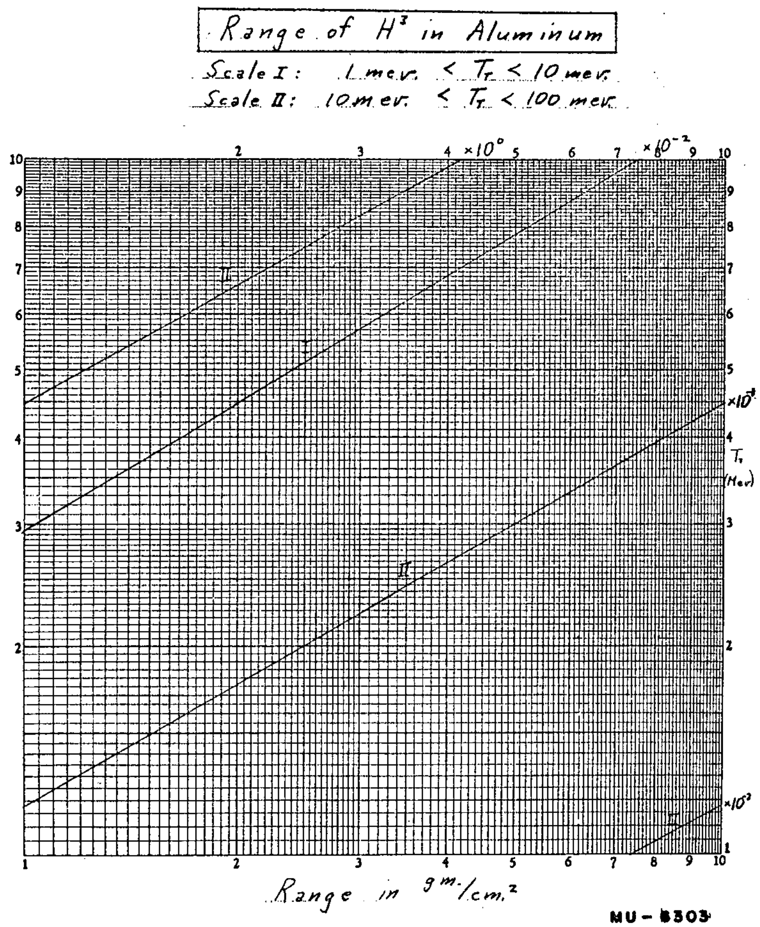


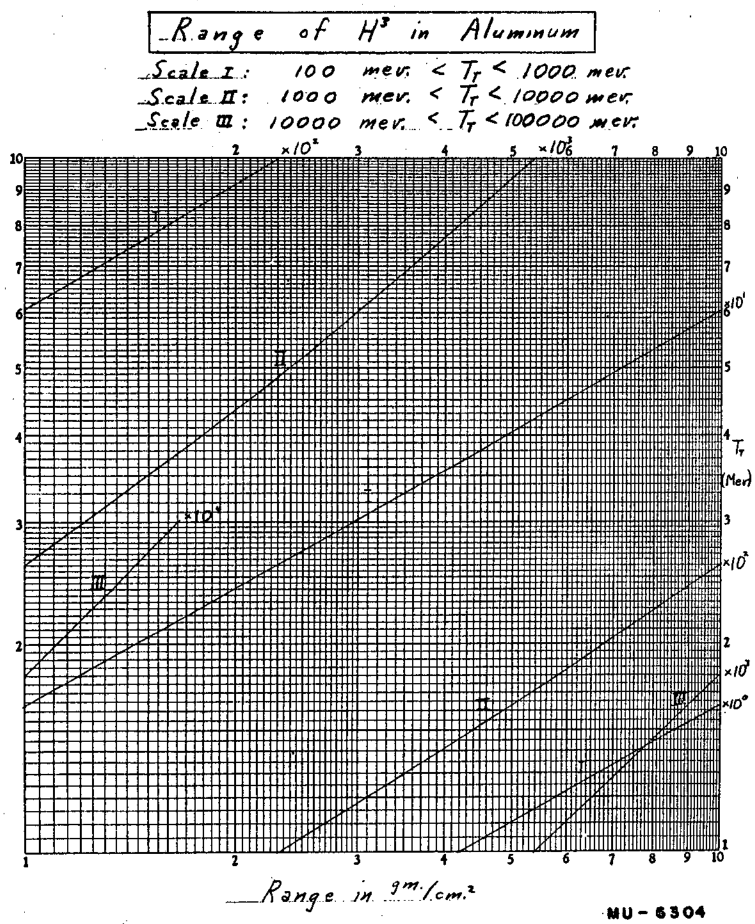
Scale I: 10^3 mev. $< T_r < 10^4$ mev. Scale II: 10^4 mev. $< T_r < 10^5$ mev.

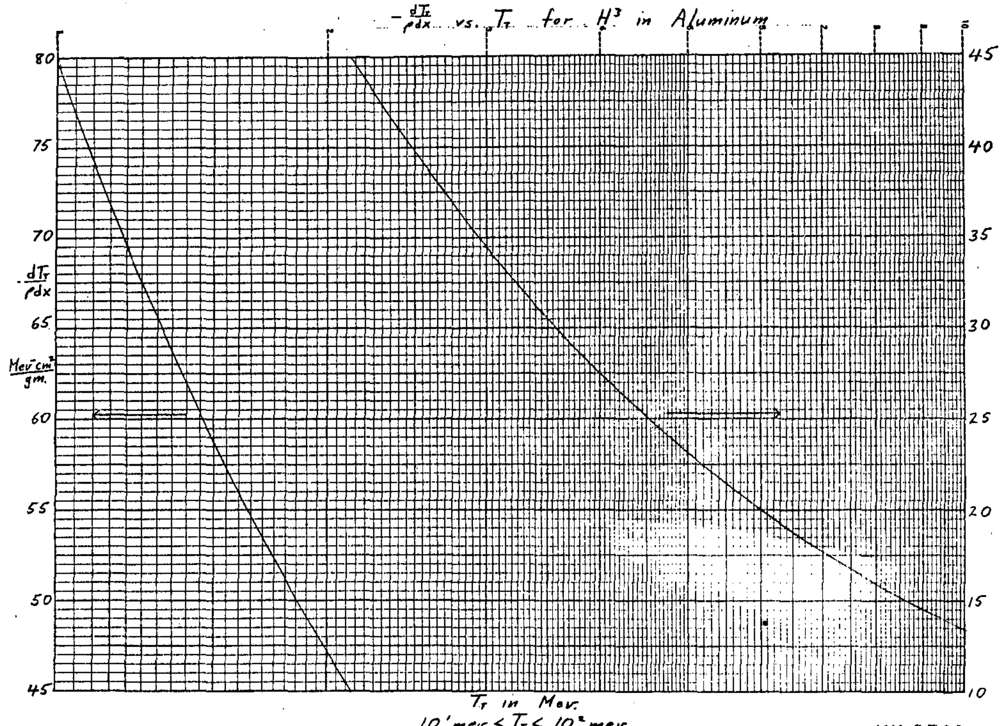
RANGE OF H^3 IN ALUMINUM

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
2.994	1.033×10^{-2}	
4.490	2.003	
5.987	3.233	115.0
7.484	4.670	98.5
8.981	6.287	86.2
11.97	1.033×10^{-1}	69.6
14.97	1.505	58.8
17.96	2.069	51.2
20.96	2.694	45.5
23.95	3.388	41.0
26.94	4.155	37.5
29.94	4.990	34.5
35.92	6.855	29.9
44.90	1.016×10^{0}	25.18
62.87	1.839	19.30
74.84	2.505	16.82
89.81	3.464	14.56
104.8	4.559	12.89
119.7	5.786	11.60
149.7	8.616	9.743
179.6	1.192×10^{1}	8.458
209.6	1.569	7.516
239.5	1.988	6.794
269.4	2.449	6.222
299.4	2.950	5.757

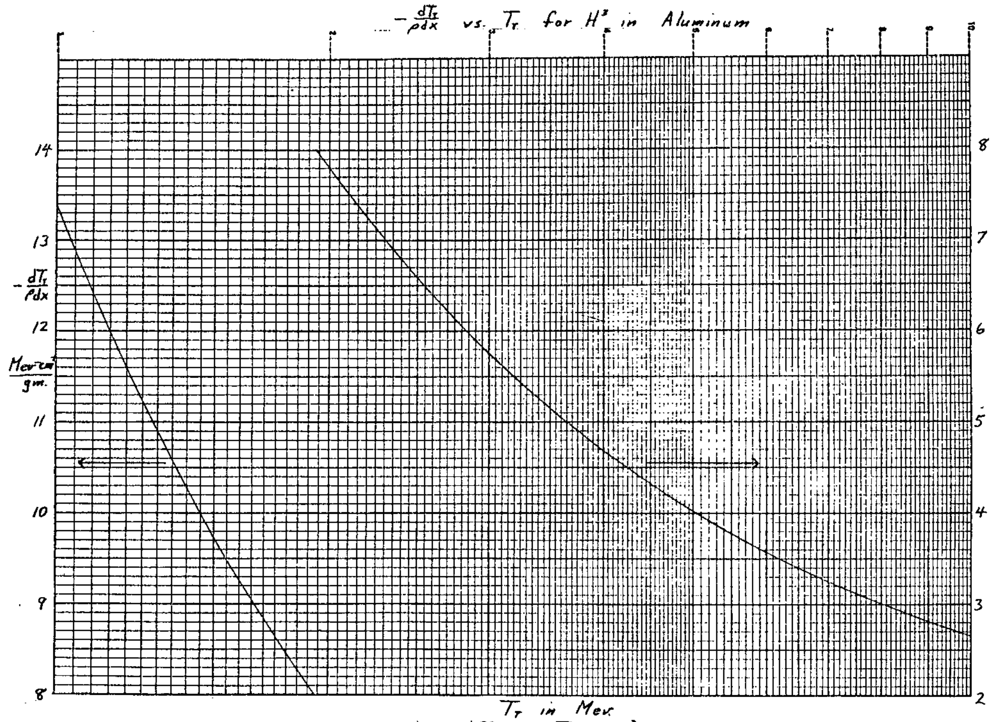
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
359.2	4.065×10^{1}	5.047
479.0	6.705	4.136
598.7	9.831	3.576
748.4	1.433×10^{2}	3.120
898.1	1.940	2.813
1048.0	2.495	2.593
1197.0	3.092	2.428
1497.0	4.392	2.201
1796.0	5.802	2.054
2096.0	7.298	1.952
2395.0	8.864	1.879
2694.0	1.048×10^{3}	1.826
2994.0	1.213	1.785
3742.0	1.642	1.721
4490.0	2.081	1.688
5987.0	2.976	1.664
7484.0	3.876	1.665
8981.0	4.771	1.677
11970.0	6.541	1.710
14970.0	8.271	1.747
17960.0	9.969	1.782
20960.0	1.163×10^{4}	1.815
23950.0	1.326	1.845
26940.0	1.487	1.873
29940.0	1.646	1.898


Range of H^3 in Aluminum
Scale I: 1 mev. < T_T < 10 mev.
Scale II: 10 mev. < T_T < 100 mev.
I
II
T_T (Mev)
Range in gm./cm.^{2}
MU-8303


Range of H^3 in Aluminum
Scale I: 100 mev. < T_T < 1000 mev.
Scale II: 1000 mev. < T_T < 10000 mev.
Scale III: 10000 mev. < T_T < 100000 mev.
T_T (Mev)
Range in gm./cm.²
MU-6304

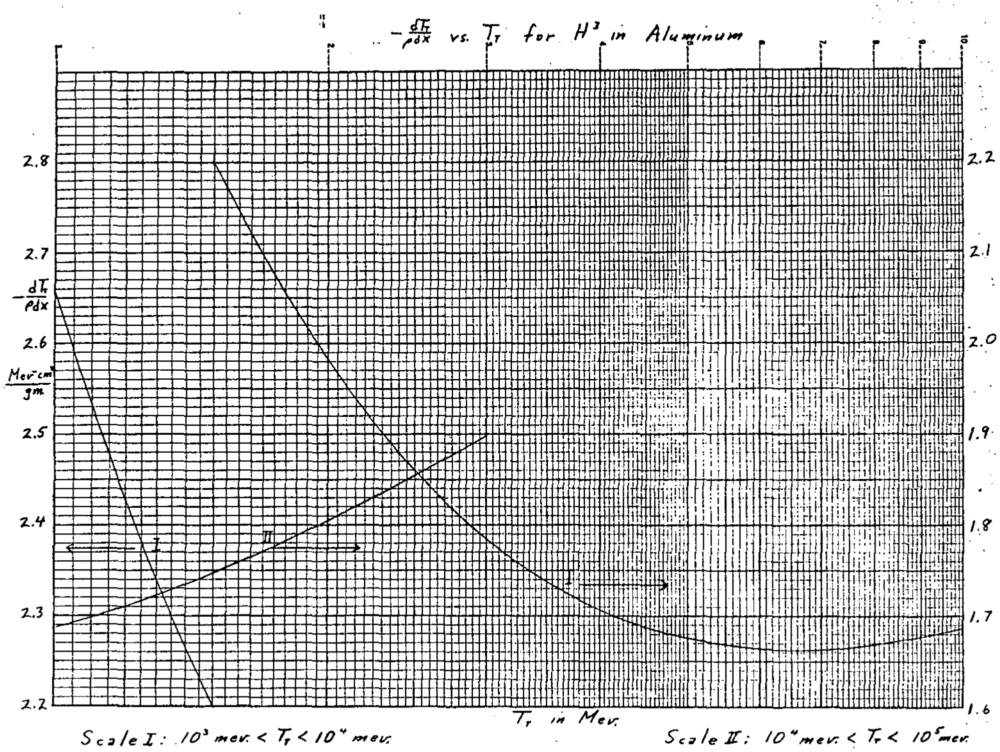

$-\frac{dT_T}{\rho dx}$ vs. T_T for H^3 in Aluminum
80
75
70
$-\frac{dT_T}{\rho dx}$
65
$\frac{Mev\text{-}cm^2}{gm.}$
60
55
50
45
45
40
35
30
25
20
15
10
T_T in Mev.
10^1 mev. < T_T < 10^2 mev.

MU-6362



$-\frac{dT_T}{\rho dx}$ vs. T_T for H^3 in Aluminum
14
13
12
11
10
9
8
$-\frac{dT_T}{\rho dx}$
$\frac{Mev\,cm^2}{gm.}$
8
7
6
5
4
3
2
T_T in Mev
10^2 mev $< T_T <$ 10^3 mev

MU-6363

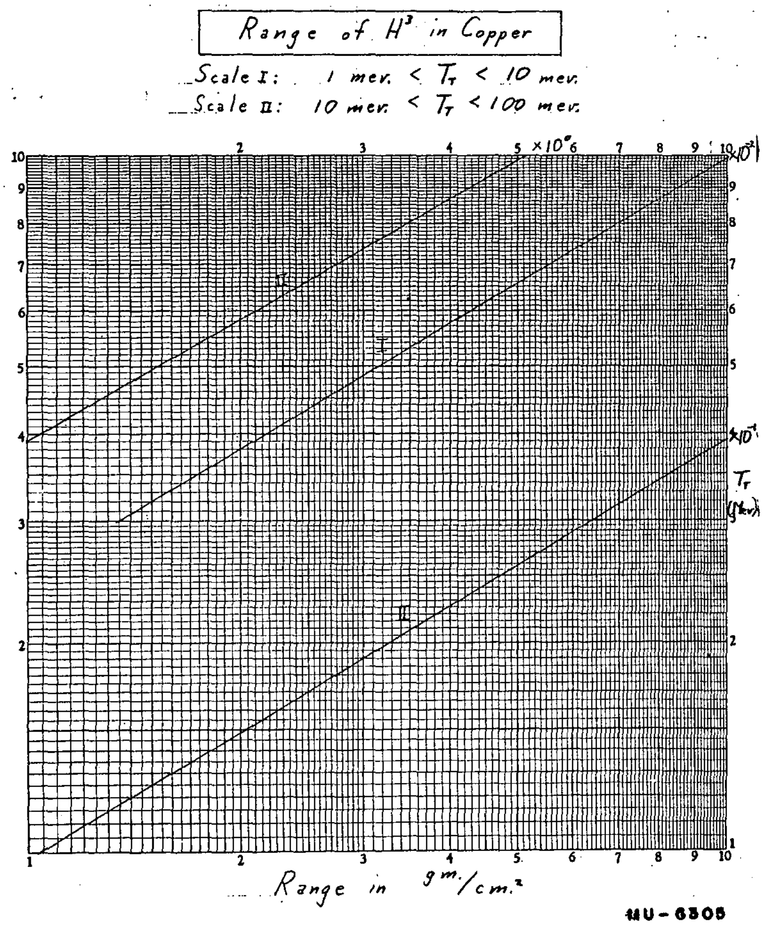

$-\frac{dT_T}{\rho dx}$ vs. T_T for H^3 in Aluminum
2.8
2.7
2.6
2.5
2.4
2.3
2.2
$-\frac{dT_T}{\rho dx}$
$\frac{Mev\,cm^2}{gm}$
2.2
2.1
2.0
1.9
1.8
1.7
1.6
I
II
T_T in Mev.
Scale I: 10^3 mev. < T_T < 10^4 mev.
Scale II: 10^4 mev. < T_T < 10^5 mev.

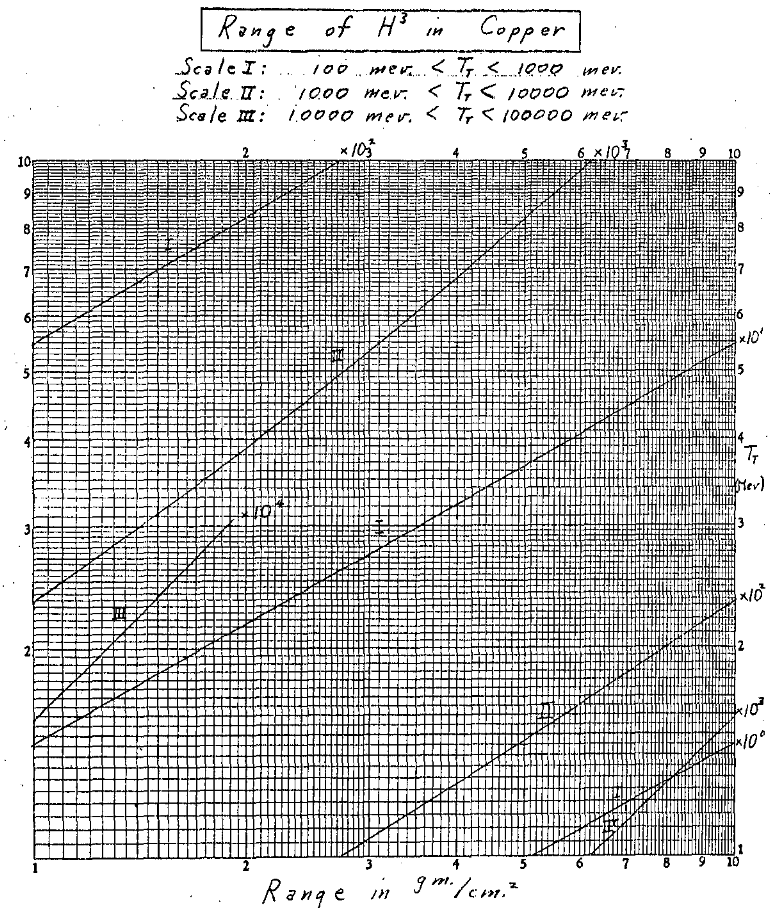
MU-6564

RANGE OF H^3 IN COPPER

T Mev	R gm/cm²	$-\frac{dT}{d\xi}$ Mev-cm²/gm
2.994	1.347×10^{-2}	
5.987	4.281	
8.981	8.502	
11.97	1.397×10^{-1}	
14.97	2.050	46.08
17.96	2.745	40.46
23.95	4.399	32.81
29.94	6.390	27.80
35.92	8.703	24.24
41.91	1.133×10^{0}	21.57
47.90	1.425	19.48
59.87	2.098	16.42
65.86	2.476	15.26
77.83	3.315	13.42
89.81	4.260	12.02
104.8	5.585	10.67
119.7	7.064	9.629
149.7	1.046×10^{1}	8.119
179.6	1.443	7.072
209.6	1.892	6.300
239.5	2.392	5.706
269.4	2.940	5.235
299.4	3.536	4.852
359.2	4.856	4.254
44	7.139	3.661

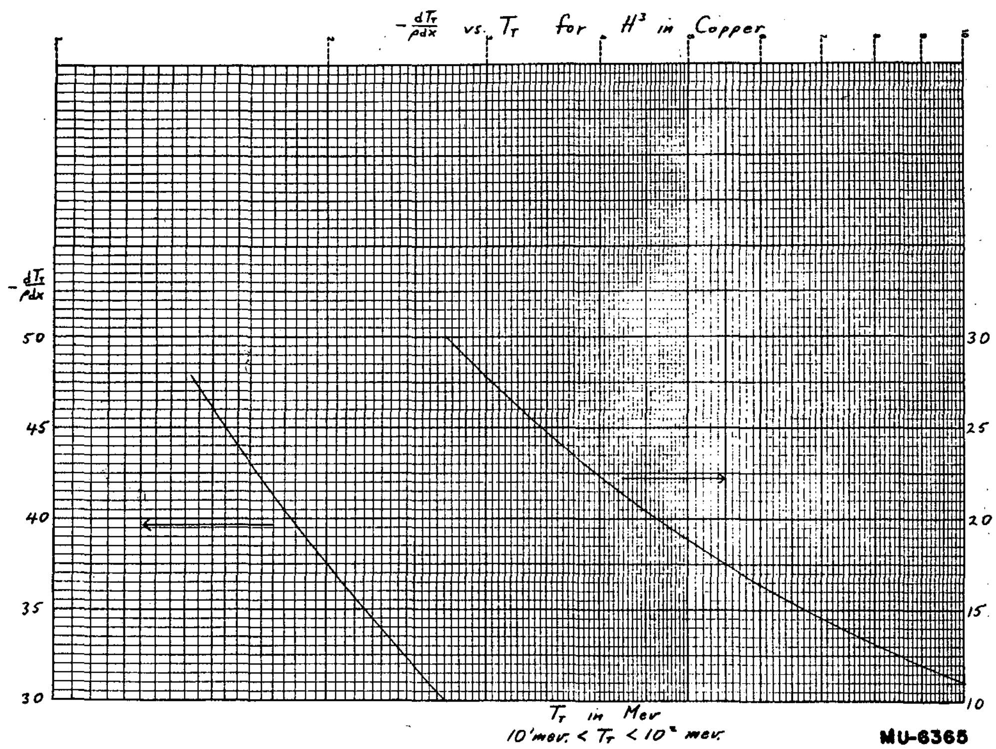
T Mev	R gm/cm²	$-\frac{dT}{d\xi}$ Mev-cm²/gm
598.7	1.165×10^{2}	3.040
748.4	1.694	2.659
898.1	2.288	2.402
1048.0	2.938	2.218
1197.0	3.635	2.081
1497.0	5.150	1.891
1796.0	6.790	1.768
2096.0	8.529	1.683
2395.0	1.034×10^{3}	1.623
2694.0	1.221	1.578
2994.0	1.413	1.545
3592.0	1.807	1.501
4490.0	2.413	1.468
5987.0	3.440	1.452
7484.0	4.470	1.456
8981.0	5.494	1.470
10480.0	6.507	1.486
11970.0	7.508	1.504
14970.0	9.475	1.540
17960.0	1.140×10^{4}	1.574
20950.0	1.328	1.605
23950.0	1.513	1.634
26940.0	1.695	1.661
29940.0	1.874	1.685


Range of H^3 in Copper
Scale I: 1 mev. < T_T < 10 mev.
Scale II: 10 mev. < T_T < 100 mev.
I
II
$\times 10^{-6}$
$\times 10^{-2}$
$\times 10^{-1}$
T_T
Range in gm./cm.^{2}
MU-6305

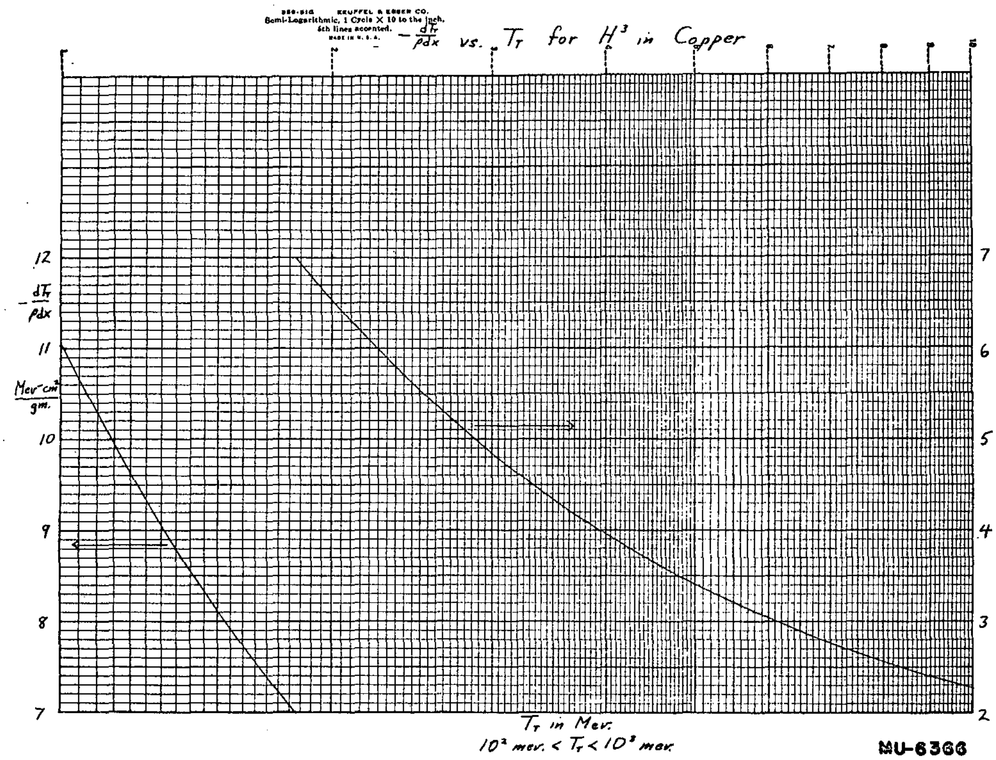


Range of H^3 in Copper
Scale I: 100 mev. < T_T < 1000 mev.
Scale II: 1000 mev. < T_T < 10000 mev.
Scale III: 10000 mev. < T_T < 100000 mev.
T_T (Mev)
Range in gm./cm.²

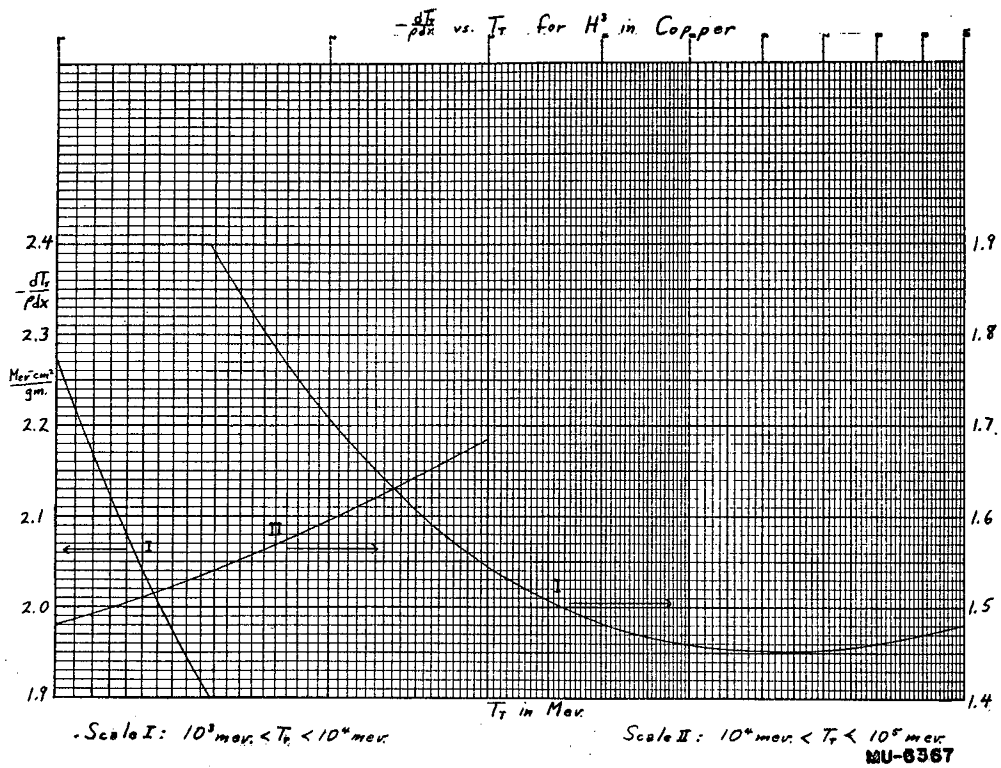
MU-6306


$-\frac{dT_T}{\rho dx}$ vs. T_T for H^3 in Copper
$-\frac{dT_T}{\rho dx}$
50
45
40
35
30
30
25
20
15
10
T_T in Mev
10^1 mev. < T_T < 10^2 mev.

MU-6365


$-\frac{dT_T}{\rho dx}$ vs. T_T for H^3 in Copper
12
$-\frac{dT_T}{\rho dx}$
11
$\frac{Mev\text{-}cm^2}{gm.}$
10
9
8
7
7
6
5
4
3
2
T_T in Mev.
10^2 mev. < T_T < 10^3 mev.

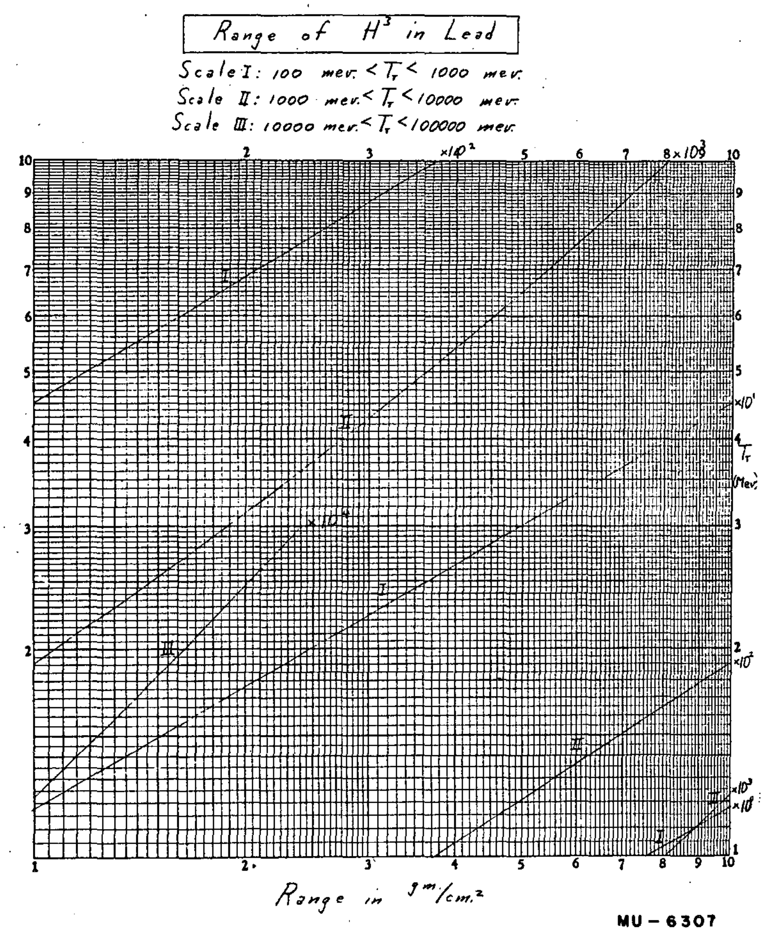
MU-6366

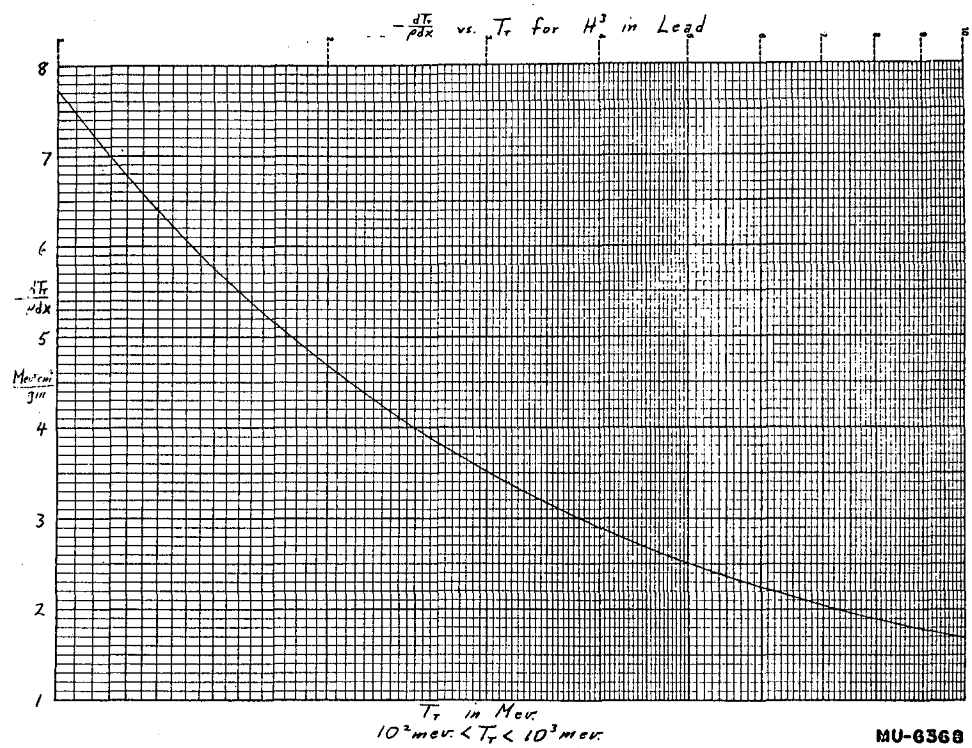

$-\frac{dT_T}{\rho dx}$ vs. T_T for H^3 in Copper
2.4
$-\frac{dT_T}{\rho dx}$
2.3
$\frac{Mev\text{-}cm^2}{gm.}$
2.2
2.1
2.0
1.9
1.9
1.8
1.7
1.6
1.5
1.4
I
II
I
T_T in Mev.
Scale I: 10^3 mev. < T_T < 10^4 mev.
Scale II: 10^4 mev. < T_T < 10^5 mev.
MU-6367

RANGE OF H^3 IN LEAD

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
104.8	8.218×10^0	7.472
119.7	1.032×10^1	6.777
149.7	1.514	5.762
179.6	2.070	5.051
209.6	2.698	4.522
239.5	3.393	4.113
269.4	4.152	3.787
299.4	4.973	3.520
359.2	6.788	3.108
478.9	1.105×10^2	2.575
598.7	1.605	2.243
748.4	2.320	1.971
898.1	3.120	1.787
1048.0	3.991	1.655
1197.0	4.924	1.557
1497.0	6.945	1.420
1796.0	9.126	1.332

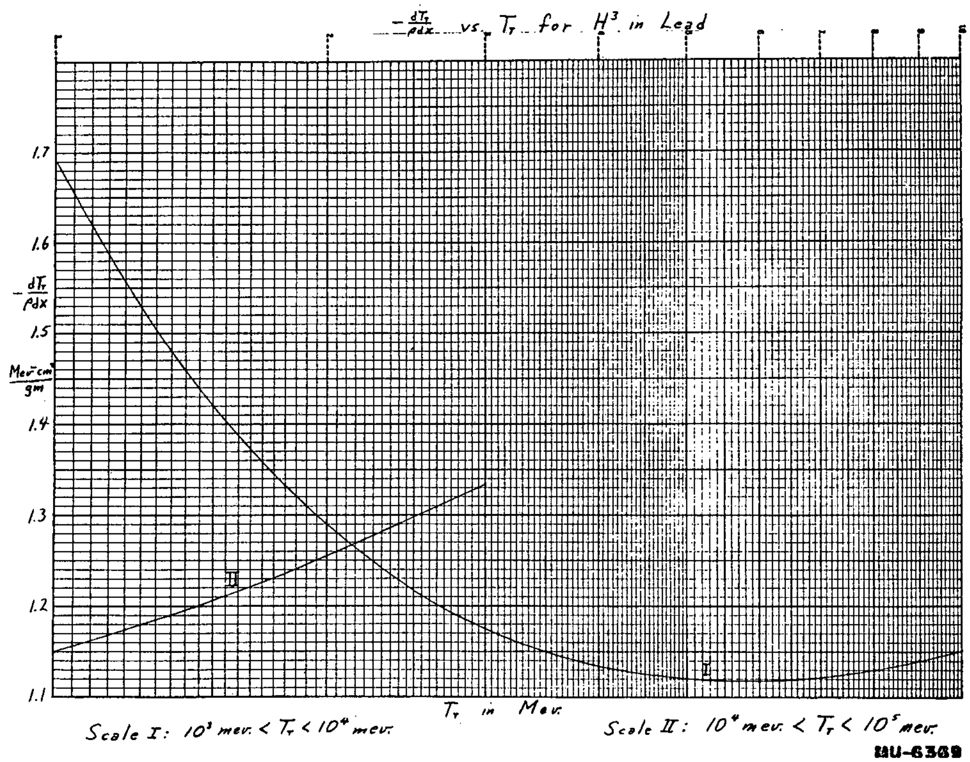
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
2096.0	1.143×10^3	1.272
2395.0	1.382	1.229
2694.0	1.629	1.198
2994.0	1.882	1.175
3592.0	2.398	1.146
4789.0	3.457	1.122
5987.0	4.527	1.118
7484.0	5.861	1.126
8981.0	7.181	1.141
10480.0	8.485	1.157
11970.0	9.769	1.174
14970.0	1.228×10^4	1.206
17960.0	1.474	1.326
20960.0	1.712	1.264
23950.0	1.947	1.290
26940.0	2.177	1.313
29940.0	2.403	1.334


Range of H^3 in Lead
Scale I: 100 mev. < T_r < 1000 mev.
Scale II: 1000 mev. < T_r < 10000 mev.
Scale III: 10000 mev. < T_r < 100000 mev.
T_r (Mev.)
Range in gm/cm.²
MU – 6307



$-\frac{dT_T}{\rho dx}$ vs. T_T for H^3 in Lead
8
7
6
$-\frac{dT_T}{\rho dx}$
5
$\frac{Mev\ cm^2}{gm}$
4
3
2
1
T_T in Mev.
10^2 mev. < T_T < 10^3 mev.

MU-6368

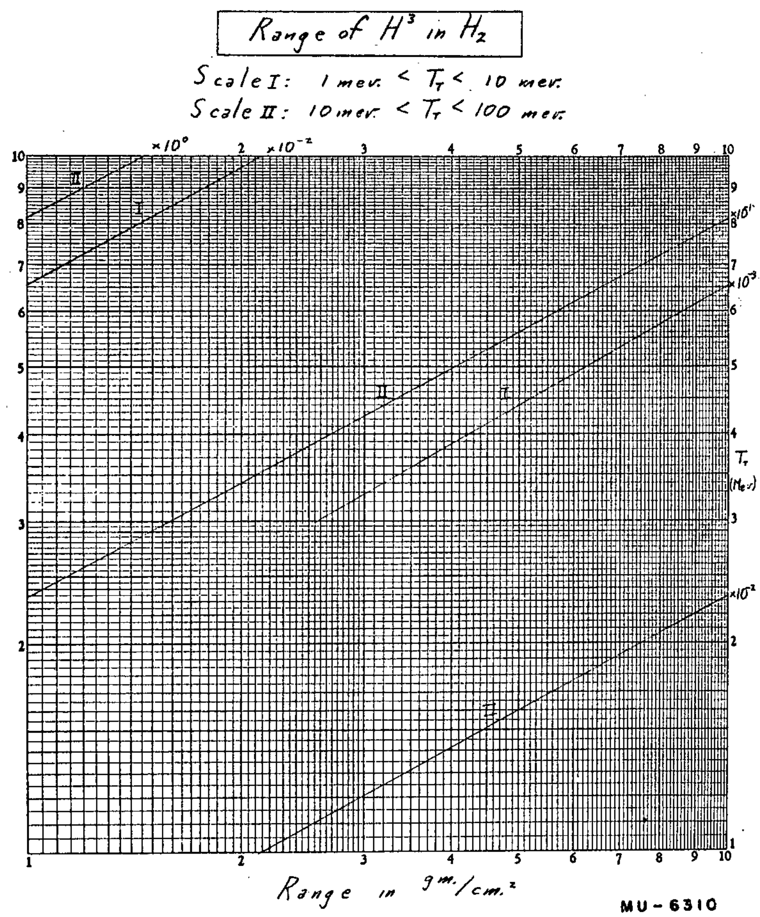


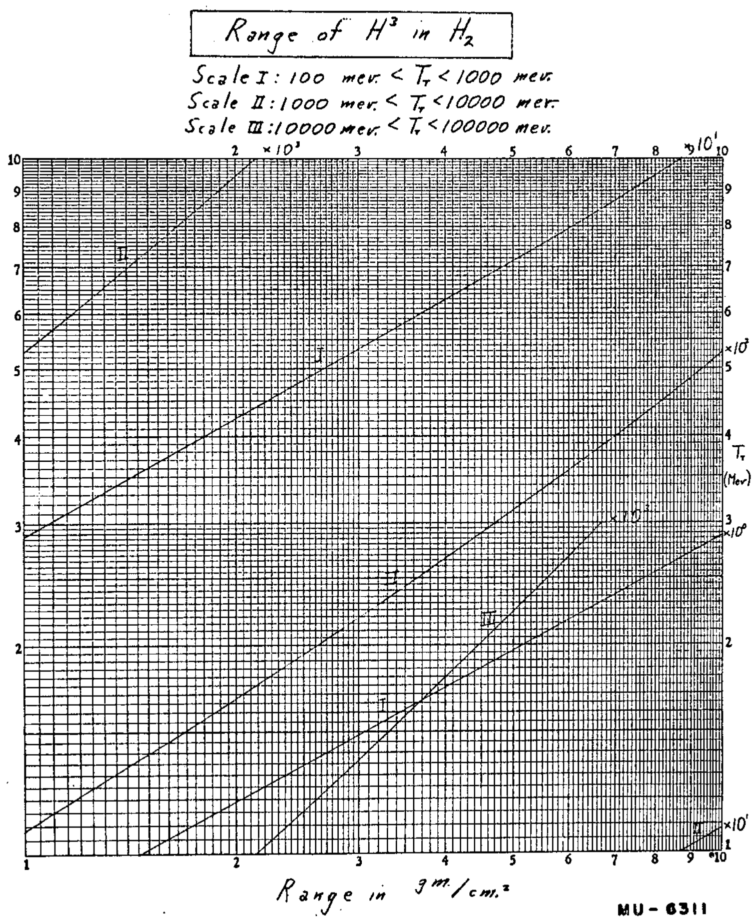
$-\frac{dT_T}{\rho dx}$ vs. T_T for H^3 in Lead
1.7
1.6
$-\frac{dT_T}{\rho dx}$
1.5
$\frac{Mev\text{-}cm^2}{gm}$
1.4
1.3
1.2
1.1
II
I
T_T in Mev.
Scale I: 10^3 mev. < T_T < 10^4 mev.
Scale II: 10^4 mev. < T_T < 10^5 mev.
MU-6369

RANGE OF H^3 IN H_2

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
2.994	2.557×10^{-3}	690.7
8.981	1.762×10^{-2}	283.4
14.97	4.440	185.2
17.96	6.190	159.0
20.96	8.205	139.6
23.95	1.048×10^{-1}	124.8
26.94	1.300	112.9
29.94	1.578	103.3
35.92	2.206	88.54
41.91	2.929	77.71
47.90	3.746	69.41
53.88	4.654	62.83
59.87	5.651	57.48
89.81	1.193×10^{0}	40.87
119.7	2.026	32.17
149.7	3.050	26.78
179.6	4.259	23.09
209.6	5.641	20.41
239.5	7.189	18.37
269.4	8.898	16.76
299.4	1.076×10^{1}	15.46

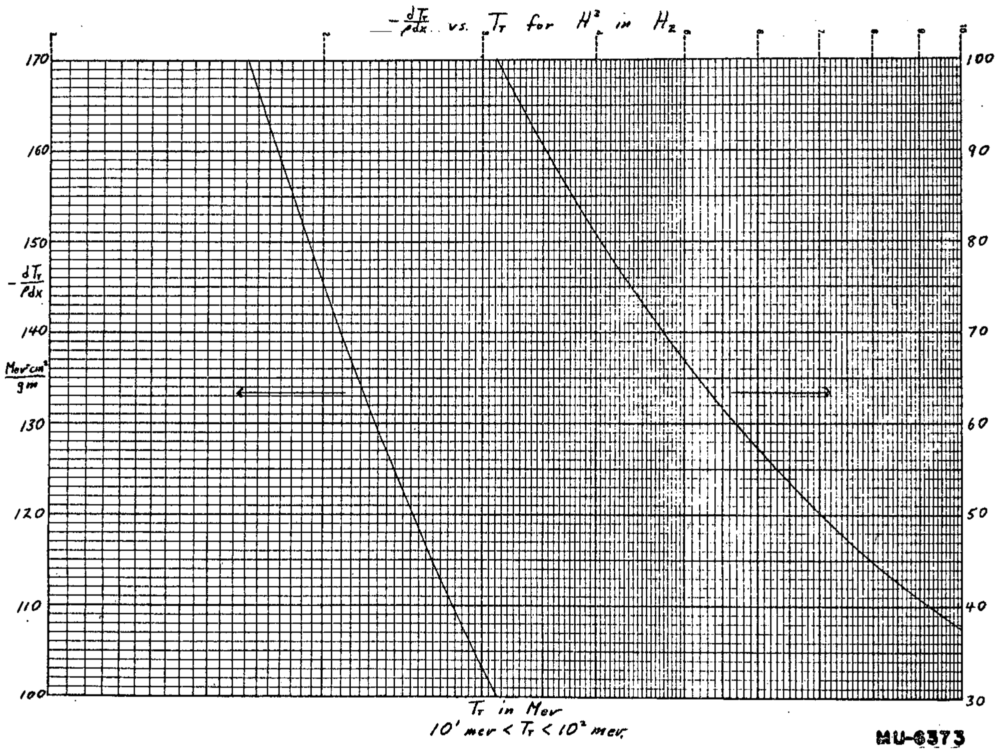
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
598.7	3.669×10^{1}	9.418
748.4	5.382	8.172
898.1	7.322	7.337
1048.0	9.454	6.740
1197.0	1.176×10^{2}	6.295
1497.0	1.679	5.678
1796.0	2.227	5.277
2096.0	2.811	4.999
2395.0	3.422	4.798
2694.0	4.057	4.649
2994.0	4.709	4.536
5987.0	1.171×10^{3}	4.159
8981.0	1.893	4.150
11970.0	2.610	4.205
14970.0	3.316	4.272
17960.0	4.009	4.340
20960.0	4.694	4.404
23950.0	5.369	4.464
26940.0	6.035	4.520
29940.0	6.694	4.572


Range of H^3 in H_2
Scale I: 1 mev. < T_T < 10 mev.
Scale II: 10 mev. < T_T < 100 mev.
$\times 10^0$
$\times 10^{-2}$
$\times 10^1$
$\times 10^3$
$\times 10^2$
T_T (Mev)
Range in gm./cm.^{2}
MU-6310



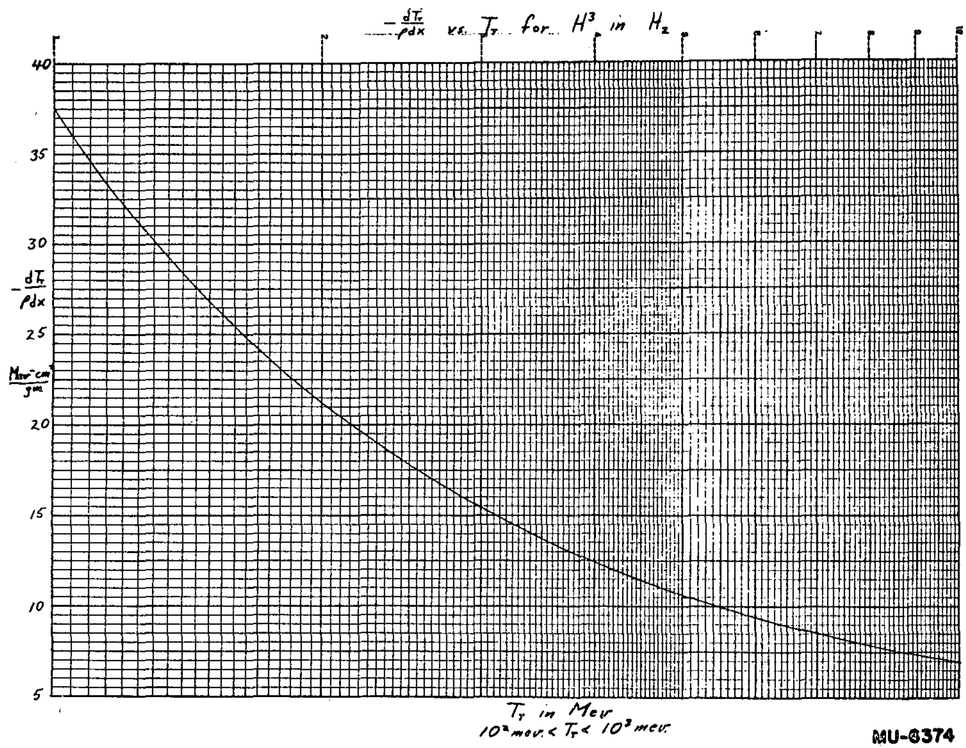
Range of H^3 in H_2
Scale I: 100 mev. < T_T < 1000 mev.
Scale II: 1000 mev. < T_T < 10000 mev.
Scale III: 10000 mev. < T_T < 100000 mev.
T_T (Mev)
Range in gm./cm.²

MU-6311



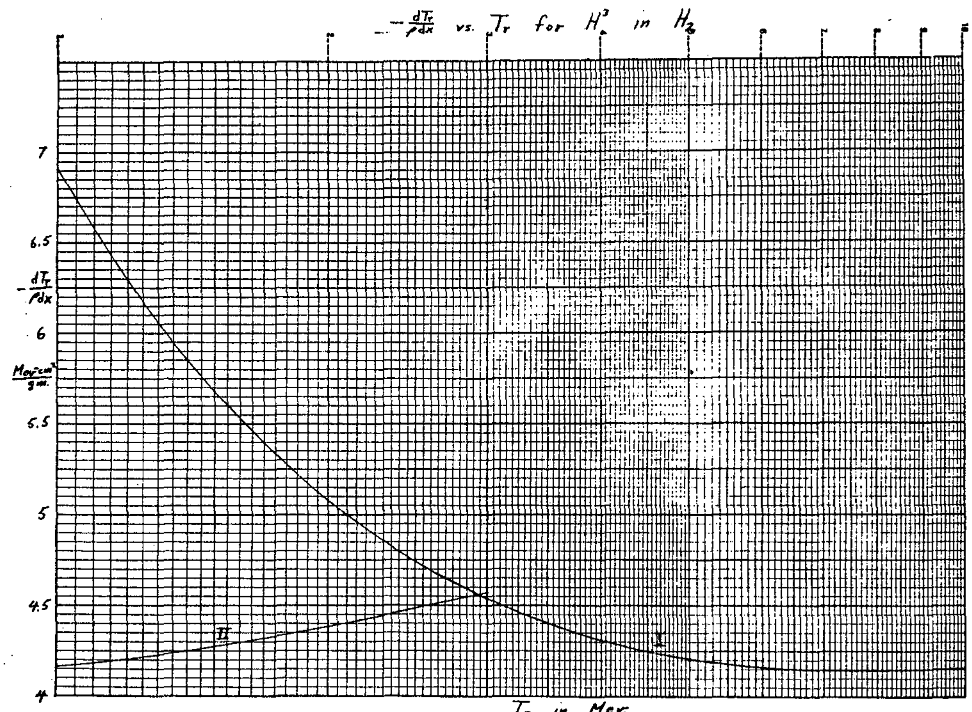
$-\frac{dT_\tau}{\rho dx}$ vs. T_τ for H^2 in H_2
170
160
150
$-\frac{dT_\tau}{\rho dx}$
140
$\frac{\text{Mev cm}^2}{\text{gm}}$
130
120
110
100
100
90
80
70
60
50
40
30
T_τ in Mev
10^1 mev < T_τ < 10^2 mev

MU-6373



$-\frac{dT_T}{\rho dx}$ vs. T_T for H^3 in H_2
40
35
30
$-\frac{dT_T}{\rho dx}$
25
$\frac{Mev\text{-}cm^2}{gm}$
20
15
10
5
T_T in Mev
10^2 mev. < T_T < 10^3 mev.

