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1  PARTICLE
2  #
3  #          IDGEANT      IDHEP   TYPE      CHARGE      MASS          TLIFE
4  #
5  # the StdHep numbering scheme for ions is the following:
6  #  FAAAAZZZ000L
7  #   where F=1 and flags this as an ion,
8  #   AAA and ZZZ are the ion's A and Z respectively, L contains the spin as L=2J+1.
9  # see  http://www-cpd.fnal.gov/psm/stdhep/doc/stdhep\_406\_manual.ps
10 #
11 He          47 1004002001      4      2.0      3.72742      .1000E+16
12 Li          907 1007003004      4      3.0      6.53536      .1000E+16
13 Be          909 1009004004      4      4.0      8.39479      .1000E+16
14 B           910 1010005007      4      5.0     10.25510      .1000E+16
15 C           912 1012006001      4      6.0     11.17793      .1000E+16
16 N           914 1014007003      4      7.0     13.04378      .1000E+16
17 O           916 1016008001      4      8.0     14.89917      .1000E+16
18 F           919 1019009002      4      9.0     17.69690      .1000E+16
19 Ne          920 1020010001      4     10.0     18.62284      .1000E+16
20 Na          923 1023011004      4     11.0     21.41483      .1000E+16
21 Mg          924 1024012001      4     12.0     22.34193      .1000E+16
22 Al          927 1027013006      4     13.0     25.13314      .1000E+16
23 Si          928 1028014001      4     14.0     26.06034      .1000E+16
24 P           931 1031015002      4     15.0     28.85188      .1000E+16
25 S           932 1032016001      4     16.0     29.78180      .1000E+16
26 Cl          935 1035017004      4     17.0     32.57328      .1000E+16
27 Ar          936 1036018001      4     18.0     33.50356      .1000E+16
28 K           939 1039019004      4     19.0     36.29447      .1000E+16
29 Ca          940 1040020001      4     20.0     37.22492      .1000E+16
30 Sc          945 1045021008      4     21.0     41.87616      .1000E+16
31 Ti          948 1048022001      4     22.0     44.66324      .1000E+16
32 V           951 1051023008      4     23.0     47.45401      .1000E+16
33 Cr          952 1052024001      4     24.0     48.38228      .1000E+16
34 Mn          955 1055025006      4     25.0     51.17447      .1000E+16
35 Fe          956 1056026001      4     26.0     52.10307      .1000E+16
36 Co          959 1059027008      4     27.0     54.89593      .1000E+16
37 gamma       1      22      1      .0      .0000E+00      .1000E+17
38 e+          2      -11     2      1.0     .5110E-03      .1000E+17
