

Laboratori Nazionali di Frascati

LNF-56/2 (26. 1. 56)

A. Turrin: TABELLE DI B_0 E \dot{B}_0 CON 5 CIFRE SIGNIFICATIVE FIBO
AD ENERGIE DI ~ 500 MeV PER SPIRALIZZAZIONI DI 0.2 cm 0.8 cm;
1.0 cm.
TABELLE DI \dot{B}_0 E t CON TRE CIFRE SIGNIFICATIVE IN FUNZIONE
DI B_0 VARIABILE DA 15 GAUSS A 120 GAUSS PER SPIRALIZZAZIONI
DI 0.2 cm; 0.6 cm; 1.0cm.

ISTITUTO NAZIONALE DI FISICA NUCLEARE
Sezione Acceleratore

Relazione n°: T 24
20 Gennaio 1956.

TABELLE DI B_0 E \dot{B}_0 CON 5 CIFRE SIGNIFICATIVE FINO
AD ENERGIE DI CIRCA 500 MeV PER SPIRALIZZAZIONI
DI 0.2 cm; 0.6 cm; 1.0 cm.-

Angelo Turrin

$$G = 0.2$$

$\Omega t_{(s)}$	$10^{-6} \dot{B}_0$ (gs/sec)	B_0 (gs)
0	0.0000	3.88
3	0.030437	10.140
6	0.060790	29.162
7	0.070875	38.279
8	0.080936	48.831
9	0.090973	60.772
12	0.12091	104.92
15	0.15052	161.48
18	0.17971	230.30
21	0.20841	311.20
24	0.23654	403.90

$$\dot{B}_0 \times 10^{-6} = 0.58156 \sin \Omega t$$

$$B_0 = 4631.9 - 4628.1 \cos \psi$$

$$\theta = 0.2$$

Ωt (°)	$10^{-6} \dot{B}_0$ (g/sec)	B_0 (g)
27	0.26402	508.22
30	0.29078	623.83
33	0.31674	750.45
36	0.34184	887.67
39	0.36599	1035.2
42	0.38914	1192.6
45	0.41123	1359.3
48	0.43218	1535.1
51	0.45196	1719.3
54	0.47049	1911.5
57	0.48774	2111.3

$$\dot{B}_0 \times 10^{-6} = 0.58156 \sin \Omega t$$

$$B_0 = 4631.9 - 4628.1 \cos \varphi$$

$$\bar{\sigma} = 0.2$$

Ωt (s)	$10^{-6} \dot{B}_0$ (ga/sec)	B_0 (ga)
60	0.50365	2317.9
63	0.51818	2530.8
66	0.53128	2749.5
69	0.54293	2973.3
72	0.55310	3201.7
75	0.56175	3434.1
78	0.56885	3669.7
81	0.57440	3907.9
84	0.57837	4148.1
87	0.58076	4389.7
90	0.58156	4631.9
	0.58156	4631.9 - - 4628.1

$$\dot{B}_0 \times 10^{-6} = 0.58156 \sin \Omega t$$

$$B_0 = 4631.9 - 4628.1 \cos \gamma$$

$$\zeta = 0.6$$

Rt	$10^{-6} \dot{B}_0$ (gs/sec)	B_0 (gs)
0	0.0000	- 144.0
3	0.03092 ₃	- 137.6
6	0.06176 ₂	- 118.2
9	0.09242 ₇	- 86.1
12	0.12284	- 41.3
15	0.15292	+ 16.2
16	0.16286	38.2
17	0.17275	61.5
18	0.18258	86.1
19	0.19236	112.2
20	0.20208	139.6
21	0.21174	168.3
22	0.22134	198.4
24	0.24032	262.5
27	0.26824	368.5
30	0.29543	485.9

$$\dot{B}_0 \times 10^{-6} = 0.59085 \sin Rt$$

$$B_0 = 4558.0 - 4708.0 \cos Rt$$

$$G = 0.6$$

Ωt	$10^{-6} \dot{B}_0$ (g/sec)	B_0 (g)
33	0.32180	614.6
36	0.34730	754.0
39	0.37183	903.8
42	0.39536	1063.8
45	0.41780	1233.2
48	0.43908	1411.8
51	0.45918	1598.9
54	0.47801	1794.2
57	0.49553	1997.1
60	0.51169	2207.0

$$\dot{B}_0 \times 10^{-6} = 0.59085 \sin \Omega t$$

$$B_0 = 4558.0 - 4702.0 \cos \Omega t$$

$$\delta = 0.6$$

Rt	$10^{-6} \dot{B}_0$ (g ^o /sec)	B_0 (g ^o)
63	0.52645	2423.3
66	0.53977	2645.5
69	0.55161	2872.9
72	0.56193	3105.0
75	0.57072	3341.0
78	0.57794	3580.4
81	0.58358	3822.5
84	0.58761	4066.5
87	0.59004	4311.9
90	0.59085	4558.0

$$\dot{B}_0 \times 10^{-6} = 0.59058 \sin Rt$$

$$B_0 = 4558.0 - 4702.0 \cos Rt$$

$$\delta^v = 1.0$$

Ωt	$10^{-6} \dot{B}_0$ (g ₀ /sec)	B_0 (g ₀)
0	0.0000	- 427.1
3	0.031854	- 420.5
6	0.063621	- 400.6
9	0.095210	- 367.5
12	0.12654	- 321.3
15	0.15753	- 262.1
18	0.18808	- 190.1
21	0.21812	- 105.4
24	0.24756	- 8.4
25	0.25722	+ 26.7
26	0.26681	63.1
27	0.27632	100.8
28	0.28574	139.8
29	0.29507	180.2
30	0.30432	221.8