MU-8374



Scale I: 10^3 mev. < T_r < 10^4 mev.

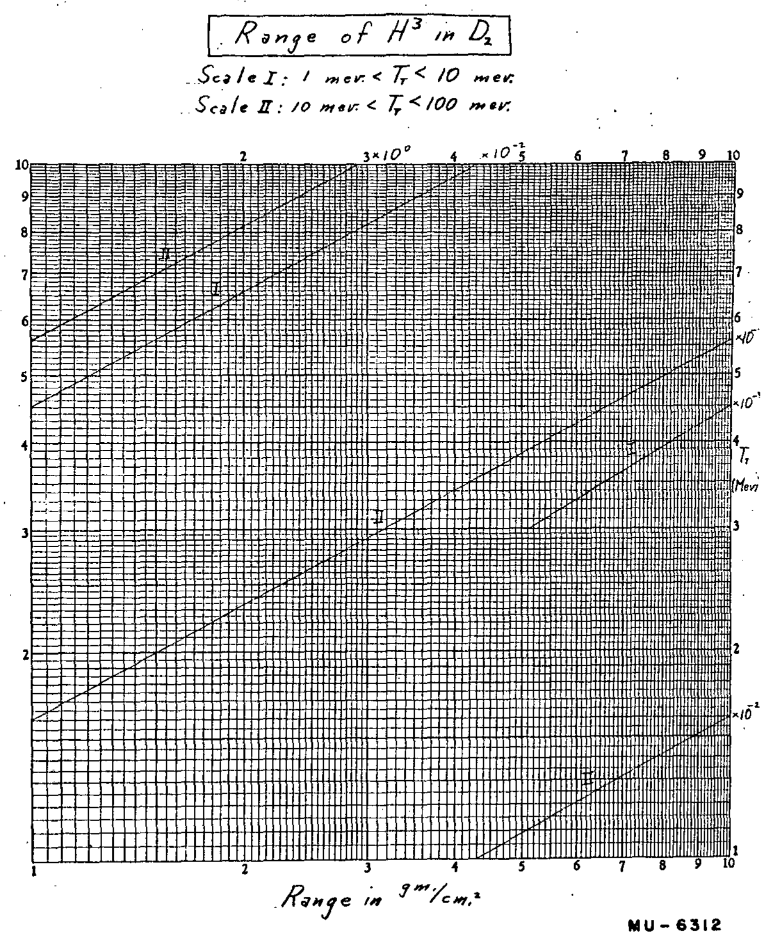
Scale II: 10^4 mev. < T_r < 10^5 mev.

MU-6375

RANGE OF H^3 IN D_2

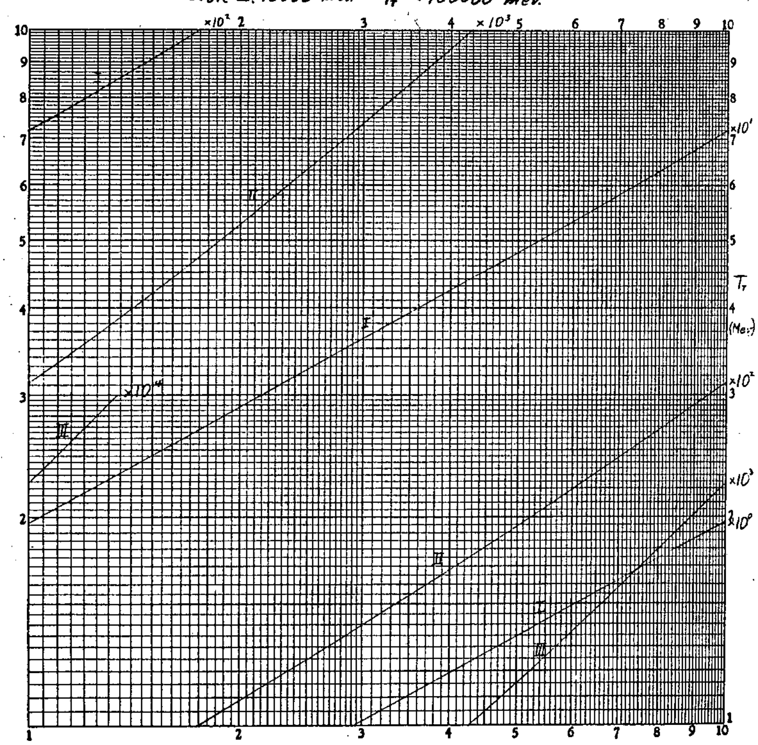
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
2.994	5.110×10^{-3}	345.6
8.981	3.520×10^{-2}	141.8
14.97	8.875	92.69
17.96	1.237×10^{-1}	79.54
20.96	1.640	69.86
23.95	2.094	62.42
26.94	2.602	56.51
29.94	3.152	51.70
35.92	4.409	44.30
41.91	5.854	38.88
47.90	7.486	34.73
53.88	9.301	31.44
59.87	1.129×10^{0}	28.76
89.81	2.384	20.45
119.7	4.048	16.10
149.7	6.097	13.40
179.6	8.511	11.56
209.6	1.127×10^{1}	10.21
239.5	1.437	9.191
269.4	1.778	8.386
299.4	2.150	7.735

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
598.7	7.333×10^{1}	4.712
748.4	1.076×10^{2}	4.089
898.1	1.463	3.671
1048.0	1.889	3.373
1197.0	2.349	3.150
1497.0	3.355	2.841
1796.0	4.450	2.640
2096.0	5.618	2.501
2395.0	6.839	2.401
2694.0	8.107	2.326
2994.0	9.410	2.270
5987.0	2.339×10^{3}	2.081
8981.0	3.782	2.077
11970.0	5.216	2.104
14970.0	6.627	2.138
17960.0	8.012	2.172
20960.0	9.381	2.204
23950.0	1.072×10^{4}	2.234
26940.0	1.206	2.262
29940.0	1.338	2.288

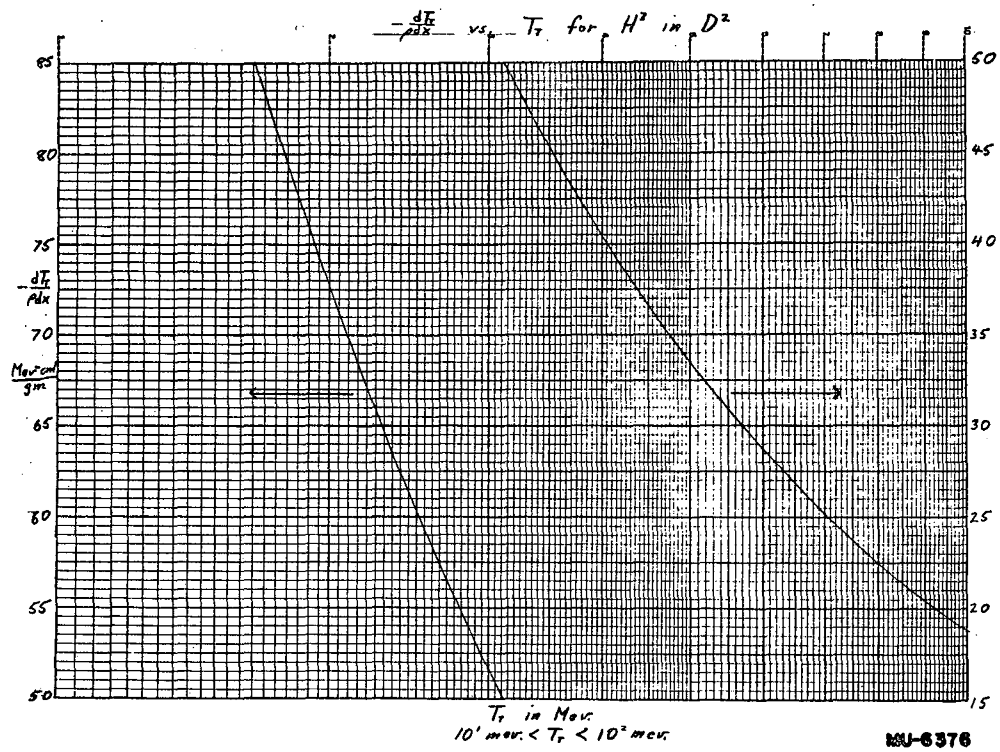

Range of H^3 in D_2
Scale I: 1 mev. < T_T < 10 mev.
Scale II: 10 mev. < T_T < 100 mev.
II
I
3×10^0
$\times10^{-2}$
$\times10$
$\times10^{-1}$
$\times10^{-2}$
T_T (Mev)
Range in gm./cm.^{2}
MU-6312

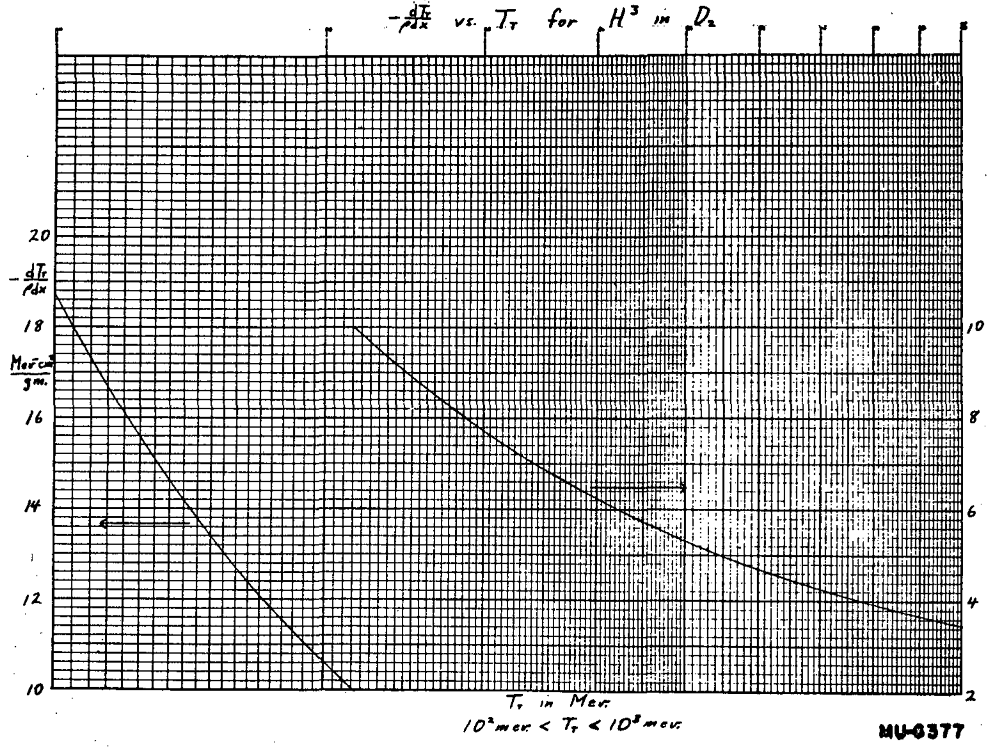
Range of H^3 in D_2

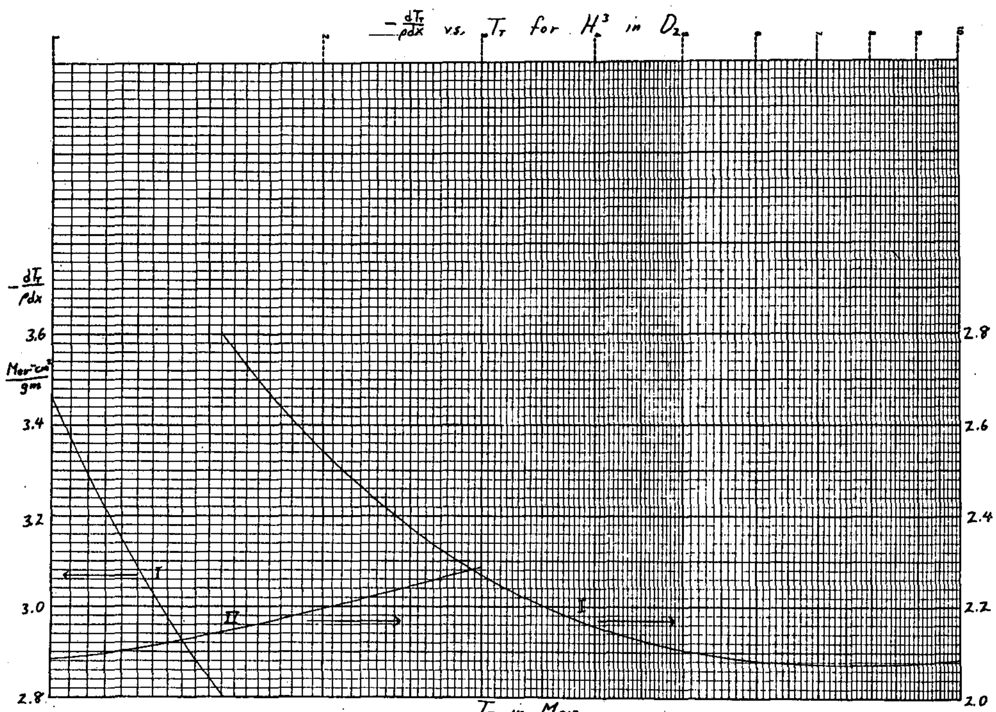
Scale I: 100 mev. < T_T < 1000 mev.
Scale II: 1000 mev. < T_T < 10000 mev.
Scale III: 10000 mev. < T_T < 100000 mev.



MU-6313


$-\frac{dT_T}{\rho dx}$ vs. T_T for H^3 in D^2
85
80
75
70
65
60
55
50
$-\frac{dT_T}{\rho dx}$
$\frac{Mev\text{-}cm^2}{gm}$
50
45
40
35
30
25
20
15
T_T in Mev.
10^1 mev. < T_T < 10^2 mev.
MU-6376


$-\frac{dT_T}{\rho dx}$ vs. T_T for H^3 in D_2
20
$-\frac{dT_T}{\rho dx}$
18
$\frac{Mev\,cm^2}{gm.}$
16
14
12
10
10
8
6
4
2
T_T in Mev.
10^2 mev. < T_T < 10^3 mev.
MU-8377



Scale I : 10^3 mev. $< T_T < 10^4$ mev.   Scale II: 10^4 mev. $< T_T < 10^5$ mev.

MU-8378

RANGE OF H^3 IN AIR

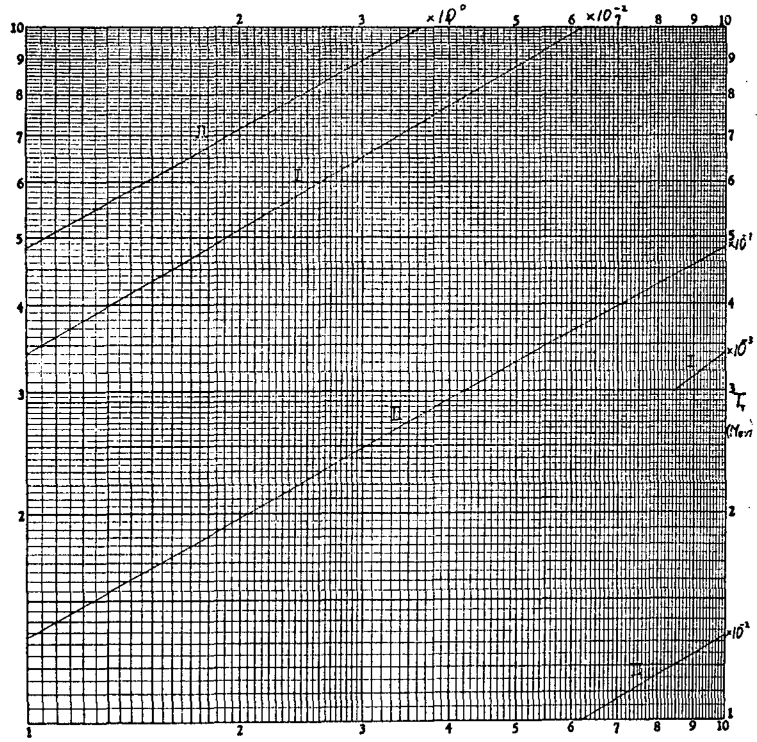
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
2.994	8.442×10^{-3}	
5.987	2.604×10^{-2}	
8.981	5.176	102.0
11.97	8.478	81.73
14.97	1.239×10^{-1}	68.68
17.96	1.707	59.38
20.96	2.230	51.71
23.95	2.833	46.00
26.94	3.473	42.09
29.94	4.203	38.82
35.92	5.811	33.93
44.90	8.753	29.15
62.87	1.589×10^{0}	22.19
74.84	2.169	19.28
89.81	3.006	16.64
104.8	3.966	14.69
119.7	5.041	13.19
149.7	7.535	11.03
179.6	1.046×10^{1}	9.568
209.6	1.378	8.483
239.5	1.750	7.662
269.4	2.159	7.010
299.4	2.604	6.479
359.2	3.595	5.669

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
479.0	5.948×10^{1}	4.631
598.7	8.747	3.996
748.4	1.277×10^{2}	3.479
898.1	1.733	3.132
1048.0	2.231	2.876
1197.0	2.769	2.698
1497.0	3.937	2.442
1796.0	5.211	2.275
2096.0	6.562	2.161
2395.0	7.978	2.077
2694.0	9.439	2.016
2994.0	1.094×10^{3}	1.971
3742.0	1.482	1.896
4490.0	1.881	1.857
5987.0	2.695	1.827
7484.0	3.514	1.825
8981.0	4.335	1.835
11970.0	5.951	1.868
14970.0	7.538	1.904
17960.0	9.098	1.940
20960.0	1.062×10^{4}	1.973
23950.0	1.213	2.004
26940.0	1.362	2.033
29940.0	1.508	2.059

Range of H^3 in Air

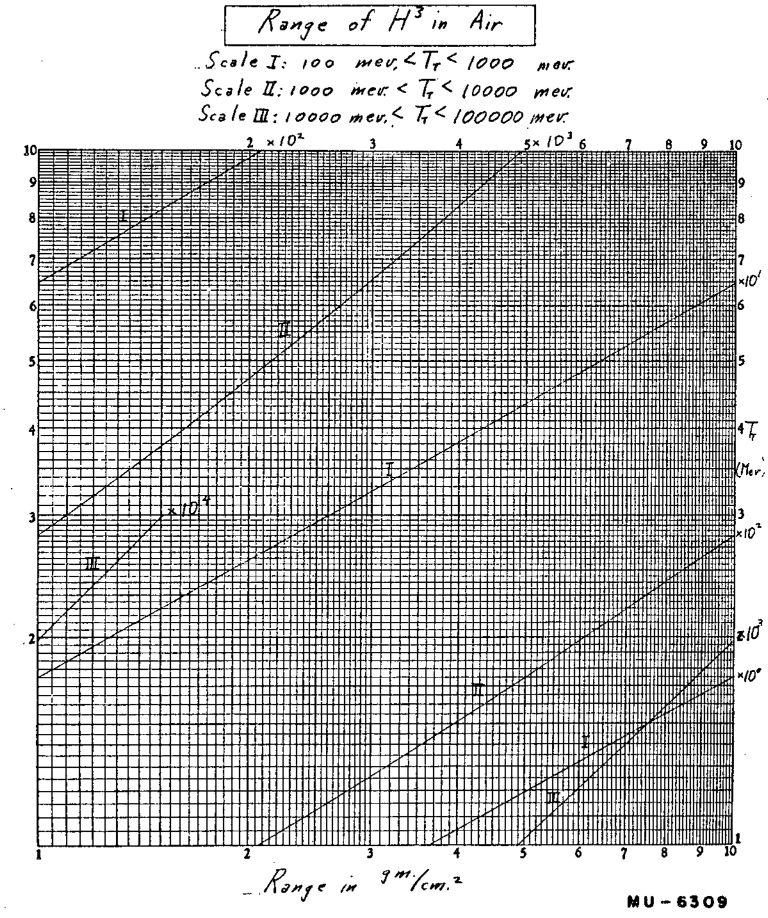
Scale I: $1 \text{ mev.} < T_T < 10 \text{ mev.}$

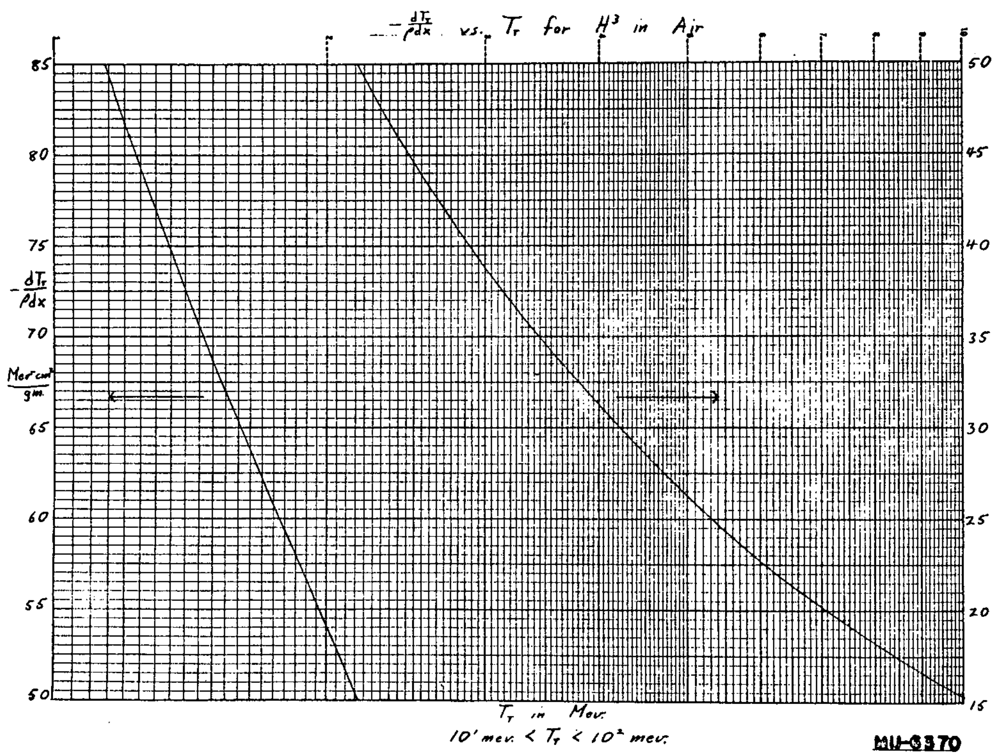
Scale II: $10 \text{ mev.} < T_T < 100 \text{ mev.}$



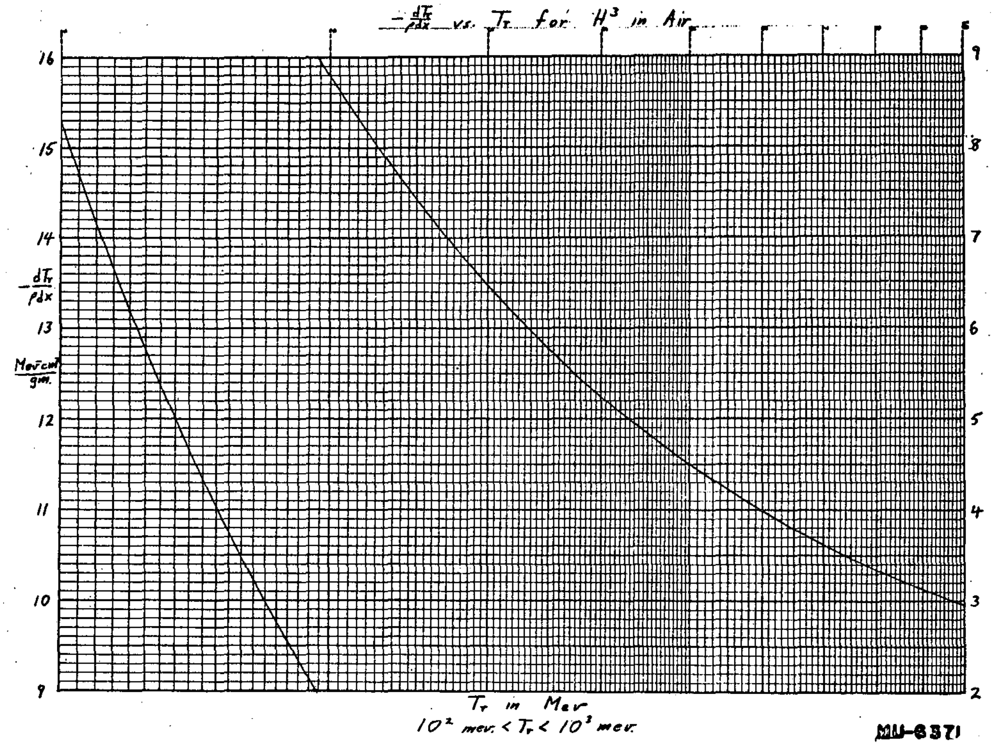
Range in gm./cm.²

MU-6308


Range of H^3 in Air
Scale I: 100 mev. < T_T < 1000 mev.
Scale II: 1000 mev. < T_T < 10000 mev.
Scale III: 10000 mev. < T_T < 100000 mev.
T_T (Mev.)
Range in gm./cm.²
MU-6309


$-\frac{dT_T}{\rho dx}$ vs. T_T for H^3 in Air
85
80
75
$-\frac{dT_T}{\rho dx}$
70
$\frac{Mev\ cm^2}{gm.}$
65
60
55
50
50
45
40
35
30
25
20
15
T_T in Mev.
10^1 mev. < T_T < 10^2 mev.

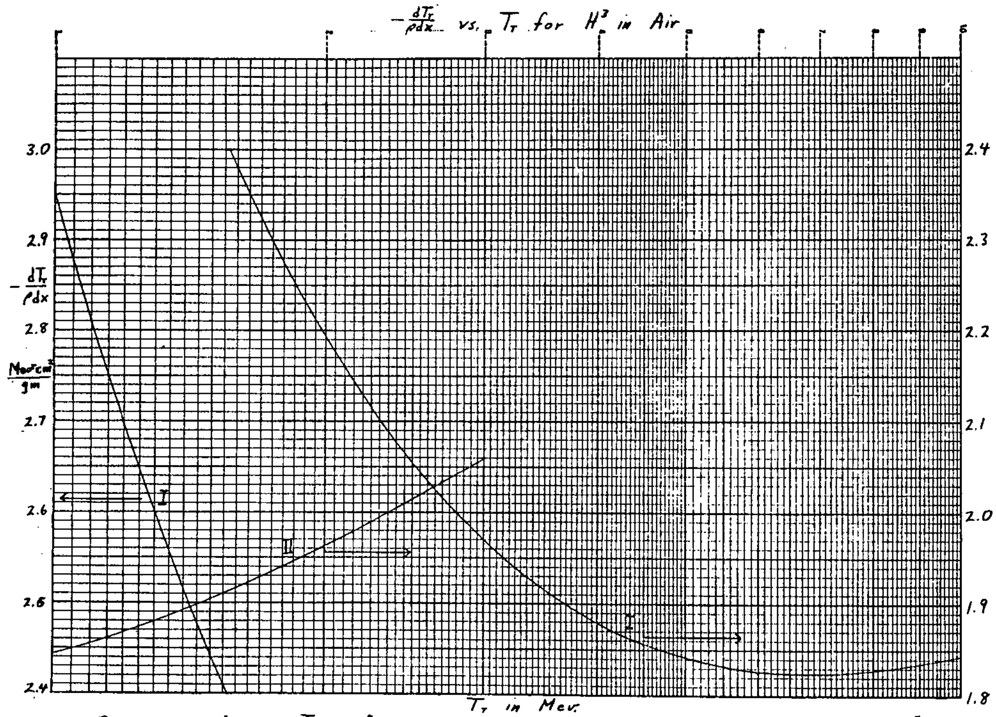
MU-6370



$-\frac{dT_r}{\rho dx}$ vs. T_r for H^3 in Air
16
15
14
$-\frac{dT_r}{\rho dx}$
13
$\frac{Mev\,cm^2}{gm.}$
12
11
10
9
9
8
7
6
5
4
3
2
T_r in Mev
10^2 mev. < T_r < 10^3 mev.

MU-6371

$-\frac{dT_T}{\rho dx}$ vs. T_T for H^3 in Air



Scale I: 10^3 mev. < T_T < 10^4 mev.

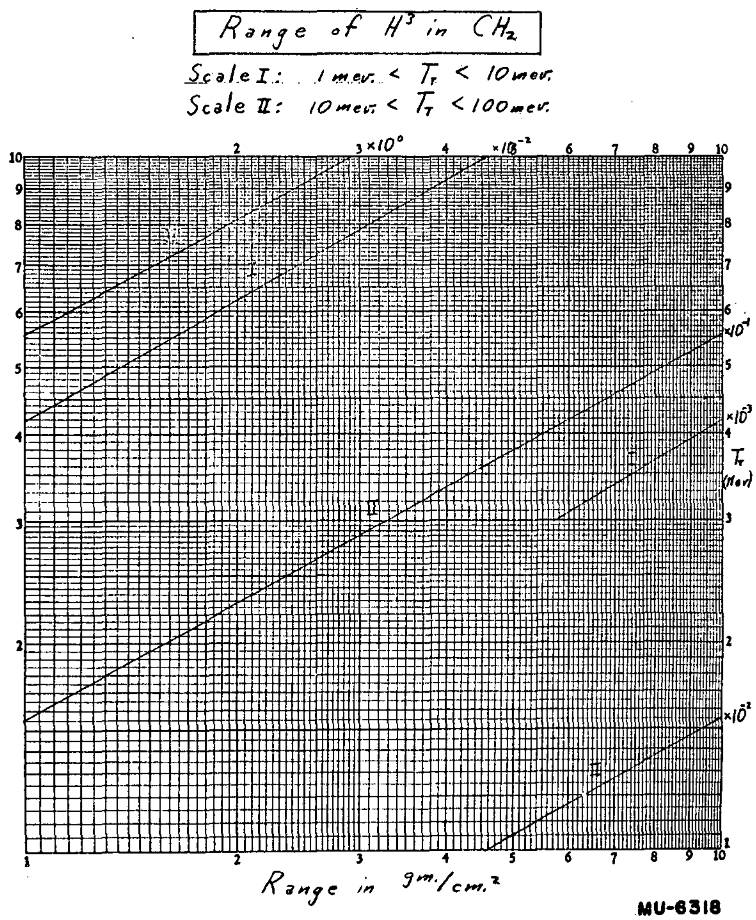
Scale II: 10^4 mev. < T_T < 10^5 mev.

MU-6572

RANGE OF H^3 IN CH_2

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
2.994	5.720×10^{-3}	305.9
5.987	1.874×10^{-2}	184.8
8.981	3.797	134.6
11.97	6.313	107.0
14.97	9.387	89.37
17.96	1.300×10^{-1}	77.10
20.96	1.715	68.00
23.95	2.181	60.97
26.94	2.696	55.36
29.94	3.261	50.77
35.92	4.537	43.69
44.90	6.802	36.34
59.87	1.148×10^{0}	28.66
74.84	1.723	23.84
89.81	2.402	20.53
104.8	3.180	18.10
119.7	4.055	16.23
149.7	6.083	13.56
179.6	8.466	11.72
209.6	1.118×10^{1}	10.38
239.5	1.423	9.360
269.4	1.757	8.552
299.4	2.122	7.898
374.2	3.156	6.700

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
449.0	4.352×10^{1}	5.886
598.7	7.174	4.849
748.4	1.050×10^{2}	4.217
898.1	1.426	3.792
1048	1.838	3.489
1197.0	2.281	3.262
1497.0	3.250	2.949
1796.0	4.305	2.745
2096.0	5.426	2.604
2395.0	6.599	2.503
2694.0	7.815	2.428
2994.0	9.064	2.371
4490.0	1.559×10^{3}	2.229
5987.0	2.240	2.189
7484.0	2.923	2.184
8981.0	3.609	2.194
10480.0	4.287	2.210
11970.0	4.963	2.229
14970.0	6.294	2.270
17960.0	7.600	2.312
20960.0	8.885	2.348
23950.0	1.015×10^{4}	2.383
26940.0	1.140	2.415
29940.0	1.263	2.445

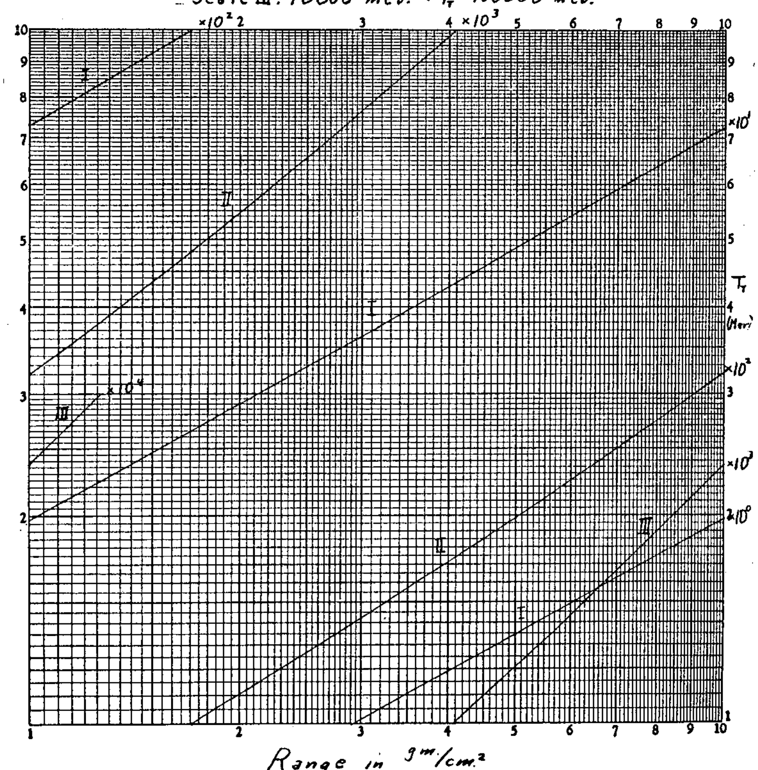

Range of H^3 in CH_2
Scale I: 1 mev. < T_T < 10 mev.
Scale II: 10 mev. < T_T < 100 mev.
T_T (Mev)
Range in gm./cm.²
MU-6318

Range of H^3 in CH_2

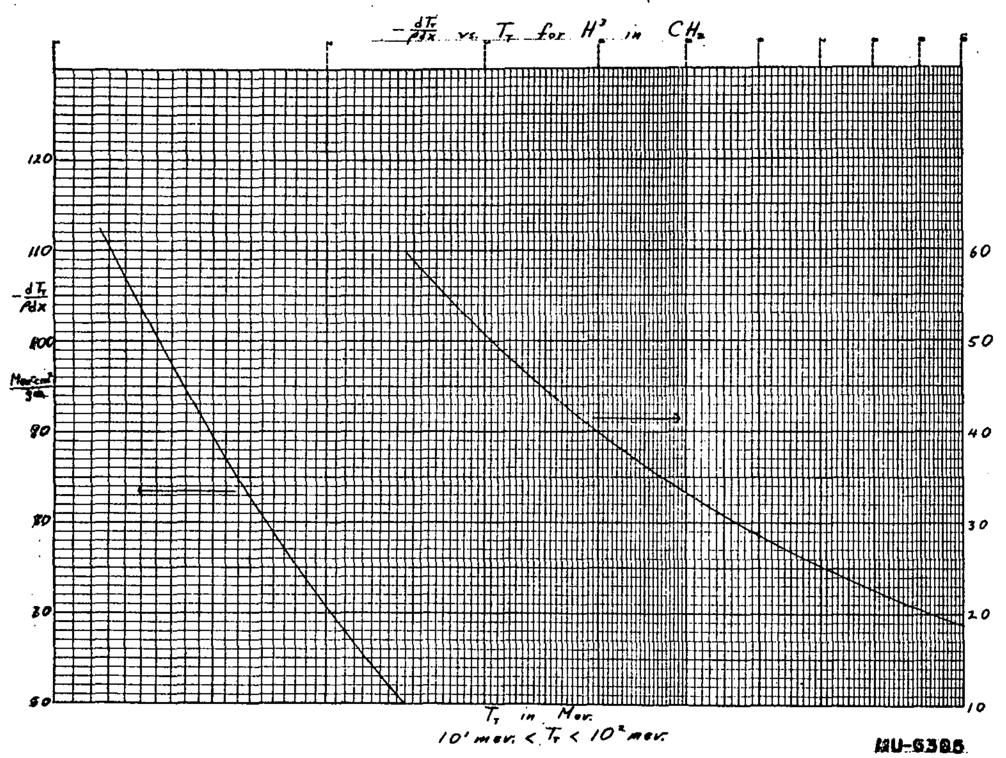
Scale I: 100 mev. < T_r < 1000 mev.

Scale II: 1000 mev. < T_r < 10000 mev.

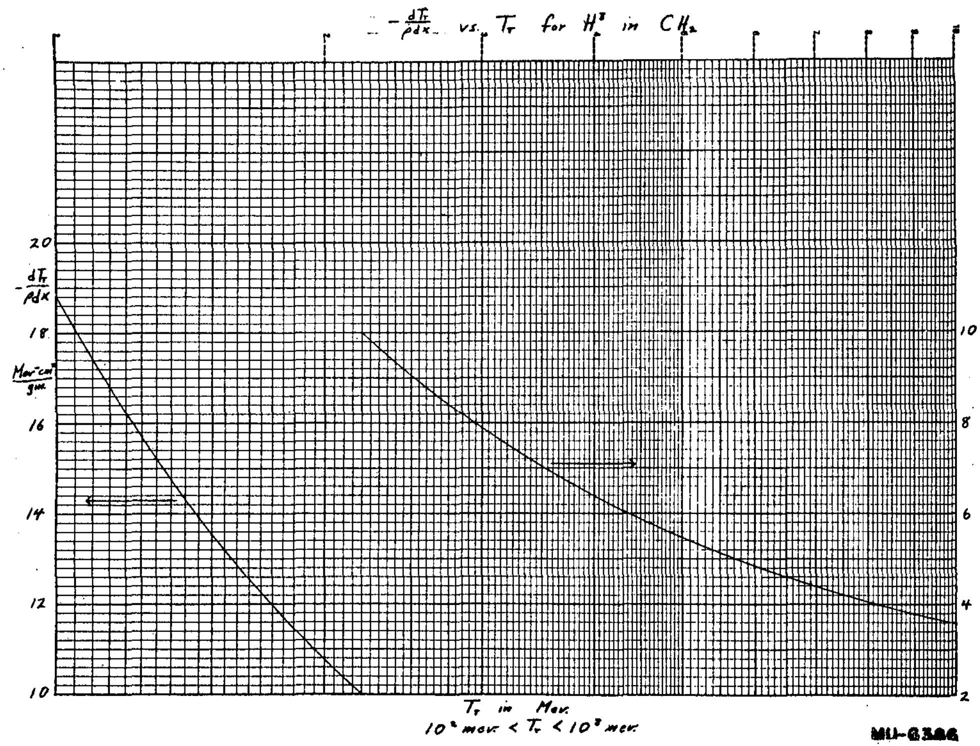
Scale III: 10000 mev. < T_r < 100000 mev.



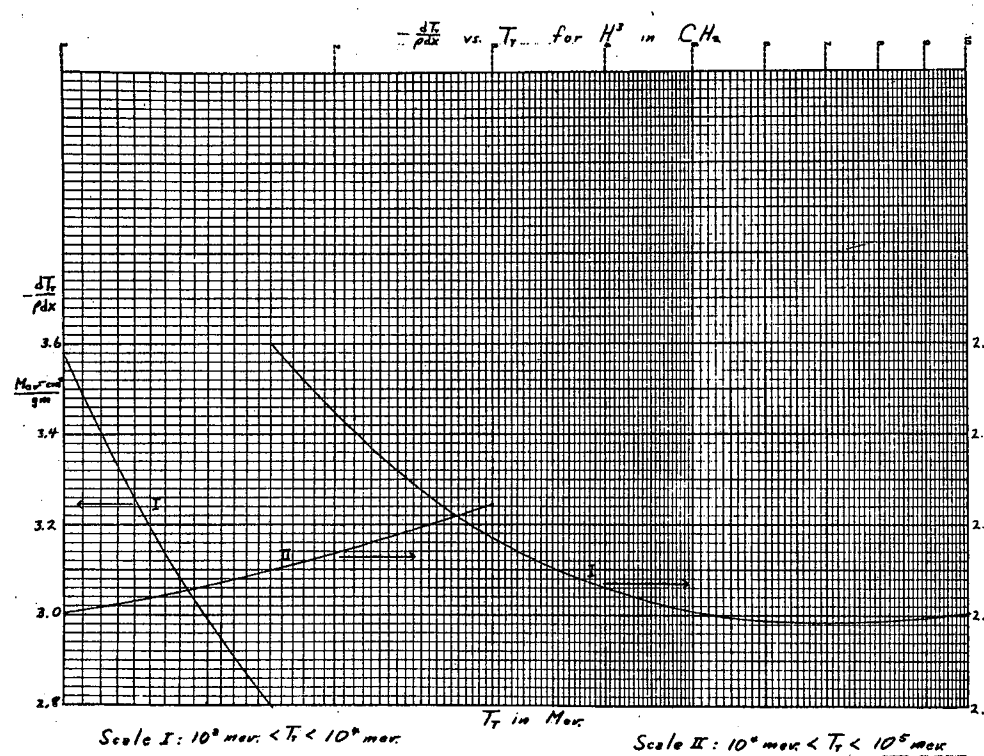
MU-6319


$-\frac{dT_T}{\rho dx}$ vs. T_T for H^3 in CH_2
120
110
$-\frac{dT_T}{\rho dx}$
100
Mev cm² / gm.
90
80
70
60
60
50
40
30
20
10
T_T in Mev.
10^1 mev. < T_T < 10^2 mev.

MU-6386


$-\frac{dT_r}{\rho dx}$ vs. T_r for H^3 in CH_2
20
$-\frac{dT_r}{\rho dx}$
18
$\frac{Mev\text{-}cm^2}{gm}$
16
14
12
10
10
8
6
4
2
T_r in Mev
10^2 mev $< T_r < 10^3$ mev

MU-6326



$-\frac{dT_T}{\rho dx}$ vs. T_T for H^3 in CH_4
$-\frac{dT_T}{\rho dx}$
$\frac{Mev\,cm^2}{gm}$
3.6
3.4
3.2
3.0
2.8
2.8
2.6
2.4
2.2
2.0
I
II
I
T_T in Mev.
Scale I: 10^3 mev. < T_T < 10^4 mev.
Scale II: 10^4 mev. < T_T < 10^5 mev.

