

1 RR_UNC - Calculate uncertainties in reaction rates
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 3 Andrej Trkov, Jozef Stefan Institute, Ljubljana, Slovenia
 4 Version Jul. 2019
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6
 7 Reference x.s. file :
 ..\IRDFF-II.g725
 8 Source spectrum file :
 ..\IRDFF-II_sp.g
 9 Reaction rate integ.flag : 1
 10 Reaction rate norm. flag : 1
 11
 12 Spectrum MAT No. : 9228
 13 Spectrum Integral : 1.000E+00
 14 Spectrum average energy [eV] : 2.000E+06
 15 Spectrum peak energy [eV] : 7.397E+05
 16 Reaction rate RR = average cross-section
 17

	No.	Mat.	MT	E(50%) [MeV]	<RR> +/- [mb]	Unc	Unc. x.s. [%]	Unc. Sp. [%]	Unc. Total [%]
18									
19									
20									
21									
22	1	3000	1	1.76146	1.8241E+03	+/- 7.788E+00	0.00	0.43	0.43
23	2	3000	2	1.69821	1.6236E+03	+/- 7.087E+00	0.00	0.44	0.44
24	3	3000	205	2.48028	4.4497E+01	+/- 6.510E-01	1.19	0.85	1.46
25	4	3000	207	3.56322	5.5517E+01	+/- 2.301E+00	4.06	0.84	4.15
26	5	3006	1	1.36387	1.9144E+03	+/- 1.016E+01	0.00	0.53	0.53
27	6	3006	2	1.32887	1.4315E+03	+/- 7.481E+00	0.00	0.52	0.52
28	7	3006	105	0.61654	3.3157E+02	+/- 4.079E+00	0.87	0.87	1.23
29	8	3006	205	0.61654	3.3157E+02	+/- 4.079E+00	0.87	0.87	1.23
30	9	3006	207	1.47294	4.7649E+02	+/- 2.923E+01	6.11	0.60	6.13
31	10	3007	1	1.78801	1.8167E+03	+/- 7.738E+00	0.00	0.43	0.43
32	11	3007	2	1.7212	1.6393E+03	+/- 7.136E+00	0.00	0.44	0.44
33	12	3007	205	5.89497	2.0919E+01	+/- 6.538E-01	2.50	1.87	3.13
34	13	3007	207	5.89455	2.0940E+01	+/- 6.539E-01	2.50	1.87	3.12
35	14	5000	1	1.27592	2.4765E+03	+/- 1.108E+01	0.00	0.45	0.45
36	15	5000	2	1.2657	2.3451E+03	+/- 1.069E+01	0.00	0.46	0.46
37	16	5000	101	1.15989	1.0055E+02	+/- 5.862E-01	0.00	0.58	0.58
38	17	5000	205	3.53396	9.5397E+00	+/- 1.183E+00	12.37	0.85	12.40
39	18	5000	207	1.33426	1.0979E+02	+/- 9.172E+00	8.34	0.54	8.35
40	19	5010	1	1.10624	2.6218E+03	+/- 1.259E+01	0.00	0.48	0.48
41	20	5010	2	1.08289	2.0805E+03	+/- 1.018E+01	0.00	0.49	0.49
42	21	5010	101	1.15839	5.0502E+02	+/- 2.946E+00	0.00	0.58	0.58
43	22	5010	107	0.82532	4.5099E+02	+/- 4.706E+01	10.41	0.68	10.44
44	23	5010	205	3.53266	4.7915E+01	+/- 5.943E+00	12.37	0.85	12.40
45	24	5010	207	1.32858	5.5077E+02	+/- 4.609E+01	8.35	0.54	8.37
46	25	5010	800	1.78719	1.8581E+02	+/- 4.509E+01	24.26	0.46	24.27
47	26	5010	801	0.41539	2.6518E+02	+/- 2.107E+01	7.87	1.07	7.95
48	27	5011	1	1.29729	2.4403E+03	+/- 1.091E+01	0.00	0.45	0.45
49	28	5011	2	1.28708	2.4109E+03	+/- 1.099E+01	0.00	0.46	0.46