39 e-          3      11      2     -1.0     .5110E-03      .1000E+17
40 nu_e        4      12      3      .0      .0000E+00      .1000E+17
41 mu+         5      -13     5      1.0     .1057E+00      .2197E-05
42 mu-         6      13      5     -1.0     .1057E+00      .2197E-05
43 pi0         7      111     3      .0      .1350E+00      .8400E-16
44 pi+         8      211     4      1.0     .1396E+00      .2603E-07
45 pi-         9     -211     4     -1.0     .1396E+00      .2603E-07
46 KL0        10     130     3      .0      .4982E+00      .5170E-07
47 K+         11     321     4      1.0     .4936E+00      .1237E-07
48 K-         12    -321     4     -1.0     .4936E+00      .1237E-07
49 n0         13    2112     3      .0      .9396E+00      .1000E+16
50 proton     14    2212     4      1.0     .9383E+00      .1000E+16
51 p~-        15   -2212     4     -1.0     .9383E+00      .1000E+16
52 KS0        16     310     3      .0      .4977E+00      .8926E-10
53 eta        17     221     3      .0      .5475E+00      .5485E-18
54 Lambda0    18    3122     3      .0      .1116E+01      .2632E-09

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55	Sigma+	19	3222	4	1.0	.1189E+01	.7990E-10
56	Sigma0	20	3212	3	.0	.1193E+01	.7400E-19
57	Sigma-	21	3112	4	-1.0	.1197E+01	.1479E-09
58	Xi0	22	3322	3	.0	.1315E+01	.2900E-09
59	Xi-	23	3312	4	-1.0	.1321E+01	.1639E-09
60	Omega-	24	3334	4	-1.0	.1672E+01	.8220E-10
61	n~0	25	-2112	3	.0	.9396E+00	.1000E+16
62	Lambda~0	26	-3122	3	.0	.1116E+01	.2632E-09
63	Sigma~-	27	-3222	4	-1.0	.1189E+01	.7990E-10
64	Sigma~0	28	-3212	3	.0	.1193E+01	.7400E-19
65	Sigma~+	29	-3112	4	1.0	.1197E+01	.1479E-09
66	Xi~0	30	-3322	3	.0	.1315E+01	.2900E-09
67	Xi~+	31	-3312	4	1.0	.1321E+01	.1638E-09
68	Omega~+	32	-3334	4	1.0	.1672E+01	.8220E-10
69	rho(770)0	33	113	3	.0	.7681E+00	.4353E-23
70	rho(770)+	34	213	4	1.0	.7669E+00	.4353E-23
71	rho(770)-	35	-213	4	-1.0	.7669E+00	.4353E-23
72	omega(782)	36	223	3	.0	.7820E+00	.7808E-22
73	phi(1020)	37	333	3	.0	.1019E+01	.1486E-21
74	K*(892)+	38	323	4	1.0	.8916E+00	.1300E-22
75	K*(892)-	39	-323	4	-1.0	.8916E+00	.1300E-22
76	K*(892)0	40	313	3	.0	.8961E+00	.1300E-22
77	K*(892)~0	41	-313	3	.0	.8961E+00	.1300E-22
78	a_1(1260)+	42	20213	4	1.0	.1230E+01	.1500E-23
79	a_1(1260)-	43	-20213	4	-1.0	.1230E+01	.1500E-23
80	Deuteron	45	0	4	1.0	.1876E+01	.1000E+16
81	Triton	46	0	4	1.0	.2814E+01	.1000E+16
82	Alpha	47	1004002001	4	2.0	.3727E+01	.1000E+16
83	Geantino	48	0	6	.0	.0000E+00	.1000E+16
84	He3	49	0	4	2.0	.2809E+01	.1000E+16