MU-6387

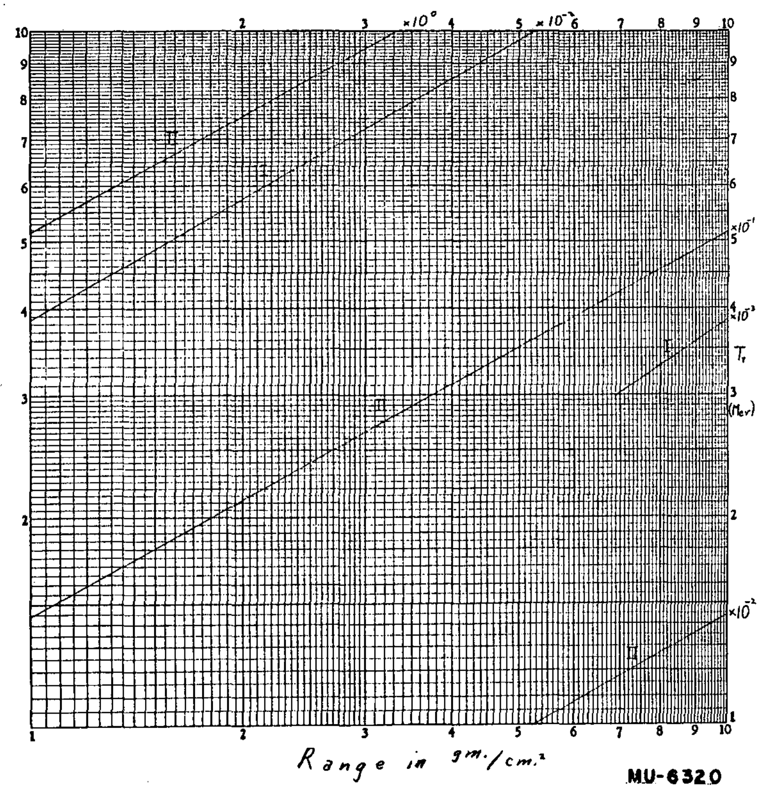
RANGE OF H^3 IN CD_2

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$	T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
2.994	6.919×10^{-3}	267.7	449.0	4.973×10^{1}	5.150
5.987	2.154×10^{-2}	161.7	598.7	8.199	4.243
8.981	4.356	117.8	748.4	1.200×10^{2}	3.690
11.97	7.228	93.59	898.1	1.629	3.318
14.97	1.074×10^{-1}	78.20	1048.0	2.100	3.053
17.96	1.488	67.46	1197.0	2.607	2.855
20.96	1.962	59.50	1497.0	3.714	2.580
23.95	2.494	53.35	1796.0	4.919	2.402
26.94	3.083	48.44	2096.0	6.201	2.279
29.94	3.729	44.42	2395.0	7.542	2.190
35.92	5.187	38.23	2694.0	8.932	2.124
44.90	7.776	31.80	2994.0	1.036×10^{3}	2.074
59.87	1.312×10^{0}	25.08	4490.0	1.783	1.951
74.84	1.969	20.86	5987.0	2.560	1.915
89.81	2.745	17.96	7484.0	3.342	1.911
104.8	3.634	15.83	8981.0	4.125	1.920
119.7	4.634	14.20	10480.0	4.900	1.934
149.7	6.952	11.86	11970.0	5.673	1.950
179.6	9.675	10.26	14970.0	7.193	1.986
209.6	1.278×10^{1}	9.085	17960.0	8.686	2.023
239.5	1.626	8.190	20960.0	1.015×10^{4}	2.054
269.4	2.009	7.483	23950.0	1.160	2.085
299.4	2.426	6.911	26940.0	1.303	2.113
374.2	3.607	5.863	29940.0	1.443	2.140

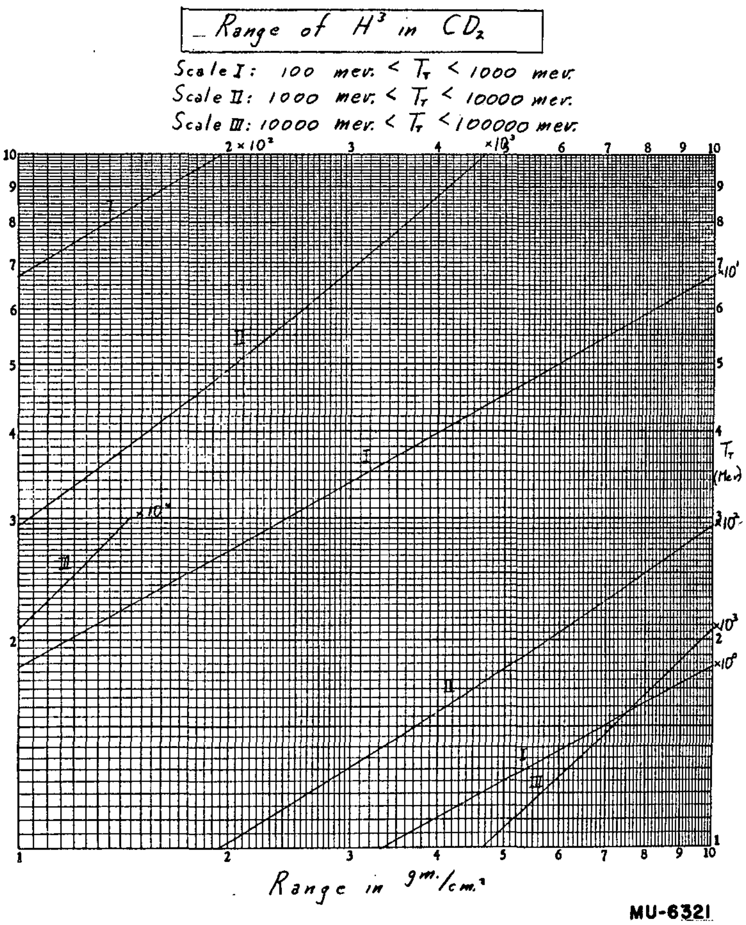
Range of H^3 in CD_2

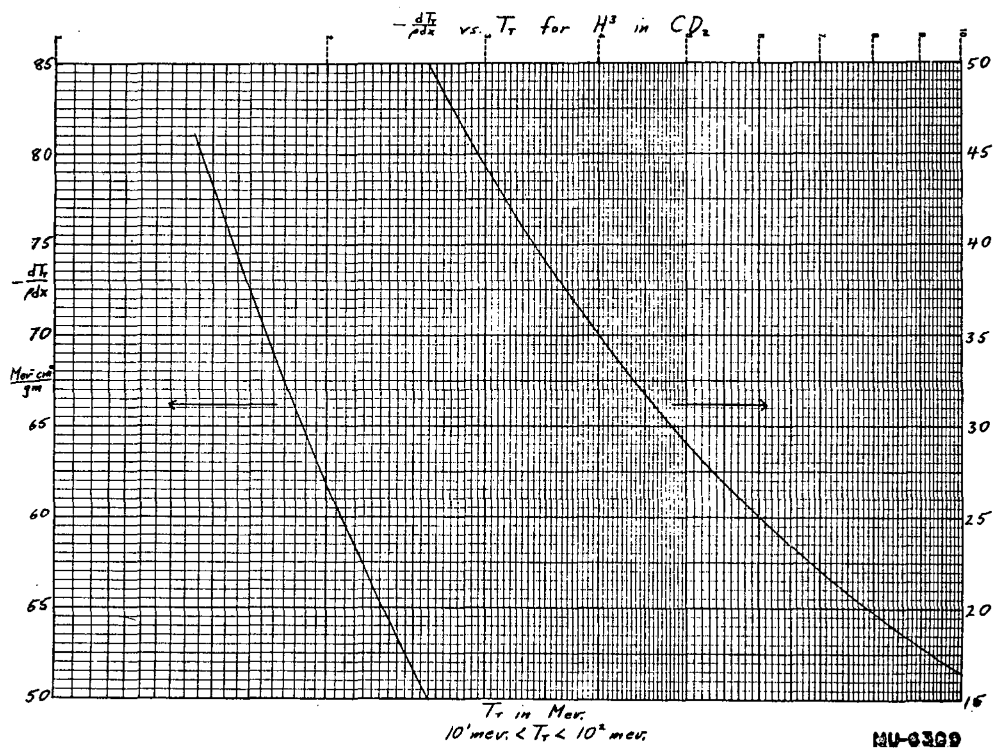
Scale I: 1 mev. ≤ T_T < 10 mev.

Scale II: 10 mev. < T_T < 100 mev.

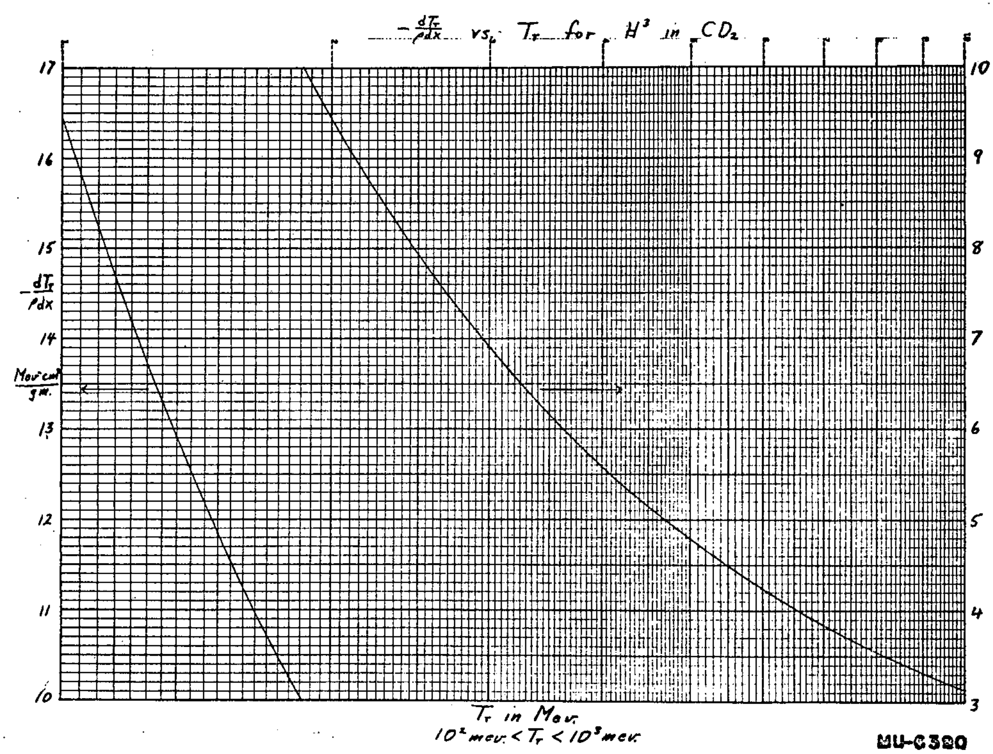


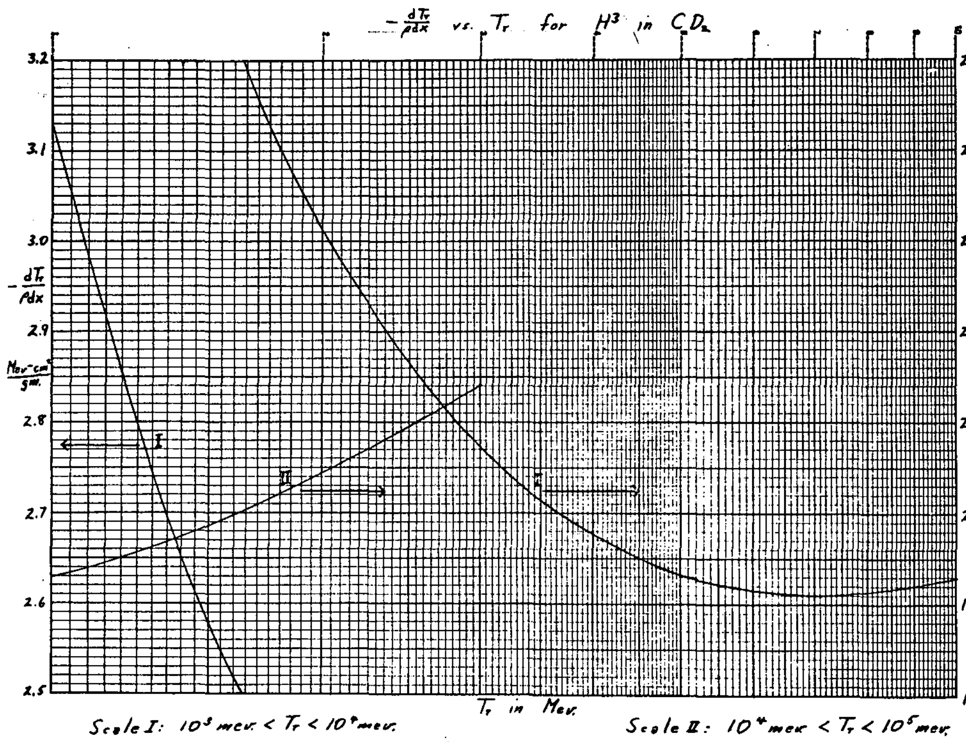
MU-6320


Range of H^3 in CD_2
Scale I: 100 mev. < T_T < 1000 mev.
Scale II: 1000 mev. < T_T < 10000 mev.
Scale III: 10000 mev. < T_T < 100000 mev.
T_T (Mev)
Range in gm./cm.²
MU-6321


$-\frac{dT_T}{\rho dx}$ vs. T_T for H^3 in CD_2
85
80
75
$-\frac{dT_T}{\rho dx}$
70
$\frac{Mev\ cm^2}{gm}$
65
60
55
50
50
45
40
35
30
25
20
15
T_T in Mev.
10^1 mev. < T_T < 10^2 mev.

MU-6309


$-\frac{dT_r}{\rho dx}$ vs. T_r for H^3 in CD_2
17
16
15
$-\frac{dT_r}{\rho dx}$
14
Mev cm²/gm.
13
12
11
10
10
9
8
7
6
5
4
3
T_r in Mev.
10^2 mev. < T_r < 10^3 mev.
MU-6320


$-\frac{dT_r}{\rho dx}$ vs. T_r for H^3 in CD_2
3.2
3.1
3.0
2.9
2.8
2.7
2.6
2.5
$-\frac{dT_r}{\rho dx}$
$\frac{Mev\text{-}cm^2}{gm.}$
2.5
2.4
2.3
2.2
2.1
2.0
1.9
1.8
I
II
T_r in Mev.
Scale I: 10^3 mev. < T_r < 10^4 mev.
Scale II: 10^4 mev < T_r < 10^5 mev.

MU-8808

RANGE OF H^3 IN H_2O

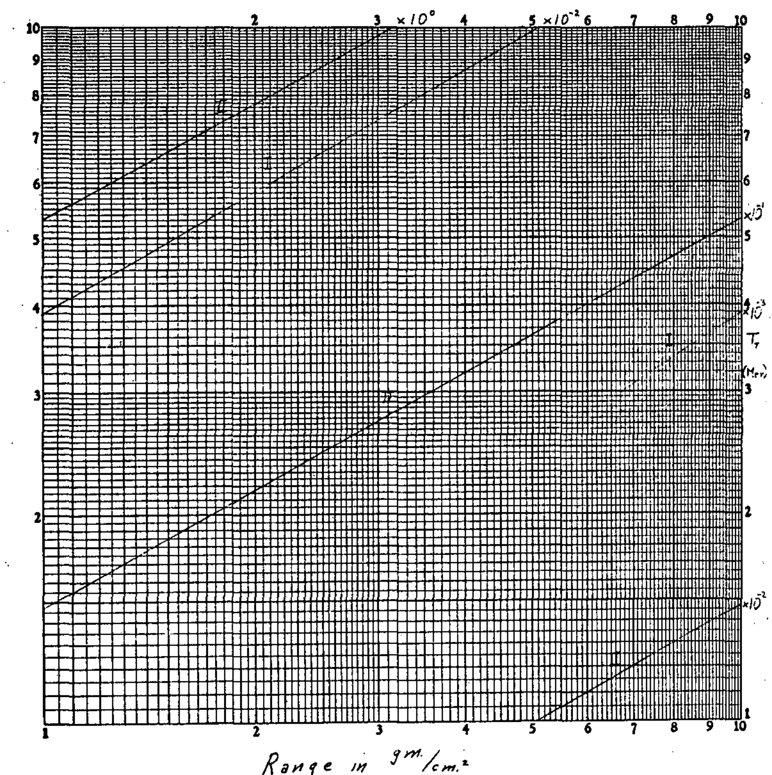
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
2.994	6.720 x 10^{-3}	279.4
5.987	2.100 x 10^{-2}	167.7
8.981	4.224	122.7
11.97	6.966	97.93
14.97	1.033 x 10^{-1}	82.04
17.96	1.426	70.90
20.96	1.877	62.63
23.95	2.381	56.22
26.94	2.951	51.10
29.94	3.553	46.91
35.92	4.932	40.43
44.90	7.378	33.69
59.87	1.242 x 10^{0}	26.62
74.84	1.861	22.18
89.81	2.590	19.11
104.8	3.426	16.86
119.7	4.364	15.14
149.7	6.537	12.66
179.6	9.087	10.96
209.6	1.200 x 10^{1}	9.709
239.5	1.524	8.758
269.4	1.883	8.006
299.4	2.272	7.397
449.0	4.650	5.521

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
598.7	7.657 x 10^{1}	4.553
748.4	1.120 x 10^{2}	3.962
898.1	1.519	3.566
1048.0	1.957	3.282
1197.0	2.430	3.070
1497.0	3.458	2.777
1796.0	4.578	2.586
2096.0	5.768	2.455
2395.0	7.013	2.360
2694.0	8.302	2.290
2994.0	9.625	2.237
4490.0	1.654 x 10^{3}	2.107
5987.0	2.373	2.070
7484.0	3.097	2.067
8981.0	3.820	2.078
10480.0	4.536	2.094
11970.0	5.250	2.113
14970.0	6.653	2.154
17960.0	8.030	2.193
20960.0	9.384	2.230
23950.0	1.072 x 10^{4}	2.264
26940.0	1.202	2.296
29940.0	1.332	2.325

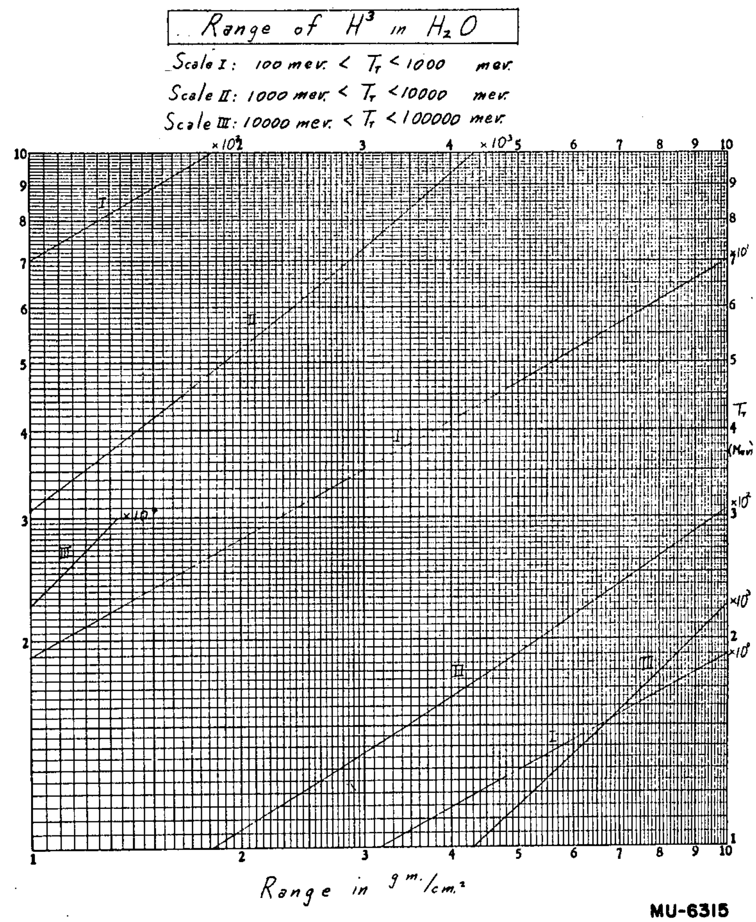
Range of H^3 in H_2O

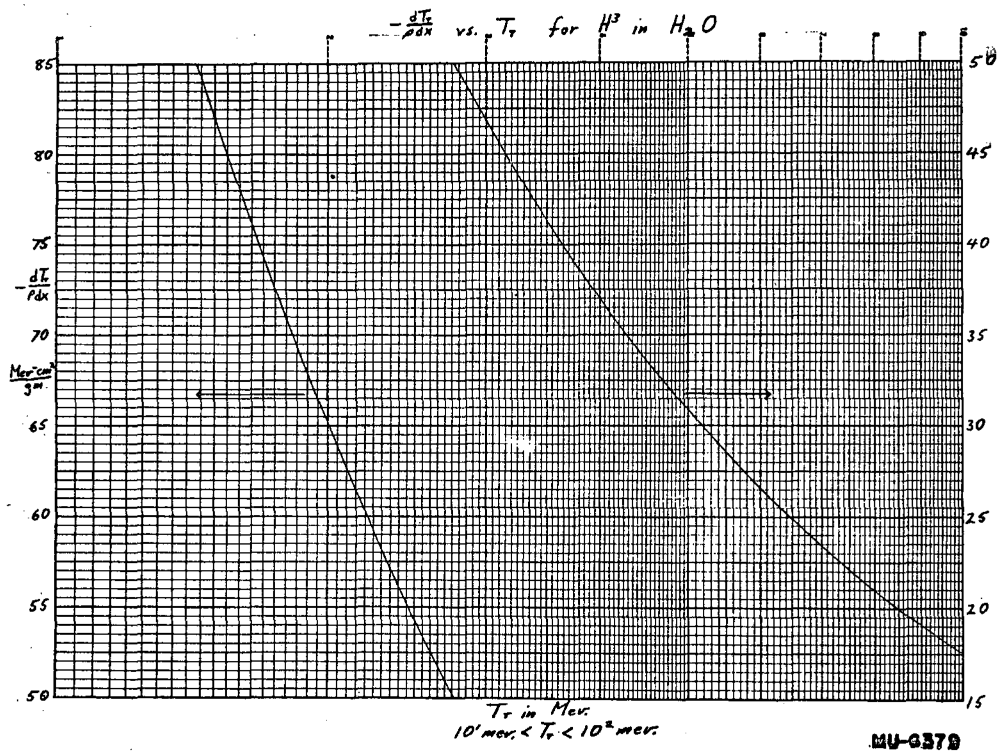
Scale I: 1 mev. < T_T < 10 mev.

Scale II: 10 mev. < T_T < 100 mev.

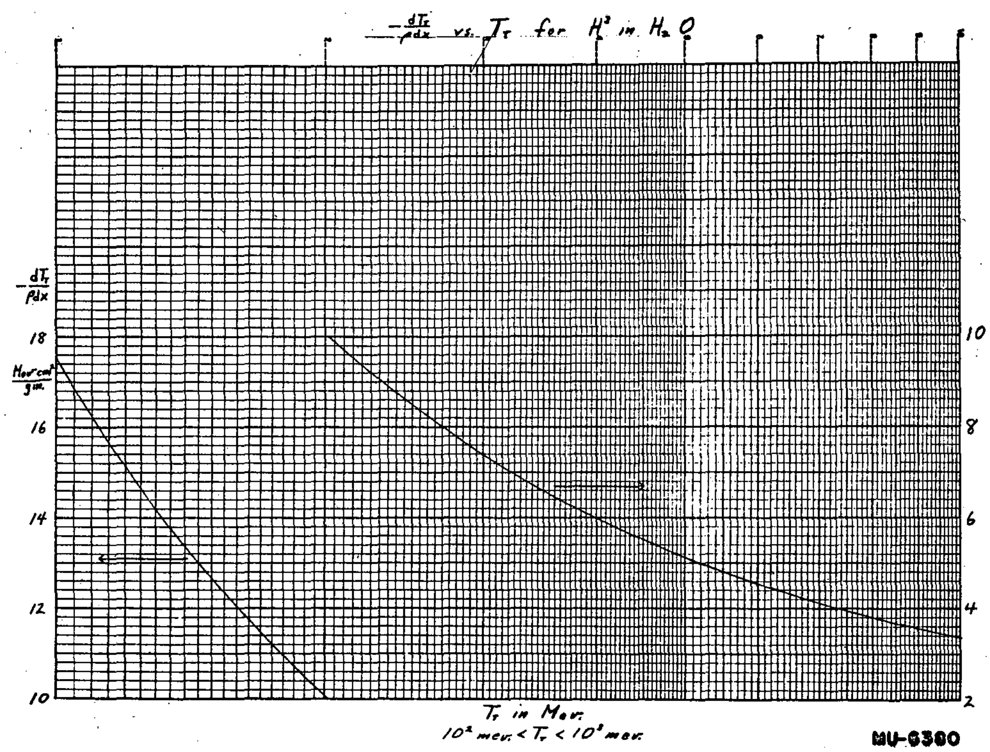


MU-6314

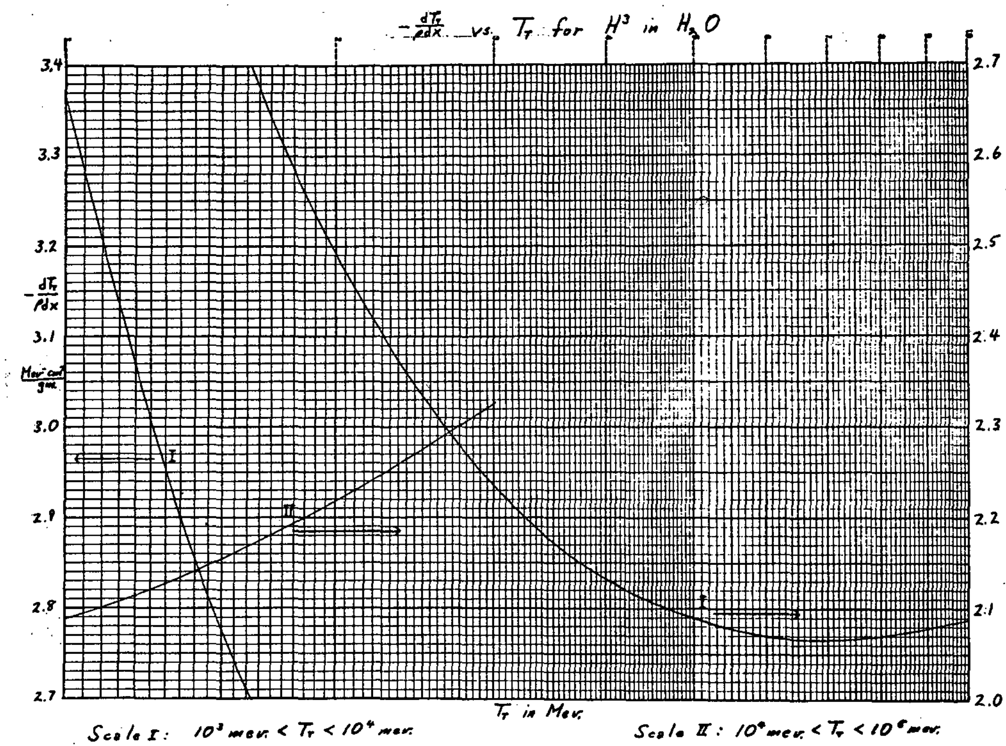

Range of H^3 in H_2O
Scale I: 100 mev. < T_T < 1000 mev.
Scale II: 1000 mev. < T_T < 10000 mev.
Scale III: 10000 mev. < T_T < 100000 mev.
T_T (Mev)
Range in gm./cm.²
MU-6315


$-\frac{dT_T}{\rho dx}$ vs. T_T for H^3 in H_2O
85
80
75
$-\frac{dT_T}{\rho dx}$
70
$\frac{Mev\text{-}cm^2}{gm.}$
65
60
55
50
50
45
40
35
30
25
20
15
T_T in Mev.
10^1 mev. < T_T < 10^2 mev.

MU-6379

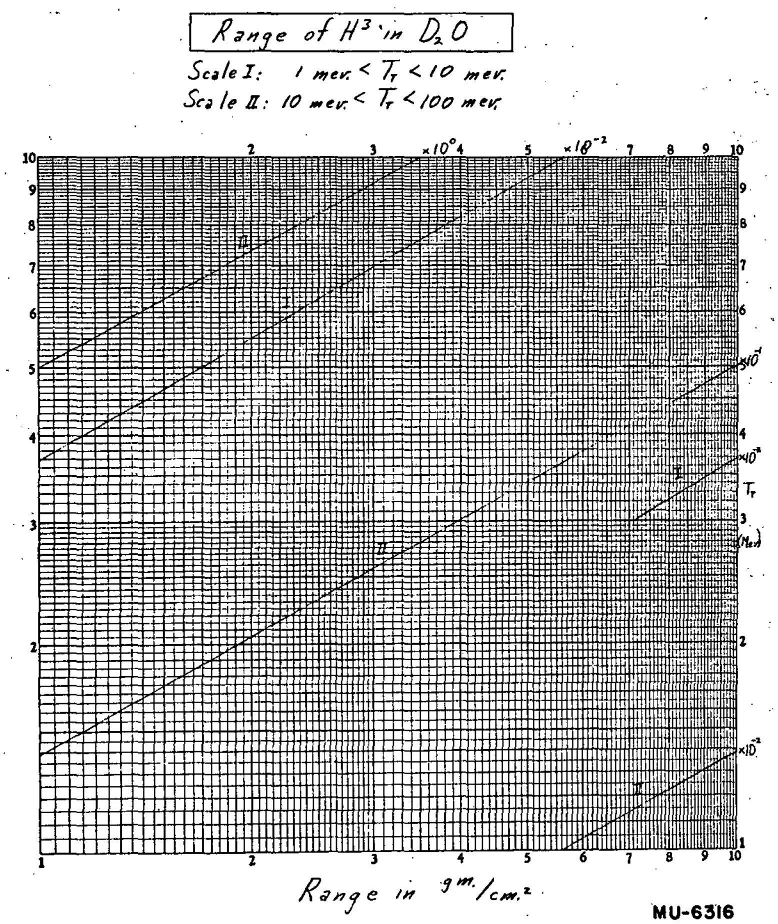

$-\frac{dT_\tau}{\rho dx}$ vs. T_τ for H^2 in H_2O
$-\frac{dT_\tau}{\rho dx}$
$\frac{Mev\,cm^2}{gm.}$
18
16
14
12
10
10
8
6
4
2
T_τ in Mev.
10^2 mev. < T_τ < 10^3 mev.

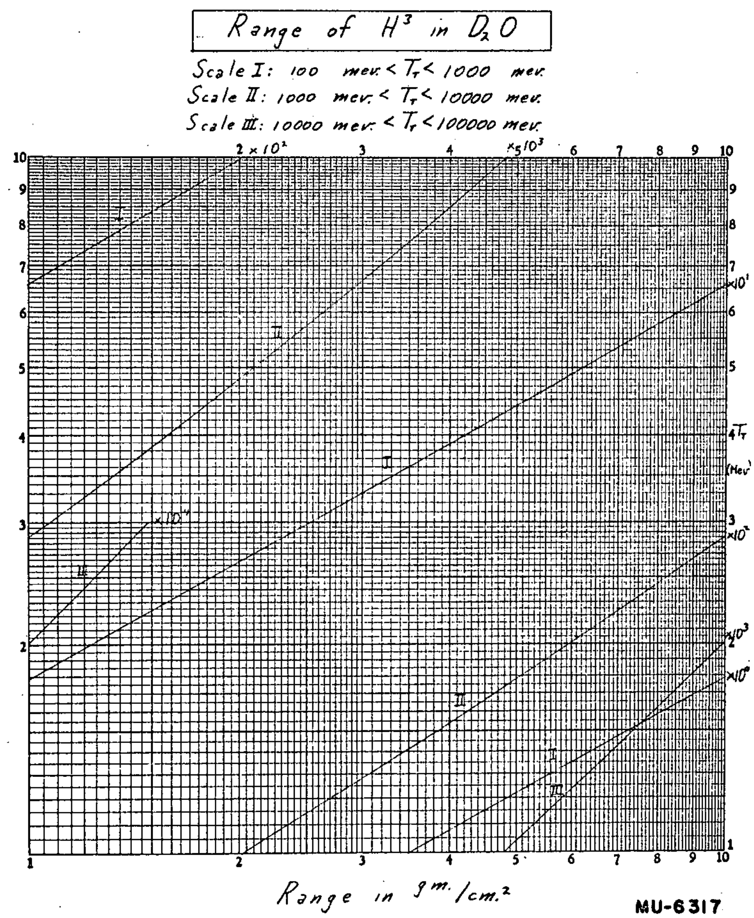
MU-6380

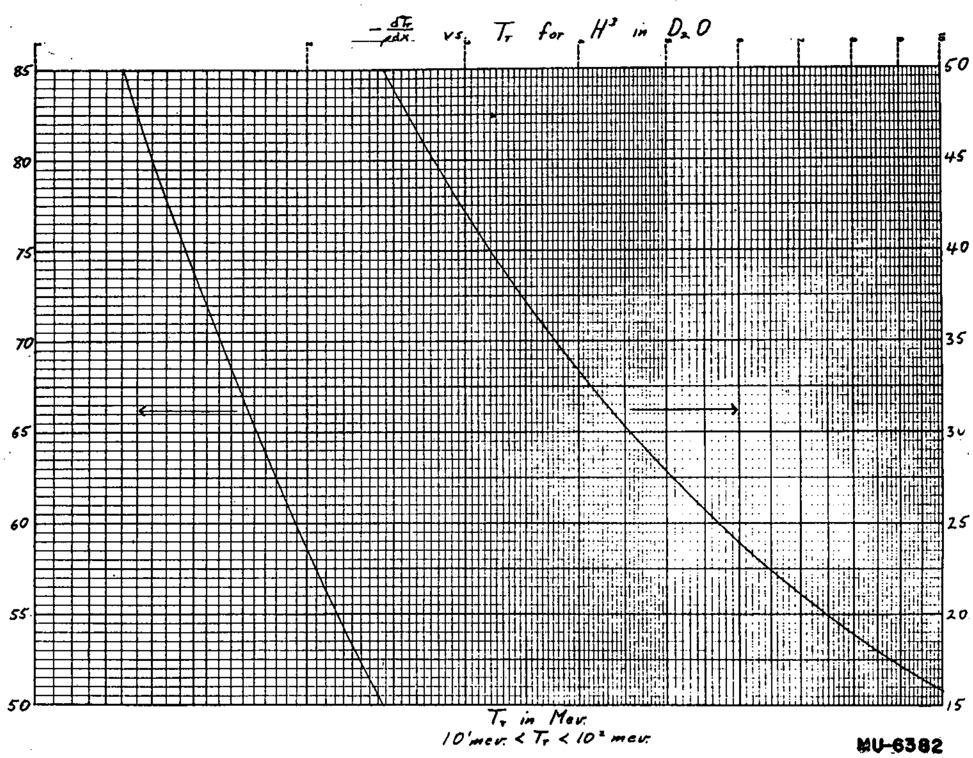

$-\frac{dT_T}{\rho dx}$ vs. T_T for H^3 in H_2O
3.4
3.3
3.2
$-\frac{dT_T}{\rho dx}$
3.1
$\frac{Mev\ cm^2}{gm.}$
3.0
2.9
2.8
2.7
2.7
2.6
2.5
2.4
2.3
2.2
2.1
2.0
I
II
I
T_T in Mev.
Scale I: 10^3 mev. < T_T < 10^4 mev.
Scale II: 10^4 mev. < T_T < 10^6 mev.
MU-6381

RANGE OF H^3 IN D_2O

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
2.994	7.109×10^{-3}	251.4
5.987	2.308×10^{-2}	150.8
8.981	4.658	110.4
11.97	7.716	88.14
14.97	1.144×10^{-1}	73.83
17.96	1.582	63.81
20.96	2.082	56.37
23.95	2.643	50.60
26.94	3.264	45.99
29.94	3.945	42.22
35.92	5.477	36.38
44.90	8.194	30.32
59.87	1.379×10^{0}	23.96
74.84	2.067	19.96
89.81	2.877	17.20
104.8	3.806	15.18
119.7	4.849	13.62
149.7	7.263	11.39
179.6	1.010 10^{1}	9.859
209.6	1.333	8.738
239.5	1.694	7.882
269.4	2.092	7.206
299.4	2.525	6.658
374.2	3.750	5.653
449.0	5.167×10^{1}	4.969
598.7	8.508	4.098
748.4	1.244×10^{2}	3.566
898.1	1.688	3.209
1048.0	2.175	2.954
1197.0	2.699	2.763
1497.0	3.843	2.499
1796.0	5.087	2.328
2096.0	6.409	2.209
2395.0	7.792	2.124
2694.0	9.244	2.061
2994.0	1.069×10^{3}	2.014
4490.0	1.838	1.896
5987.0	2.638	1.863
7484.0	3.441	1.861
8981.0	4.245	1.870
10480.0	5.041	1.885
11970.0	5.833	1.902
14970.0	7.392	1.938
17960.0	8.922	1.974
20960.0	1.042×10^{4}	2.007
23950.0	1.191	2.038
26940.0	1.336	2.066
29940.0	1.480	2.092

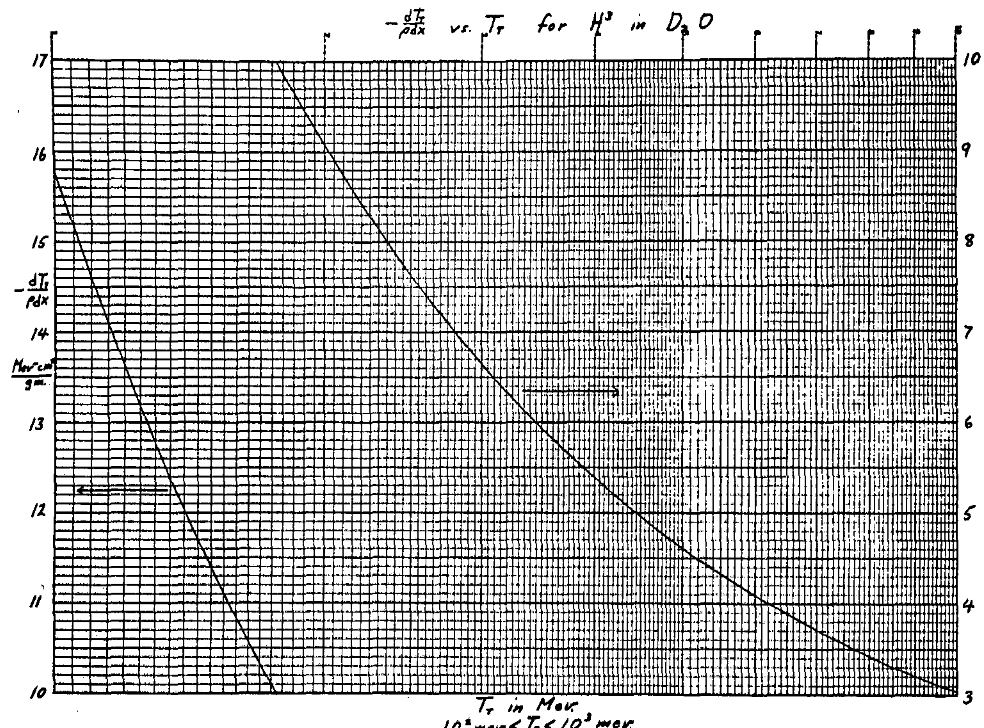

Range of H^3 in D_2O
Scale I: 1 mev. < T_T < 10 mev.
Scale II: 10 mev. < T_T < 100 mev.
T_T (Mev)
Range in gm./cm.²
MU-6316


Range of H^3 in D_2O
Scale I: 100 mev. < T_T < 1000 mev.
Scale II: 1000 mev. < T_T < 10000 mev.
Scale III: 10000 mev. < T_T < 100000 mev.
T_T (Mev)
Range in gm./cm.²
MU-6317



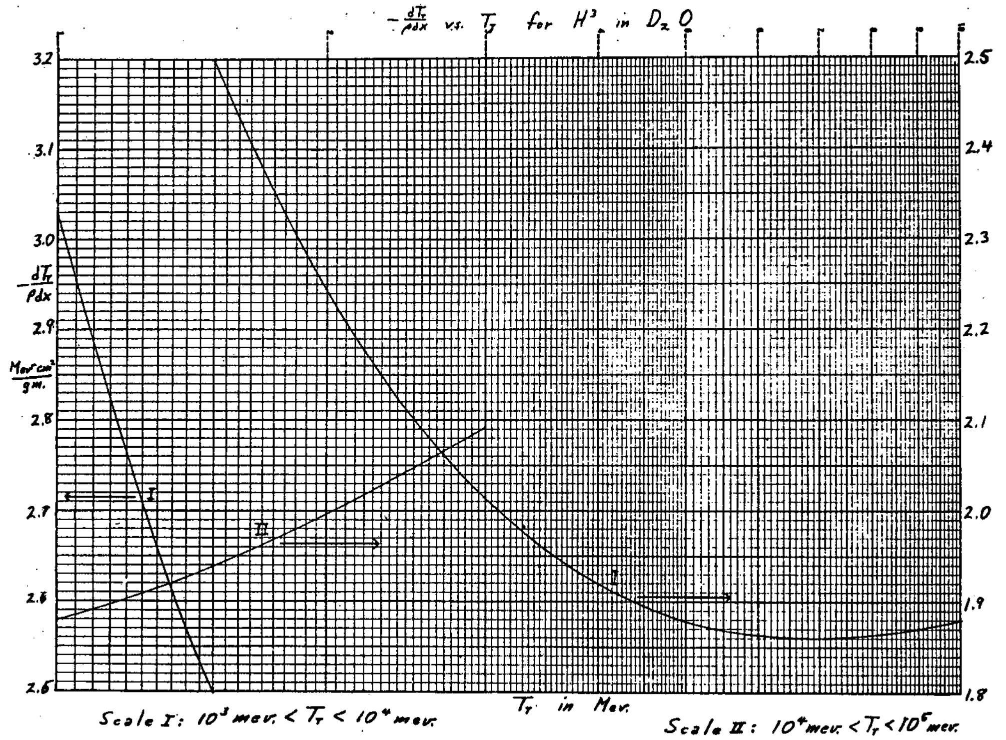
$-\frac{dT_r}{\rho dx}$ vs. T_r for H^3 in D_2O
85
80
75
70
65
60
55
50
50
45
40
35
30
25
20
15
T_r in Mev.
10^1 mev. < T_r < 10^2 mev.

MU-6382



$-\frac{dT_T}{\rho dx}$ vs. T_T for H^3 in D_2O
17
16
15
$-\frac{dT_T}{\rho dx}$
14
$\frac{Mev\,cm^2}{gm.}$
13
12
11
10
10
9
8
7
6
5
4
3
T_T in Mev.
10^2 mev. < T_T < 10^3 mev.

MU-6303



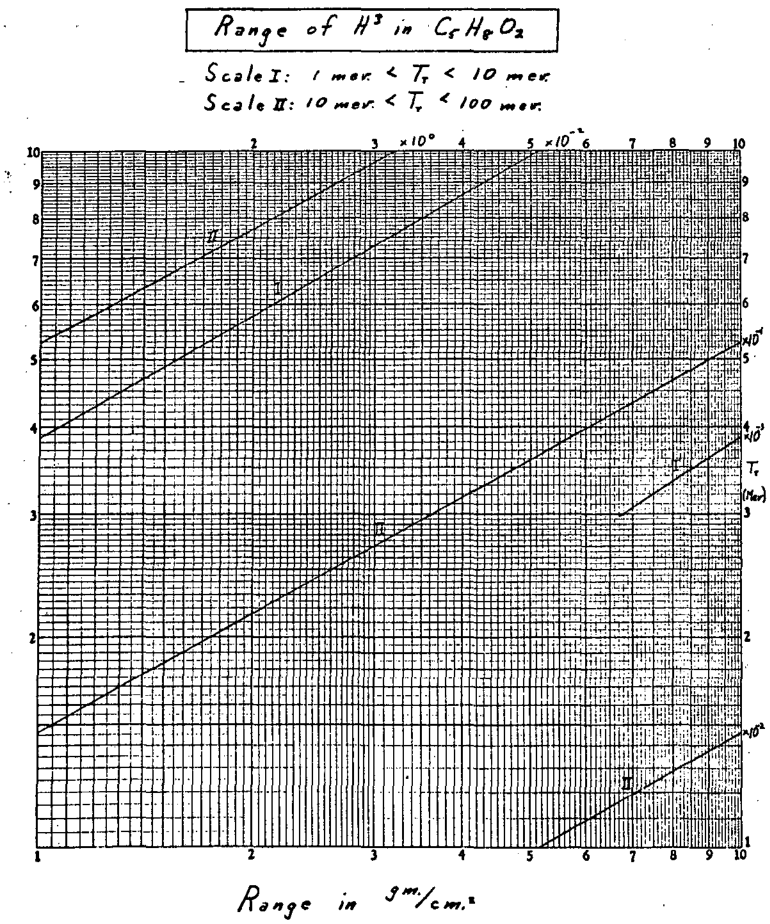
$-\frac{dT_T}{\rho dx}$ vs. T_T for H^3 in D_2O
$-\frac{dT_T}{\rho dx}$
$\frac{Mev\,cm^2}{gm.}$
3.2
3.1
3.0
2.9
2.8
2.7
2.6
2.5
2.5
2.4
2.3
2.2
2.1
2.0
1.9
1.8
I
II
I
T_T in Mev.
Scale I: 10^3 mev. < T_T < 10^4 mev.
Scale II: 10^4 mev. < T_T < 10^5 mev.

MU-6384

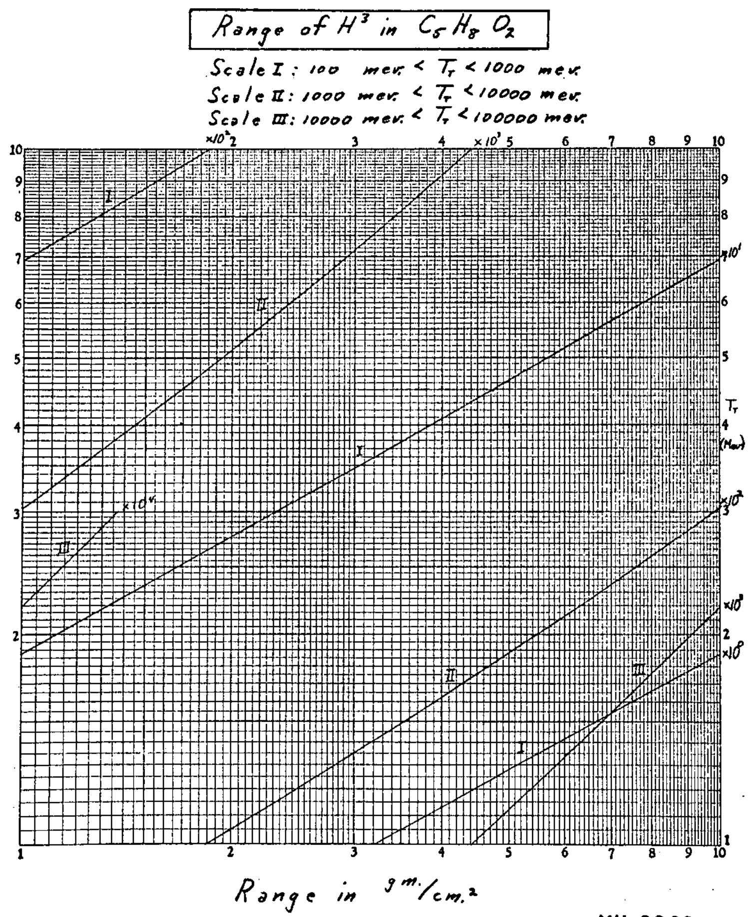
RANGES OF H^3 IN $C_5H_8O_2$

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
2.994	6.748×10^{-3}	273.2
5.987	2.129×10^{-2}	166.0
8.981	4.267	121.4
11.97	7.050	96.73
14.97	1.045×10^{-1}	80.98
17.96	1.444	69.95
20.96	1.900	61.77
23.95	2.413	55.43
26.94	2.980	50.37
29.94	3.601	46.22
35.92	5.001	39.82
44.90	7.484	33.17
59.87	1.260×10^{0}	26.20
74.84	1.889	21.82
89.81	2.631	18.80
104.8	3.481	16.58
119.7	4.435	14.88
134.7	5.491	13.54
149.7	6.646	12.44
179.6	9.241	10.76
209.6	1.218×10^{1}	9.539
239.5	1.547	8.603
269.4	1.911	7.863
299.4	2.308	7.264
374.2	3.427	6.166
449.0	4.730	5.420

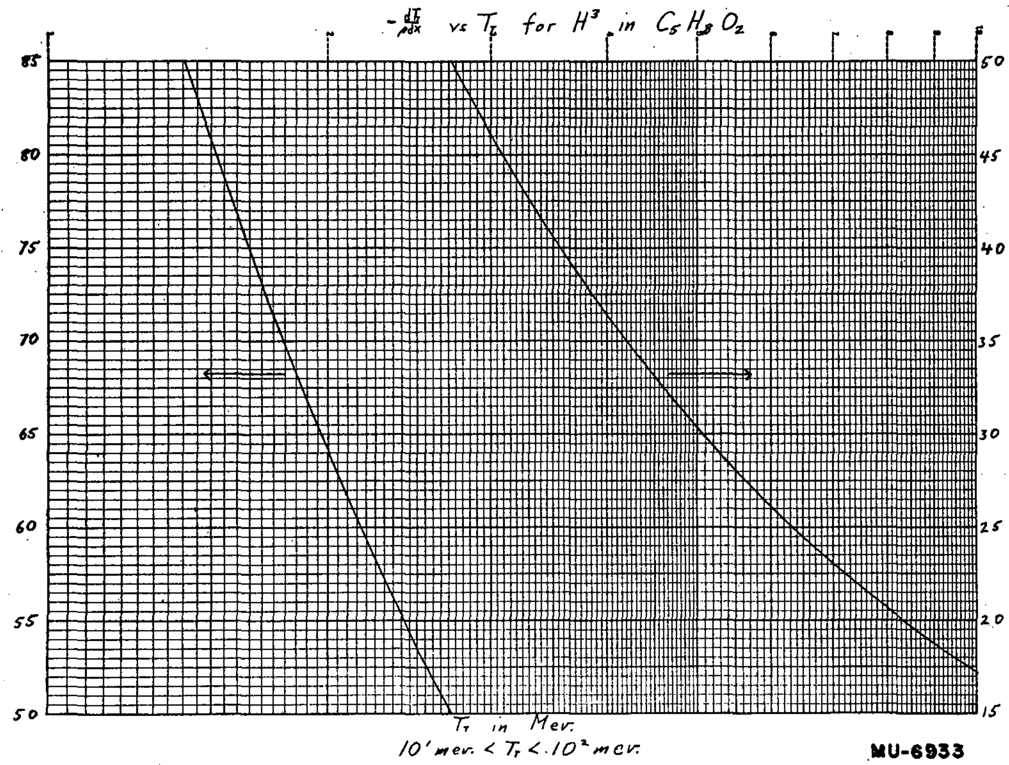
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
598.7	7.794×10^{1}	4.468
748.4	1.140×10^{2}	3.888
898.1	1.547	3.498
1048.0	1.994	3.220
1197.0	2.475	3.011
1347.0	2.986	2.847
1497.0	3.524	2.723
1796.0	4.666	2.536
2096.0	5.879	2.406
2395.0	7.149	2.314
2694.0	8.464	2.245
2994.0	9.814	2.193
4490.0	1.687×10^{3}	2.064
5987.0	2.422	2.028
7484.0	3.160	2.025
8981.0	3.899	2.034
10480.0	4.630	2.050
11970.0	5.358	2.069
13470.0	6.077	2.088
14970.0	6.792	2.108
17960.0	8.198	2.148
20960.0	9.582	2.182
23950.0	1.094×10^{4}	2.215
26940.0	1.228	2.246
29940.0	1.361	2.274


Range of H^3 in $C_5H_8O_2$
Scale I: 1 mev. < T_r < 10 mev.
Scale II: 10 mev. < T_r < 100 mev.
T_r (Mev)
Range in gm./cm.²

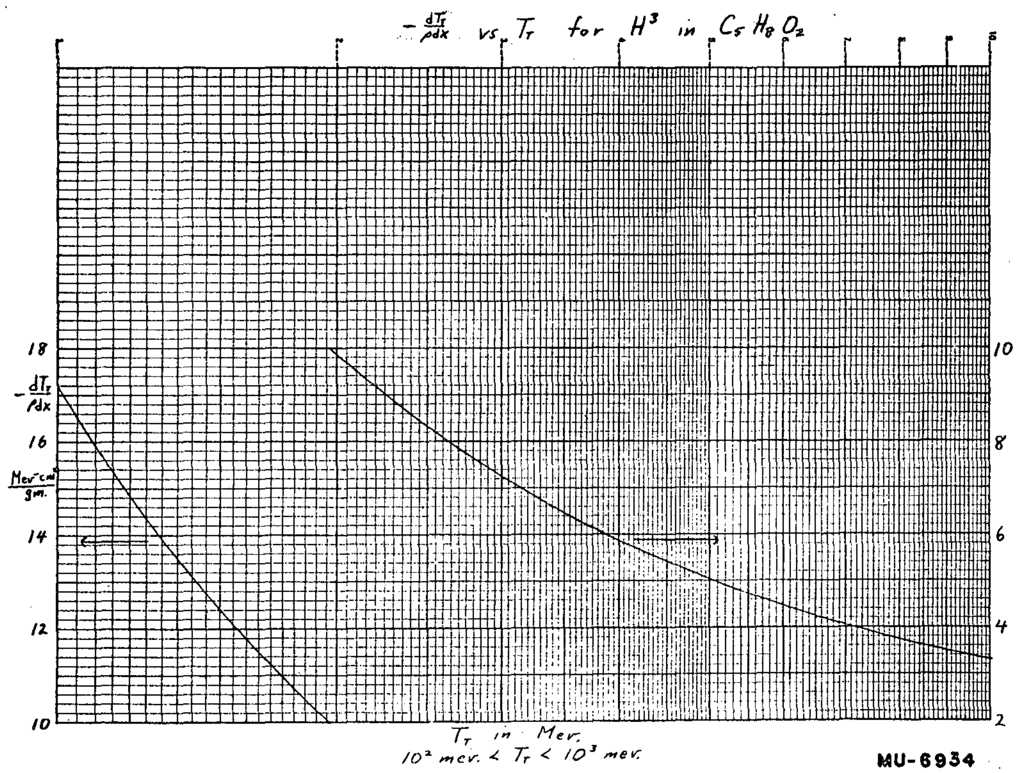
MU-6910

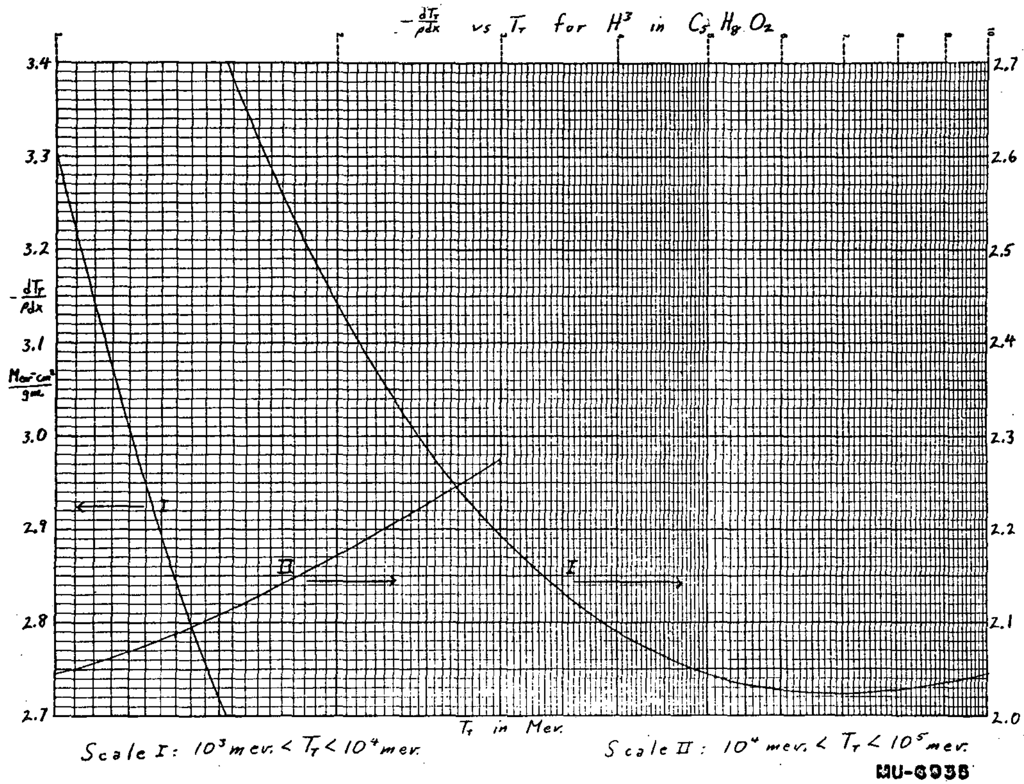

Range of H^3 in $C_5H_8O_2$
Scale I: 100 mev. < T_r < 1000 mev.
Scale II: 1000 mev. < T_r < 10000 mev.
Scale III: 10000 mev. < T_r < 100000 mev.
T_r (Mev)
Range in gm./cm.²

MU-6909


$-\frac{dT}{\rho dx}$ vs T_T for H^3 in $C_5H_8O_2$
85
80
75
70
65
60
55
50
50
45
40
35
30
25
20
15
T_T in Mev.
10^1 mev. < T_T < 10^2 mev.