$$\dot{B}_0 \times 10^{-6} = 0.60864 \sin \Omega t$$

$$B_0 = 4416.45 - 4843.55 \cos \Omega t$$

$$\bar{\sigma} = 1.0$$

Ωt	$10^{-6} \dot{B}_0$ (gs/sec)	B_0 (gs)
33	0.33149	354.3
36	0.35775	497.9
39	0.38303	652.3
42	0.40726	817.0
45	0.43038	991.5
48	0.45230	1175.5
51	0.47300	1368.3
54	0.49240	1569.5
57	0.51045	1778.5
60	0.52710	1994.7
63	0.54230	2217.5

$$\dot{B}_0 \times 10^{-6} = 0.60869 \sin \Omega t$$

$$B_0 = 4916.45 - 4893.55 \cos \Omega t$$

$$\sigma = 1.0$$

Rt	$10^{-6} \dot{B}_0$ (gr/sec)	B_0 (gr)
66	0.55602	2446.4
69	0.56821	2680.7
72	0.57885	2919.7
75	0.58790	3162.8
78	0.59534	3409.4
81	0.60115	3658.8
84	0.60530	3910.2
87	0.60781	4163.0
90	0.60864	4416.45

$$\dot{B}_0 \times 10^{-6} = 0.60864 \sin Rt$$

$$B_0 = 4416.45 - 4893.55 \cos Rt$$

ISTITUTO NAZIONALE DI FISICA NUCLEARE
Sezione Acceleratore

Relazione n°: T 24/bis (da aggiungere alla rel. n° T 24)
26 Gennaio 1956.

TABELLE DI \dot{B}_0 e t CON 3 CIFRE SIGNIFICATIVE IN
FUNZIONE DI B_0 VARIABILE DA 15 GAUSS A 120 GAUSS
PER SPIRALIZZAZIONI DI 0.2 cm; 0.6 cm; 1.0 cm. -

$$\Omega = 125.7 \text{ sec}^{-1}$$

$$\text{Per } \dot{G} = 0.2 \text{ cm}$$

$$10^{-6} \dot{B}_0 = 0.58156 \sqrt{1 - \left(\frac{4631.9 - B_0}{4628.1} \right)^2}$$

$$t = \frac{1}{\Omega} \text{ arc cos } \left(\frac{4631.9 - B_0}{4628.1} \right)$$

$$\text{Per } \dot{G} = 0.6 \text{ cm}$$

$$10^{-6} \dot{B}_0 = 0.59085 \sqrt{1 - \left(\frac{4558.0 - B_0}{4702.0} \right)^2}$$

$$t = \frac{1}{\Omega} \text{ arc cos } \left(\frac{4558.0 - B_0}{4702.0} \right)$$

$$\text{Per } \dot{G} = 1.0 \text{ cm}$$

$$10^{-6} \dot{B}_0 = 0.60864 \sqrt{1 - \left(\frac{4416.45 - B_0}{4843.55} \right)^2}$$

$$t = \frac{1}{\Omega} \text{ arc cos } \left(\frac{4416.45 - B_0}{4843.55} \right)$$

B_0 in gauss; \dot{B}_0 in gauss/sec; t in seconds

$$\bar{G} = 0,2 \text{ cm}$$

B_0 (ga)	$10^{-6} \dot{B}_0$ (ga/sec)	$10^{-1} t$ (Asec)
15	0.040 ₄	55.4
20	0.048 ₆	66.6
25	0.055 ₆	76.1
30	0.061 ₈	84.7
35	0.067 ₄	92.3
40	0.072 ₆	99.4
45	0.077 ₄	106
50	0.081 ₉	113
55	0.086 ₂	118
60	0.090 ₃	124
65	0.094 ₃	130
70	0.098 ₀	134
75	0.101 ₆	140
80	0.105 ₁	145
85	0.108 ₅	150
90	0.111 ₇	154
95	0.114 ₉	158
100	0.118 ₀	162
105	0.121 ₀	167
110	0.123 ₉	171
115	0.126 ₇	175
120	0.129 ₅	179

$$\hat{b} = 0,6 \text{ cm}$$

B_0 (gs)	$10^{-6} \dot{B}_0$ (gs/sec)	$10^{-1} t$ (μ sec)
15	0.152 ₄	208
20	0.154 ₇	211
25	0.157 ₀	214
30	0.159 ₂	217
35	0.161 ₅	220
40	0.163 ₇	223
45	0.165 ₈	226
50	0.168 ₀	229
55	0.170 ₀	232
60	0.172 ₂	235
65	0.174 ₂	238
70	0.176 ₂	241
75	0.178 ₂	244
80	0.180 ₂	247
85	0.182 ₂	249
90	0.184 ₀	252
95	0.186 ₀	255
100	0.187 ₈	257
105	0.189 ₇	260
110	0.191 ₅	262
115	0.193 ₄	265
120	0.195 ₂	268

$$G = 1,0 \text{ cm}$$

B_0 (gs)	$10^{-6} \dot{B}_0$ (gs/sec)	$10^{-1} t$ (μsec)
15	0.254 ₀	343
20	0.255 ₄	344
25	0.256 ₈	346
30	0.258 ₁	348
35	0.259 ₅	350
40	0.260 ₈	352
45	0.262 ₁	354
50	0.263 ₄	356
55	0.264 ₇	358
60	0.266 ₀	360
65	0.267 ₃	362
70	0.268 ₈	364
75	0.269 ₉	365
80	0.271 ₁	367
85	0.272 ₄	369
90	0.273 ₆	371
95	0.274 ₉	373
100	0.276 ₁	375
105	0.277 ₄	376
110	0.278 ₆	378
115	0.279 ₈	380
120	0.281 ₀	382