85	Tcherenkov	50	22	8	.0	.0000E+00	.1000E+16
86	tau+	51	-15	4	1.0	.1777E+01	.2956E-12
87	tau-	52	15	4	-1.0	.1777E+01	.2956E-12
88	W+	53	24	4	1.0	.8022E+02	.9400E-25
89	W-	54	-24	4	-1.0	.8022E+02	.9400E-25
90	Z0	55	23	3	.0	.9119E+02	.7740E-25
91	D+	56	411	4	1.0	.1869E+01	.1057E-11
92	D-	57	-411	4	-1.0	.1869E+01	.1057E-11
93	D0	58	421	3	.0	.1865E+01	.4150E-12
94	D~0	59	-421	3	.0	.1865E+01	.4150E-12
95	D_s+	60	431	4	1.0	.1969E+01	.4670E-12
96	D_s-	61	-431	4	-1.0	.1969E+01	.4670E-12
97	Lambda_c+	62	4122	4	1.0	.2285E+01	.2000E-12
98	Lambda_c~-	63	-4122	4	-1.0	.2285E+01	.2000E-12
99	J/psi(1S)	64	443	3	.0	.3097E+01	.7480E-20
100	D*(2010)+	65	413	4	1.0	.2010E+01	.1000E-18
101	D*(2010)-	66	-413	4	-1.0	.2010E+01	.1000E-18
102	D*(2010)0	67	423	3	.0	.2007E+01	.1000E-18
103	D*(2010)~0	68	-423	3	.0	.2007E+01	.1000E-18
104	D*_s+	69	433	4	1.0	.2110E+01	.1000E-18
105	D*_s-	70	-433	4	-1.0	.2110E+01	.1000E-18
106	B+	71	521	4	1.0	.5279E+01	.1620E-11
107	B-	72	-521	4	-1.0	.5279E+01	.1620E-11
108	B0	73	511	3	.0	.5279E+01	.1560E-11

109	B~0	74	-511	3	.0	.5279E+01	.1560E-11
110	B_s0	75	531	3	.0	.5375E+01	.1520E-11
111	B_s~0	76	-531	3	.0	.5375E+01	.1520E-11
112	B_c+	77	541	4	1.0	.6594E+01	.5003E-12
113	B_c-	78	-541	4	-1.0	.6594E+01	.5003E-12
114	Lambda_b0	79	5122	3	.0	.5641E+01	.1140E-11
115	Lambda_b~0	80	-5122	3	.0	.5641E+01	.1140E-11
116	Sigma_c0	81	4112	3	.0	.2453E+01	.1000E-18
117	Sigma_c~0	82	-4112	3	.0	.2453E+01	.1000E-18
118	Sigma_c+	83	4212	4	1.0	.2453E+01	.1000E-18
119	Sigma_c~-	84	-4212	4	-1.0	.2453E+01	.1000E-18
120	Sigma_c++	85	4222	4	2.0	.2453E+01	.1000E-18
121	Sigma_c~-~	86	-4222	4	-2.0	.2453E+01	.1000E-18
122	H_10	87	25	3	.0	.1100E+03	.9400E-25
123	H_20	88	35	3	.0	.3100E+03	.9400E-25
124	H_30	89	36	3	.0	.3100E+03	.9400E-25
125	H+	90	37	4	1.0	.3100E+03	.9400E-25
126	H-	91	-37	4	-1.0	.3100E+03	.9400E-25
127	Xi'_c0	100	4312	3	.0	.2550E+01	.9800E-13
128	Xi'_c~0	101	-4312	3	.0	.2550E+01	.9800E-13
129	Xi'_c+	102	4322	4	1.0	.2550E+01	.3500E-12
130	Xi'_c~-	103	-4322	4	-1.0	.2550E+01	.3500E-12
131	Omega_c0	104	4332	3	.0	.2710E+01	.4336E-12
132	Omega_c~0	105	-4332	3	.0	.2710E+01	.4336E-12
133	Xi_c0	106	4132	3	.0	.2470E+01	.9800E-13
134	Xi_c~0	107	-4132	3	.0	.2470E+01	.9800E-13
135	Xi_c+	108	4232	4	1.0	.2465E+01	.3500E-12
136	Xi_c~-	109	-4232	4	-1.0	.2465E+01	.3500E-12
137	Sigma_b+	110	5222	4	1.0	.5800E+01	.1000E-18
138	Sigma_b~-	111	-5222	4	-1.0	.5800E+01	.1000E-18
139	Sigma_b0	112	5212	3	.0	.5800E+01	.1000E-18
140	Sigma_b~0	113	-5212	3	.0	.5800E+01	.1000E-18