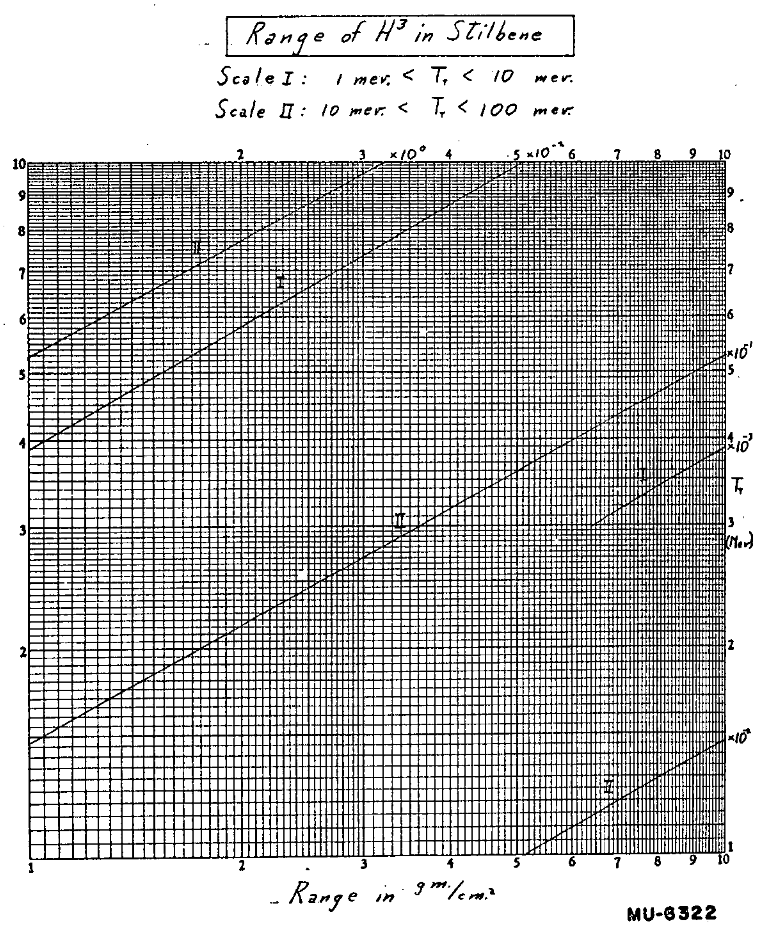
MU-6933

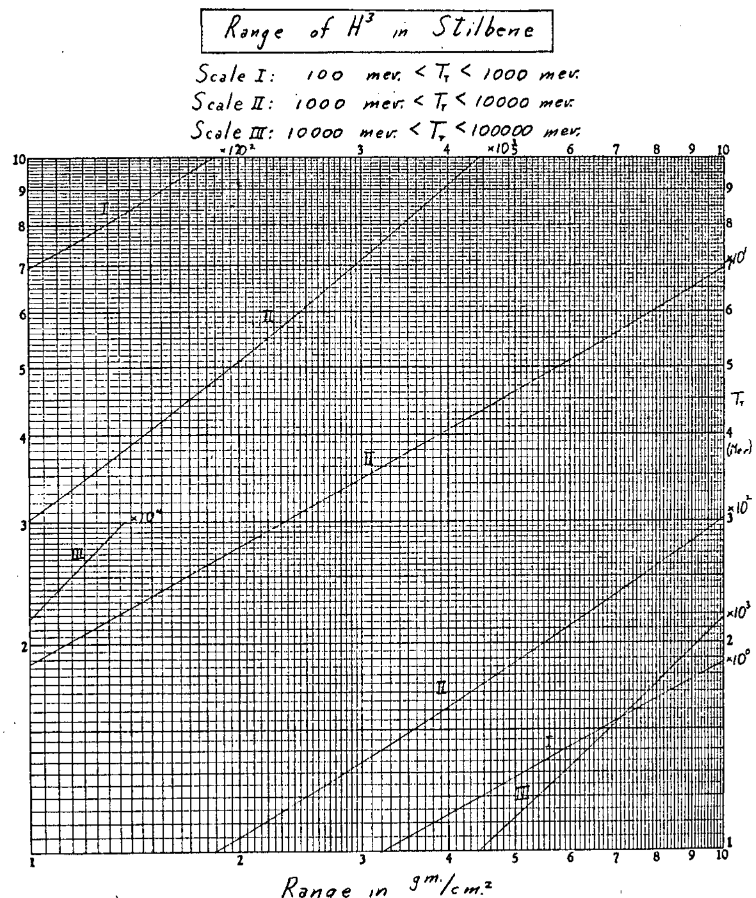

$-\frac{dT_T}{\rho dx}$ vs T_T for H^3 in $C_5H_8O_2$
18
$-\frac{dT_T}{\rho dx}$
16
$\frac{Mev\text{-}cm^2}{gm.}$
14
12
10
10
8
6
4
2
T_T in Mev.
10^2 mev. < T_T < 10^3 mev.
MU-6934


$-\frac{dT_T}{\rho dx}$ vs T_T for H^3 in $C_5H_8O_2$
$-\frac{dT_T}{\rho dx}$
$\frac{Mev\text{-}cm^2}{gm}$
3.4
3.3
3.2
3.1
3.0
2.9
2.8
2.7
2.7
2.6
2.5
2.4
2.3
2.2
2.1
2.0
I
II
I
T_T in Mev.
Scale I: 10^3 mev. < T_T < 10^4 mev.
Scale II: 10^4 mev. < T_T < 10^5 mev.
MU-6938

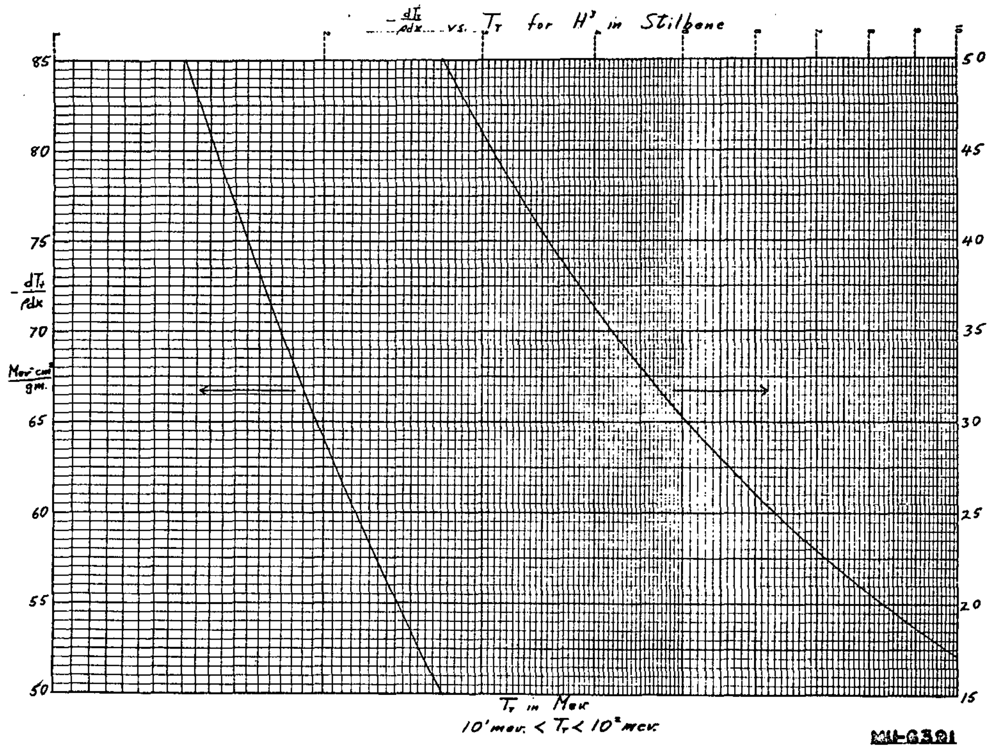
RANGE OF H^3 IN STILBENE

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$	T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
2.994	6.466×10^{-3}	271.7	449.0	4.758×10^{1}	5.390
5.987	2.106×10^{-2}	166.1	598.7	7.840	4.443
8.981	4.239	121.3	748.4	1.146×10^{2}	3.865
11.97	7.029	96.62	898.1	1.557	3.477
14.97	1.043×10^{-1}	80.85	1048.0	2.006	3.200
17.96	1.442	69.82	1197.0	2.490	2.993
20.96	1.900	61.63	1497.0	3.545	2.706
23.95	2.413	55.30	1796.0	4.695	2.520
26.94	2.982	50.24	2096.0	5.915	2.391
29.94	3.605	46.094	2395.0	7.194	2.299
35.92	5.009	39.70	2694.0	8.517	2.230
44.90	7.500	33.06	2994.0	9.876	2.178
59.87	1.263×10^{0}	26.10	4490.0	1.698×10^{3}	2.050
74.84	1.895	21.73	5987.0	2.438	2.014
89.81	2.640	18.72	7484.0	3.181	2.010
104.8	3.493	16.51	8981.0	3.926	2.020
119.7	4.452	14.82	10480.0	4.663	2.035
149.7	6.672	12.38	11970.0	5.396	2.054
179.6	9.281	10.71	14970.0	6.840	2.092
209.6	1.226×10^{1}	9.491	17960.0	8.258	2.132
239.5	1.558	8.559	20960.0	9.652	2.165
269.4	1.925	7.823	23950.0	1.102×10^{4}	2.198
299.4	2.323	7.226	26940.0	1.238	2.228
374.2	3.452	6.133	29940.0	1.371	2.256


Range of H^3 in Stilbene
Scale I: 1 mev. < T_T < 10 mev.
Scale II: 10 mev. < T_T < 100 mev.
×10⁰
5 ×10⁻²
×10¹
×10⁻³
×10⁻²
T_T
(Mev)
I
II
Range in gm./cm.²
MU-6322

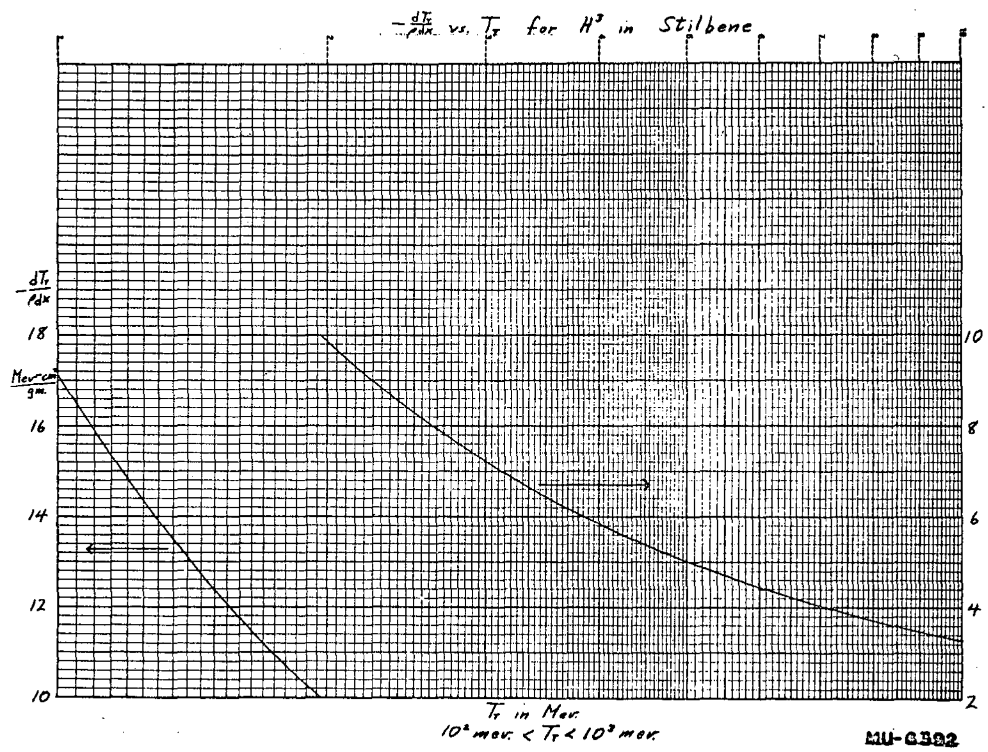

Range of H^3 in Stilbene
Scale I: 100 mev. < T_r < 1000 mev.
Scale II: 1000 mev. < T_r < 10000 mev.
Scale III: 10000 mev. < T_r < 100000 mev.
T_r
(Mev)
Range in gm./cm.²

MU-6323



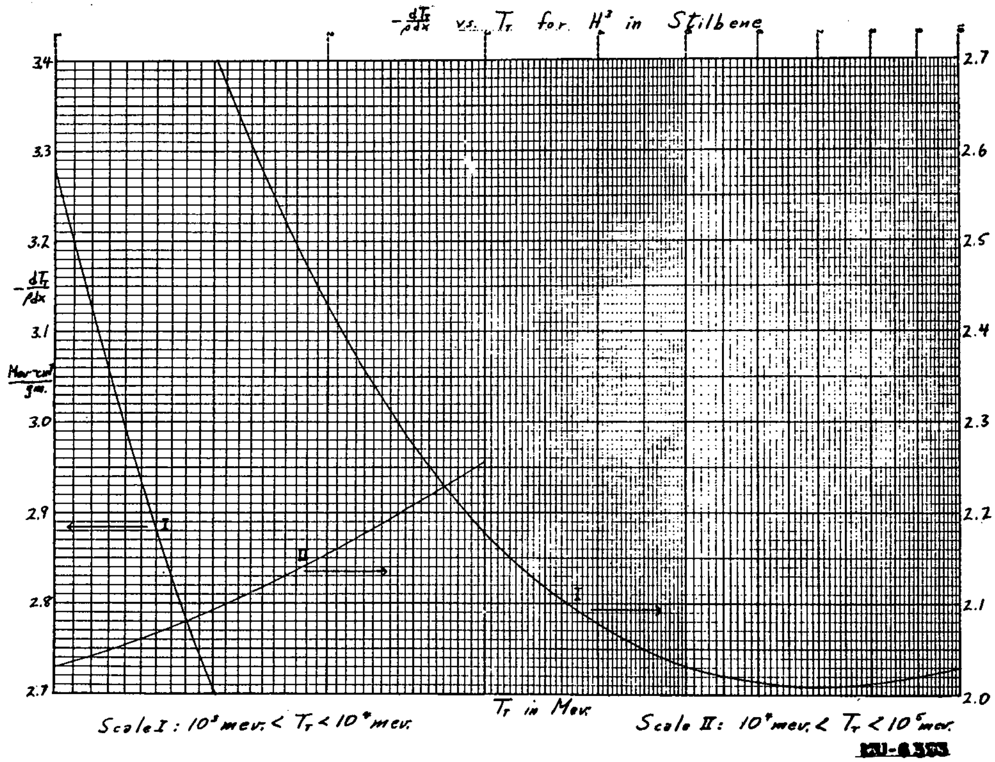
$-\frac{dT_T}{\rho dx}$ vs. T_T for H^3 in Stilbene
85
80
75
$-\frac{dT_T}{\rho dx}$
70
$\frac{Mev \cdot cm^2}{gm.}$
65
60
55
50
50
45
40
35
30
25
20
15
T_T in Mev
$10^1 mev. < T_T < 10^2 mev.$

MU-6391



$-\frac{dT_T}{\rho dx}$ vs. T_T for H^3 in Stilbene
$-\frac{dT_T}{\rho dx}$
18
Mev-cm²/gm.
16
14
12
10
10
8
6
4
2
T_T in Mev.
10^2 mev. < T_T < 10^3 mev.

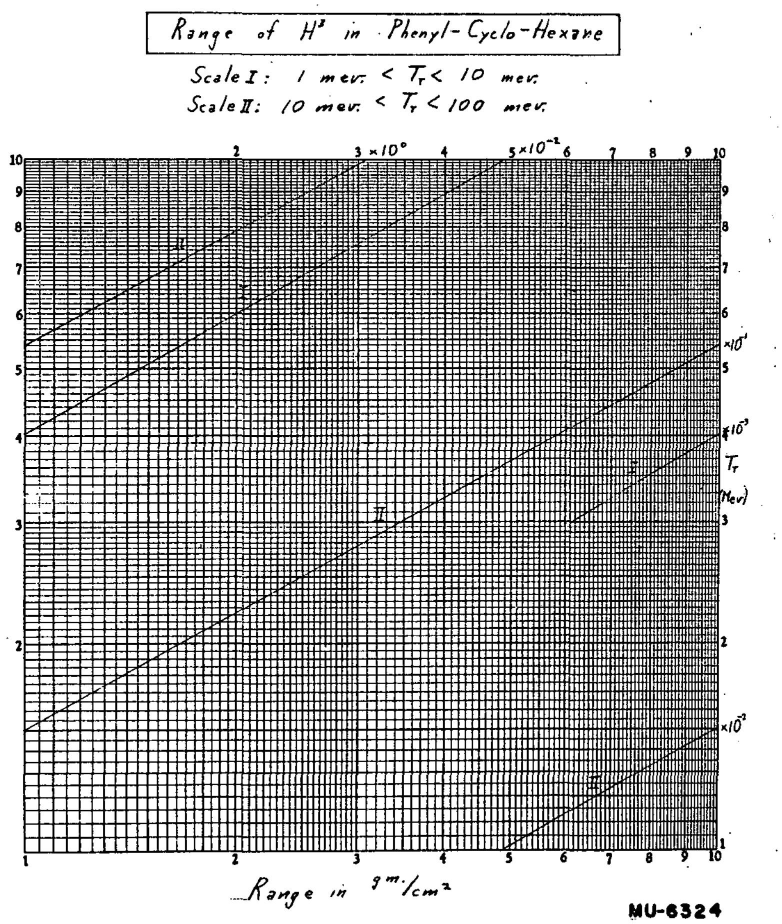
MU-6392


$-\frac{dT_T}{\rho dx}$ vs. T_T for H^3 in Stilbene
3.4
3.3
3.2
$-\frac{dT_T}{\rho dx}$
3.1
$\frac{Mev\text{-}cm^2}{gm.}$
3.0
2.9
2.8
2.7
2.7
2.6
2.5
2.4
2.3
2.2
2.1
2.0
I
II
I
T_T in Mev.
Scale I : 10^3 mev. < T_T < 10^4 mev.
Scale II: 10^4 mev. < T_T < 10^5 mev.

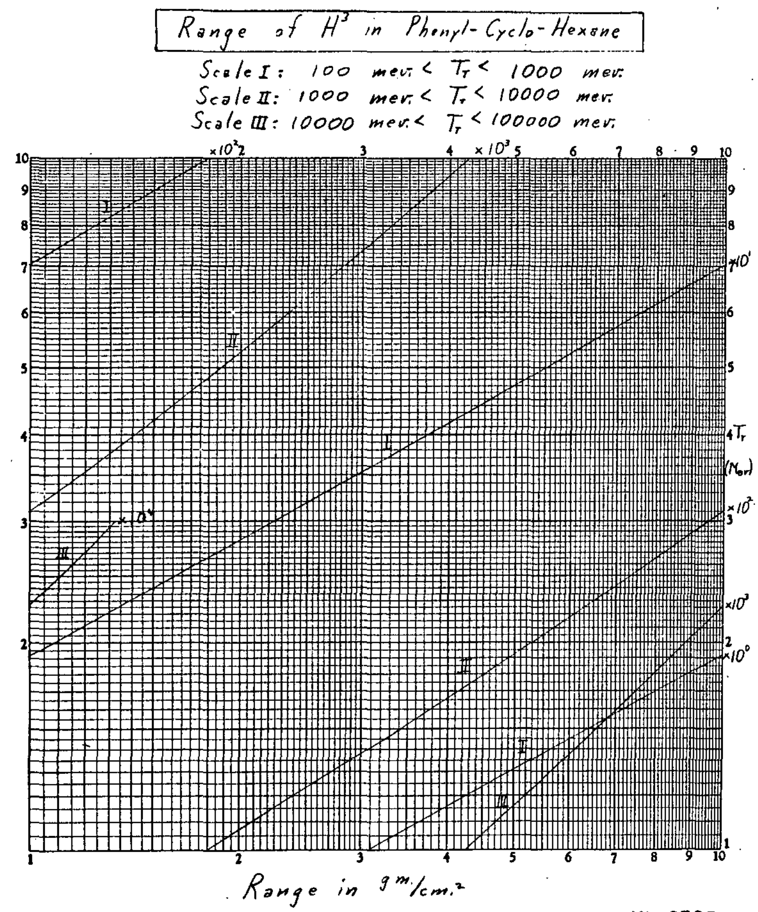
RANGE OF H^3 IN PHENYL CYCLOHEXANE

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
2.994	6.125×10^{-3}	286.6
5.987	2.002×10^{-2}	174.3
8.981	4.036	127.1
11.97	6.702	101.2
14.97	9.948	84.58
17.96	1.378×10^{-1}	73.00
20.96	1.814	64.42
23.95	2.307	57.78
26.94	2.850	52.48
29.94	3.447	48.14
35.92	4.792	41.45
44.90	7.178	34.50
59.87	1.210×10^{0}	27.22
74.84	1.815	22.66
89.81	2.530	19.51
104.8	3.349	17.20
119.7	4.269	15.44
149.7	6.402	12.90
179.6	8.906	11.15
209.6	1.176×10^{1}	9.881
239.5	1.496	8.909
269.4	1.848	8.142
299.4	2.231	7.520
374.2	3.316	6.381

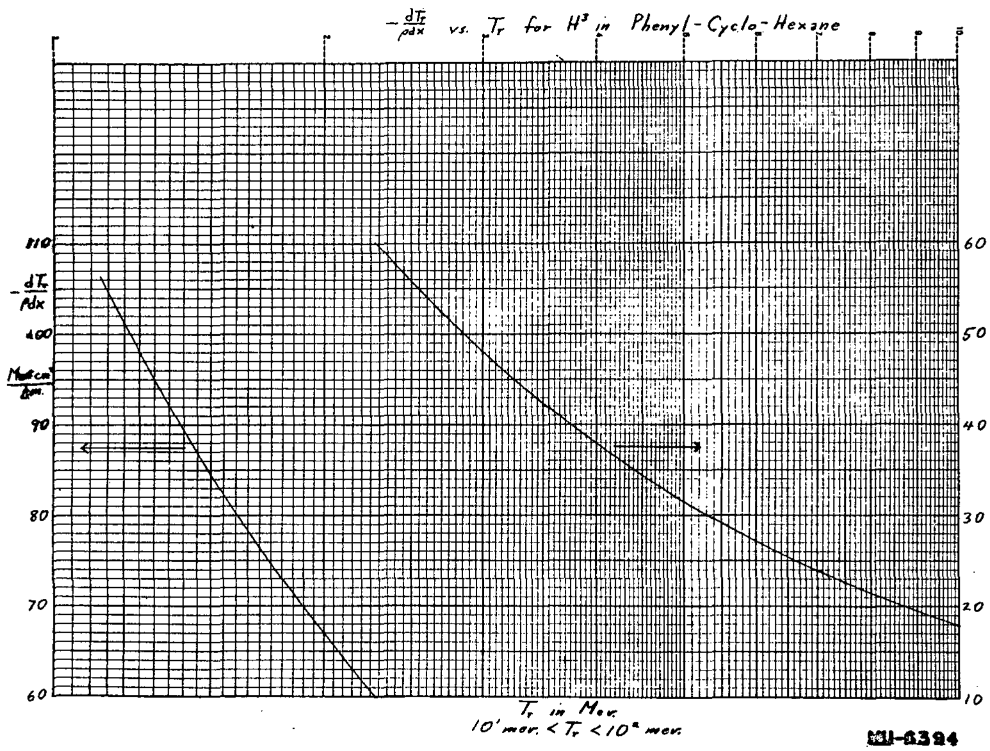
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
449.0	4.571×10^{1}	5.607
598.7	7.534	4.620
748.4	1.102×10^{2}	4.019
898.1	1.496	3.615
1048.0	1.929	3.327
1197.0	2.394	3.111
1497.0	3.410	2.812
1796.0	4.515	2.618
2096.0	5.691	2.484
2395.0	6.921	2.388
2694.0	8.195	2.317
2994.0	9.503	2.263
4490.0	1.635×10^{3}	2.128
5987.0	2.347	2.096
7484.0	3.063	2.086
8981.0	3.780	2.096
10480.0	4.490	2.112
11970.0	5.201	2.130
14970.0	6.590	2.170
17960.0	7.956	2.211
20960.0	9.301	2.245
23950.0	1.062×10^{4}	2.279
26940.0	1.193	2.310
29940.0	1.322	2.339



Range of H^3 in Phenyl-Cyclo-Hexane
Scale I: 1 mev. < T_r < 10 mev.
Scale II: 10 mev. < T_r < 100 mev.
T_r
(Mev)
Range in gm./cm²
MU-6324

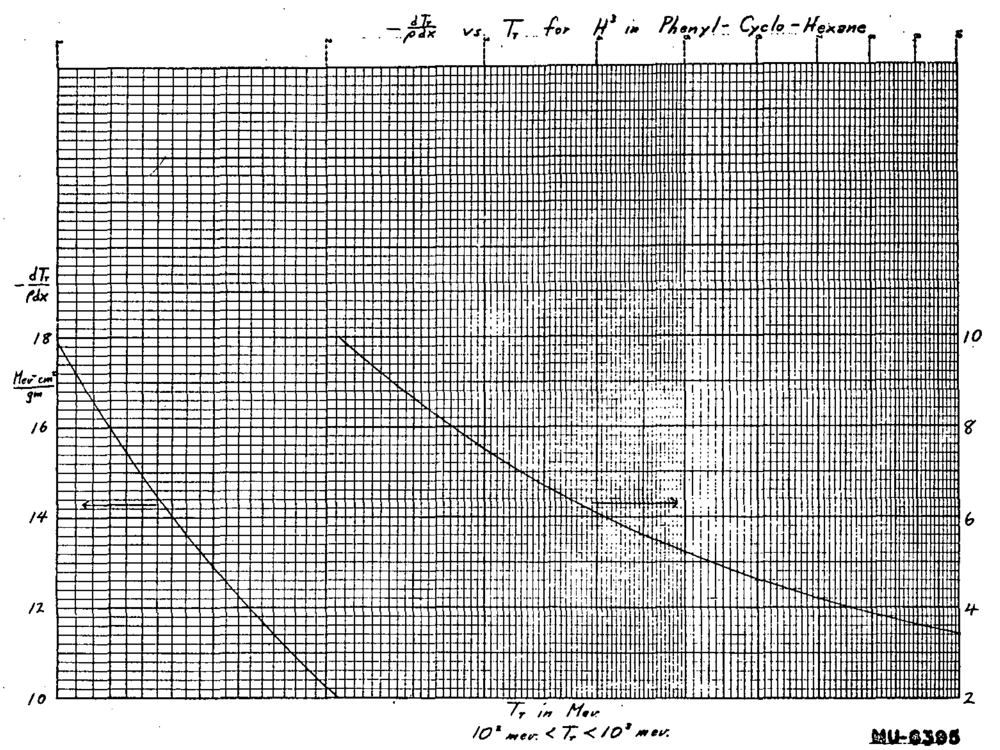

Range of H^3 in Phenyl-Cyclo-Hexane
Scale I: 100 mev. < T_r < 1000 mev.
Scale II: 1000 mev. < T_r < 10000 mev.
Scale III: 10000 mev. < T_r < 100000 mev.
T_r
(N_{or})
Range in gm./cm.²

MU-6325



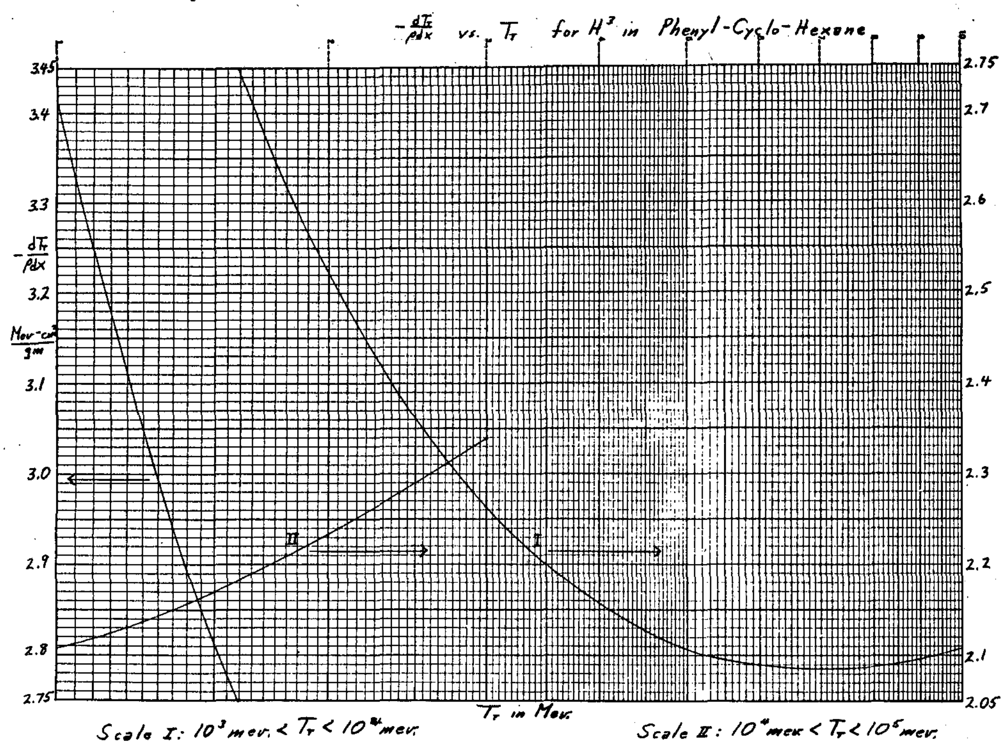
$-\frac{dT_r}{\rho dx}$ vs. T_r for H^3 in Phenyl-Cyclo-Hexane
$-\frac{dT_r}{\rho dx}$
Mev cm²/gm.
110
100
90
80
70
60
60
50
40
30
20
10
T_r in Mev.
10^1 mev. < T_r < 10^2 mev.

MU-8394



$-\frac{dT_r}{\rho dx}$ vs. T_r for H^3 in Phenyl-Cyclo-Hexane
$-\frac{dT_r}{\rho dx}$
$\frac{Mev\text{-}cm^2}{gm}$
18
16
14
12
10
10
8
6
4
2
T_r in Mev
10^2 mev. < T_r < 10^3 mev.

MU-6395



$-\frac{dT_r}{\rho dx}$ vs. T_r for H^3 in Phenyl-Cyclo-Hexene
3.45
3.4
3.3
$-\frac{dT_r}{\rho dx}$
3.2
Mev-cm²/gm
3.1
3.0
2.9
2.8
2.75
2.75
2.7
2.6
2.5
2.4
2.3
2.2
2.1
2.05
II
I
T_r in Mev.
Scale I: 10^3 mev. < T_r < 10^4 mev.
Scale II: 10^4 mev < T_r < 10^5 mev.

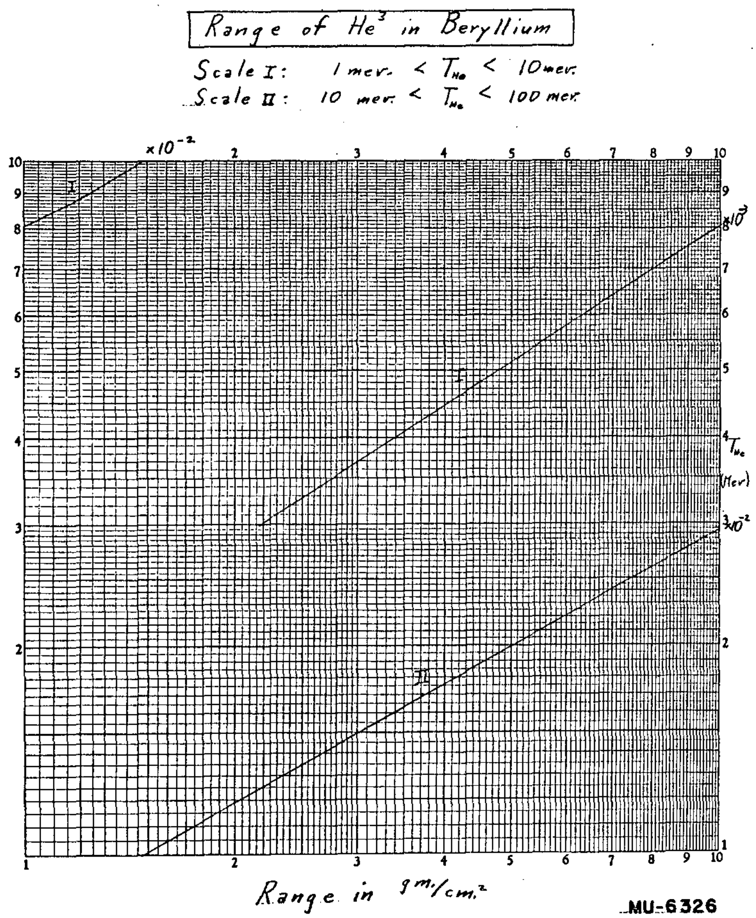
MU-6396

VI. He^3 RANGE-ENERGY DATA

He^3 Kinetic Energy Range: 1 Mev. to 10^5 Mev.

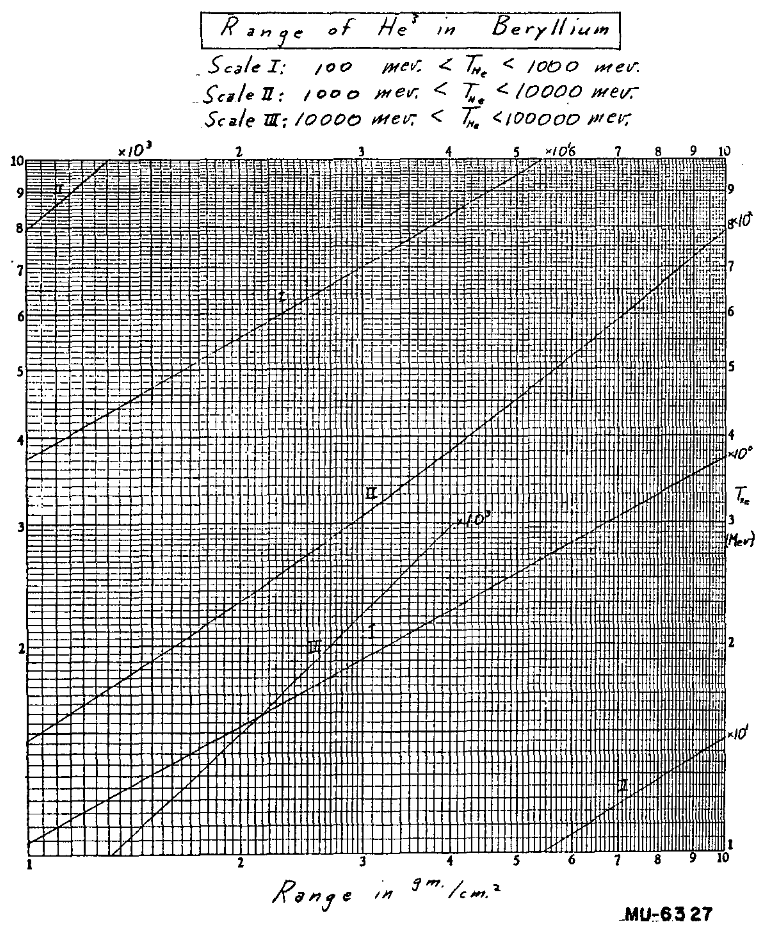
RANGE OF He^3 IN BERYLLIUM

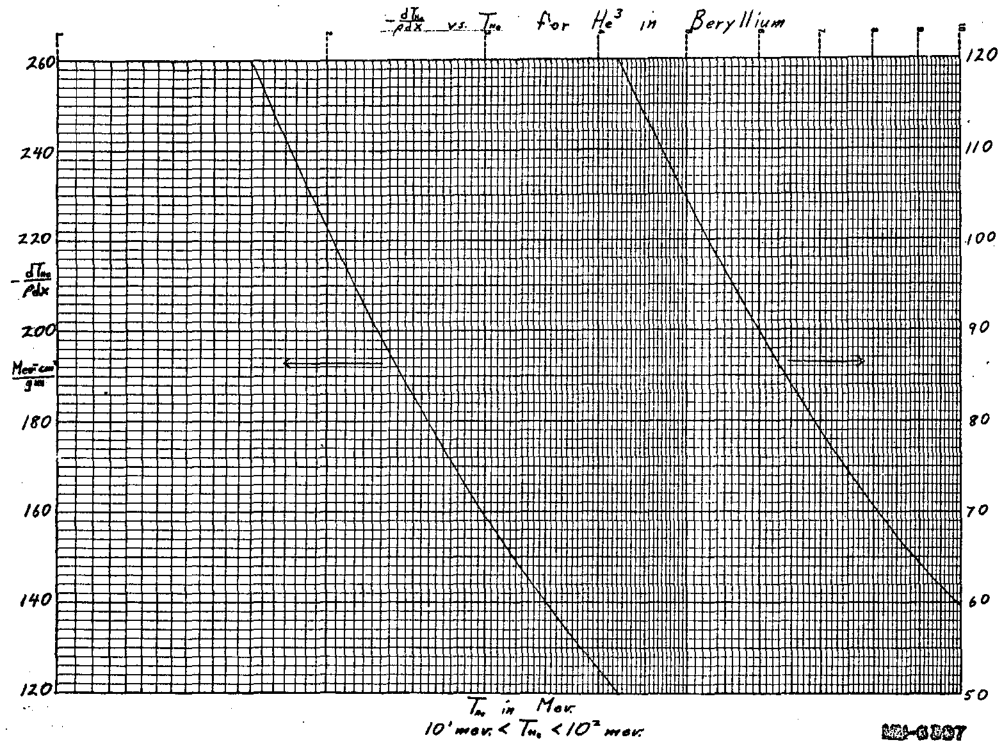
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
2.993	2.177×10^{-3}	987.9
5.986	6.306	583.5
8.979	1.238×10^{-2}	424.2
11.97	2.034	337.1
14.96	3.012	281.5
17.96	4.160	242.7
20.95	5.476	214.0
23.94	6.956	191.8
26.94	8.596	174.2
29.93	1.039×10^{-1}	159.7
35.92	1.445	137.4
41.90	1.910	121.0
47.89	2.434	108.3
53.88	3.015	98.25
59.86	3.652	90.06
89.79	7.644	64.47
119.7	1.291×10^{0}	50.96
149.6	1.937	42.55
179.6	2.696	36.79
209.5	3.562	32.58
239.4	4.532	29.37
269.4	5.599	26.83
299.3	6.761×10^{0}	24.78
449.0	1.387×10^{1}	18.46
598.6	2.287	15.20
748.3	3.347	13.18
897.9	4.544	11.89
1048.0	5.859	10.94
1197.0	7.276	10.22
1496.0	1.037×10^{2}	9.240
1796.0	1.373	8.600
2095.0	1.731	8.158
2394.0	2.106	7.840
2694.0	2.494	7.604
2993.0	2.892	7.426
5986.0	7.151	6.853
8979.0	1.152×10^{3}	6.865
11970.0	1.585	6.975
14960.0	2.010	7.102
17960.0	2.428	7.226
20950.0	2.839	7.344
23940.0	3.244	7.453
26940.0	3.642	7.553
29930.0	4.036	7.647

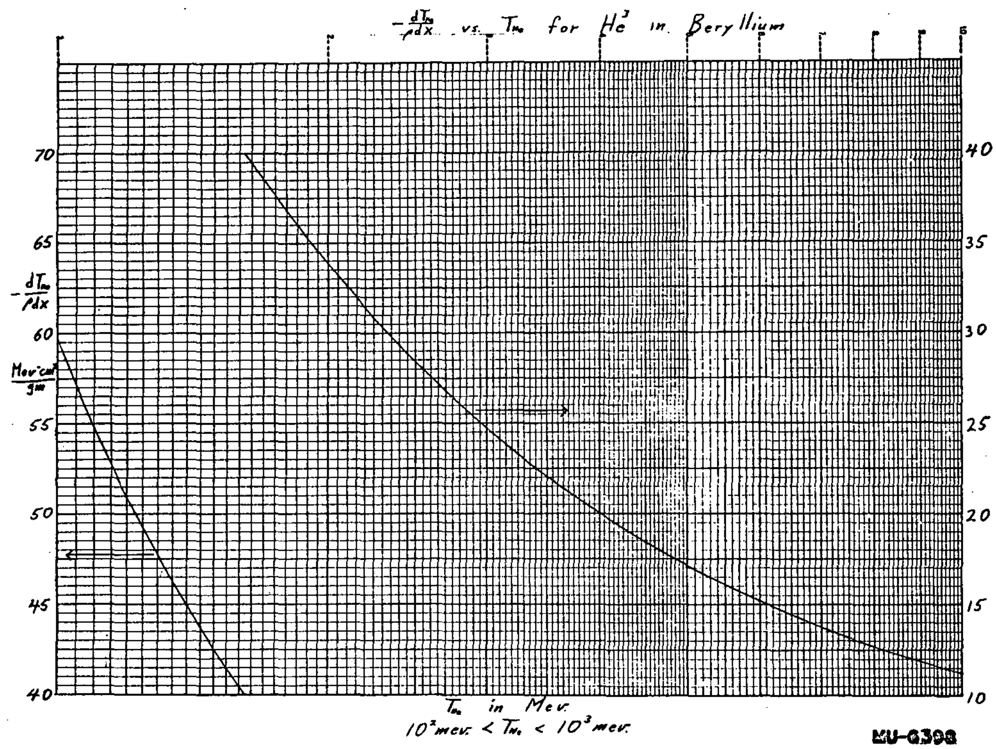


Range of He^3 in Beryllium
Scale I: 1 mev. < T_{He} < 10 mev.
Scale II: 10 mev. < T_{He} < 100 mev.
×10^{-2}
I
II
×10^{-3}
×10^{-2}
T_{He} (Mev)
Range in gm./cm.^{2}

MU-6326

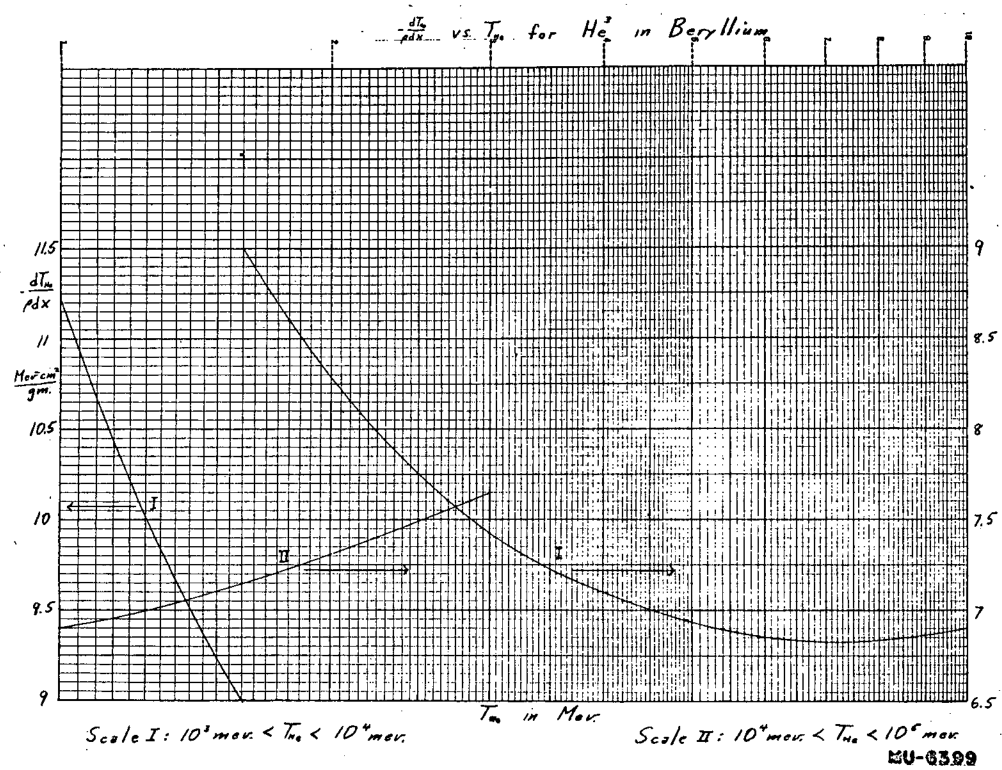

Range of He^3 in Beryllium
Scale I: 100 mev. < T_{He} < 1000 mev.
Scale II: 1000 mev. < T_{He} < 10000 mev.
Scale III: 10000 mev. < T_{He} < 100000 mev.
T_{He} (Mev)
Range in gm./cm.^{2}
MU-6327


$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in Beryllium
260
240
220
$-\frac{dT_{He}}{\rho dx}$
200
$\frac{Mev\text{-}cm^2}{gm}$
180
160
140
120
120
110
100
90
80
70
60
50
T_{He} in Mev.
10^1 mev. < T_{He} < 10^2 mev.