50	29	5011	205	12.6967	5.7268E-03	+/- 1.042E-03	16.90	6.77	18.20
51	30	5011	207	11.2943	2.3781E-01	+/- 3.688E-02	14.27	6.06	15.51
52	31	9019	16	13.9106	8.1151E-03	+/- 6.824E-04	2.99	7.86	8.41
53	32	11023	1	1.21062	3.2165E+03	+/- 1.418E+01	0.00	0.44	0.44
54	33	11023	2	1.04503	2.7034E+03	+/- 1.391E+01	0.00	0.51	0.51
55	34	11023	16	15.4828	3.9599E-03	+/- 4.642E-04	1.27	11.65	11.72
56	35	11023	102	0.944	2.8090E-01	+/- 1.113E-02	3.88	0.82	3.96
57	36	12000	11024g	8.12488	1.1465E+00	+/- 3.407E-02	0.83	2.85	2.97
58	37	12024	103	8.12458	1.4512E+00	+/- 4.313E-02	0.83	2.85	2.97
59	38	13027	16	16.0297	3.4823E-03	+/- 4.428E-04	3.49	12.23	12.72
60	39	13027	103	5.69969	3.8527E+00	+/- 1.025E-01	2.06	1.69	2.66
61	40	13027	107	8.47185	6.8720E-01	+/- 2.229E-02	0.74	3.16	3.24
62	41	13027	11024g	8.47185	6.8720E-01	+/- 2.229E-02	0.74	3.16	3.24
63	42	13027	13026g	15.8635	3.1190E-03	+/- 4.040E-04	3.74	12.40	12.95
64	43	13027	13026m	17.8134	3.6325E-04	+/- 5.662E-05	9.48	12.38	15.59
65	44	14000	13028g	7.07891	4.8724E+00	+/- 1.660E-01	2.53	2.28	3.41
66	45	14028	103	7.07884	5.2831E+00	+/- 1.800E-01	2.53	2.28	3.41
67	46	14029	13028g	15.8554	4.2537E-03	+/- 4.541E-04	4.40	9.73	10.67

68	47	15031	103	3.63252	3.4842E+01	+/-	1.264E+00	3.47	1.06	3.63
69	48	16000	15032g	3.96674	6.3497E+01	+/-	1.765E+00	2.53	1.14	2.78
70	49	16032	103	3.96673	6.6846E+01	+/-	1.858E+00	2.53	1.14	2.78
71	50	21045	1	1.646	3.3744E+03	+/-	1.307E+01	0.00	0.39	0.39
72	51	21045	2	1.36987	2.6485E+03	+/-	1.139E+01	0.00	0.43	0.43
73	52	21045	102	0.55112	5.1070E+00	+/-	4.629E-01	9.01	0.99	9.06
74	53	22000	21046g	0	9.1798E-01	+/-	3.335E-02	3.19	1.74	3.63
75	54	22000	21047g	0	1.3233E+00	+/-	3.906E-02	2.78	0.99	2.95
76	55	22000	21048g	0	2.1642E-01	+/-	1.352E-02	5.57	2.84	6.25
77	56	22000	22045g	16.0056	4.6913E-04	+/-	6.120E-05	4.26	12.33	13.05
78	57	22046	16	16.0055	5.6860E-03	+/-	7.418E-04	4.26	12.33	13.05
79	58	22046	103	5.8616	1.1118E+01	+/-	4.043E-01	3.19	1.74	3.64
80	59	22047	103	3.64688	1.7765E+01	+/-	5.250E-01	2.79	0.99	2.96
81	60	22048	103	8.103	2.9347E-01	+/-	1.834E-02	5.57	2.84	6.25
82	61	23051	107	9.73678	2.3918E-02	+/-	1.309E-03	3.17	4.46	5.48
83	62	23051	21048g	9.73678	2.3918E-02	+/-	1.309E-03	3.17	4.46	5.48
84	63	24000	24051g	14.6145	3.9326E-02	+/-	3.902E-03	2.66	9.56	9.92
85	64	25055	1	1.58404	3.5410E+03	+/-	1.388E+01	0.00	0.39	0.39
86	65	25055	2	1.38963	2.5390E+03	+/-	1.124E+01	0.00	0.44	0.44
87	66	25055	16	12.7963	2.4852E-01	+/-	1.808E-02	2.48	6.84	7.28
88	67	25055	102	0.72585	2.9111E+00	+/-	7.887E-01	27.08	0.96	27.09