141	Sigma_b-	114	5112	4	-1.0	.5800E+01	.1000E-18
142	Sigma_b~+	115	-5112	4	1.0	.5800E+01	.1000E-18
143	Xi'_b-	116	5312	4	-1.0	.5960E+01	.1000E-18
144	Xi'_b~+	117	-5312	4	1.0	.5960E+01	.1000E-18
145	Xi'_b0	118	5322	3	.0	.5960E+01	.1000E-18
146	Xi'_b~0	119	-5322	3	.0	.5960E+01	.1000E-18
147	Omega_b-	120	5332	4	-1.0	.6120E+01	.1550E-11
148	Omega_b~+	121	-5332	4	1.0	.6120E+01	.1550E-11
149	Xi_b-	122	5132	4	-1.0	.5840E+01	.1550E-11
150	Xi_b~+	123	-5132	4	1.0	.5840E+01	.1550E-11
151	Xi_b0	124	5232	3	.0	.5840E+01	.1550E-11
152	Xi_b~0	125	-5232	3	.0	.5840E+01	.1550E-11
153	psi(2S)	126	100443	3	.0	.3686E+01	.2376E-20
154	eta'	127	331	3	.0	.9578E+00	.3242E-20
155	eta_c(1S)	128	441	3	.0	.2979E+01	.4986E-22
156	chi_c0(1P)	129	10441	3	.0	.3415E+01	.4702E-22
157	chi_c1(1P)	130	20443	3	.0	.3511E+01	.7480E-21
158	chi_c2(1P)	131	445	3	.0	.3556E+01	.3291E-21
159	a_0(980)0	132	9000111	3	.0	.9824E+00	.1150E-22
160	a_0(980)+	133	9000211	4	1.0	.9824E+00	.1150E-22
161	a_0(980)-	134	-9000211	4	-1.0	.9824E+00	.1150E-22
162	a_1(1260)0	135	20113	3	.0	.1230E+01	.1500E-23

163	a_2(1320)0	136	115	3	.0	.1318E+01	.5980E-22
164	a_2(1320)+	137	215	4	1.0	.1318E+01	.5980E-22
165	a_2(1320)-	138	-215	4	-1.0	.1318E+01	.5980E-22
166	K_1(1270)+	139	10323	4	1.0	.1273E+01	.7314E-23
167	K_1(1270)-	140	-10323	4	-1.0	.1273E+01	.7314E-23
168	K_1(1270)0	141	10313	3	.0	.1273E+01	.7314E-23
169	K_1(1270)~0	142	-10313	3	.0	.1273E+01	.7314E-23
170	K_1(1400)+	143	20323	4	1.0	.1402E+01	.3780E-23
171	K_1(1400)-	144	-20323	4	-1.0	.1402E+01	.3780E-23
172	K_1(1400)0	145	20313	3	.0	.1402E+01	.3780E-23
173	K_1(1400)~0	146	-20313	3	.0	.1402E+01	.3780E-23
174	K*(1410)+	147	100323	4	1.0	.1414E+01	.2837E-23
175	K*(1410)-	148	-100323	4	-1.0	.1414E+01	.2837E-23
176	K*(1410)0	149	100313	3	.0	.1414E+01	.2837E-23
177	K*(1410)~0	150	-100313	3	.0	.1414E+01	.2837E-23
178	K*_2(1430)+	151	325	4	1.0	.1432E+01	.6710E-23
179	K*_2(1430)-	152	-325	4	-1.0	.1432E+01	.6710E-23
180	K*_2(1430)0	153	315	3	.0	.1432E+01	.6030E-23
181	K*_2(1430)~0	154	-315	3	.0	.1432E+01	.6030E-23
182	D*_0+	155	10411	4	1.0	.2400E+01	.4380E-23
183	D_1(H)+	156	20413	4	1.0	.2445E+01	.2630E-23
184	D_1(2420)+	157	10413	4	1.0	.2423E+01	.3290E-22
185	D*_2(2460)-	158	-415	4	1.0	.2460E+01	.2820E-22
186	D*_0-	159	-10411	4	-1.0	.2400E+01	.4380E-23
187	D_1(H)-	160	-20413	4	-1.0	.2445E+01	.2630E-23
188	D_1(2420)-	161	-10413	4	-1.0	.2423E+01	.3290E-22
189	D*_2(2460)+	162	415	4	-1.0	.2460E+01	.2820E-22
190	D*_00	163	10421	3	.0	.2400E+01	.4380E-23
191	D_1(H)0	164	20423	3	.0	.2445E+01	.2630E-23