$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in Beryllium
70
65
$-\frac{dT_{He}}{\rho dx}$
60
$\frac{Mev\,cm^2}{gm}$
55
50
45
40
40
35
30
25
20
15
10
T_{He} in Mev
10^2 mev $< T_{He} <$ 10^3 mev

MU-6398



$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in Beryllium
11.5
$-\frac{dT_{He}}{\rho dx}$
11
$\frac{Mev\,cm^2}{gm.}$
10.5
10
9.5
9
9
8.5
8
7.5
7
6.5
I
II
II
T_{He} in Mev.
Scale I: 10^3 mev. < T_{He} < 10^4 mev.
Scale II: 10^4 mev. < T_{He} < 10^5 mev.
MU-6399

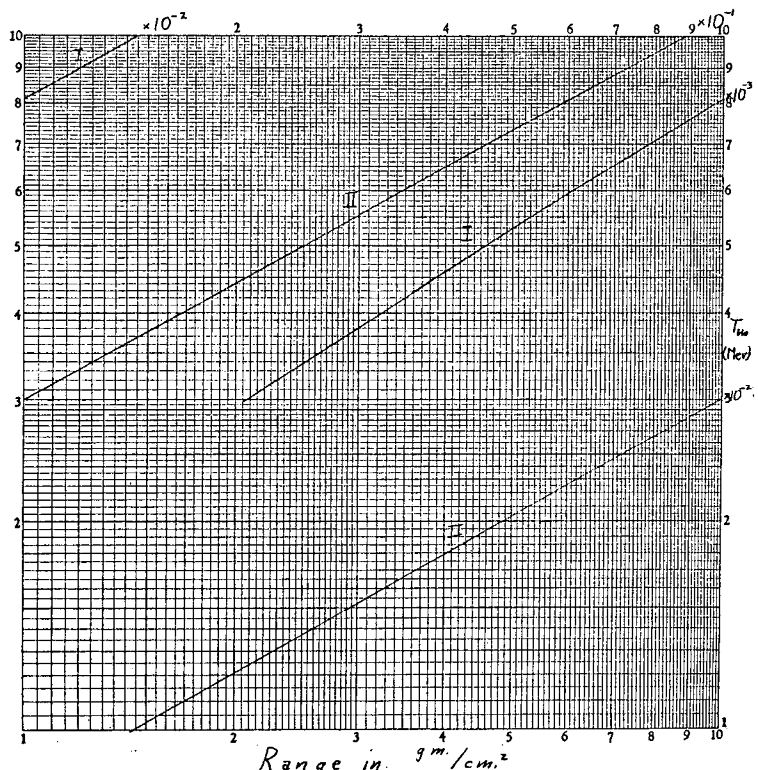
RANGE OF He^3 IN CARBON

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
2.993	2.065×10^{-3}	967.0
5.986	6.071	598.7
8.979	1.196×10^{-2}	439.0
11.97	1.967	350.3
14.96	2.910	293.6
17.96	4.009	253.8
20.95	5.267	224.2
23.94	6.677	201.3
26.94	8.239	183.0
29.93	9.947	168.0
35.92	1.380×10^{-1}	144.8
41.90	1.821	127.7
47.89	2.316	114.5
53.88	2.866	104.0
59.86	3.467	95.43
89.79	7.227	68.55
119.7	1.217×10^{0}	54.30
149.6	1.823	45.41
179.6	2.534	39.31
209.5	3.344	34.94
239.4	4.250	31.43
269.4	5.247	28.74

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
299.3	6.332×10^{0}	26.55
449.0	1.295×10^{1}	19.82
598.6	2.136	16.35
748.3	3.118	14.23
897.9	4.232	12.81
1048.0	5.452	11.79
1197.0	6.763	11.03
1496.0	9.627	9.976
1796.0	1.274×10^{2}	9.292
2095.0	1.605	8.820
2394.0	1.952	8.480
2694.0	2.310	8.230
2993.0	2.678	8.040
5986.0	6.604	7.443
8979.0	1.063×10^{3}	7.470
11970.0	1.460	7.599
14960.0	1.850	7.745
17960.0	2.233	7.897
20950.0	2.609	8.020
23940.0	2.980	8.144
26940.0	3.344	8.258
29930.0	3.705	8.364

Range of He^3 in Carbon

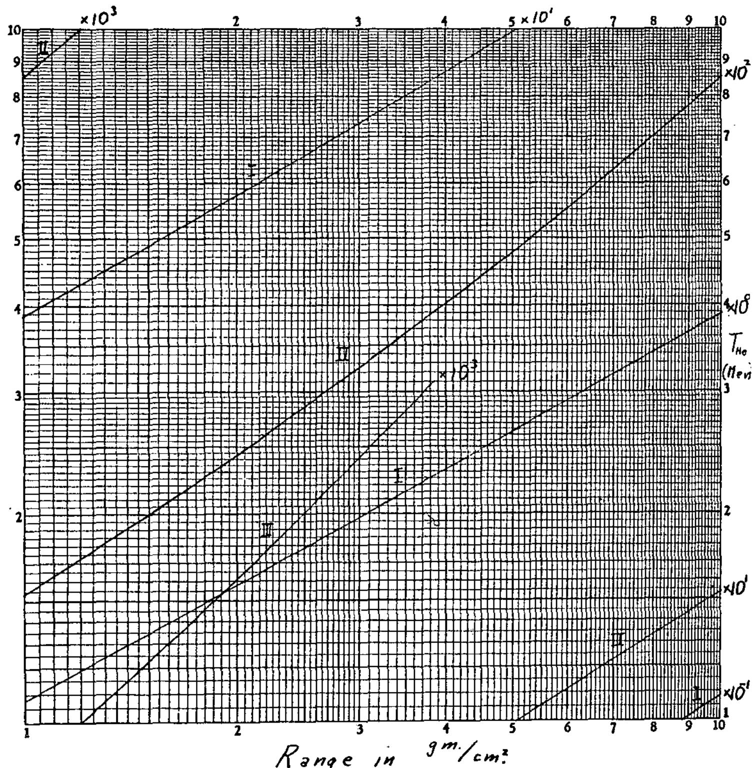
Scale I: 1 mev. < T_{He} < 10 mev.
Scale II: 10 mev. < T_{He} < 100 mev.



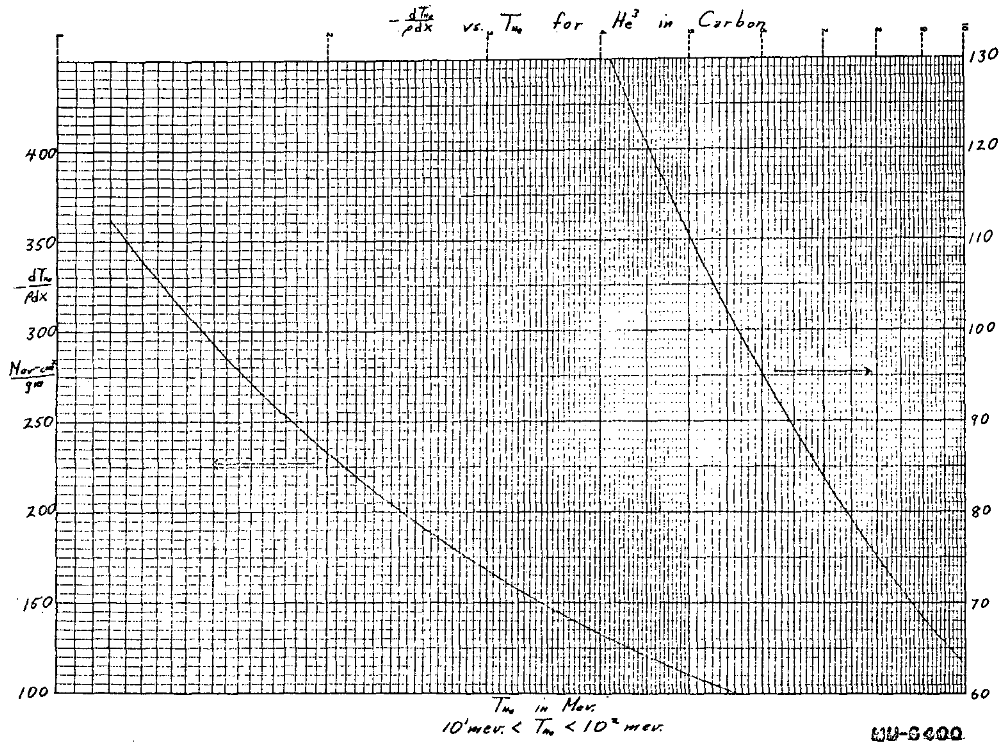
MU-6528

Range of He^3 in Carbon

Scale I: 100 mev. < T_{He} < 1000 mev.
Scale II: 1000 mev. < T_{He} < 10000 mev.
Scale III: 10000 mev. < T_{He} < 100000 mev.

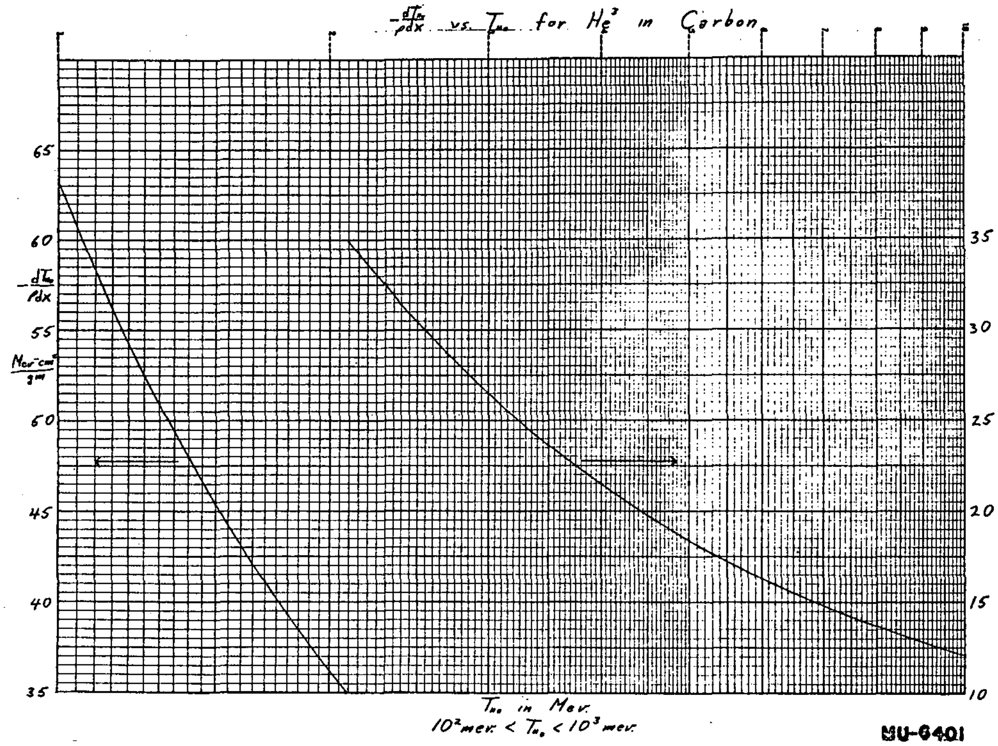


MU-6329



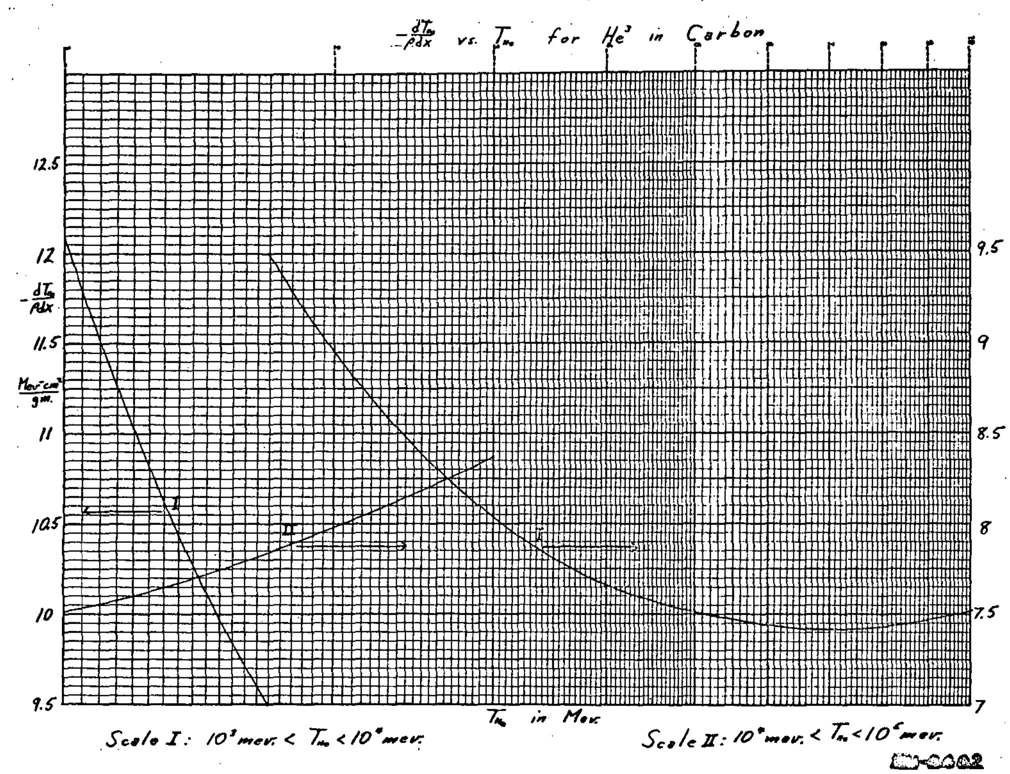
$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in Carbon
400
350
$-\frac{dT_{He}}{\rho dx}$
300
$\frac{Mev\text{-}cm^2}{gm}$
250
200
150
100
130
120
110
100
90
80
70
60
T_{He} in Mev.
$10^1 mev. < T_{He} < 10^2 mev.$

MU-8400



$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in Carbon
65
60
$-\frac{dT_{He}}{\rho dx}$
55
$\frac{Mev\text{-}cm^2}{gm}$
50
45
40
35
35
30
25
20
15
10
T_{He} in Mev.
10^2 mev. < T_{He} < 10^3 mev.

MU-6401



$-\frac{dT_m}{\rho dx}$ vs. T_m for He^3 in Carbon
12.5
12
$-\frac{dT_m}{\rho dx}$
11.5
$\frac{Mev\,cm^2}{gm.}$
11
10.5
10
9.5
9.5
9
8.5
8
7.5
7
I
II
I
T_m in Mev.
Scale I: 10^3 mev. < T_m < 10^4 mev.
Scale II: 10^4 mev. < T_m < 10^5 mev.

RANGE OF He^3 IN ALUMINUM

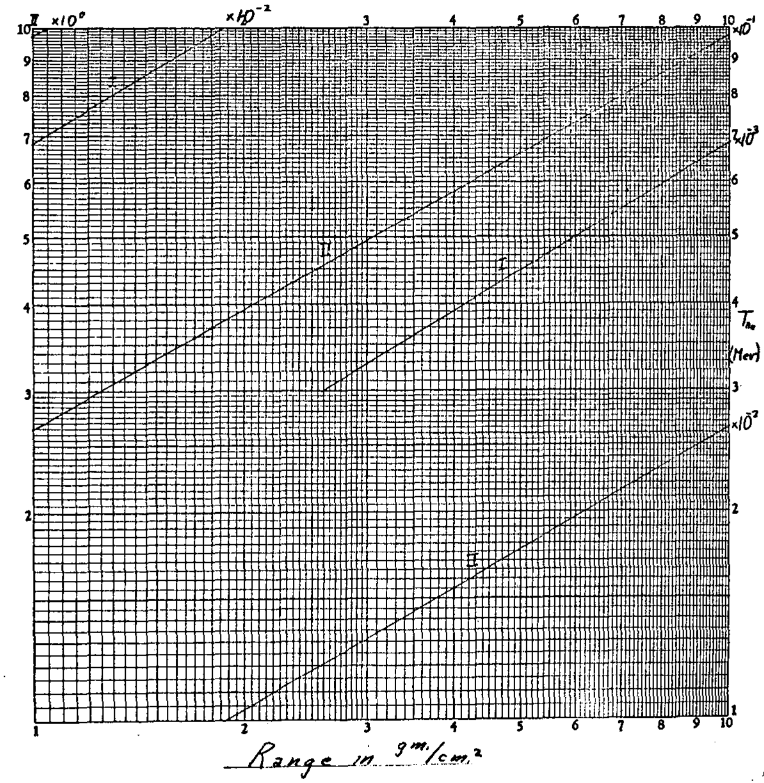
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
2.993	2.582×10^{-3}	
4.490	5.006	
5.986	8.081	460.0
7.483	1.167×10^{-2}	394.0
8.979	1.571	344.8
11.97	2.582	278.4
14.96	3.764	235.2
17.96	5.171	204.8
20.95	6.734	182.0
23.94	8.470	164.0
26.94	1.039×10^{-1}	150.0
29.93	1.247	138.0
35.92	1.714	119.6
44.90	2.539	100.7
62.86	4.597	77.20
74.83	6.262	67.28
89.79	8.658	58.24
104.8	1.140×10^{0}	51.56
119.7	1.446	46.40
149.6	2.154	38.97
179.6	2.980	33.83
209.5	3.921	30.06
239.4	4.970	27.18
269.4	6.122	24.89
299.3	7.374	23.03

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
359.2	1.016×10^{1}	20.19
478.9	1.676	16.54
598.6	2.457	14.30
748.3	3.582	12.48
897.9	4.849	11.25
1049.0	6.236	10.37
1197.0	7.730	9.712
1496.0	1.098×10^{2}	8.804
1796.0	1.450	8.216
2095.0	1.824	7.808
2394.0	2.216	7.516
2694.0	2.620	7.304
2993.0	3.034	7.140
3741.0	4.104	6.884
4490.0	5.202	6.752
5986.0	7.439	6.656
7483.0	9.690	6.660
8979.0	1.193×10^{3}	6.708
11970.0	1.635	6.840
14960.0	2.067	6.988
17960.0	2.492	7.128
20950.0	2.908	7.260
23940.0	3.316	7.380
26940.0	3.719	7.492
29930.0	4.116	7.592

Range of He^3 in Aluminum

Scale I: 1 mev. < T_{He} < 10 mev.

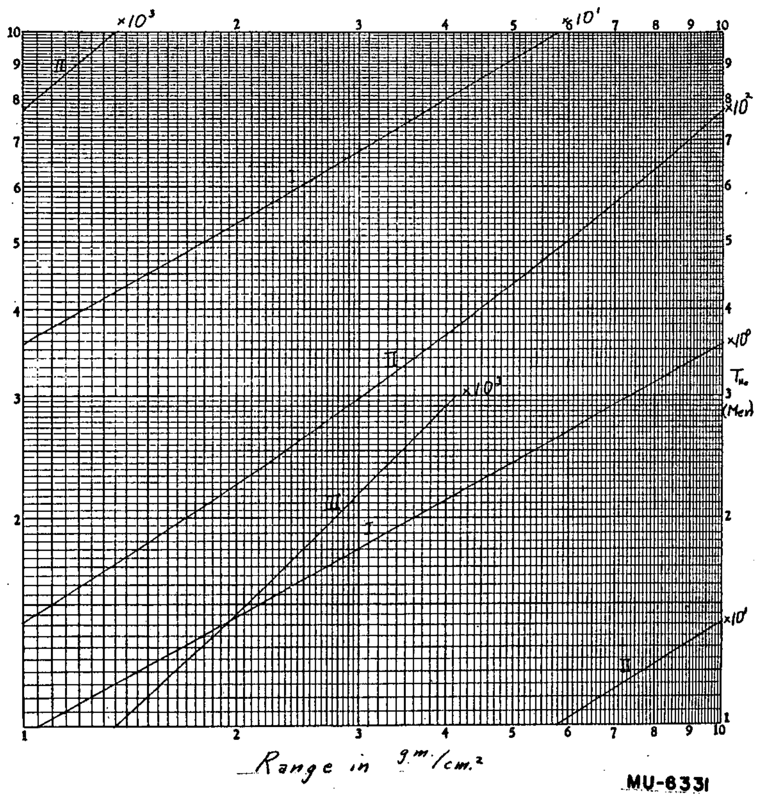
Scale II: 10 mev. ≤ T_{He} < 100 mev.

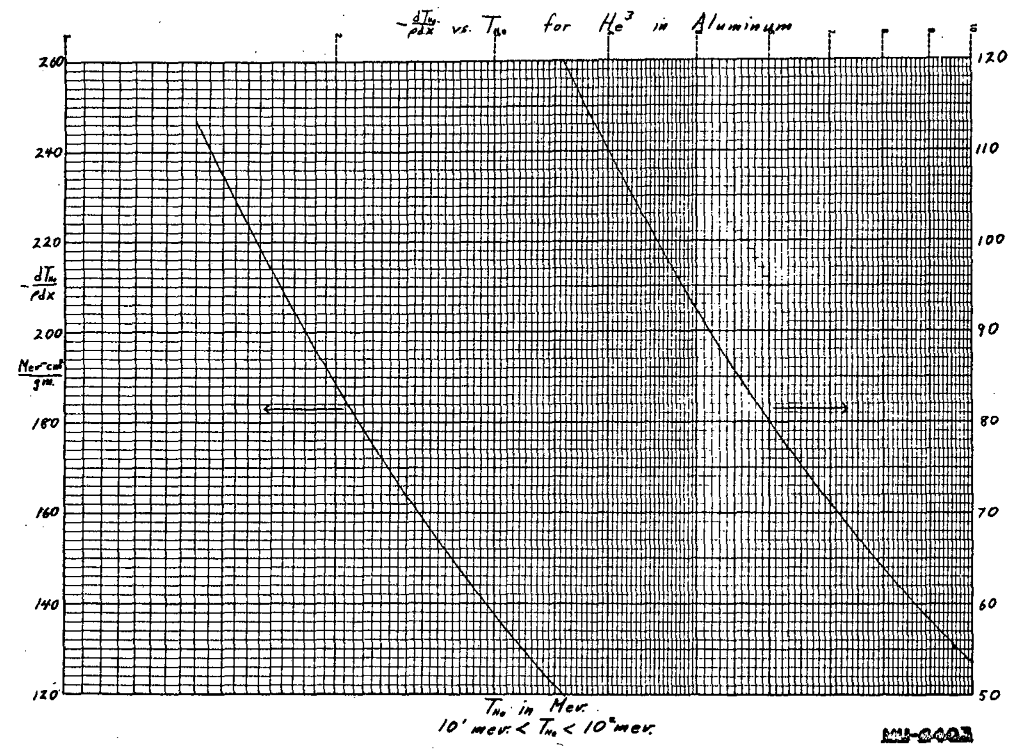


MU-6330

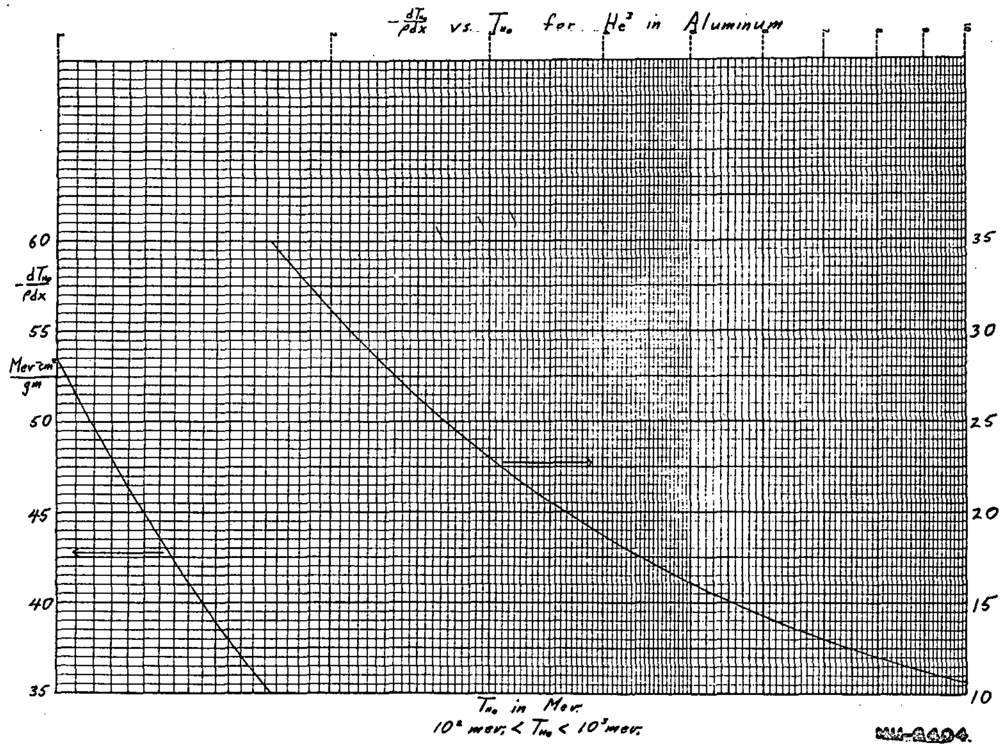
Range of He^3 in Aluminum

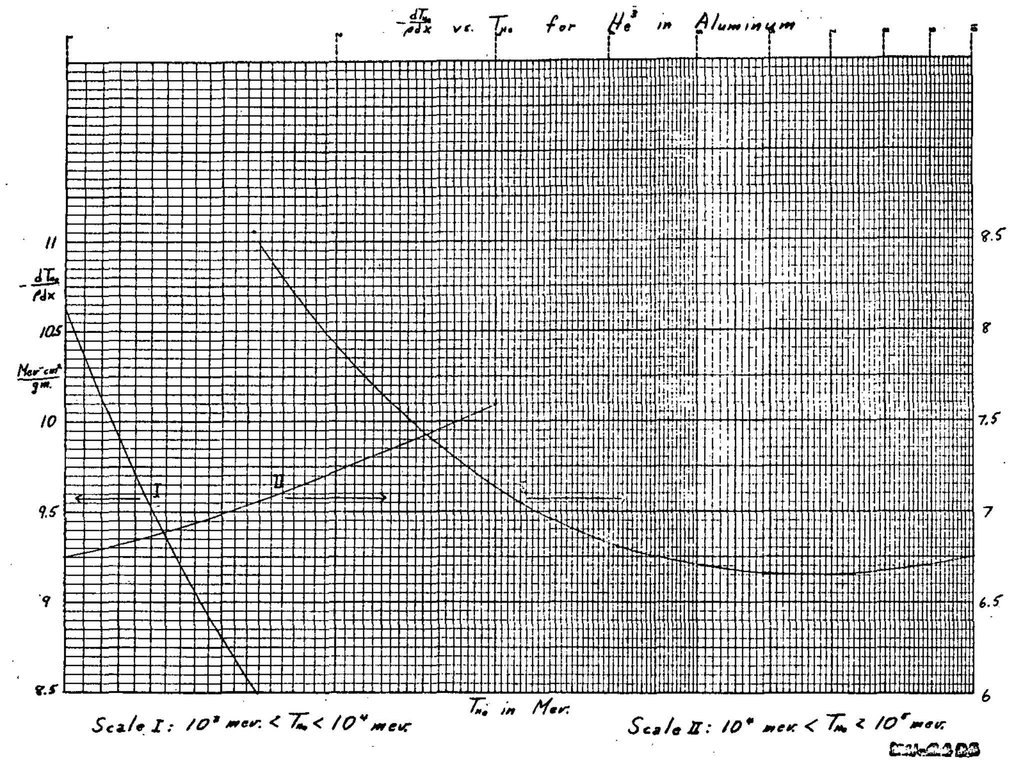
Scale I: 100 mev. < T_{He} < 1000 mev.
Scale II: 1000 mev. < T_{He} < 10000 mev.
Scale III: 10000 mev. < T_{He} < 100000 mev.





$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in Aluminum
260
240
220
200
180
160
140
120
$-\frac{dT_{He}}{\rho dx}$
$\frac{Mev\text{-}cm^2}{gm.}$
120
110
100
90
80
70
60
50
T_{He} in Mev.
10^1 mev. < T_{He} < 10^2 mev.


$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in Aluminum
60
$-\frac{dT_{He}}{\rho dx}$
55
$\frac{Mev\text{-}cm^2}{gm}$
50
45
40
35
35
30
25
20
15
10
T_{He} in Mev.
10^2 mev. < T_{He} < 10^3 mev.

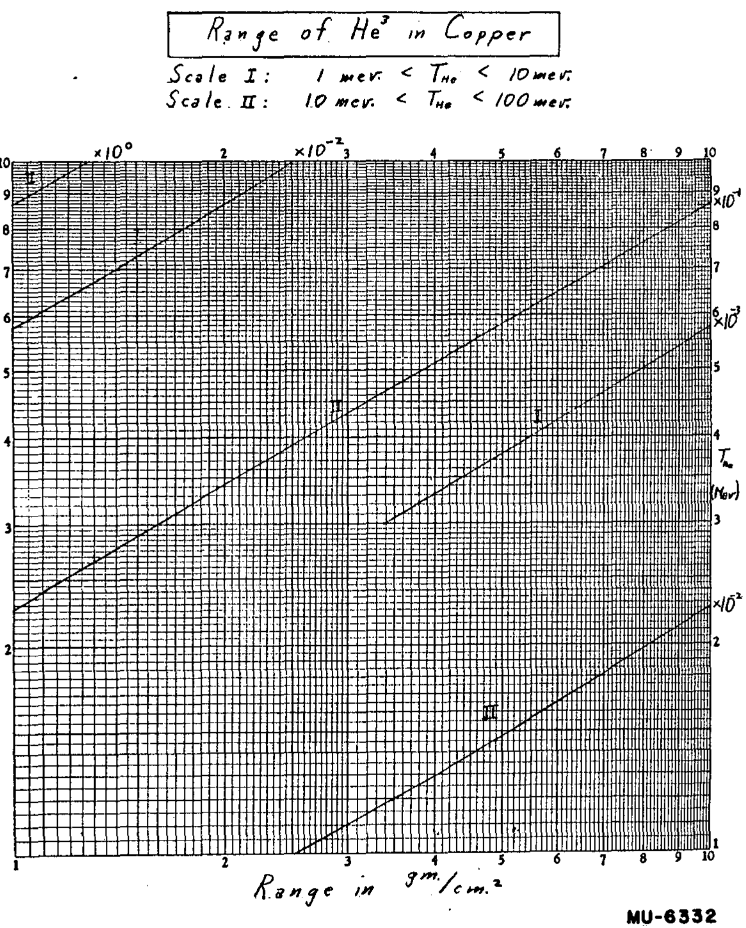


$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in Aluminum
11
$-\frac{dT_{He}}{\rho dx}$
10.5
$\frac{Mev\,cm^2}{gm.}$
10
9.5
9
8.5
8.5
8
7.5
7
6.5
6
I
II
T_{He} in Mev.
Scale I: 10^3 mev. < T_{He} < 10^4 mev.
Scale II: 10^4 mev. < T_{He} < 10^5 mev.

RANGE OF He^3 IN COPPER

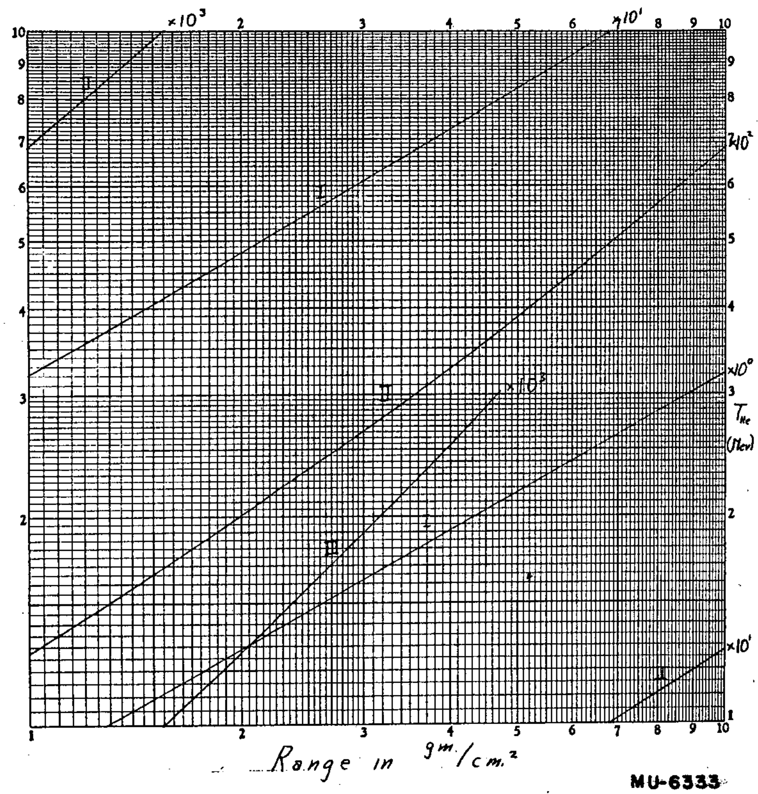
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
2.993	3.367×10^{-3}	
5.896	1.070×10^{-2}	
8.979	2.125	
11.97	3.491	
14.96	5.124	184.3
17.96	6.362	161.8
23.94	1.100×10^{-1}	131.2
29.93	1.597	111.2
35.92	2.175	96.96
41.90	2.831	86.28
47.89	3.562	77.92
59.86	5.243	65.68
65.84	6.190	61.04
77.82	8.287	53.68
89.79	1.065×10^{0}	48.08
104.8	1.396	42.68
119.7	1.766	38.52
149.6	2.616	32.48
179.6	3.606	28.29
209.5	4.730	25.20
239.4	5.980	22.82
269.4	7.351	20.94
299.3	8.837	19.41
359.2	1.214×10^{1}	17.02
449.0	1.784	14.64

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
598.6	2.914×10^{1}	12.16
748.2	4.235	10.64
897.9	5.720	9.608
1048.0	7.343	8.872
1197.0	9.087	8.324
1496.0	1.287×10^{2}	7.564
1796.0	1.697	7.072
2095.0	2.132	6.732
2394.0	2.585	6.492
2694.0	3.053	6.312
2993.0	3.532	6.180
3592.0	4.516	6.004
4490.0	6.031	5.872
5986.0	8.599	5.808
7482.0	1.117×10^{3}	5.824
8979.0	1.373	5.880
10480.0	1.626	5.944
11970.0	1.877	6.016
14960.0	2.368	6.160
17960.0	2.849	6.296
20950.0	3.320	6.420
23940.0	3.782	6.536
26940.0	4.236	6.644
29930.0	4.683	6.740

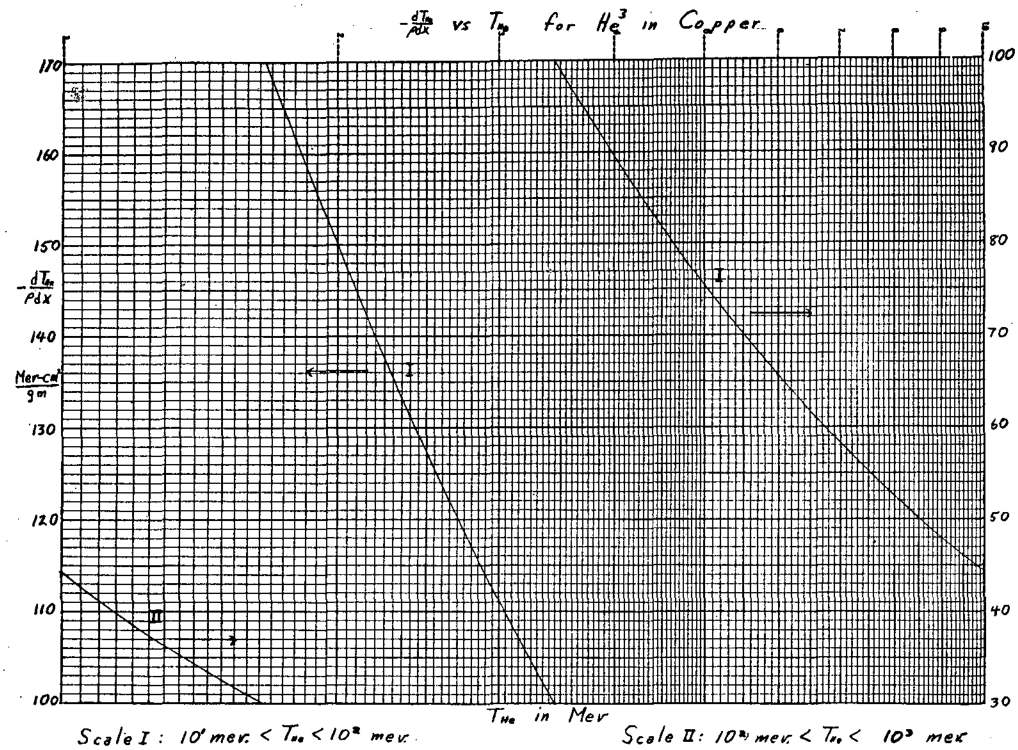

Range of He³ in Copper
Scale I: 1 mev. < T_{He} < 10 mev.
Scale II: 10 mev. < T_{He} < 100 mev.
×10⁰
×10⁻²
×10⁻⁴
×10⁻³
×10²
T_{He} (Mev)
Range in gm./cm.²
MU-6332

Range of He^3 in Copper

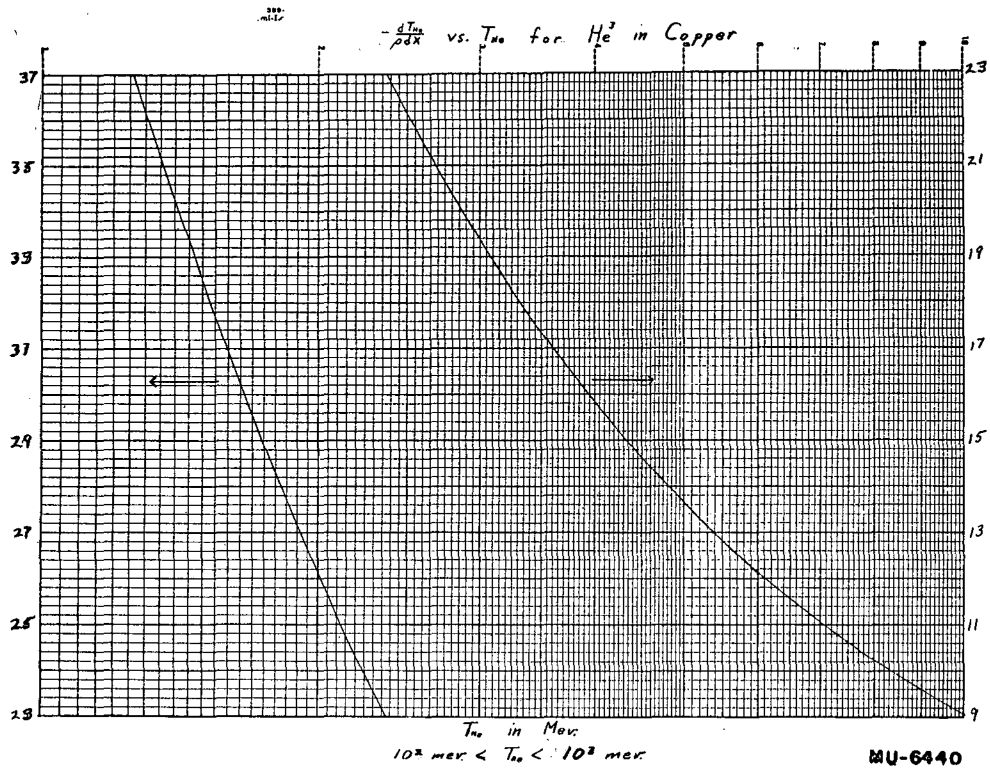
Scale I: 100 mev. < T_{He} < 1000 mev.
Scale II: 1000 mev. < T_{He} < 10000 mev.
Scale III: 10000 mev. < T_{He} < 100000 mev.



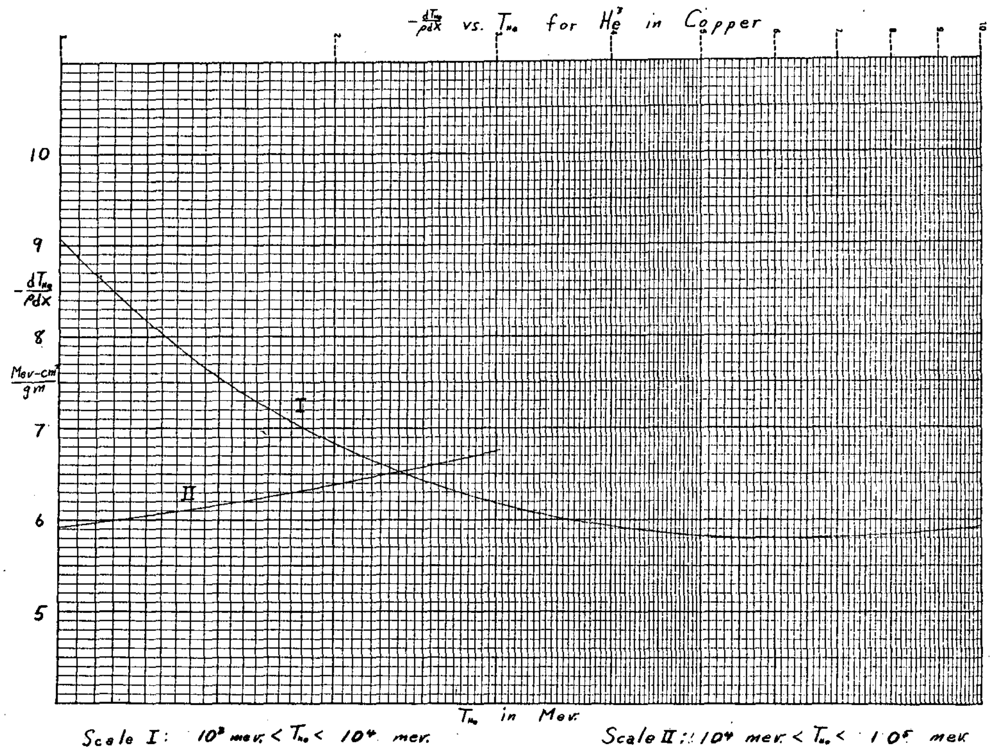
MU-6333


$-\frac{dT_{He}}{\rho dx}$ vs T_{He} for He^3 in Copper
$-\frac{dT_{He}}{\rho dx}$
$\frac{Mev\text{-}cm^2}{gm}$
170
160
150
140
130
120
110
100
I
I
II
T_{He} in Mev
Scale I : 10^1 mev. < T_{He} < 10^2 mev.
Scale II: 10^2 mev. < T_{He} < 10^3 mev.

MU-6432



$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in Copper
37
35
33
31
29
27
25
23
23
21
19
17
15
13
11
9
T_{He} in Mev.
10^2 mev. < T_{He} < 10^3 mev.
MU-6440



$-\frac{dT_{He}}{\rho dX}$ vs. T_{He} for He^3 in Copper
10
9
$-\frac{dT_{He}}{\rho dX}$
8
$\frac{Mev\text{-}cm^2}{gm}$
7
6
5
I
II
T_{He} in Mev.
Scale I: 10^3 mev. < T_{He} < 10^4 mev.
Scale II: 10^4 mev. < T_{He} < 10^5 mev.

MU-6441

RANGE OF He^3 IN LEAD

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
104.8	2.054×10^0	29.89
119.7	2.581	27.11
149.6	3.783	23.05
179.6	5.174	20.20
209.5	6.743	18.09
239.4	8.480	16.45
269.4	1.038×10^1	15.15
299.3	1.243	14.08
359.2	1.697	12.43
478.9	2.762	10.30
598.6	4.012	8.971
748.3	5.799	7.884
897.9	7.798	7.149
1048.0	9.976	6.621
1197.0	1.231×10^2	6.227
1496.0	1.736	5.681
1796.0	2.281	5.328

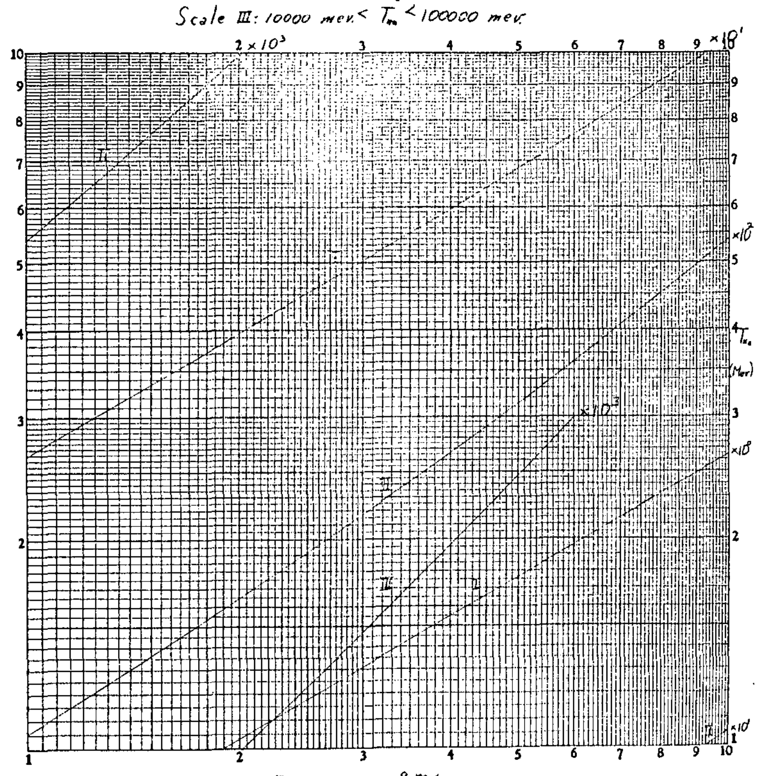
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
2095.0	2.857×10^2	5.087
2394.0	3.456	4.917
2694.0	4.072	4.793
2993.0	4.703	4.702
3592.0	5.994	4.584
4789.0	8.641	4.486
5986.0	1.132×10^3	4.474
7483.0	1.465	4.504
8979.0	1.795	4.564
10480.0	2.121	4.628
11970.0	2.442	4.694
14960.0	3.071	4.825
17960.0	3.683	4.946
20950.0	4.282	5.057
23940.0	4.867	5.159
26940.0	5.442	5.252
29930.0	6.007	5.338

Range of He^3 in Lead

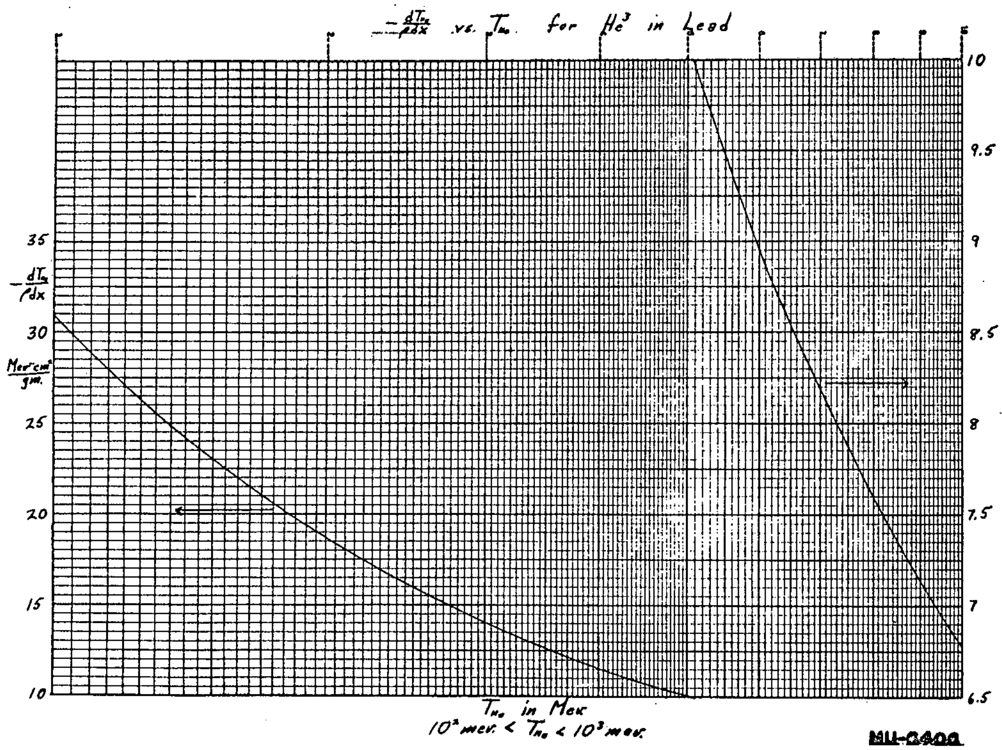
Scale I: 100 mev. < T_{He} < 1000 mev.