89	68	26000	24051g	0	4.7687E-02	+/-	2.178E-03	3.98	2.25	4.57
90	69	26000	25054g	0	4.4808E+00	+/-	1.520E-01	3.16	1.24	3.39
91	70	26000	25056g	0	9.7110E-01	+/-	3.486E-02	2.68	2.38	3.59
92	71	26000	26053g	16.4943	9.4965E-05	+/-	1.259E-05	5.02	12.27	13.26
93	72	26054	1	1.48427	3.6352E+03	+/-	1.549E+01	0.00	0.43	0.43
94	73	26054	2	1.20107	3.1259E+03	+/-	1.521E+01	0.00	0.49	0.49
95	74	26054	16	16.4942	1.6247E-03	+/-	2.154E-04	5.02	12.27	13.26
96	75	26054	103	4.29269	7.6660E+01	+/-	2.601E+00	3.16	1.24	3.39
97	76	26054	107	7.20422	8.1586E-01	+/-	3.727E-02	3.98	2.25	4.57
98	77	26056	103	7.36145	1.0583E+00	+/-	3.799E-02	2.68	2.38	3.59
99	78	26058	1	1.26718	4.7791E+03	+/-	2.055E+01	0.00	0.43	0.43
100	79	26058	2	1.07463	3.2126E+03	+/-	1.679E+01	0.00	0.52	0.52
101	80	26058	102	0.71474	2.0773E+00	+/-	2.293E-01	11.01	0.77	11.04
102	81	27059	1	1.46014	3.7199E+03	+/-	1.447E+01	0.00	0.39	0.39
103	82	27059	2	1.11708	2.9838E+03	+/-	1.442E+01	0.00	0.48	0.48
104	83	27059	16	12.9744	2.1220E-01	+/-	1.521E-02	1.65	6.98	7.17
105	84	27059	17	22.2223	3.4494E-05	+/-	1.175E-05	7.43	33.23	34.05
106	85	27059	102	0.87757	5.0259E+00	+/-	2.044E-01	4.00	0.76	4.07
107	86	27059	103	5.7031	1.3812E+00	+/-	5.480E-02	3.59	1.68	3.97
108	87	27059	107	8.1267	1.5260E-01	+/-	7.449E-03	3.99	2.81	4.88
109	88	27059	25056g	8.1267	1.5260E-01	+/-	7.449E-03	3.99	2.81	4.88
110	89	28000	27058g	0	7.1611E+01	+/-	1.498E+00	1.75	1.14	2.09
111	90	28000	27060g	0	5.5238E-01	+/-	1.591E-02	1.98	2.10	2.88
112	91	28000	28057g	14.8786	2.7943E-03	+/-	2.882E-04	1.29	10.23	10.31
113	92	28058	16	14.8786	4.1047E-03	+/-	4.233E-04	1.29	10.23	10.31
114	93	28058	103	4.05089	1.0519E+02	+/-	2.201E+00	1.75	1.14	2.09
115	94	28060	103	6.81098	2.1062E+00	+/-	6.068E-02	1.98	2.10	2.88
116	95	29000	27060g	7.01922	3.5584E-01	+/-	1.341E-02	3.09	2.16	3.77
117	96	29000	29062g	13.7209	6.8901E-02	+/-	5.388E-03	1.44	7.69	7.82
118	97	29000	29064g	0.94827	7.5014E+00	+/-	6.358E-01	8.45	0.63	8.48
119	98	29063	1	1.4139	3.6433E+03	+/-	1.426E+01	0.00	0.39	0.39
120	99	29063	2	1.05896	2.8582E+03	+/-	1.410E+01	0.00	0.49	0.49
121	100	29063	16	13.7209	9.9640E-02	+/-	7.792E-03	1.44	7.69	7.82
122	101	29063	102	0.93202	1.0693E+01	+/-	9.194E-01	8.57	0.64	8.60
123	102	29063	107	7.01922	5.1459E-01	+/-	1.939E-02	3.09	2.16	3.77
124	103	29065	16	12.5546	3.4749E-01	+/-	2.431E-02	1.95	6.72	7.00
125	104	30000	29064g	4.03564	1.8750E+01	+/-	3.967E-01	1.74	1.20	2.12
126	105	30000	29067g	4.43667	3.8746E-02	+/-	2.175E-03	5.48	1.19	5.61