192	D_1(2420)0	165	10423	3	.0	.2423E+01	.3290E-22
193	D*_2(2460)~0	166	-425	3	.0	.2460E+01	.2820E-22
194	D*_0~0	167	-10421	3	.0	.2400E+01	.4380E-23
195	D_1(H)~0	168	-20423	3	.0	.2445E+01	.2630E-23
196	D_1(2420)~0	169	-10423	3	.0	.2423E+01	.3290E-22
197	D*_2(2460)0	170	425	3	.0	.2460E+01	.2820E-22
198	D*_s0+	171	10431	4	1.0	.2460E+01	.4380E-23
199	D_s1(H)+	172	20433	4	1.0	.2560E+01	.2630E-23
200	D_s1(2536)+	173	10433	4	1.0	.2536E+01	.1310E-21
201	D*_s2+	174	435	4	1.0	.2610E+01	.2630E-22
202	D*_s0-	175	-10431	4	1.0	.2460E+01	.4380E-23
203	D_s1(H)-	176	-20433	4	1.0	.2560E+01	.2630E-23
204	D_s1(2536)-	177	-10433	4	1.0	.2536E+01	.1310E-21
205	D*_s2-	178	-435	4	1.0	.2610E+01	.2630E-22
206	Delta++	179	2224	4	2.0	.1232E+01	.5490E-23
207	Delta+	180	2214	4	1.0	.1232E+01	.5490E-23
208	Delta0	181	2114	4	.0	.1232E+01	.5490E-23
209	Delta-	182	1114	4	-1.0	.1232E+01	.5490E-23
210	Delta---	183	-2224	4	-2.0	.1232E+01	.5490E-23
211	Delta--	184	-2214	4	-1.0	.1232E+01	.5490E-23
212	Delta~0	185	-2114	4	.0	.1232E+01	.5490E-23
213	Delta~+	186	-1114	4	1.0	.1232E+01	.5490E-23
214	B*-	187	-523	4	-1.0	.5326E+01	.1000E-18
215	B*+	188	523	4	1.0	.5326E+01	.1000E-18
216	B*0	189	513	3	.0	.5326E+01	.1000E-18

217	B*~0	190	-513	3	.0	.5326E+01	.1000E-18
218	B*_s0	191	533	3	.0	.5420E+01	.1000E-18
219	B*_s~0	192	-533	3	.0	.5420E+01	.1000E-18
220	B*_0+	193	10521	4	1.0	.5730E+01	.4390E-23
221	B_1(H)+	194	20523	4	1.0	.5759E+01	.2630E-23
222	B_1(L)+	195	10523	4	1.0	.5755E+01	.1650E-22
223	B*_2+	196	525	4	1.0	.5767E+01	.1310E-22
224	B*_0-	197	-10521	4	-1.0	.5730E+01	.4390E-23
225	B_1(H)-	198	-20523	4	-1.0	.5759E+01	.2630E-23
226	B_1(L)-	199	-10523	4	-1.0	.5755E+01	.1650E-22
227	B*_2-	200	-525	4	-1.0	.5767E+01	.1310E-22
228	B*_00	201	10511	3	.0	.5730E+01	.4390E-23
229	B_1(H)0	202	20513	3	.0	.5759E+01	.2630E-23
230	B_1(L)0	203	10513	3	.0	.5755E+01	.1650E-22
231	B*_20	204	515	3	.0	.5767E+01	.1310E-22
232	B*_0~0	205	-10511	3	.0	.5730E+01	.4390E-23
233	B_1(H)~0	206	-20513	3	.0	.5759E+01	.2630E-23
234	B_1(L)~0	207	-10513	3	.0	.5755E+01	.1650E-22
235	B*_2~0	208	-515	3	.0	.5767E+01	.1310E-22
236	B*_s00	209	10531	3	.0	.5809E+01	.4390E-23
237	B_s1(H)0	210	20533	3	.0	.5838E+01	.2630E-23
238	B_s1(L)0	211	10533	3	.0	.5834E+01	.2190E-21
239	B*_s20	212	535	3	.0	.5846E+01	.9400E-21
240	B*_s0~0	213	-10531	3	.0	.5809E+01	.4390E-23
241	B_s1(H)~0	214	-20533	3	.0	.5838E+01	.2630E-23
242	B_s1(L)~0	215	-10533	3	.0	.5834E+01	.2190E-21
243	B*_s2~0	216	-535	3	.0	.5846E+01	.9400E-21
244	END PARTICLE						
245							