Scale II: 1000 mev. < T_{He} < 10000 mev.

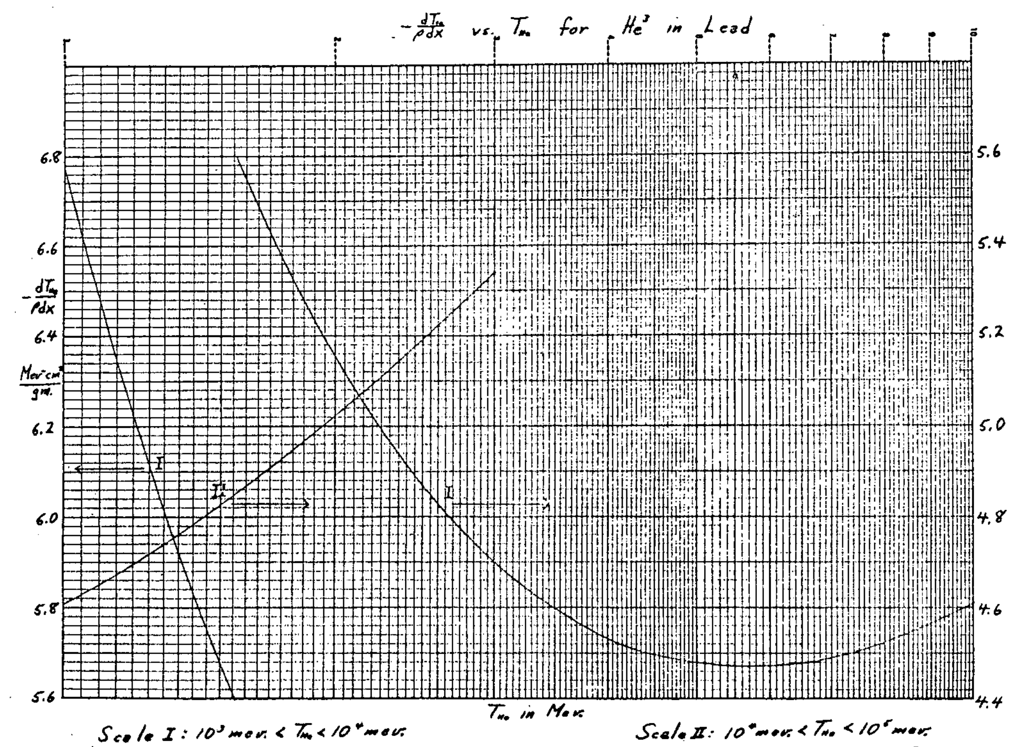
Scale III: 10000 mev. < T_{He} < 100000 mev.



MU-6334


$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in Lead
$-\frac{dT_{He}}{\rho dx}$
$\frac{Mev\,cm^2}{gm.}$
35
30
25
20
15
10
10
9.5
9
8.5
8
7.5
7
6.5
T_{He} in Mev
10^2 mev. < T_{He} < 10^3 mev.

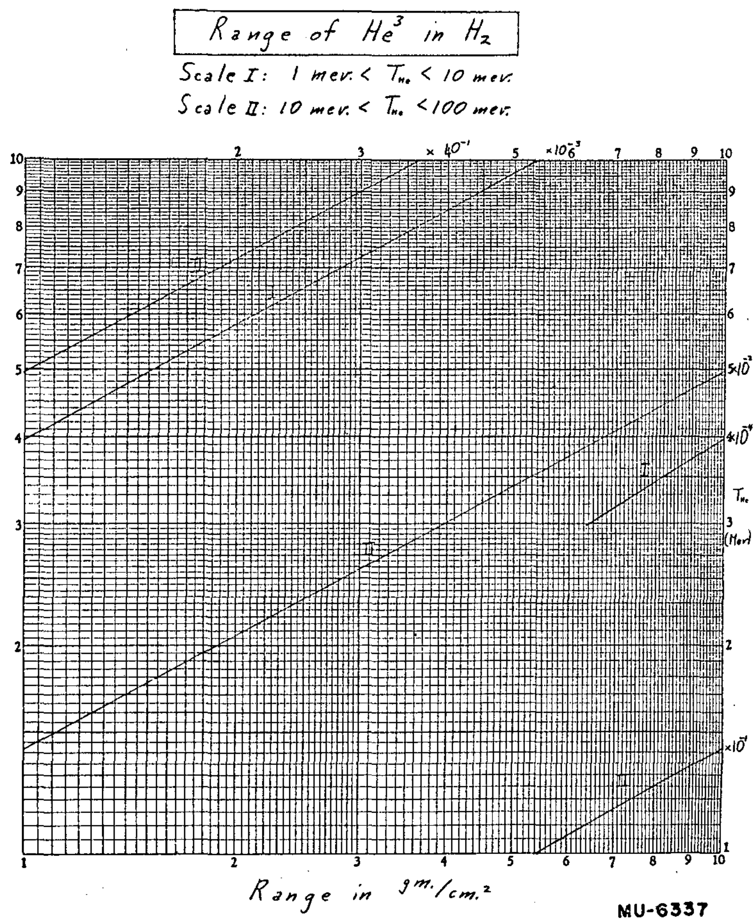
MU-8408

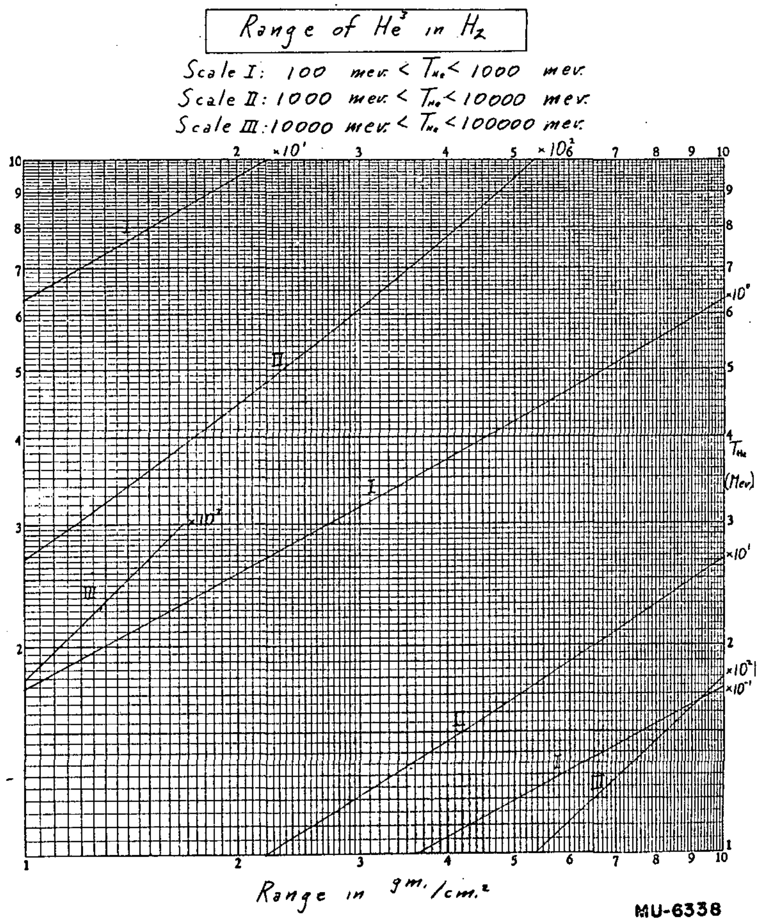

$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in Lead
6.8
6.6
$-\frac{dT_{He}}{\rho dx}$
6.4
$\frac{Mev\,cm^2}{gm.}$
6.2
6.0
5.8
5.6
5.6
5.4
5.2
5.0
4.8
4.6
4.4
I
II
II
T_{He} in Mev.
Scale I: 10^3 mev. < T_{He} < 10^4 mev.
Scale II: 10^4 mev. < T_{He} < 10^5 mev.

RANGE OF HE^3 IN H_2

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
2.993	6.391×10^{-4}	2763.0
8.979	4.403×10^{-3}	1134.0
14.96	1.110×10^{-2}	740.9
17.96	1.547	635.8
20.95	2.051	558.5
23.94	2.619	499.0
26.94	3.250	451.7
29.93	3.944	413.2
35.92	5.514	354.2
41.90	7.322	310.8
47.89	9.364	277.6
53.88	1.163×10^{-1}	251.3
59.86	1.413	229.9
89.79	2.982	163.5
119.7	5.063	128.7
149.6	7.626	107.1
179.6	1.064×10^{0}	92.37
209.5	1.410	81.64
239.4	1.797	73.47
269.4	2.224	67.04
299.3	2.690	61.83

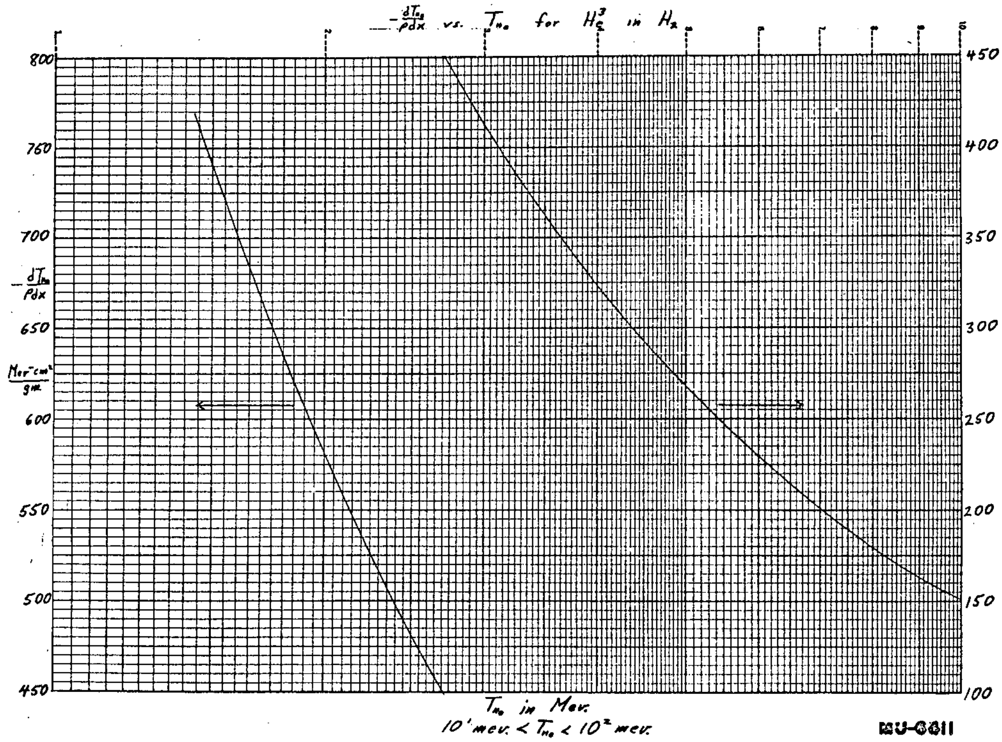
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
598.6	9.172	37.67
748.3	1.345×10^{1}	32.69
897.9	1.830	29.35
1048.0	2.363	26.96
1197.0	2.938	25.18
1496.0	4.196	22.71
1796.0	5.566	21.11
2095.0	7.027	20.00
2394.0	8.554	19.19
2694.0	1.014×10^{2}	18.60
2993.0	1.177	18.14
5986.0	2.926	16.64
8979.0	4.731	16.60
11970.0	6.523	16.82
14960.0	8.289	17.09
17960.0	1.002×10^{3}	17.36
20950.0	1.173	17.62
23940.0	1.342	17.86
26940.0	1.509	18.08
29930.0	1.673	18.29

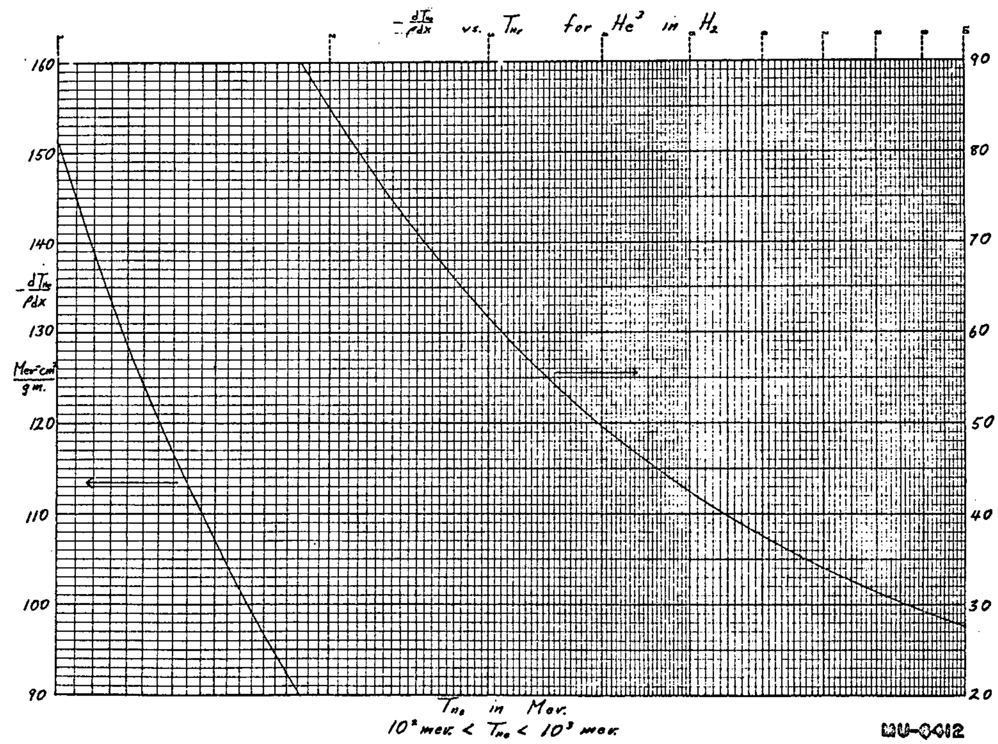

Range of He^3 in H_2
Scale I: 1 mev. < T_{He} < 10 mev.
Scale II: 10 mev. < T_{He} < 100 mev.
T_{He}
(Mev)
Range in gm./cm.²
MU-6337



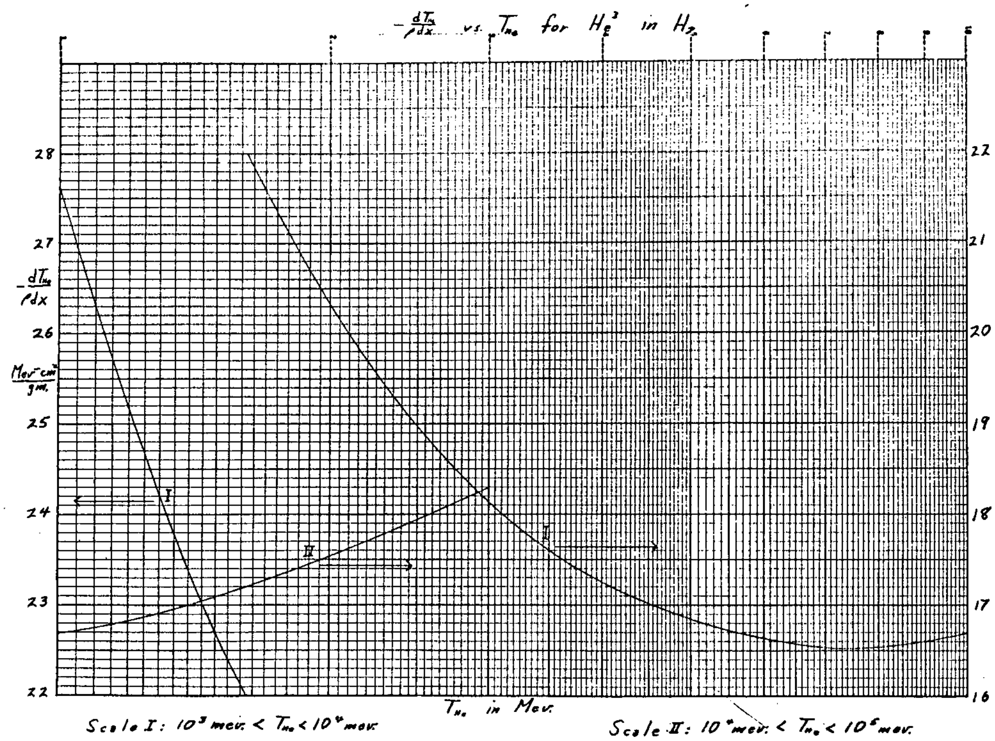
Range of He³ in H₂
Scale I: 100 mev. < T_He < 1000 mev.
Scale II: 1000 mev. < T_He < 10000 mev.
Scale III: 10000 mev. < T_He < 100000 mev.
×10¹
×10²
×10⁰
×10¹
×10²
×10⁻¹
T_He (Mev)
I
II
III
Range in gm./cm.²

MU-6338


$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He_2^3 in H_2
$-\frac{dT_{He}}{\rho dx}$
$\frac{Mev\text{-}cm^2}{gm}$
800
750
700
650
600
550
500
450
400
350
300
250
200
150
100
T_{He} in Mev.
10^1 mev. < T_{He} < 10^2 mev.
MU-6611



$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in H_2
160
150
140
$-\frac{dT_{He}}{\rho dx}$
130
$\frac{Mev\text{-}cm^2}{gm.}$
120
110
100
90
80
70
60
50
40
30
20
T_{He} in Mev.
10^2 mev. $< T_{He} < 10^3$ mev.
MU-0412


$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in H_2
28
27
$-\frac{dT_{He}}{\rho dx}$
26
$\frac{Mev\text{-}cm^2}{gm.}$
25
24
23
22
22
21
20
19
18
17
16
I
II
I
T_{He} in Mev.
Scale I: 10^3 mev. < T_{He} < 10^4 mev.
Scale II: 10^4 mev. < T_{He} < 10^5 mev.

MU-6413

RANGE OF HE^3 IN D_2

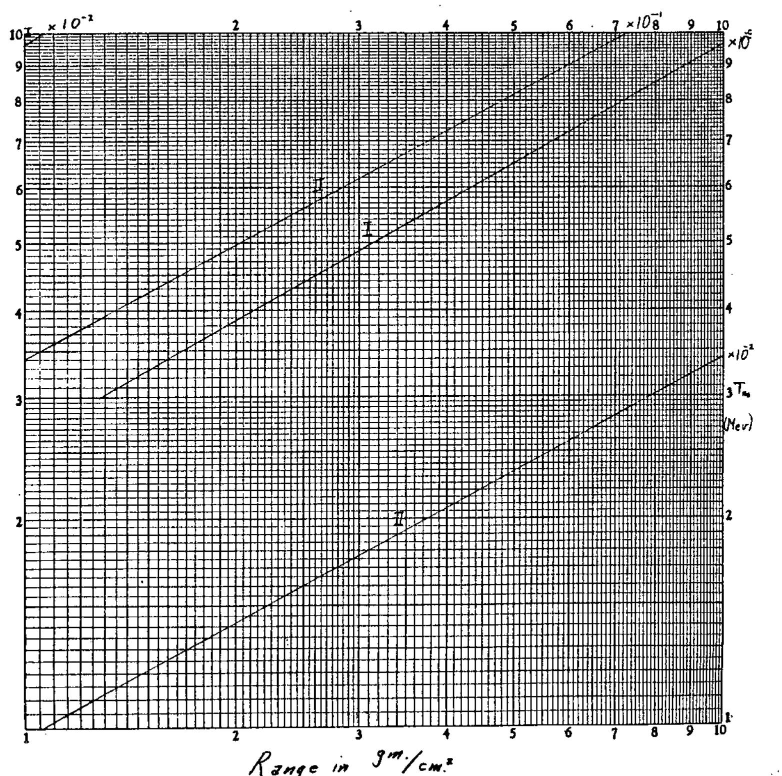
T (Mev)	R (gm/cm^2)	$-\frac{dT}{d\xi}$ ($Mev\text{-}cm^2/gm$)
2.993	1.277×10^{-3}	1382.0
8.979	8.799	567.3
14.96	2.218×10^{-2}	370.8
17.96	3.092	318.2
20.95	4.099	279.5
23.94	5.234	249.7
26.94	6.503	226.0
29.93	7.881	206.8
35.92	1.102×10^{-1}	177.2
41.90	1.463	155.5
47.89	1.871	138.9
53.88	2.325	125.8
59.86	2.823	115.0
89.79	5.960	81.80
119.7	1.012×10^{0}	64.39
149.6	1.524	53.59
179.6	2.127	46.22
209.5	2.818	40.86
239.4	3.591	36.76
269.4	4.445	33.54
299.3	5.375	30.94

T (Mev)	R (gm/cm^2)	$-\frac{dT}{d\xi}$ ($Mev\text{-}cm^2/gm$)
598.6	1.833×10^{1}	18.85
748.3	2.689	16.36
897.9	3.657	14.68
1048.0	4.722	13.49
1197.0	5.872	12.60
1496.0	8.385	11.36
1796.0	1.112×10^{2}	10.56
2095.0	1.404	10.01
2394.0	1.710	9.604
2694.0	2.026	9.306
2993.0	2.352	9.079
5986.0	5.848	8.324
8979.0	9.455	8.307
11970.0	1.304×10^{3}	8.416
14960.0	1.656	8.551
17960.0	2.003	8.686
20950.0	2.345	8.815
23940.0	2.682	8.935
26940.0	3.015	9.047
29930.0	3.344	9.150

Range of He^3 in D_2

Scale I: 1 mev. < T_{He} < 10 mev.

Scale II: 10 mev. < T_{He} < 100 mev.



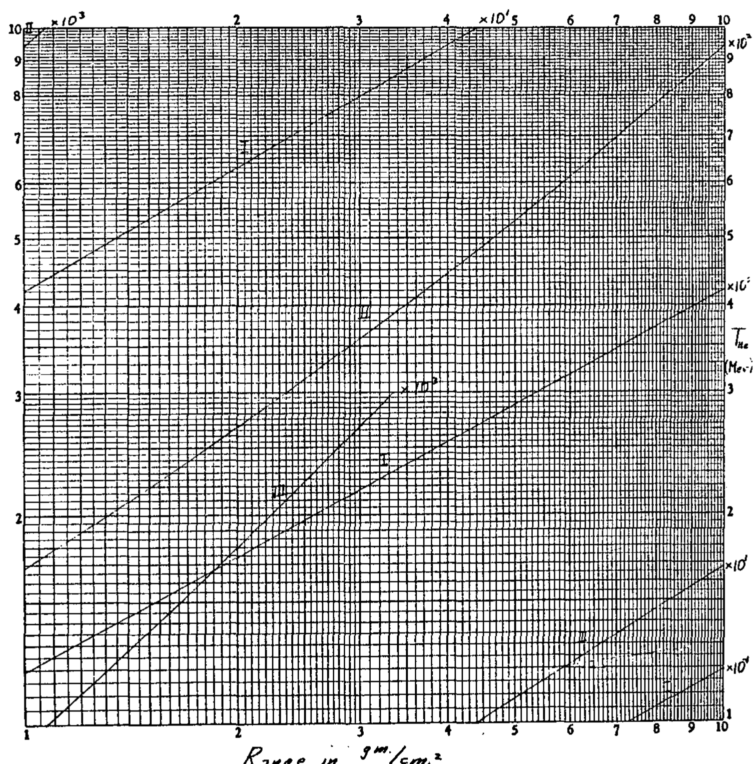
MU-6339

Range of He^3 in D_2

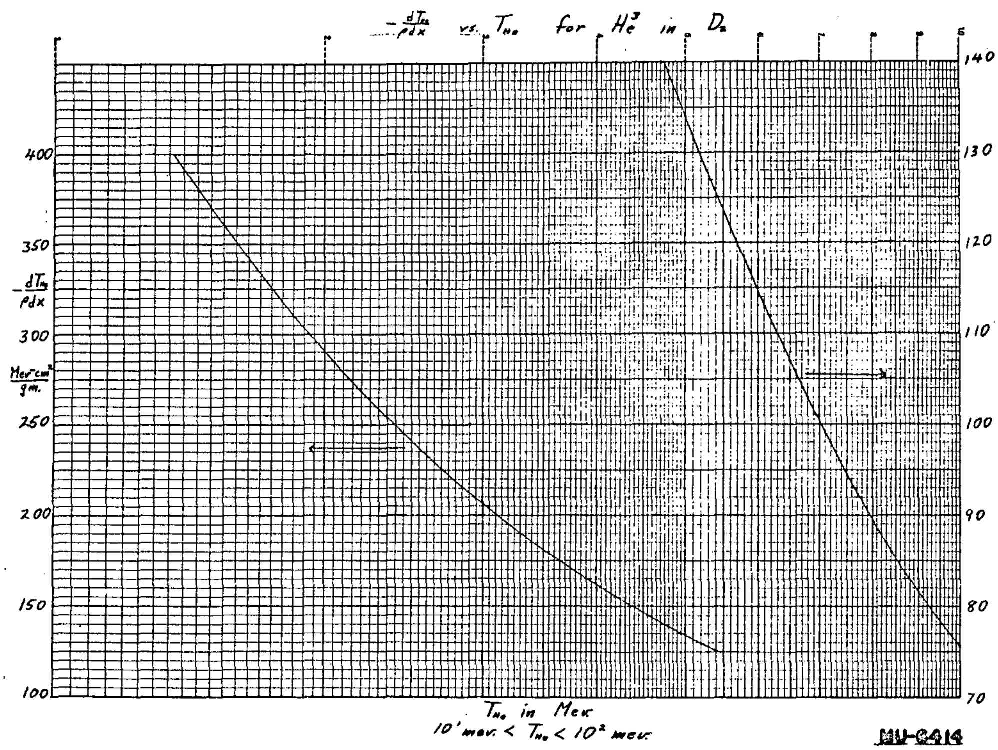
Scale I: 100 mev. < T_{He} < 1000 mev.

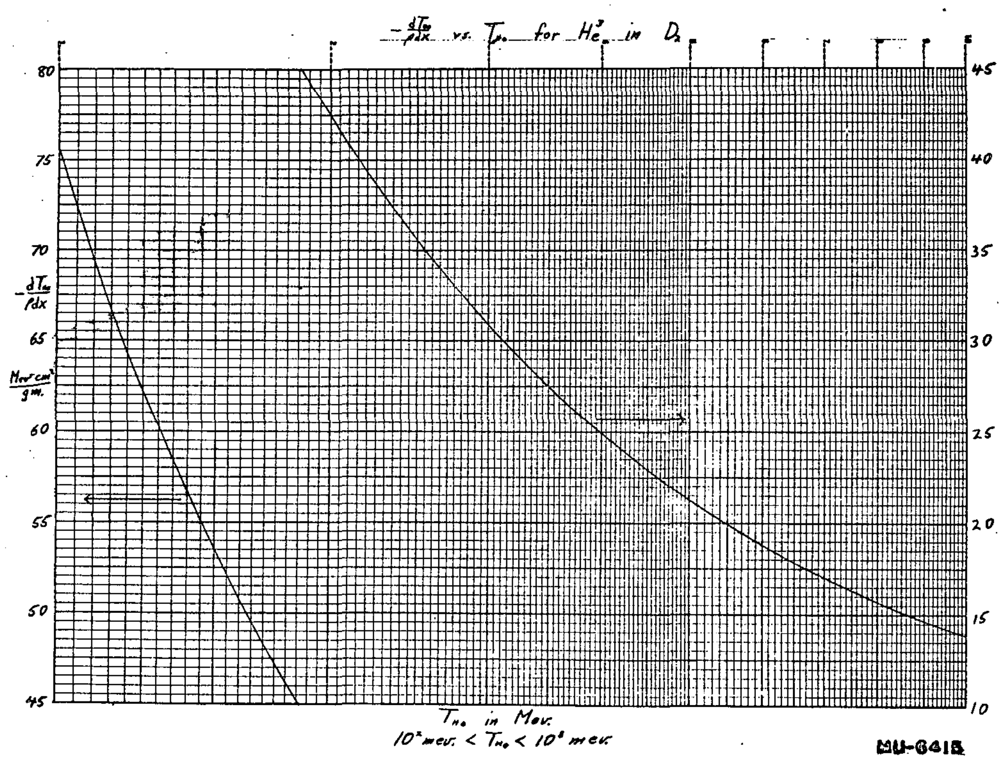
Scale II: 1000 mev. < T_{He} < 10000 mev.

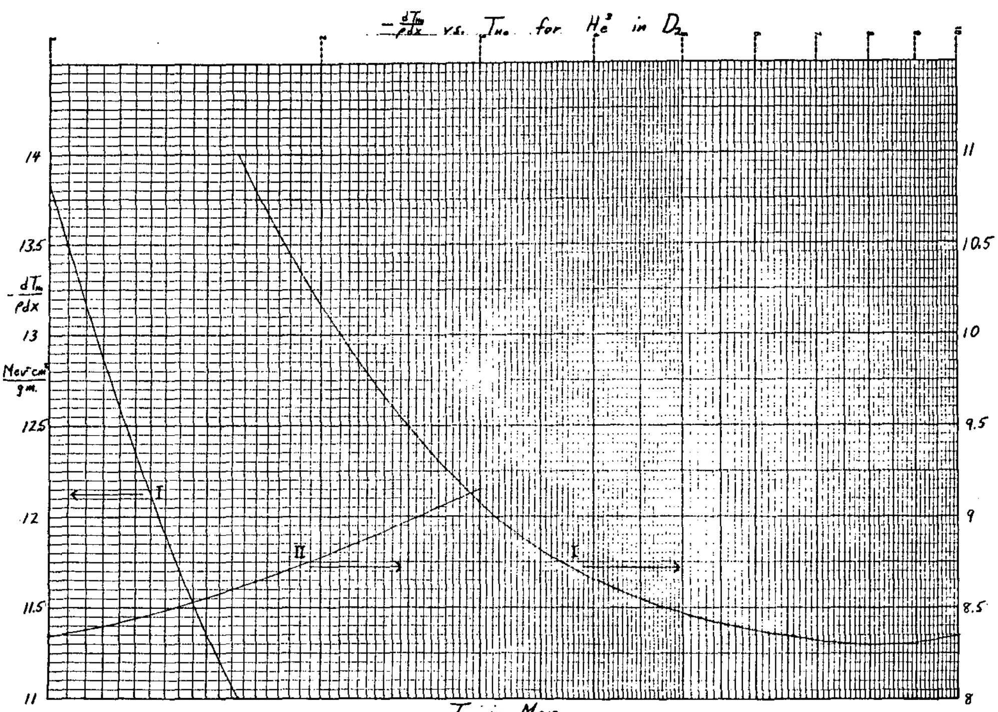
Scale III: 10000 mev. < T_{He} < 100000 mev.



MU-6340


$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in D_2
400
350
$-\frac{dT_{He}}{\rho dx}$
300
$\frac{Mev\,cm^2}{gm.}$
250
200
150
100
140
130
120
110
100
90
80
70
T_{He} in Mev
10^1 mev. < T_{He} < 10^2 mev.
MU-6414


$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in D_2
80
75
70
65
60
55
50
45
$-\frac{dT_{He}}{\rho dx}$
$\frac{Mev\,cm^2}{gm.}$
45
40
35
30
25
20
15
10
T_{He} in Mev.
10^2 mev. < T_{He} < 10^3 mev.
MU-6415



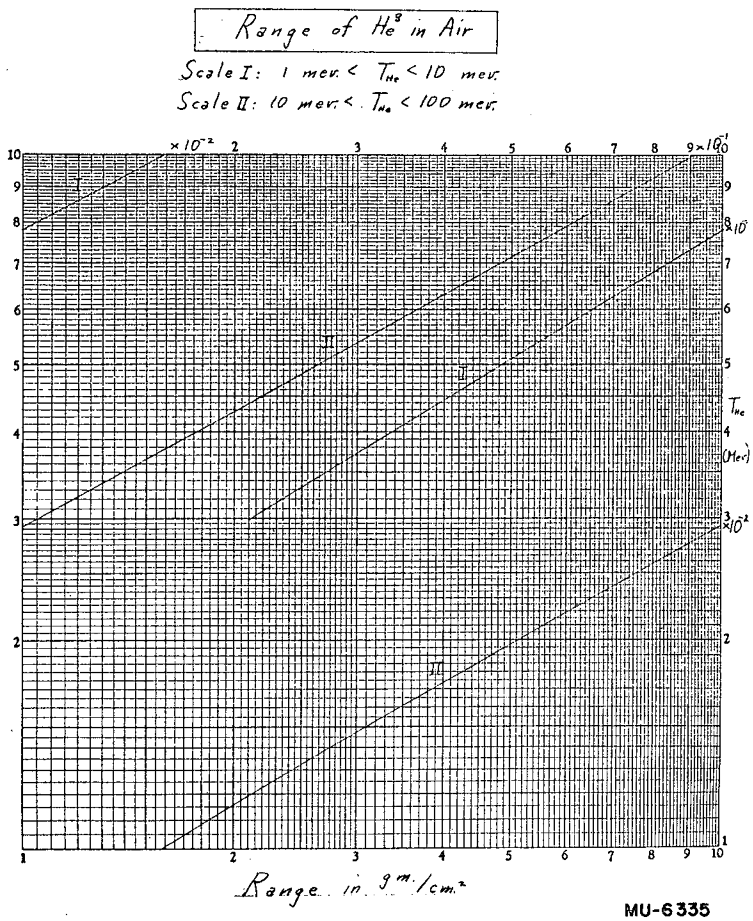
Scale I: 10^3 mev. < T_{He} < 10^4 mev.   Scale II: 10^4 mev. < T_{He} < 10^5 mev.

MU-6416

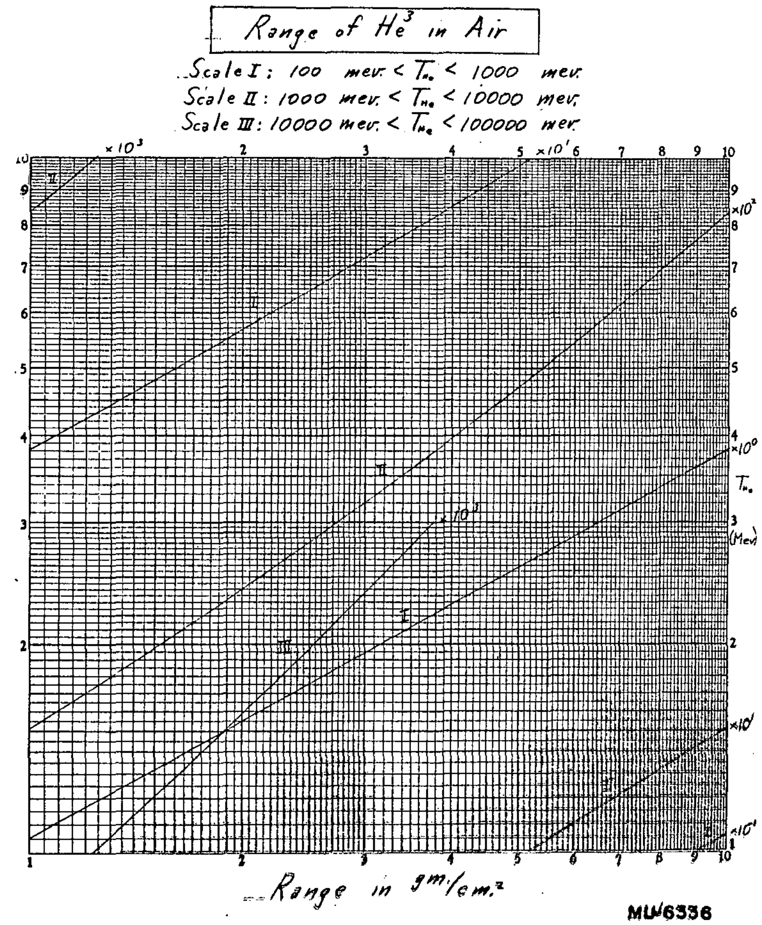
RANGE OF He^3 IN AIR

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
2.993	2.110×10^{-3}	
5.986	6.510	
8.979	1.294×10^{-2}	408.0
11.97	2.119	326.9
14.96	3.096	274.7
17.96	4.266	237.5
20.95	5.573	206.8
23.94	7.082	184.0
26.94	8.680	168.4
29.93	1.050×10^{-1}	155.3
35.92	1.452	135.7
44.90	2.188	116.6
62.86	3.971	88.76
74.83	5.422	77.12
89.79	7.513	66.56
104.8	9.915	58.76
119.7	1.260×10^{0}	52.76
149.6	1.883	44.12
179.6	2.614	38.27
209.5	3.446	33.93
239.4	4.375	30.65
269.4	5.396	28.04
299.3	6.508	25.92
359.2	8.987	22.68

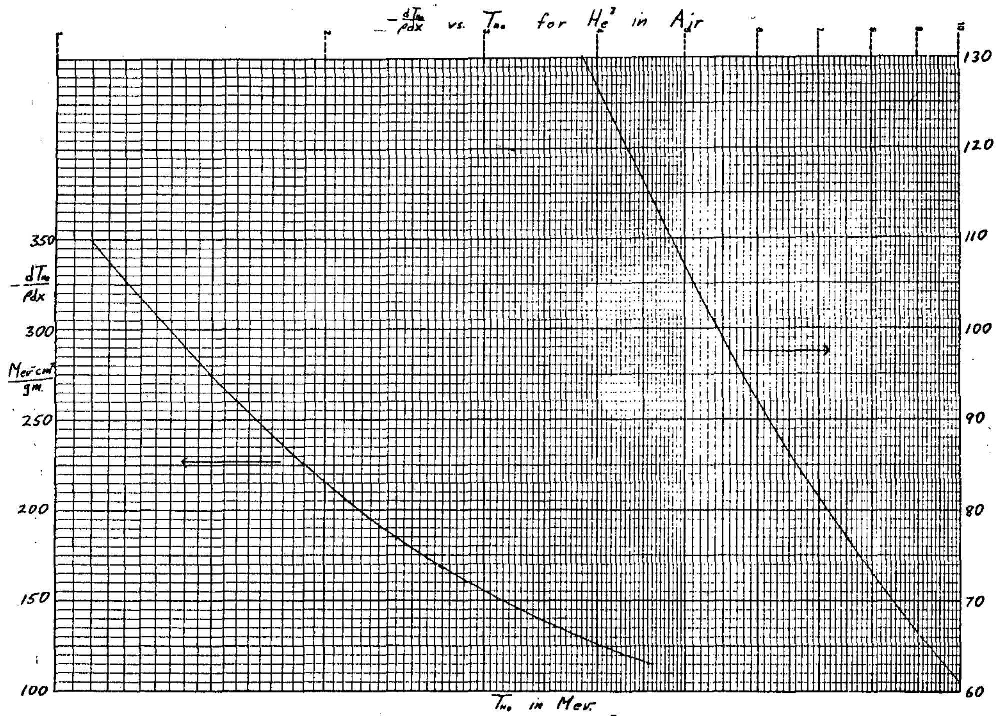
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
478.9	1.487×10^{1}	18.52
598.6	2.186	15.98
748.3	3.194	13.92
897.9	4.331	12.53
1048.0	5.578	11.50
1197.0	6.921	10.79
1496.0	9.840	9.768
1796.0	1.303×10^{2}	9.100
2095.0	1.640	8.644
2394.0	1.994	8.308
2694.0	2.359	8.064
2993.0	2.736	7.884
3741.0	3.704	7.584
4490.0	4.702	7.428
5986.0	6.738	7.308
7483.0	8.785	7.300
8979.0	1.084×10^{3}	7.340
11970.0	1.488	7.472
14960.0	1.884	7.616
17960.0	2.274	7.760
20950.0	2.656	7.892
23940.0	3.033	8.016
26940.0	3.403	8.132
29930.0	3.768	8.236



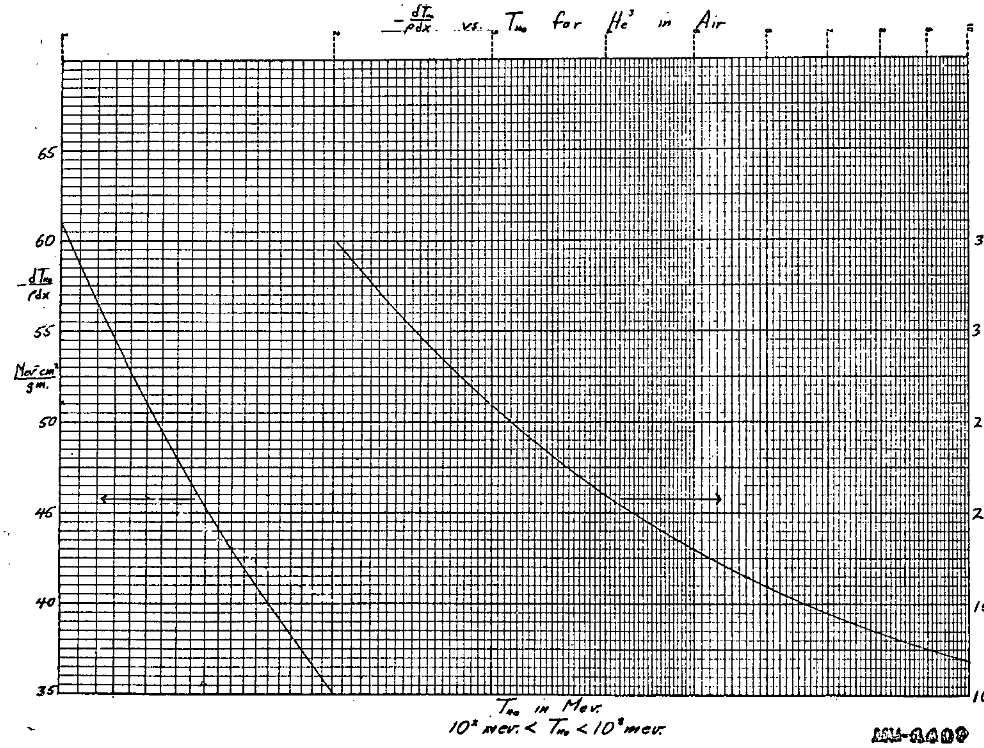
Range of He³ in Air
Scale I: 1 mev. < T_{He} < 10 mev.
Scale II: 10 mev. < T_{He} < 100 mev.
T_{He} (Mev)
Range in gm./cm.²
MU-6335



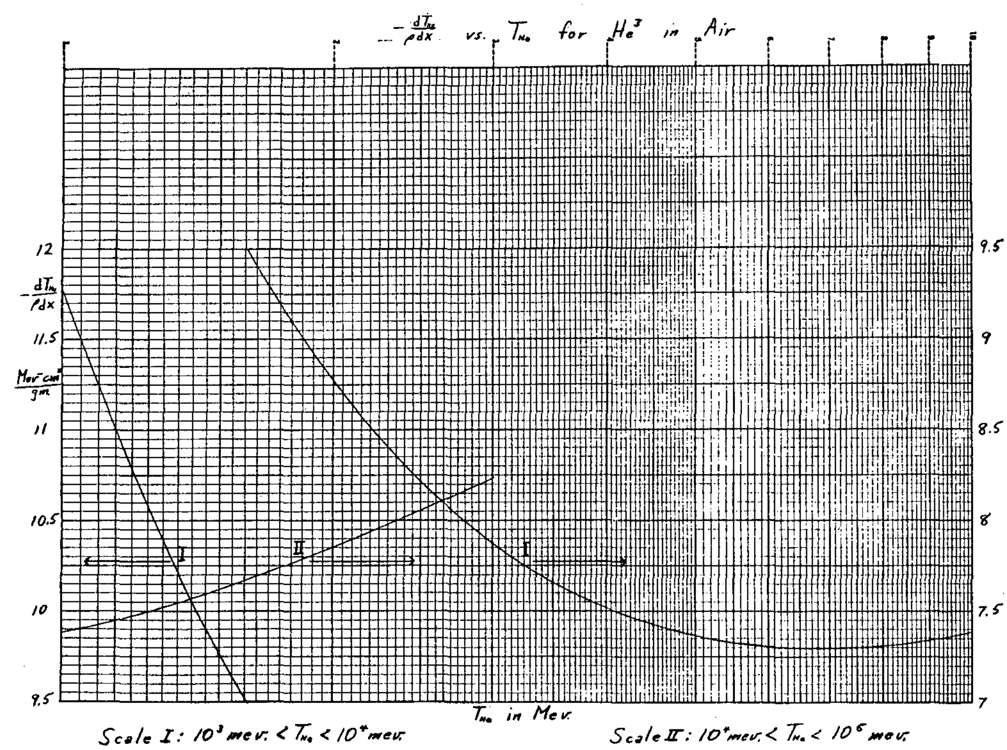
Range of He^3 in Air
Scale I: 100 mev. < T_{He} < 1000 mev.
Scale II: 1000 mev. < T_{He} < 10000 mev.
Scale III: 10000 mev. < T_{He} < 100000 mev.
T_{He} (Mev)
Range in gm/cm.^{2}
MU-6336


$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in Air
350
300
250
200
150
100
$-\frac{dT_{He}}{\rho dx}$
$\frac{Mev\text{-}cm^2}{gm.}$
130
120
110
100
90
80
70
60
T_{He} in Mev.
10^1 mev. < T_{He} < 10^2 mev.

MU-6408



$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in Air
65
60
$-\frac{dT_{He}}{\rho dx}$
55
$\frac{Mev\ cm^2}{gm.}$
50
46
40
35
35
30
25
20
15
10
T_{He} in Mev.
10^2 mev. < T_{He} < 10^3 mev.


$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in Air
12
$-\frac{dT_{He}}{\rho dx}$
11.5
$\frac{Mev\text{-}cm^2}{gm}$
11
10.5
10
9.5
9.5
9
8.5
8
7.5
7
I
II
I
T_{He} in Mev.
Scale I: 10^3 mev. < T_{He} < 10^4 mev.
Scale II: 10^4 mev. < T_{He} < 10^6 mev.

MU-6410

RANGE OF He^3 IN CH_2

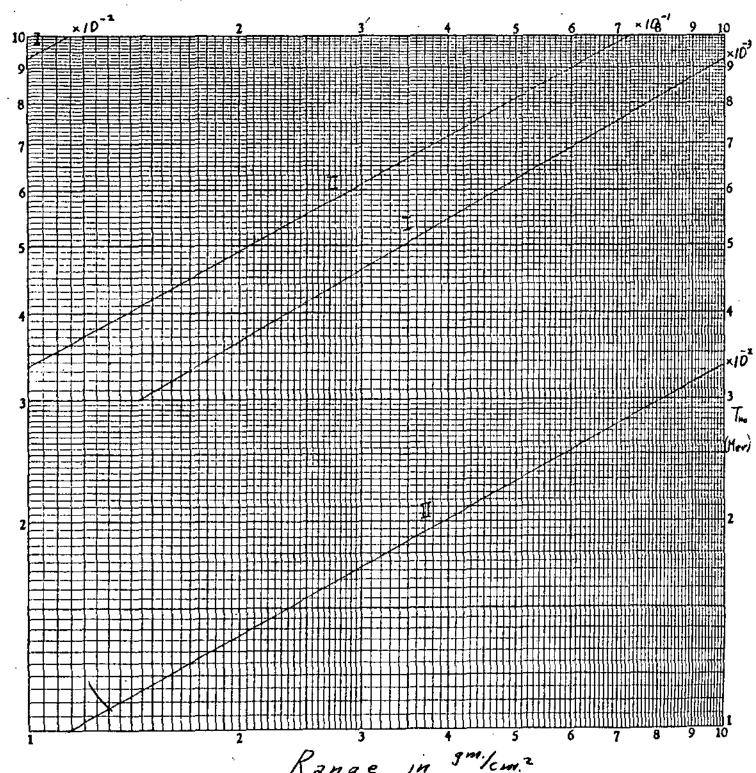
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
2.993	1.430×10^{-3}	1224.0
5.986	4.683	739.2
8.979	9.492	538.3
11.97	1.578×10^{-2}	427.8
14.96	2.346	357.5
17.96	3.251	308.4
20.95	4.286	272.0
23.94	5.451	243.9
26.94	6.740	221.4
29.93	8.153	203.1
35.92	1.134×10^{-1}	174.8
44.90	1.700	145.4
59.86	2.869	114.6
74.83	4.307	95.38
89.79	6.004	82.11
104.8	7.949	72.38
119.7	1.014	64.93
149.6	1.520×10^{0}	54.23
179.6	2.116	46.89
209.5	2.796	41.53
239.4	3.556	37.44
269.4	4.394	34.21
299.3	5.305	31.59
374.1	7.888	26.80

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
449.0	1.088×10^{1}	23.54
598.6	1.793	19.40
748.3	2.624	16.87
897.9	3.564	15.17
1048.0	4.594	13.96
1197.0	5.702	12.05
1496.0	8.124	11.80
1796.0	1.076×10^{2}	10.98
2095.0	1.356	10.42
2394.0	1.650	10.01
2694.0	1.953	9.711
2993.0	2.265	9.484
4490.0	3.899	8.918
5986.0	5.599	8.756
7483.0	7.308	8.736
8979.0	9.021	8.775
10480.0	1.072×10^{3}	8.840
11970.0	1.241	8.916
14960.0	1.573	9.080
17960.0	1.900	9.249
20950.0	2.221	9.392
23940.0	2.537	9.532
26940.0	2.849	9.661
29930.0	3.157	9.782

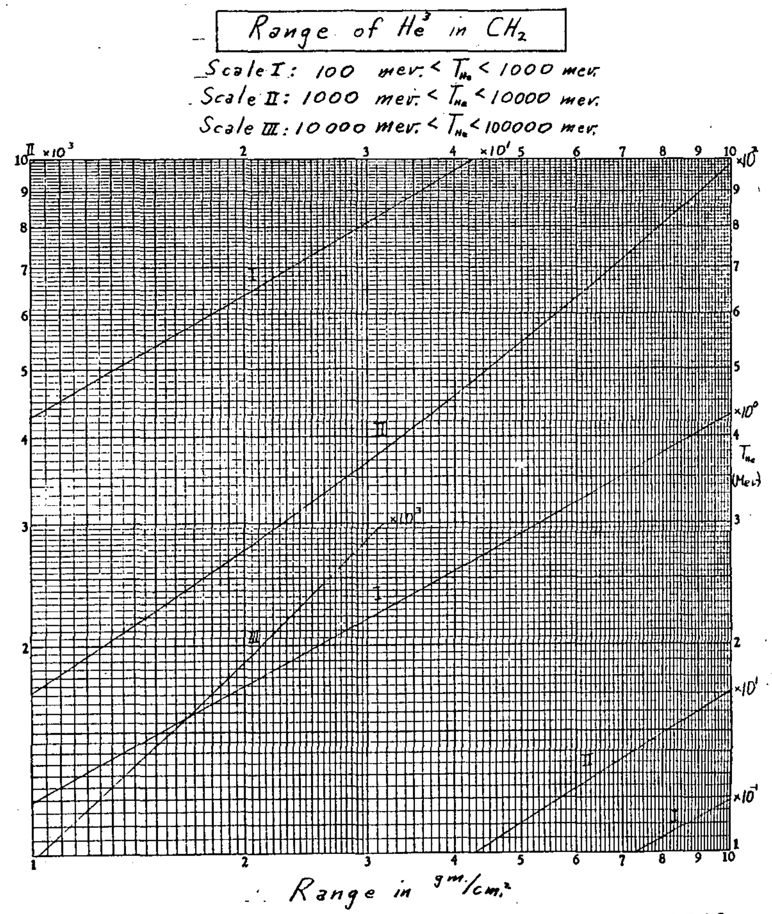
Range of He^3 in CH_2

Scale I : 1 mev. < T_{He} < 10 mev.