127	106	30064	103	4.03564	3.8133E+01	+/-	8.068E-01	1.74	1.20	2.12
128	107	30067	103	4.42117	9.5344E-01	+/-	5.381E-02	5.52	1.19	5.64
129	108	30068	1	1.29365	4.0219E+03	+/-	1.673E+01	0.00	0.42	0.42
130	109	30068	2	1.01891	3.3382E+03	+/-	1.740E+01	0.00	0.52	0.52
131	110	30068	29067g	15.3402	1.2324E-03	+/-	2.181E-04	14.81	9.70	17.70
132	111	33075	16	12.7972	3.2561E-01	+/-	2.984E-02	6.07	6.87	9.16
133	112	39089	16	13.797	1.7274E-01	+/-	1.377E-02	1.30	7.87	7.97
134	113	40000	40089g	14.3207	5.4584E-02	+/-	4.851E-03	0.92	8.84	8.89
135	114	40090	16	14.3204	1.0607E-01	+/-	9.429E-03	0.92	8.84	8.89
136	115	41093	1	1.18959	5.7712E+03	+/-	2.567E+01	0.00	0.44	0.44

137	116	41093	2	0.91372	4.5018E+03	+/-	2.662E+01	0.00	0.59	0.59
138	117	41093	102	0.64464	2.5359E+01	+/-	6.034E-01	2.18	0.95	2.38
139	118	41093	41093m	2.58897	1.4109E+02	+/-	3.822E+00	2.63	0.66	2.71
140	119	41093	41092m	11.2104	4.5189E-01	+/-	3.030E-02	0.86	6.65	6.71
141	120	41093	41094g	0.64464	6.3330E+00	+/-	1.507E-01	2.18	0.95	2.38
142	121	41093	41094m	0.64464	1.9026E+01	+/-	4.527E-01	2.18	0.95	2.38
143	122	42000	41092m	5.19014	9.5496E-01	+/-	3.925E-02	3.83	1.49	4.11
144	123	42092	41092m	5.19013	6.5723E+00	+/-	2.701E-01	3.83	1.49	4.11
145	124	45103	45103m	2.26738	7.0643E+02	+/-	2.817E+01	3.95	0.53	3.99
146	125	47109	1	1.30111	5.7990E+03	+/-	2.378E+01	0.00	0.41	0.41
147	126	47109	2	0.99635	3.6855E+03	+/-	1.996E+01	0.00	0.54	0.54
148	127	47109	47110n	0.71969	9.7390E+00	+/-	7.321E-01	7.48	0.77	7.52
149	128	48000	1	1.32151	5.8951E+03	+/-	2.390E+01	0.00	0.41	0.41
150	129	48000	2	1.074	4.3977E+03	+/-	2.223E+01	0.00	0.51	0.51
151	130	48000	101	0.95478	6.4077E+01	+/-	3.814E-01	0.00	0.60	0.60
152	131	49000	49114m	1.2411	8.4848E+00	+/-	2.614E-01	2.97	0.84	3.08
153	132	49113	1	1.39672	5.5441E+03	+/-	2.161E+01	0.00	0.39	0.39
154	133	49113	2	1.18609	4.4534E+03	+/-	2.072E+01	0.00	0.47	0.47
155	134	49113	102	1.11627	2.2121E+02	+/-	1.288E+00	0.00	0.58	0.58
156	135	49113	49113m	2.65081	1.5217E+02	+/-	2.120E+00	1.19	0.72	1.39
157	136	49113	49114g	1.07577	4.3714E+01	+/-	1.409E+00	3.16	0.61	3.22
158	137	49113	49114m	1.1259	1.7750E+02	+/-	5.857E+00	3.25	0.58	3.30
159	138	49115	1	1.39772	5.5428E+03	+/-	2.160E+01	0.00	0.39	0.39
160	139	49115	2	1.17984	4.4477E+03	+/-	2.074E+01	0.00	0.47	0.47
161	140	49115	102	1.08151	1.5873E+02	+/-	9.308E-01	0.00	0.59	0.59
162	141	49115	49115m	2.58879	1.8383E+02	+/-	3.341E+00	1.68	0.69	1.82
163	142	49115	49114m	11.6811	9.0917E-01	+/-	7.665E-02	5.26	6.58	8.43
164	143	49115	49116g	1.02465	3.0674E+01	+/-	8.076E-01	2.56	0.62	2.63