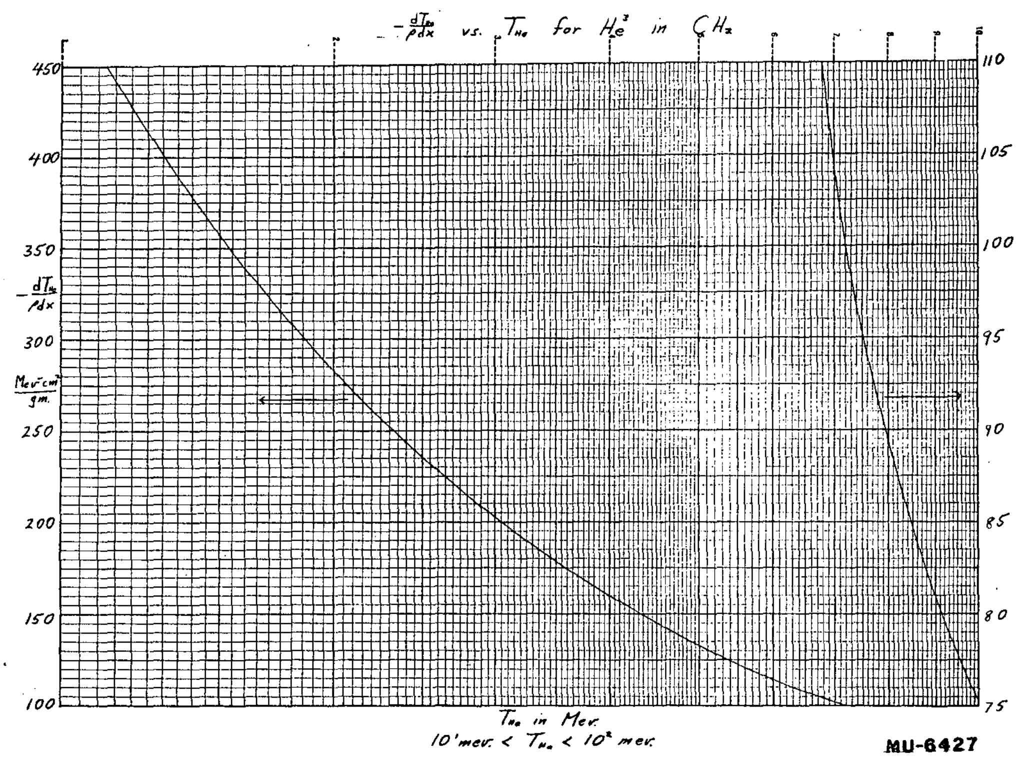
Scale II : 10 mev. < T_{He} < 100 mev.



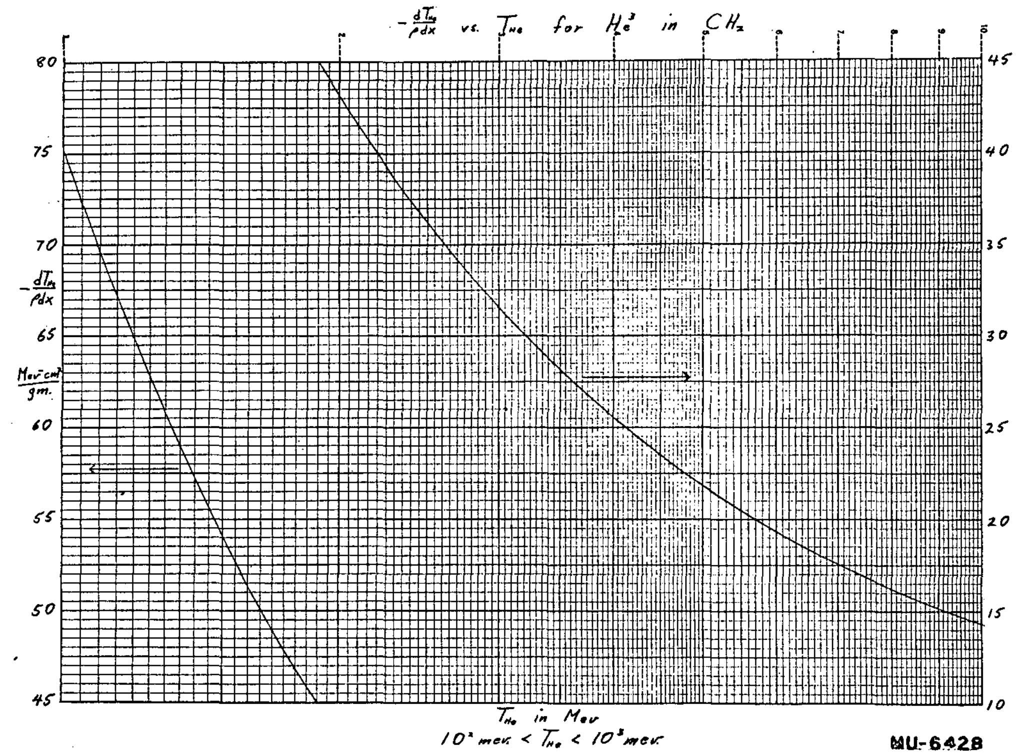
MU-6345


Range of He^3 in CH_2
Scale I: 100 mev. < T_{He} < 1000 mev.
Scale II: 1000 mev. < T_{He} < 10000 mev.
Scale III: 10 000 mev. < T_{He} < 100000 mev.
T_{He} (Mev)
Range in gm/cm.²

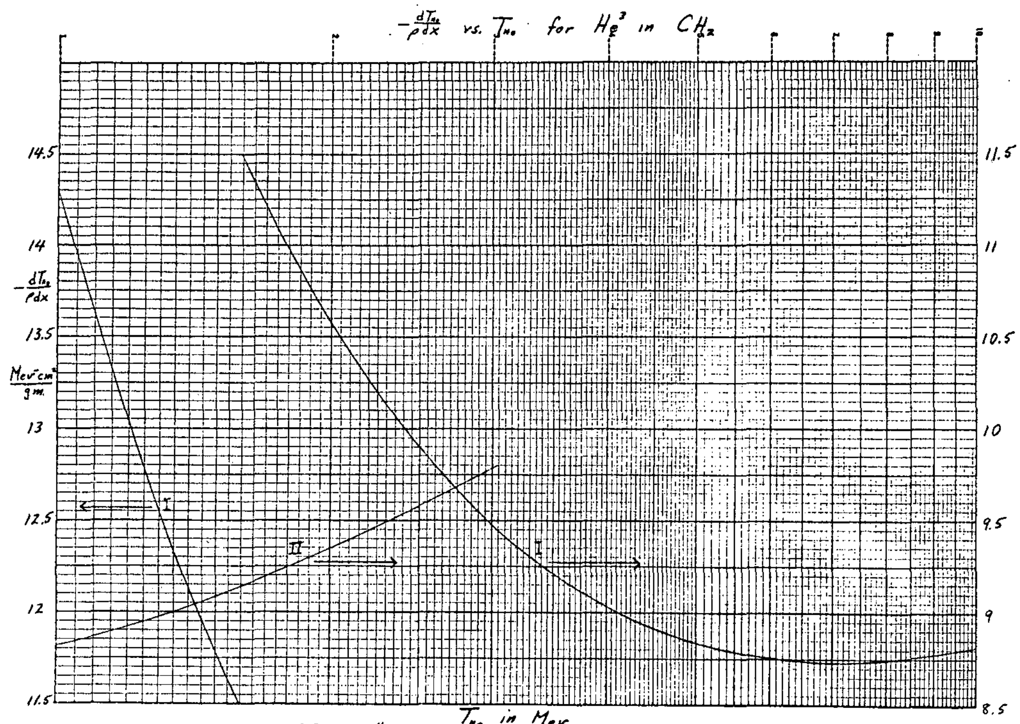
MU-6346


$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in CH_2
450
400
350
$-\frac{dT_{He}}{\rho dx}$
300
$\frac{Mev\text{-}cm^2}{gm.}$
250
200
150
100
110
105
100
95
90
85
80
75
T_{He} in Mev.
10^1 mev. < T_{He} < 10^2 mev.

MU-6427


$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in CH_2
80
75
70
$-\frac{dT_{He}}{\rho dx}$
65
Mev-cm²/gm.
60
55
50
45
45
40
35
30
25
20
15
10
T_{He} in Mev
10^2 mev. < T_{He} < 10^3 mev.

MU-6428



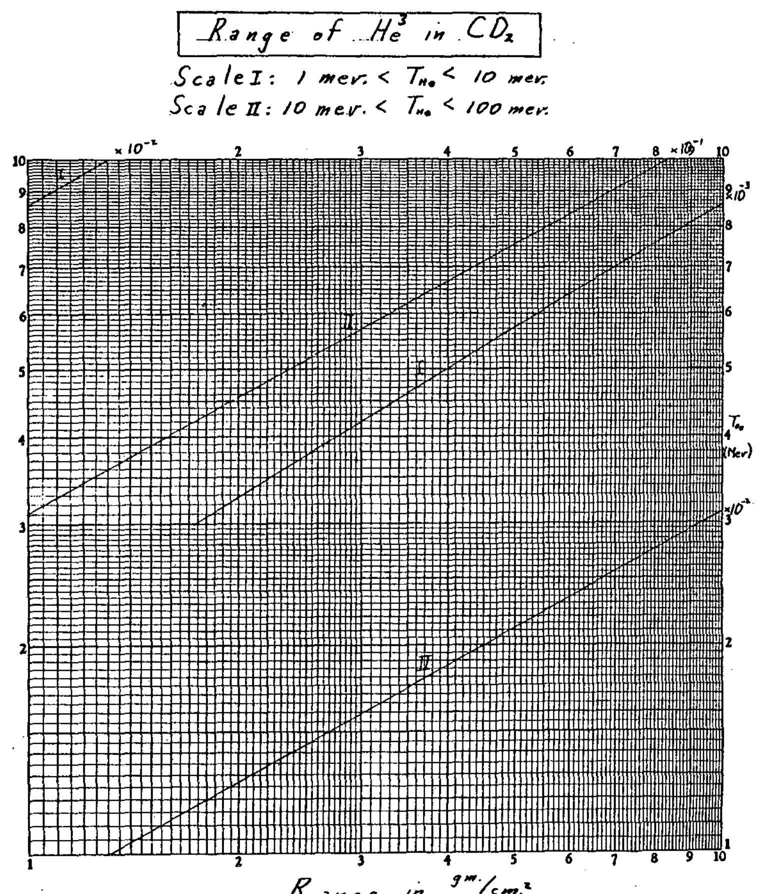
Scale I: 10^3 mev. < T_{He} < 10^4 mev.　　Scale II: 10^4 mev. < T_{He} < 10^5 mev.

MU-6429

RANGE OF He^3 IN CD_2

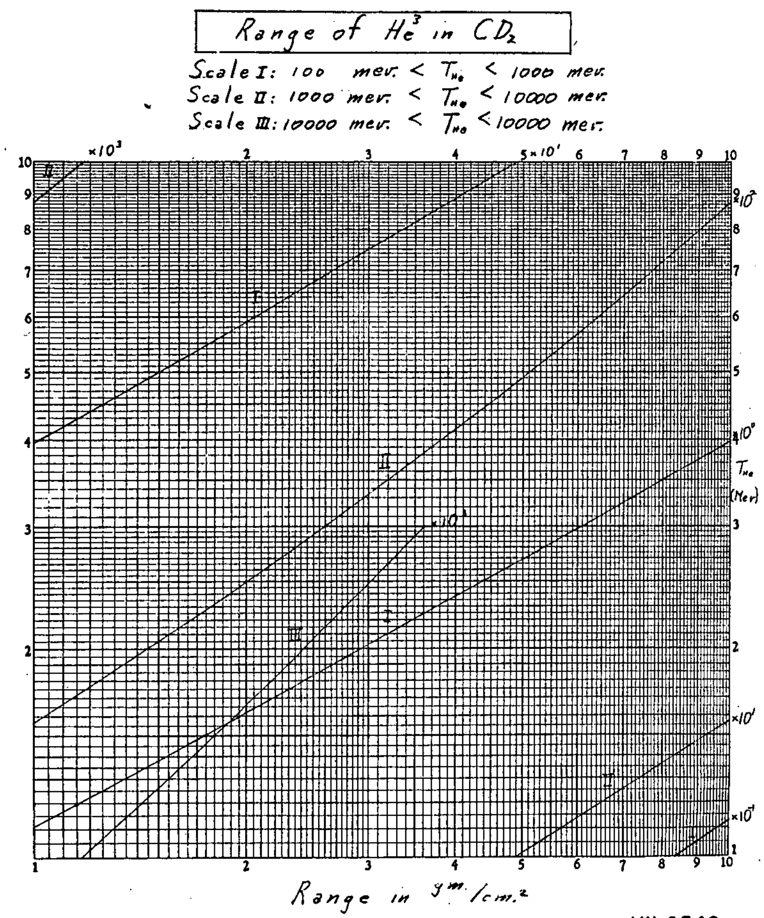
T (Mev)	R (gm/cm^2)	$-\frac{dT}{d\xi}$ ($Mev\text{-}cm^2/gm$)
2.993	1.729×10^{-3}	107.1
5.986	5.385	646.8
8.979	1.089×10^{-2}	471.0
11.97	1.806	374.4
14.96	2.680	312.8
17.96	3.718	269.8
20.95	4.903	238.0
23.94	6.233	213.4
26.94	7.708	193.7
29.93	9.322	177.7
35.92	1.296×10^{-1}	152.9
44.90	1.944	127.2
59.86	3.279	100.3
74.83	4.923	83.46
89.79	6.862	71.85
104.8	8.990	63.34
119.7	1.158×10^{0}	56.81
149.6	1.738	47.45
179.6	2.418	41.03
209.5	3.195	36.34
239.4	4.064	32.76
269.4	5.021	29.93
299.3	6.063	27.64
374.1	9.015	23.45

T (Mev)	R (gm/cm^2)	$-\frac{dT}{d\xi}$ ($Mev\text{-}cm^2/gm$)
449.0	1.243×10^{1}	20.60
598.6	2.049	16.97
748.3	2.999	14.76
897.9	4.072	13.27
1048.0	5.250	12.21
1197.0	6.517	11.42
1496.0	9.285	10.32
1796.0	1.230×10^{2}	9.607
2095.0	1.550	9.114
2394.0	1.885	8.760
2694.0	2.232	8.497
2993.0	2.589	8.298
4490.0	4.456	7.803
5986.0	6.399	7.662
7483.0	8.352	7.644
8979.0	1.031×10^{3}	7.678
10480.0	1.225	7.735
11970.0	1.418	7.802
14960.0	1.798	7.945
17960.0	2.171	8.093
20950.0	2.538	8.217
23940.0	2.900	8.340
26940.0	3.256	8.454
29930.0	3.608	8.559



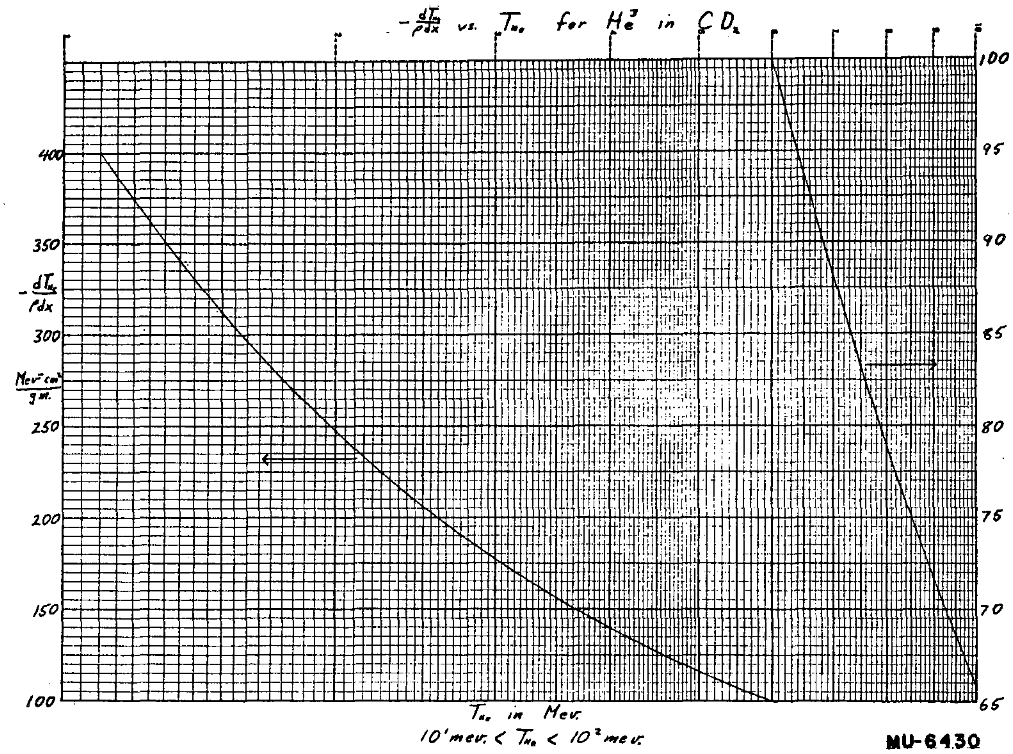
Range of He^3 in CD$_2$
Scale I: 1 mev. < T$_{He}$ < 10 mev.
Scale II: 10 mev. < T$_{He}$ < 100 mev.
T$_{He}$ (Mev)
Range in gm./cm.^{2}

MU-6347

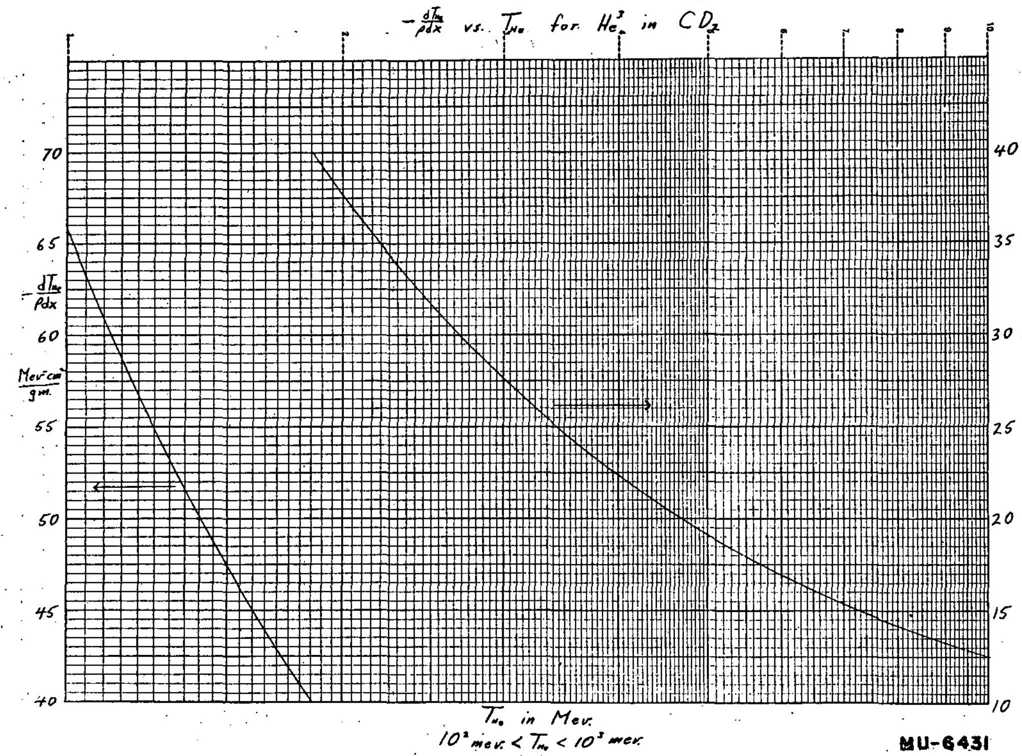


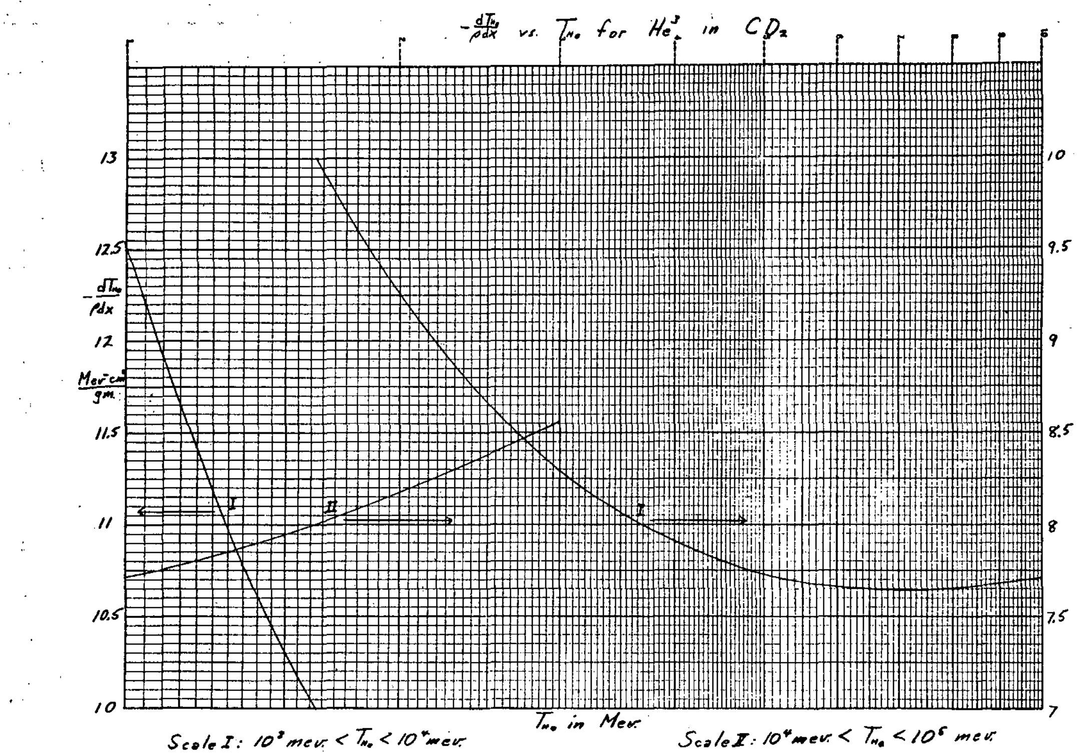
Range of He^3 in CD_2
Scale I: 100 mev. < T_{He} < 1000 mev.
Scale II: 1000 mev. < T_{He} < 10000 mev.
Scale III: 10000 mev. < T_{He} < 10000 mev.
T_{He} (Mev)
Range in gm./cm.²

MU-6348


$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in CD_2
400
350
$-\frac{dT_{He}}{\rho dx}$
300
$\frac{Mev\text{-}cm^2}{gm.}$
250
200
150
100
100
95
90
85
80
75
70
65
T_{He} in Mev.
10^1 mev. < T_{He} < 10^2 mev.

MU-6430


$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in CD_2
70
65
$-\frac{dT_{He}}{\rho dx}$
60
$\frac{\text{Mev cm}^2}{\text{gm.}}$
55
50
45
40
40
35
30
25
20
15
10
T_{He} in Mev.
10^2 mev. $< T_{He} < 10^3$ mev.
MU-6431

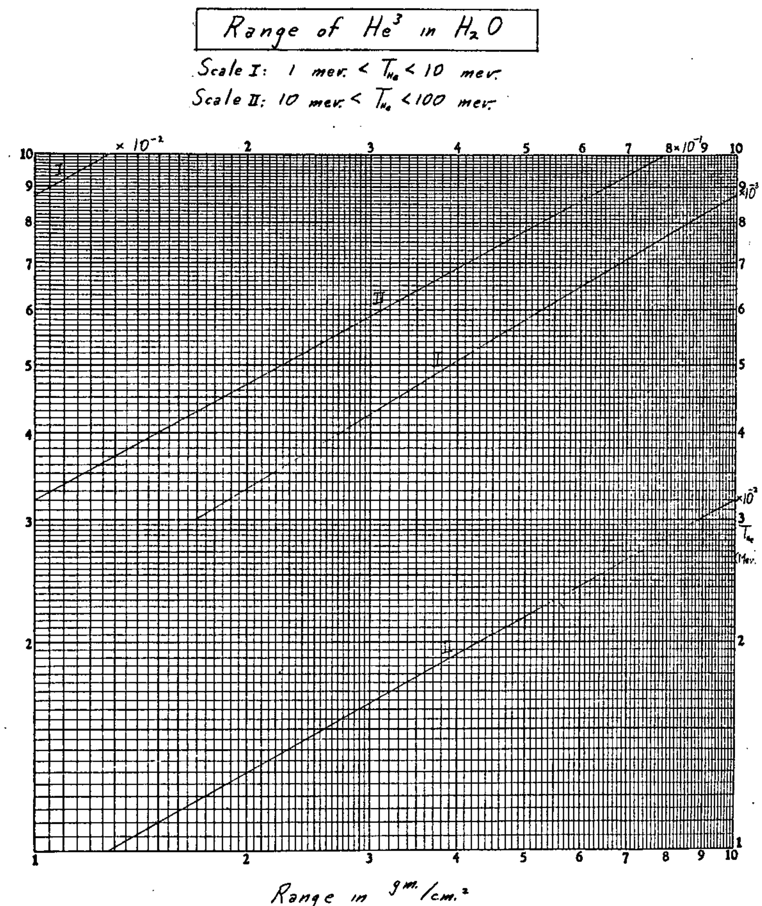


$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3_+ in CD_2
13
12.5
$-\frac{dT_{He}}{\rho dx}$
12
$\frac{Mev\text{-}cm^2}{gm}$
11.5
11
10.5
10
10
9.5
9
8.5
8
7.5
7
I
II
I
T_{He} in Mev
Scale I: 10^3 mev < T_{He} < 10^4 mev
Scale II: 10^4 mev < T_{He} < 10^5 mev

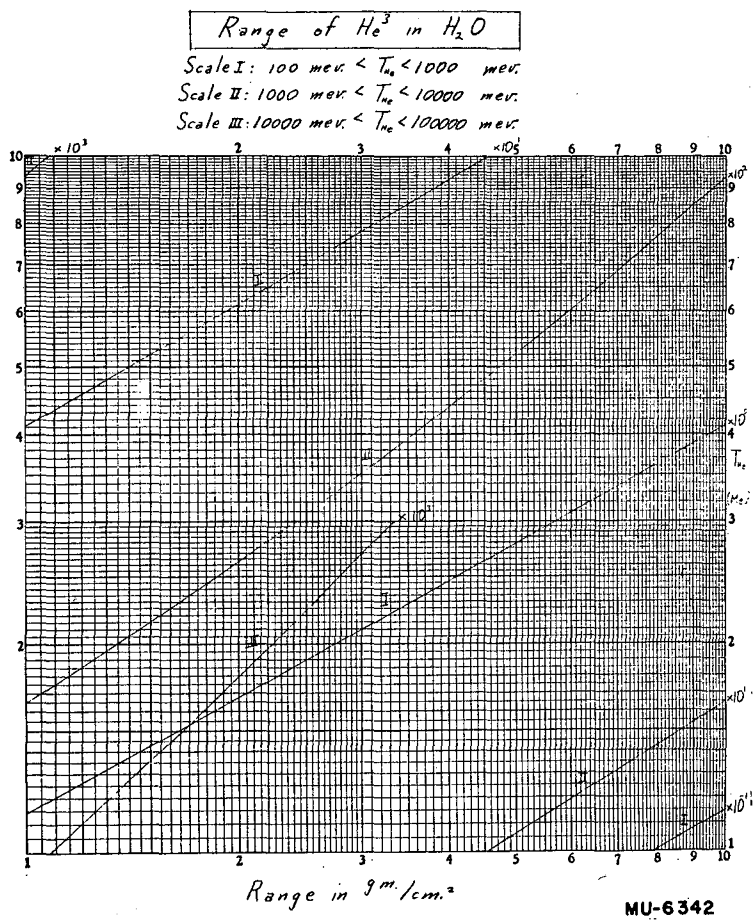
MU-6432

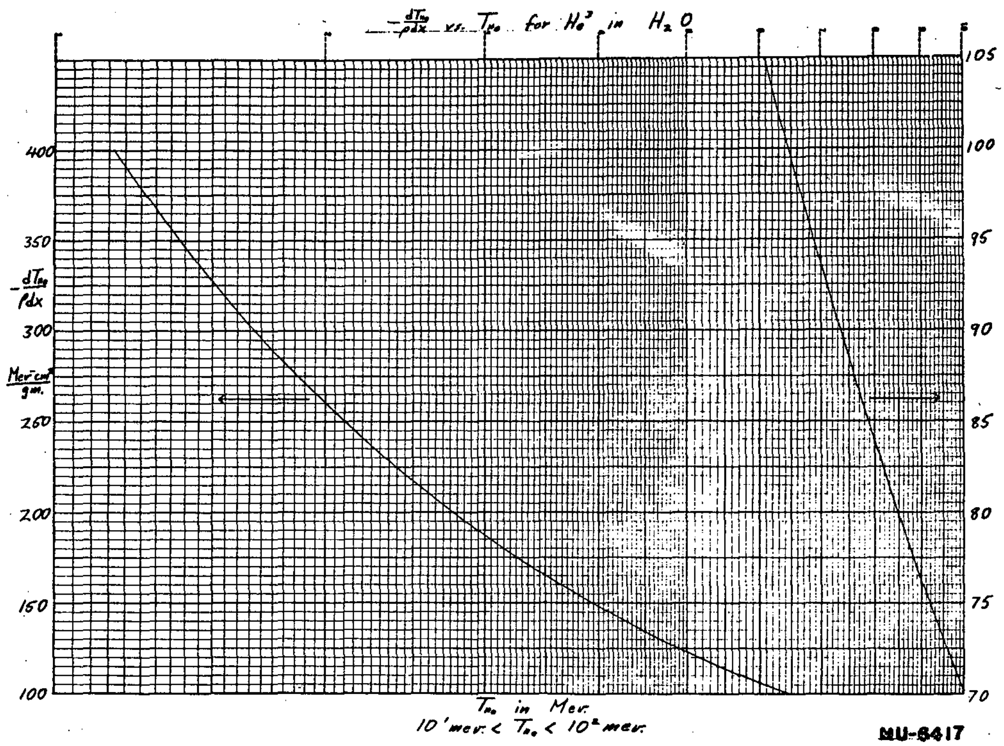
RANGES OF He^3 IN H_2O

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$	T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
2.993	1.680×10^{-3}	1117.0	598.6	1.914×10^{1}	18.21
5.986	5.248	670.8	748.3	2.799	15.85
8.979	1.056×10^{-2}	490.9	897.9	3.797	14.26
11.97	1.741	391.7	1048.0	4.892	13.13
14.96	2.582	328.1	1197.0	6.073	12.28
17.96	3.564	283.6			
20.95	4.691	250.5	1496.0	8.646	11.11
23.94	5.952	224.9	1796.0	1.144×10^{2}	10.34
26.94	7.352	204.4	2095.0	1.442	9.818
29.93	8.880	187.6	2394.0	1.753	9.440
35.92	1.233×10^{-1}	161.7	2694.0	2.075	9.161
40.90	1.844	134.7	2993.0	2.406	8.949
59.86	3.103	106.5	4490.0	4.135	8.426
74.83	4.651	88.70	5986.0	5.934	8.282
89.79	6.474	76.45	7483.0	7.740	8.269
104.8	8.562	67.46	8979.0	9.550	8.311
119.7	1.091×10^{0}	60.55	10480.0	1.134×10^{3}	8.376
			11970.0	1.312	8.453
149.6	1.634	50.63			
179.6	2.272	43.82	14960.0	1.663	8.614
209.5	2.999	38.84	17960.0	2.007	8.772
239.4	3.812	35.03	20950.0	2.345	8.919
269.4	4.706	32.03	23940.0	2.678	9.056
299.3	5.680	29.59	26940.0	3.006	9.182
449.0	1.162×10^{1}	22.08	29930.0	3.330	9.300


Range of He^3 in H_2O
Scale I: 1 mev. < T_{He} < 10 mev.
Scale II: 10 mev. < T_{He} < 100 mev.
I
II
T_{He} Mev.
Range in gm./cm.²

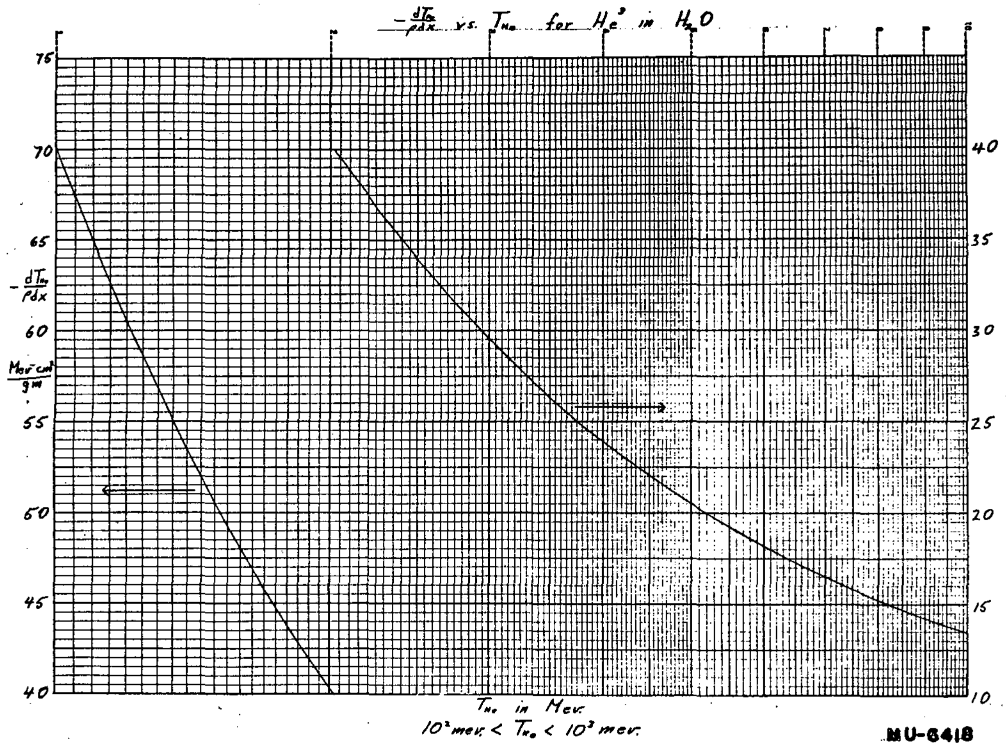
MU-6341


Range of He^3 in H_2O
Scale I: 100 mev. < T_{He} < 1000 mev.
Scale II: 1000 mev. < T_{He} < 10000 mev.
Scale III: 10000 mev. < T_{He} < 100000 mev.
T_{He}
Range in gm./cm.^{2}
MU-6342



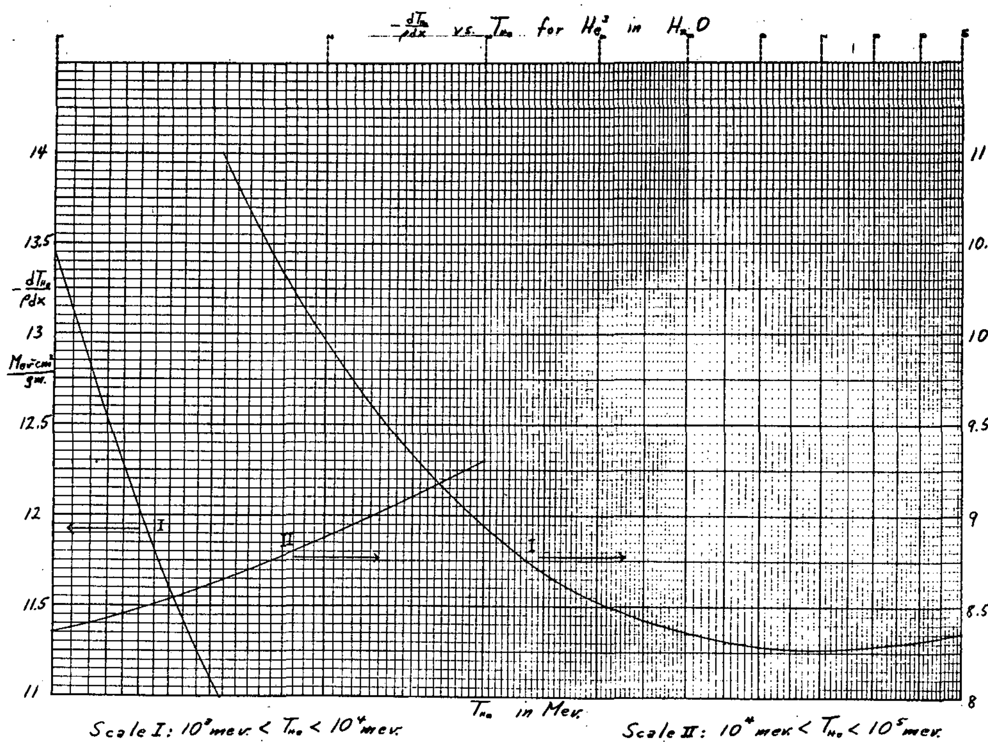
$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in H_2O
400
350
$-\frac{dT_{He}}{\rho dx}$
300
$\frac{Mev\text{-}cm^2}{gm.}$
250
200
150
100
105
100
95
90
85
80
75
70
T_{He} in Mev.
10^1 mev. < T_{He} < 10^2 mev.

MU-6417



$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in H_2O
75
70
65
60
55
50
45
40
$-\frac{dT_{He}}{\rho dx}$
$\frac{Mev\text{-}cm^2}{gm}$
40
35
30
25
20
15
10
T_{He} in Mev.
10^2 mev. < T_{He} < 10^3 mev.

MU-6418



$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in H_2O
14
13.5
$-\frac{dT_{He}}{\rho dx}$
13
$\frac{Mev\,cm^2}{gm.}$
12.5
12
11.5
11
I
II
I
11
10.5
10
9.5
9
8.5
8
T_{He} in Mev.
Scale I: 10^3 mev. < T_{He} < 10^4 mev.
Scale II: 10^4 mev. < T_{He} < 10^5 mev.

MU-6419

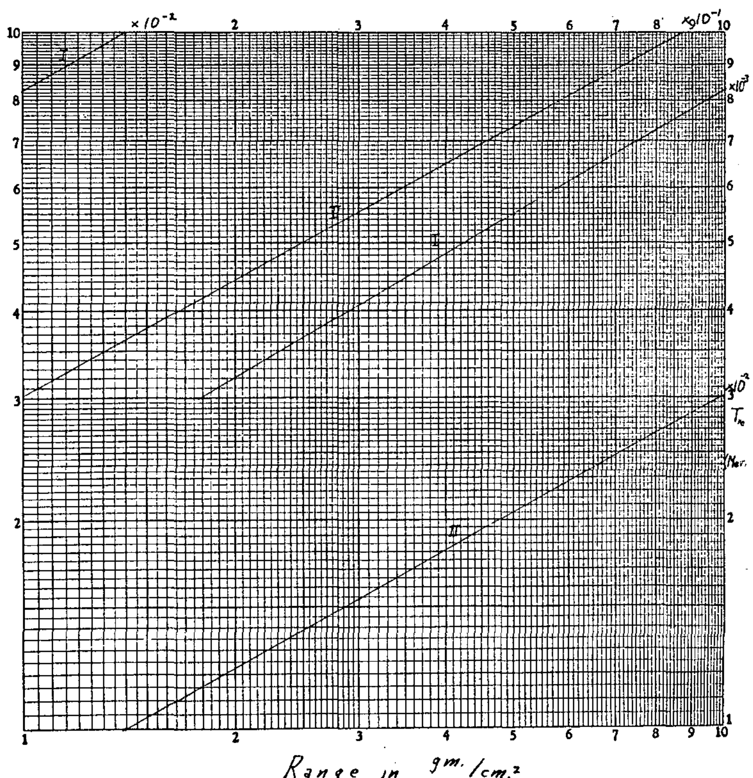
RANGE OF He^3 IN D_2O

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
2.993	1.777×10^{-3}	1006.0
5.986	5.768	603.0
8.979	1.164×10^{-2}	441.8
11.97	1.928	352.6
14.96	2.860	295.3
17.96	3.954	255.2
20.95	5.204	225.5
23.94	6.608	202.4
26.94	8.160	184.0
29.93	9.861	168.9
25.92	1.369×10^{-1}	145.5
44.90	2.048	121.3
59.86	3.448	95.82
74.83	5.167	79.84
89.79	7.192	68.81
104.8	9.514	60.71
119.7	1.212	54.50
149.6	1.815	45.57
179.6	2.524×10^{0}	39.44
209.5	3.332	34.95
239.4	4.235	31.53
269.4	5.229	28.82
299.3	6.311	26.63
374.1	9.374	22.61
449.0	1.291×10^{1}	19.88
598.6	2.127	16.39
748.3	3.110	14.26
897.9	4.219	12.84
1048.0	5.436	11.82
1197.0	6.747	11.05
1496.0	9.606	9.996
1796.0	1.272×10^{2}	9.310
2095.0	1.602	8.837
2394.0	1.948	8.496
2694.0	2.306	8.244
2993.0	2.673	8.054
4490.0	4.595	7.584
5986.0	6.593	7.454
7483.0	8.600	7.442
8979.0	1.061×10^{3}	7.480
10480.0	1.260	7.539
11970.0	1.458	7.608
14960.0	1.848	7.753
17960.0	2.230	7.894
20950.0	2.606	8.027
23940.0	2.976	8.150
26940.0	3.356	8.264
29930.0	3.700	8.370

Range of He^3 in D_2O

Scale I: 1 mev. < T_{He} < 10 mev.

Scale II: 10 mev. < T_{He} < 100 mev.



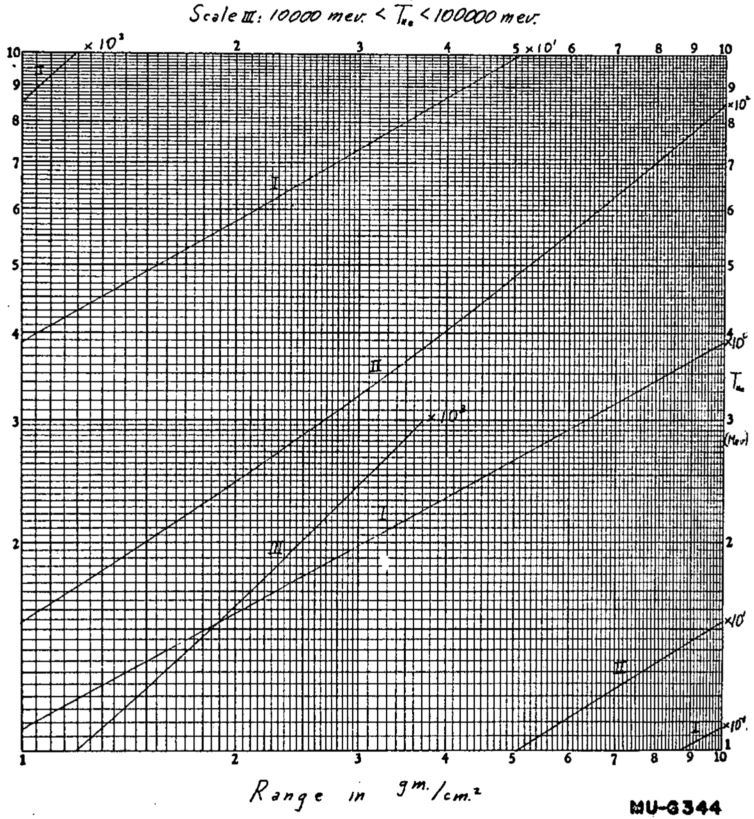
MU-6343

Range of He^3 in D_2O

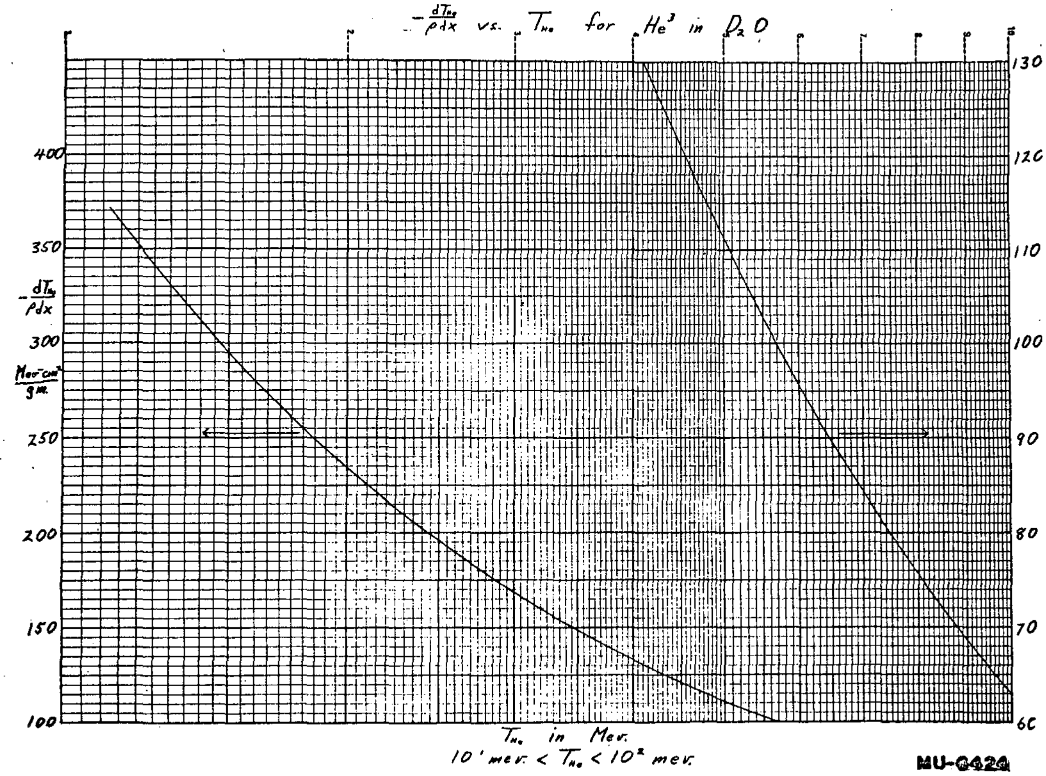
Scale I: 100 mev. < T_{He} < 1000 mev.

Scale II: 1000 mev. < T_{He} < 10000 mev.

Scale III: 10000 mev. < T_{He} < 100000 mev.

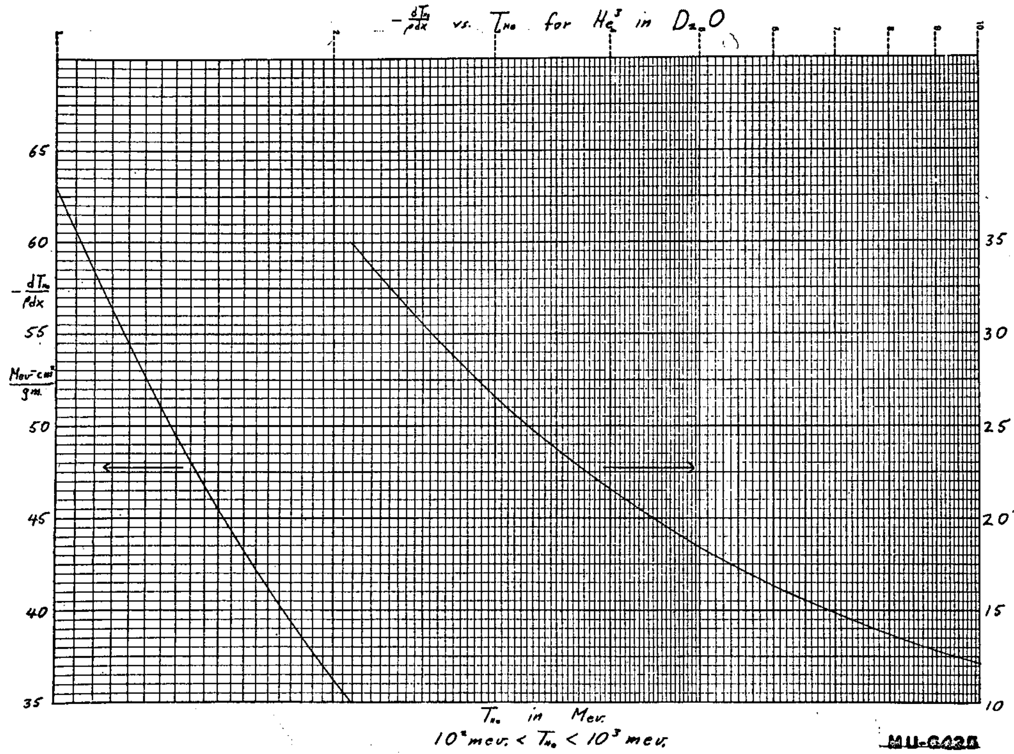


MU-6344

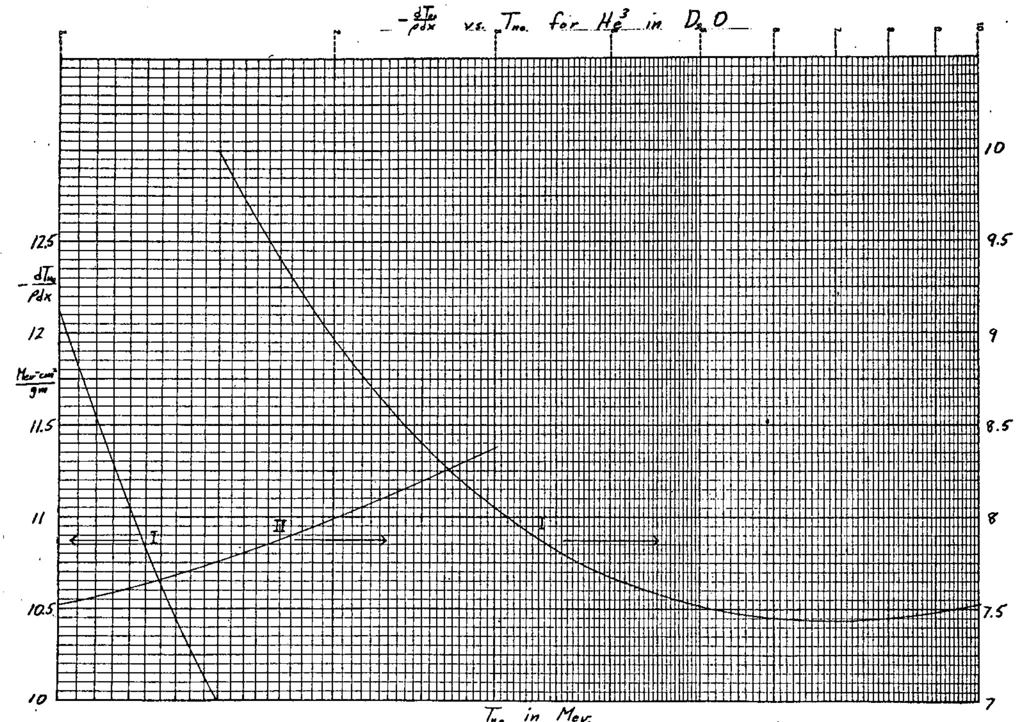


$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in D_2O
400
350
$-\frac{dT_{He}}{\rho dx}$
300
$\frac{Mev\,cm^2}{gm}$
250
200
150
100
130
120
110
100
90
80
70
60
T_{He} in Mev.
10^1 mev. < T_{He} < 10^2 mev.

MU-6424


$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in D_2O
$-\frac{dT_{He}}{\rho dx}$
$\frac{Mev\text{-}cm^2}{gm}$
65
60
55
50
45
40
35
35
30
25
20
15
10
T_{He} in Mev.
10^2 mev. < T_{He} < 10^3 mev.
MU-6035

$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in D_2O

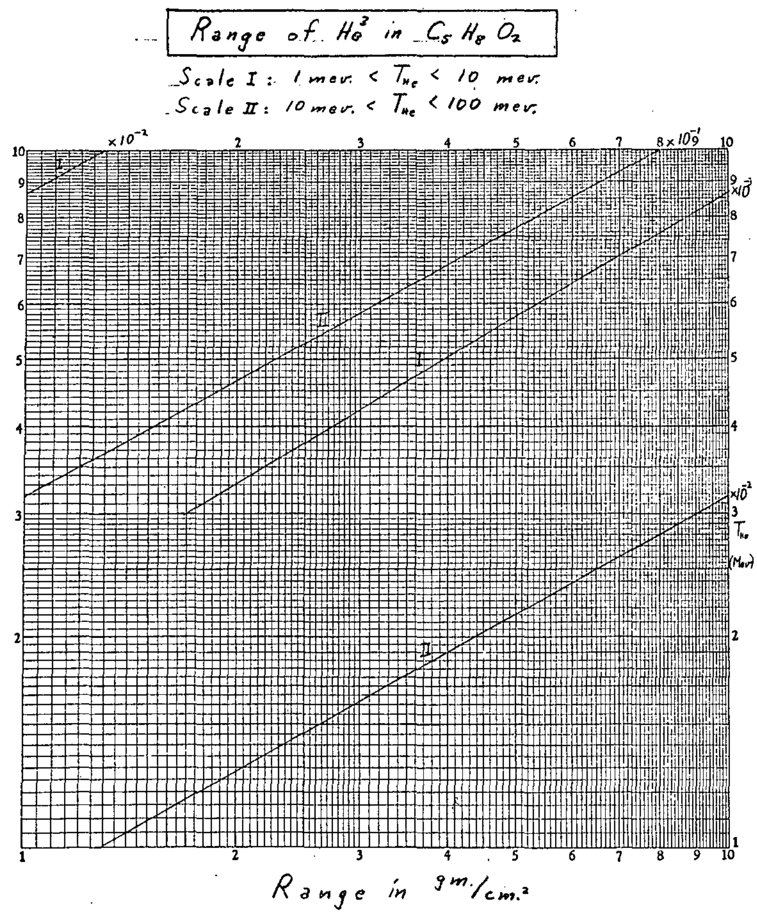


Scale I: 10^3 mev. < T_{He} < 10^4 mev.
Scale II: 10^4 mev. < T_{He} < 10^5 mev.

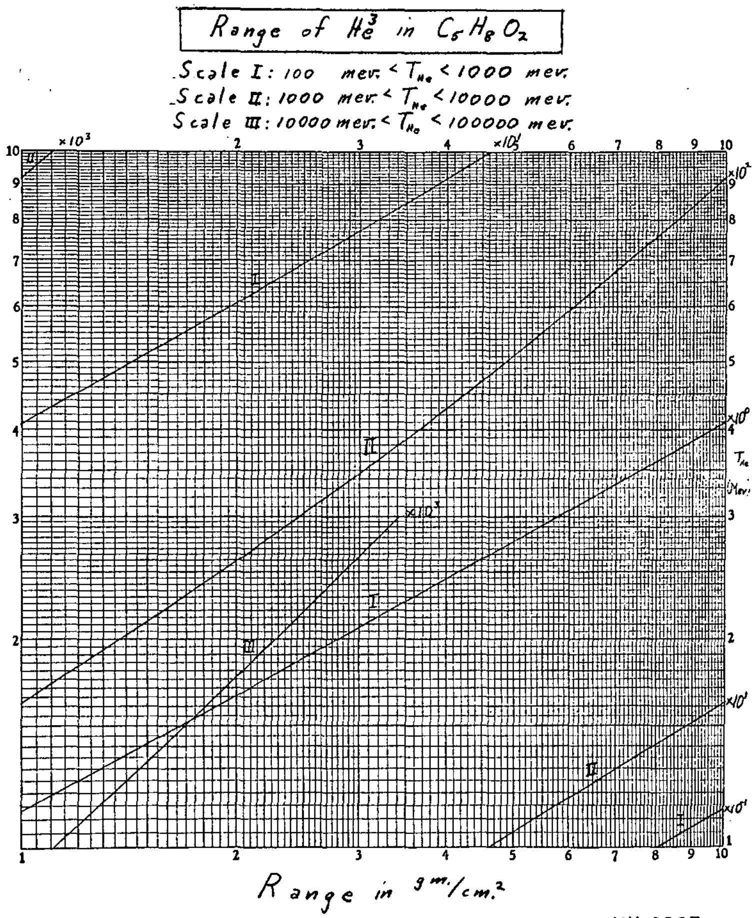
MU-6426

RANGES OF HE^3 IN $C_5H_8O_2$

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
2.993	1.687×10^{-3}	1093.0
5.986	5.322	664.0
8.979	1.066×10^{-2}	485.6
11.97	1.762	386.9
14.96	2.611	323.9
17.96	3.609	279.8
20.95	4.750	247.1
23.94	6.031	221.7
26.94	7.448	201.5
29.93	9.001	184.9
35.92	1.250×10^{-1}	159.3
44.90	1.871	132.7
59.86	3.150	104.8
74.83	4.723	87.28
89.79	6.576	75.20
104.8	8.700	66.32
119.7	1.108×10^{0}	59.52
134.7	1.372	54.16
149.6	1.661	49.76
179.6	2.310	43.04
209.5	3.045	38.16
239.4	3.866	34.41
269.4	4.778	31.45
299.3	5.769	29.06
374.1	8.566	24.66
449.0	1.182×10^{1}	21.68
598.6	1.948×10^{1}	17.87
748.3	2.850	15.55
897.9	3.868	13.99
1048.0	4.985	12.88
1197.0	6.186	12.04
1347.0	7.465	11.39
1496.0	8.810	10.89
1796.0	1.166×10^{2}	10.14
2095.0	1.470	9.624
2394.0	1.780	9.256
2694.0	2.116	8.980
2993.0	2.453	8.772
4490.0	4.218	8.256
5986.0	6.053	8.112
7483.0	7.898	8.100
8979.0	9.746	8.136
10480.0	1.157×10^{3}	8.200
11970.0	1.339	8.276
13470.0	1.519	8.352
14960.0	1.698	8.432
17960.0	2.049	8.592
20950.0	2.395	8.728
23940.0	2.735	8.860
26940.0	3.071	8.984
29930.0	3.402	9.096

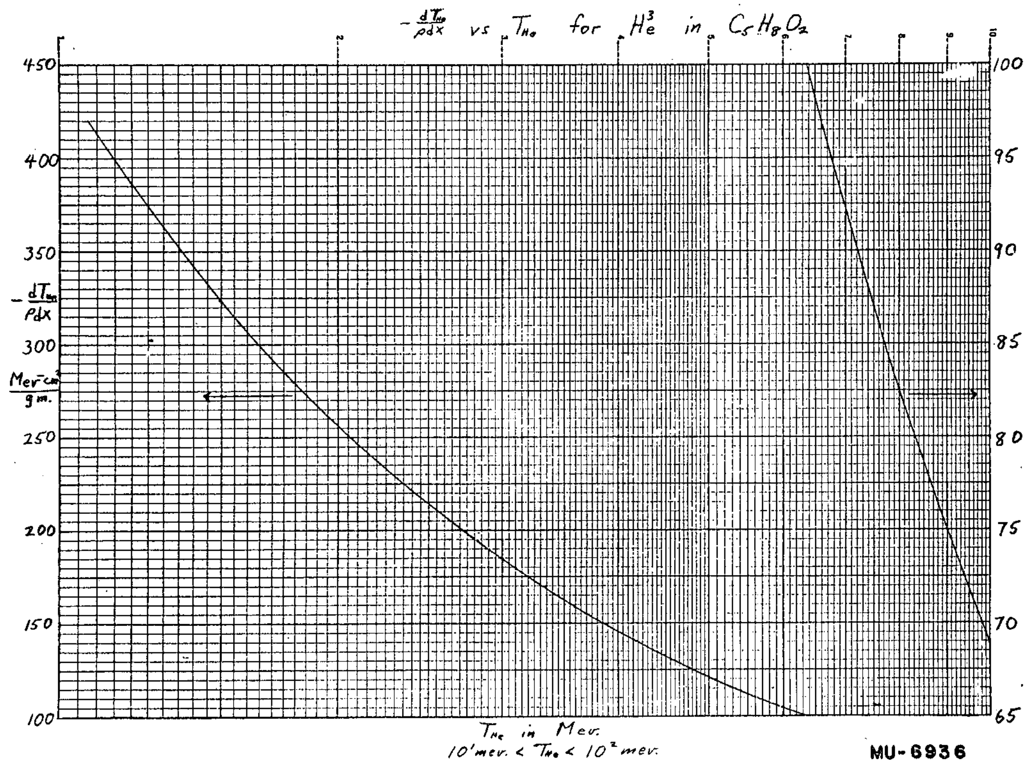

Range of He^3 in $C_5H_8O_2$
Scale I: 1 mev. < T_{He} < 10 mev.
Scale II: 10 mev. < T_{He} < 100 mev.
T_{He} (Mev)
Range in gm./cm.²

MU-6908

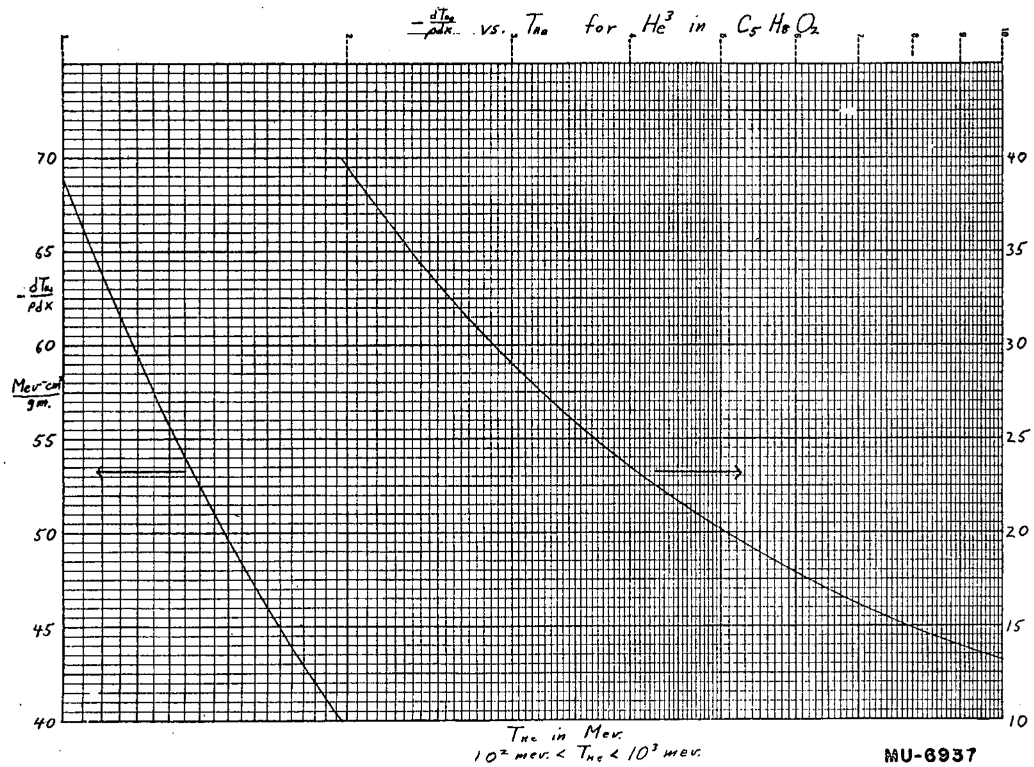


Range of He³ in C₅H₈O₂
Scale I: 100 mev. < T_He < 1000 mev.
Scale II: 1000 mev. < T_He < 10000 mev.
Scale III: 10000 mev. < T_He < 100000 mev.
T_He (Mev.)
Range in gm./cm.²

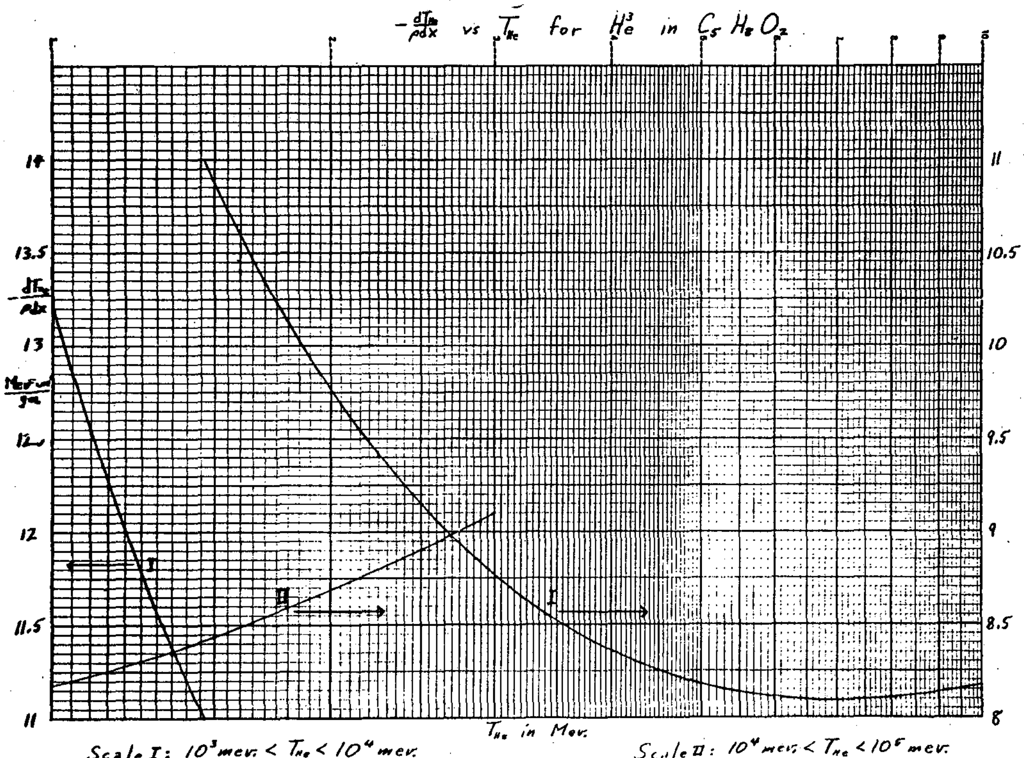
MU-6907


$-\frac{dT_{He}}{\rho dx}$ vs T_{He} for He^3 in $C_5H_8O_2$
450
400
350
$-\frac{dT_{He}}{\rho dx}$
300
$\frac{Mev\text{-}cm^2}{gm.}$
250
200
150
100
100
95
90
85
80
75
70
65
T_{He} in Mev.
10^1 mev. < T_{He} < 10^2 mev.

MU-6936


$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in $C_5H_8O_2$
70
65
$-\frac{dT_{He}}{\rho dx}$
60
$\frac{Mev\text{-}cm^2}{gm.}$
55
50
45
40
40
35
30
25
20
15
10
T_{He} in Mev.
10^2 mev. < T_{He} < 10^3 mev.

MU-6937

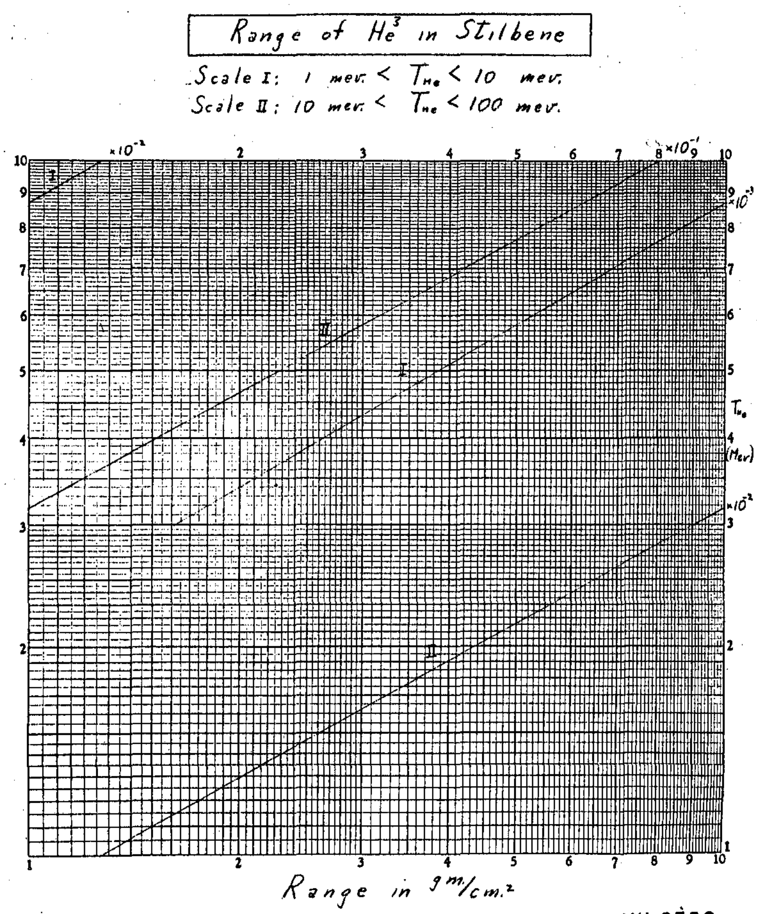


$-\frac{dT_{He}}{\rho dx}$ vs T_{He} for He^3 in $C_5H_8O_2$
14
13.5
$-\frac{dT_{He}}{\rho dx}$
13
$\frac{Mev\text{-}cm^2}{gm}$
12.5
12
11.5
11
11
10.5
10
9.5
9
8.5
8
I
II
I
T_{He} in Mev.
Scale I: 10^3 mev. < T_{He} < 10^4 mev.
Scale II: 10^4 mev. < T_{He} < 10^5 mev.

MU-6938

RANGE OF He^3 IN STILBENE

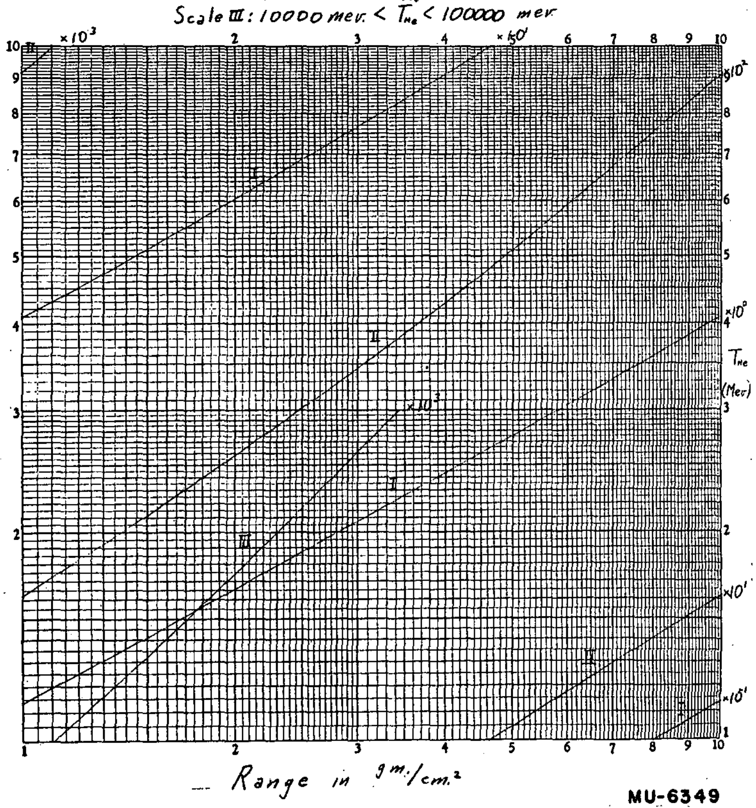
T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm	T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ Mev-cm^2/gm
2.993	1.616×10^{-3}	1087.0	449.0	1.189×10^{1}	21.56
5.986	5.264	664.3	598.6	1.960	17.77
8.979	1.060×10^{-2}	485.4	748.3	2.866	15.46
11.97	1.757	386.5	897.9	3.891	13.91
14.96	2.606	323.4	1048.0	5.015	12.80
17.96	3.607	279.3	1197.0	6.223	11.97
20.95	4.748	246.5	1496.0	8.862	10.82
23.94	6.033	221.2	1796.0	1.173×10^{2}	10.08
26.94	7.454	200.9	2095.0	1.478	9.565
29.93	9.012	184.4	2394.0	1.798	9.195
35.92	1.252×10^{-1}	158.8	2694.0	2.129	8.921
44.90	1.874	132.2	2993.0	2.468	8.714
59.86	3.159	104.4	4490.0	4.245	8.200
74.83	4.737	86.92	5986.0	6.094	8.056
89.79	6.598	74.88	7483.0	7.951	8.041
104.8	8.731	66.04	8979.0	9.812	8.079
119.7	1.113×10^{0}	59.26	10480.0	1.165×10^{3}	8.141
149.6	1.668	49.52	11970.0	1.349	8.214
179.6	2.320	42.85	14960.0	1.710	8.368
209.5	3.064	37.96	17960.0	2.064	8.528
239.4	3.895	34.24	20950.0	2.412	8.660
269.4	4.811	31.29	23940.0	2.755	8.792
299.3	5.807	28.90	26940.0	3.094	8.913
374.1	8.631	24.53	29930.0	3.427	9.026


Range of He^3 in Stilbene
Scale I: 1 mev. < T_{He} < 10 mev.
Scale II: 10 mev. < T_{He} < 100 mev.
$\times 10^{-2}$
$\times 10^{-1}$
$\times 10^{-3}$
$\times 10^{-2}$
T_{He} (Mev)
I
II
Range in gm/cm.²

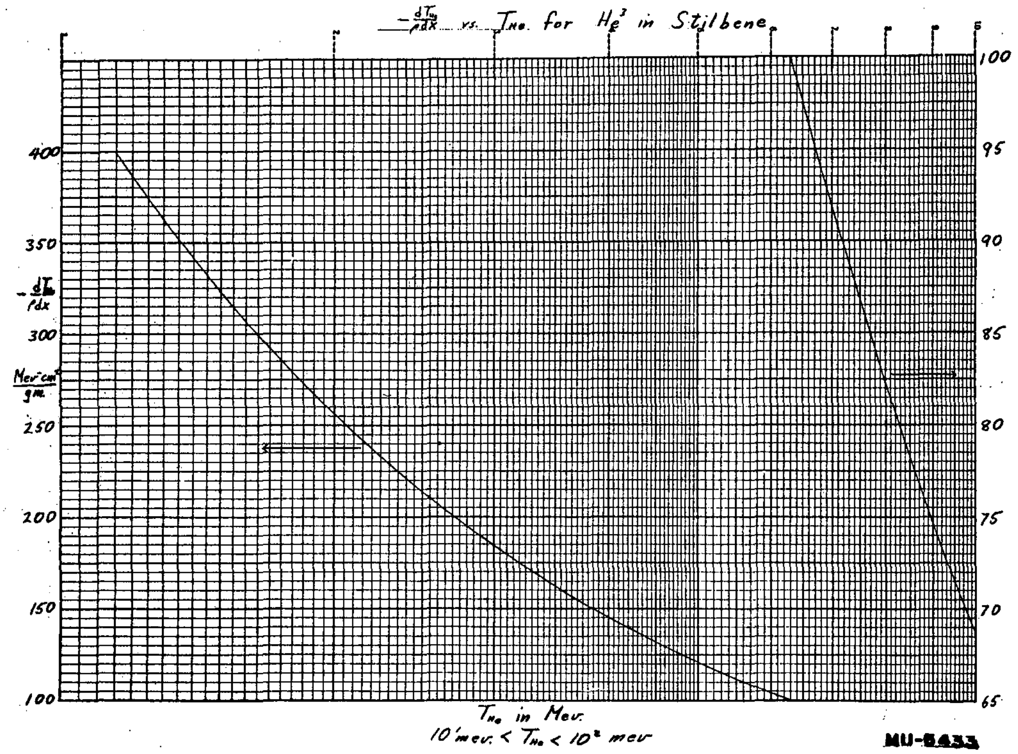
MU-6350

Range of He^3 in Stilbene

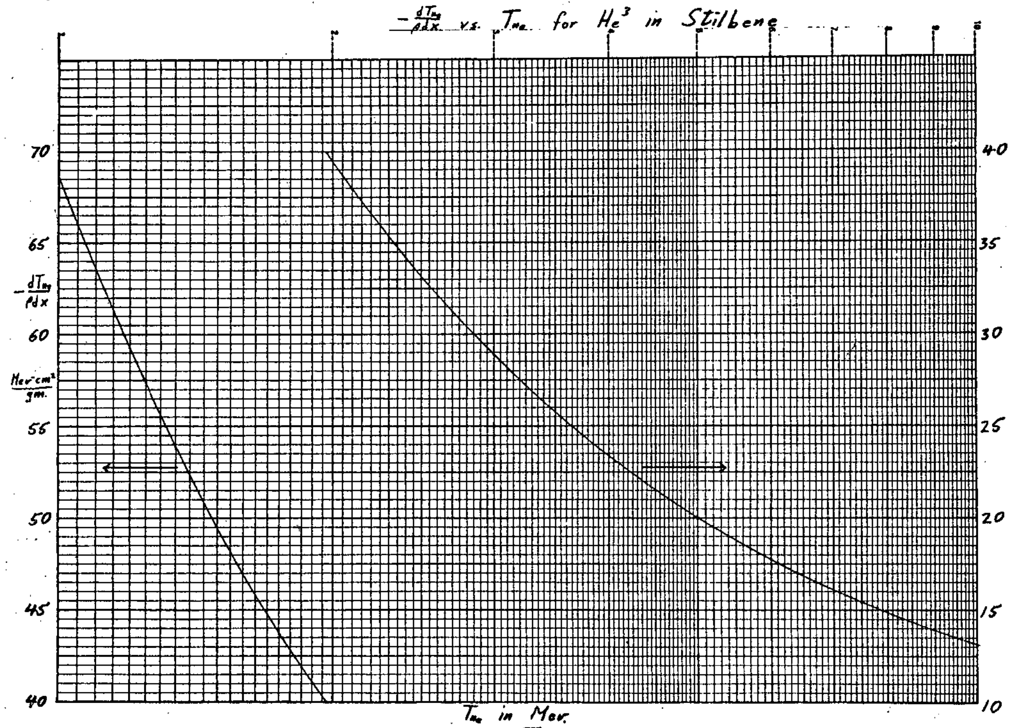
Scale I: 100 mev. < T_{He} ≤ 1000 mev.
Scale II: 1000 mev. < T_{He} < 10000 mev.
Scale III: 10000 mev. < T_{He} < 100000 mev.



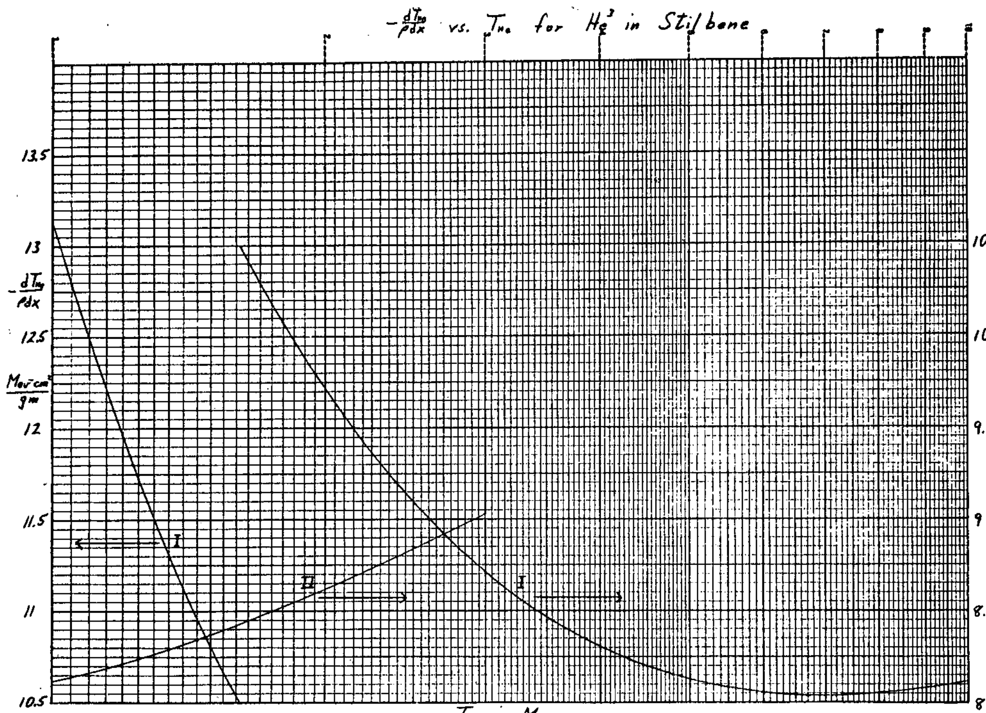
MU-6349


$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in Stilbene
400
350
$-\frac{dT}{\rho dx}$
300
$\frac{Mev\text{-}cm^2}{gm.}$
250
200
150
100
100
95
90
85
80
75
70
65
T_{He} in Mev.
10^1 mev. < T_{He} < 10^2 mev
MU-5433

$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in Stilbene



MU-G434

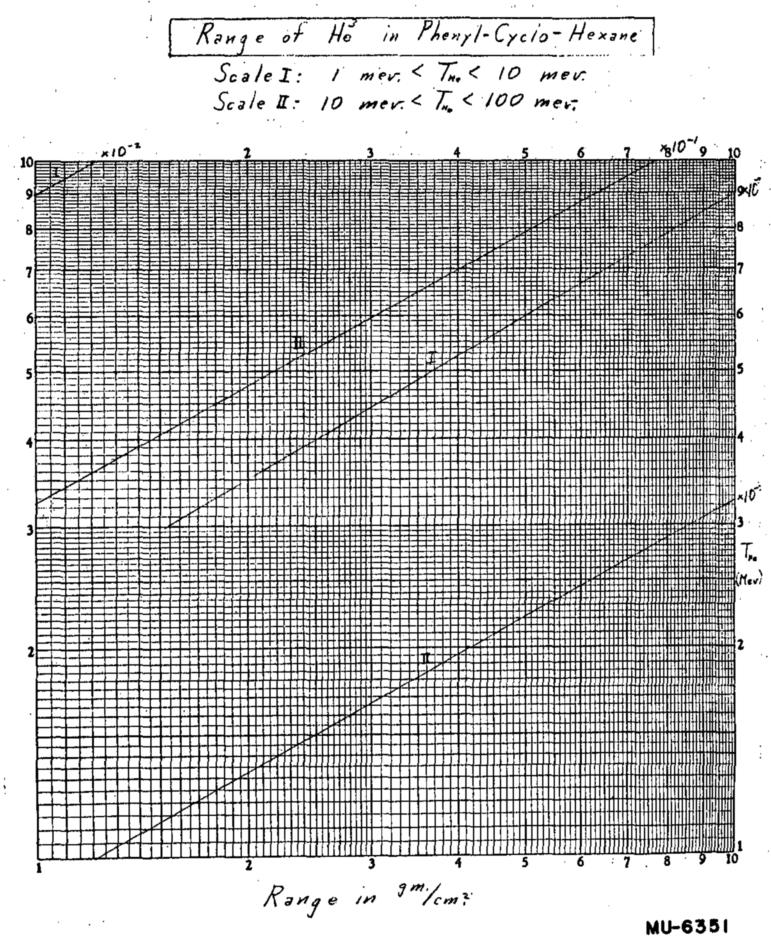


Scale I: 10^3 mev. < T_{He} < 10^4 mev.   Scale II: 10^4 mev. < T_{He} < 10^5 mev.

MU-6435

RANGE OF He^3 IN PHENYL CYCLOHEXANE

T Mev	R gm/cm^2	$-\frac{dT}{d\xi}$ $Mev\text{-}cm^2/gm$
2.993	1.531×10^{-3}	114.7
5.986	5.006	697.0
8.979	1.009×10^{-2}	508.4
11.97	1.675	404.6
14.96	2.486	338.3
17.96	3.443	292.0
20.95	4.535	257.7
23.94	5.765	231.1
26.94	7.124	209.9
29.93	8.616	192.6
35.92	1.198×10^{-1}	165.8
44.90	1.794	138.0
59.86	3.025	108.9
74.83	4.539	90.62
89.79	6.324	78.04
104.8	8.371	68.82
119.7	1.067×10^{0}	61.74
149.6	1.600	51.58
179.6	2.226	44.62
209.5	2.940	39.52
239.4	3.739	35.64
269.4	4.619	32.57
299.3	5.576	30.08
374.1	8.289	25.52
449.0	1.143×10^{1}	22.43
598.6	1.883	18.48
748.3	2.755	16.08
897.9	3.741	14.46
1048.0	4.822	13.31
1197.0	5.984	12.44
1496.0	8.524	11.25
1796.0	1.129×10^{2}	10.47
2095.0	1.422	9.937
2394.0	1.730	9.552
2694.0	2.048	9.266
2993.0	2.375	9.050
4490.0	4.086	8.514
5986.0	5.867	8.362
7483.0	7.656	8.345
8979.0	9.449	8.384
10480.0	1.122×10^{3}	8.447
11970.0	1.300	8.521
14960.0	1.647	8.679
17960.0	1.989	8.844
20950.0	2.325	8.980
23940.0	2.655	9.115
26940.0	2.982	9.240
29930.0	3.304	9.356



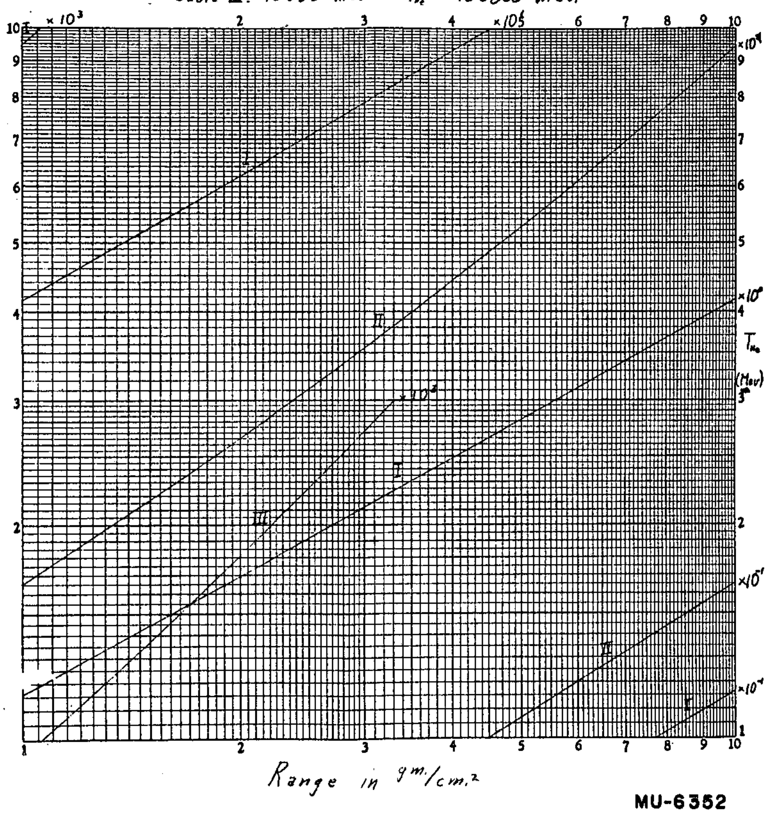
Range of He^3 in Phenyl-Cyclo-Hexane
Scale I: 1 mev. < T_{He} < 10 mev.
Scale II: 10 mev. < T_{He} < 100 mev.
$\times 10^{-2}$
$\times 10^{-1}$
$\times 10$
T_{He} (Mev)
Range in gm./cm.²
MU-6351

Range of He^3 in Phenyl-Cyclo-Hexane

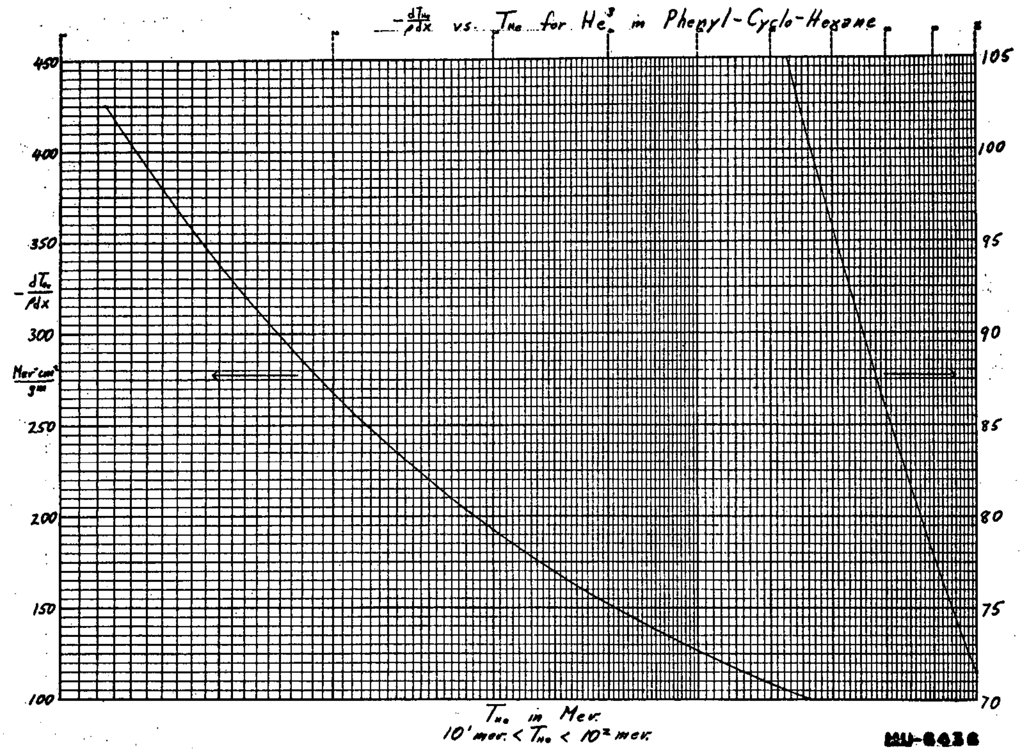
Scale I: 100 mev. < T_{He} < 1000 mev.

Scale II: 1000 mev. < T_{He} < 10000 mev.

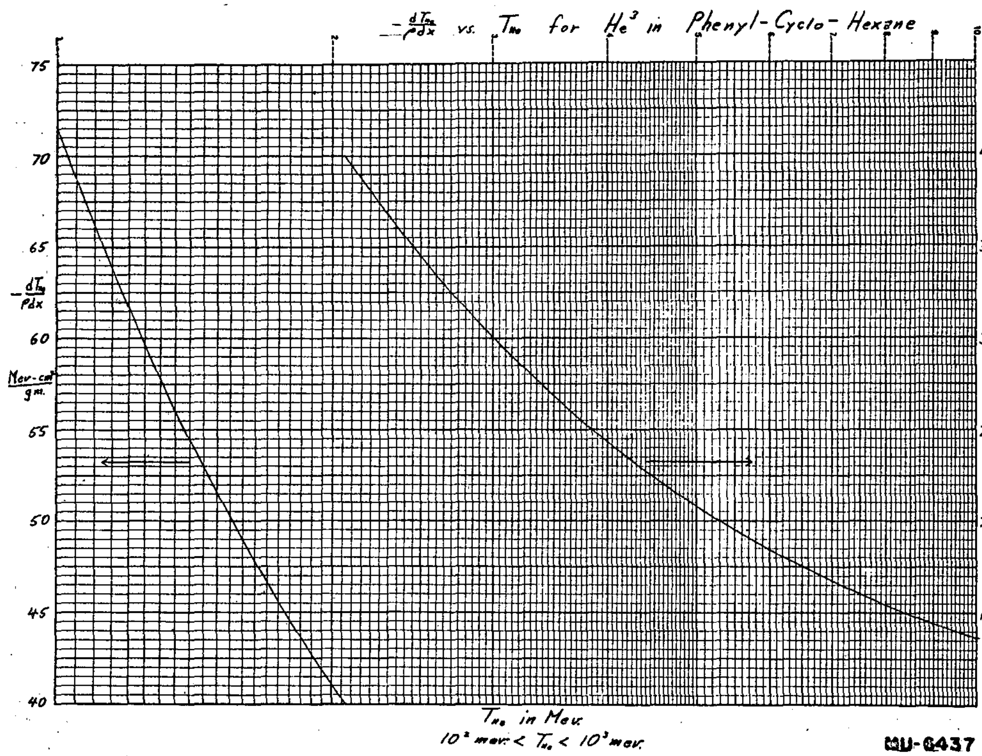
Scale III: 10000 mev. < T_{He} < 100000 mev.



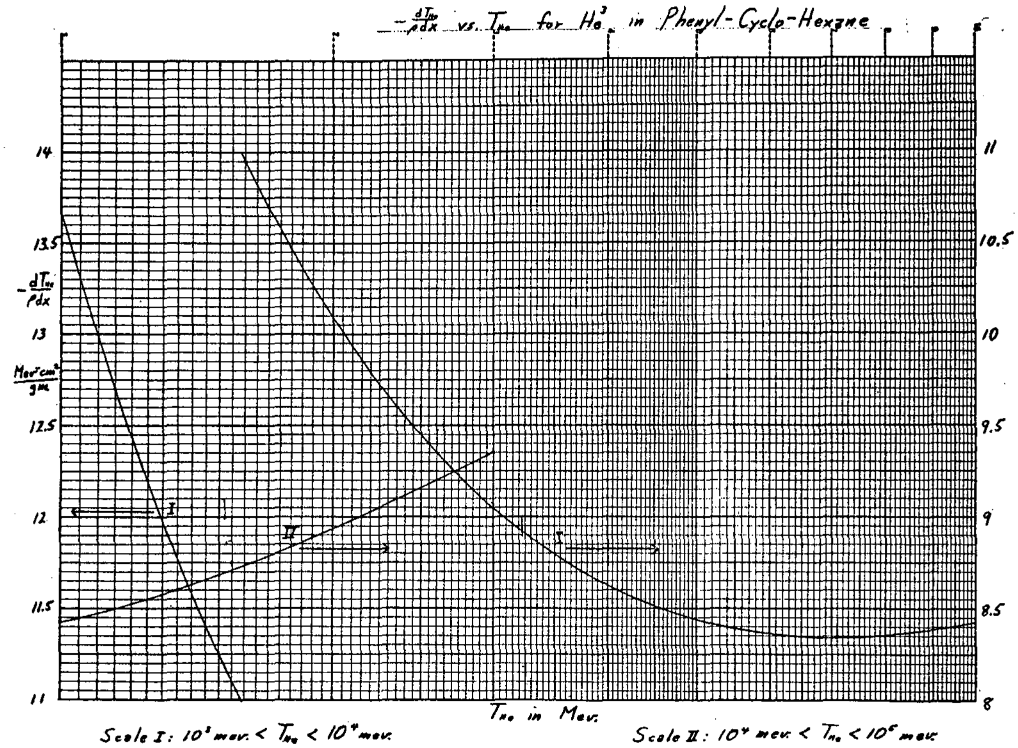
MU-6352


$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in Phenyl-Cyclo-Hexane
450
400
350
$-\frac{dT_{He}}{\rho dx}$
300
$\frac{Mev\ cm^2}{gm}$
250
200
150
100
105
100
95
90
85
80
75
70
T_{He} in Mev
10^1 mev $< T_{He} < 10^2$ mev

MU-6436


−dT/ρdx vs. T for He³ in Phenyl-Cyclo-Hexane
75
70
65
60
55
50
45
40
40
35
30
25
20
15
10
−dT/ρdx
Mev-cm²/gm.
T in Mev
10² mev < T < 10³ mev

MU-6437


$-\frac{dT_{He}}{\rho dx}$ vs. T_{He} for He^3 in Phenyl-Cyclo-Hexane
14
13.5
$-\frac{dT_{He}}{\rho dx}$
13
$\frac{Mev\,cm^2}{gm}$
12.5
12
11.5
11
11
10.5
10
9.5
9
8.5
8
I
II
I
T_{He} in Mev.
Scale I: 10^3 mev. < T_{He} < 10^4 mev.
Scale II: 10^4 mev. < T_{He} < 10^6 mev.