165	144	49115	49116m	1.09532	1.2805E+02	+/-	3.419E+00	2.61	0.58	2.67
166	145	53127	16	11.4592	1.1860E+00	+/-	8.682E-02	3.16	6.60	7.32
167	146	57139	1	1.55128	5.9218E+03	+/-	2.231E+01	0.00	0.38	0.38
168	147	57139	2	1.33812	4.6255E+03	+/-	1.894E+01	0.00	0.41	0.41
169	148	57139	102	1.2611	6.7979E+00	+/-	3.471E-01	5.08	0.52	5.11
170	149	59141	16	11.7249	1.1043E+00	+/-	1.478E-01	11.64	6.60	13.38
171	150	64000	1	1.45824	6.7514E+03	+/-	2.556E+01	0.00	0.38	0.38
172	151	64000	2	1.17638	4.1620E+03	+/-	1.890E+01	0.00	0.45	0.45
173	152	64000	101	0.7823	9.5428E+01	+/-	7.566E-01	0.00	0.79	0.79
174	153	69169	16	10.2649	3.7685E+00	+/-	2.593E-01	3.34	6.01	6.88
175	154	69169	17	18.3834	6.0506E-03	+/-	8.613E-04	5.87	12.97	14.24
176	155	73181	1	1.55129	7.0136E+03	+/-	2.598E+01	0.00	0.37	0.37
177	156	73181	2	1.41711	4.6295E+03	+/-	1.823E+01	0.00	0.39	0.39
178	157	73181	102	0.79951	8.6851E+01	+/-	4.779E+00	5.45	0.78	5.50
179	158	74186	1	1.56842	6.9760E+03	+/-	2.580E+01	0.00	0.37	0.37
180	159	74186	2	1.3044	4.6015E+03	+/-	1.932E+01	0.00	0.42	0.42
181	160	74186	102	0.99622	3.3870E+01	+/-	8.588E-01	2.47	0.59	2.54
182	161	79197	1	1.66302	6.6551E+03	+/-	2.457E+01	0.00	0.37	0.37
183	162	79197	2	1.47267	4.6473E+03	+/-	1.840E+01	0.00	0.40	0.40
184	163	79197	16	10.4136	3.2969E+00	+/-	2.113E-01	1.93	6.11	6.41
185	164	79197	102	0.70516	7.8011E+01	+/-	7.424E-01	0.51	0.80	0.95
186	165	80199	80199m	2.97165	2.8024E+02	+/-	1.053E+01	3.68	0.77	3.76
187	166	82204	82204m	4.83848	1.7364E+01	+/-	8.462E-01	4.66	1.42	4.87
188	167	83209	16	9.74355	6.2314E+00	+/-	4.070E-01	4.14	5.05	6.53
189	168	83209	17	18.0918	7.9204E-03	+/-	1.082E-03	5.05	12.69	13.66
190	169	83209	37	26.4828	7.0925E-06	+/-	3.675E-06	38.77	34.37	51.81
191	170	83209	152	29.75	4.8092E-12	+/-	2.440E-12	27.82	42.43	50.74
192	171	90232	1	1.54336	7.7235E+03	+/-	2.889E+01	0.00	0.37	0.37
193	172	90232	2	1.18931	4.8531E+03	+/-	2.208E+01	0.00	0.45	0.45
194	173	90232	18	2.86647	7.8267E+01	+/-	4.573E+00	5.79	0.78	5.84
195	174	90232	102	0.88709	9.3698E+01	+/-	2.603E+00	2.70	0.67	2.78
196	175	92235	1	1.56098	7.7244E+03	+/-	2.879E+01	0.00	0.37	0.37
197	176	92235	18	1.61766	1.2253E+03	+/-	1.543E+01	1.21	0.36	1.26
198	177	92238	1	1.54997	7.7818E+03	+/-	2.896E+01	0.00	0.37	0.37
199	178	92238	2	1.20351	4.8181E+03	+/-	2.140E+01	0.00	0.44	0.44
200	179	92238	16	8.08677	1.4604E+01	+/-	8.576E-01	5.10	2.92	5.87
201	180	92238	18	2.65925	3.0618E+02	+/-	4.392E+00	1.22	0.75	1.43
202	181	92238	102	0.90714	7.0197E+01	+/-	1.469E+00	1.97	0.69	2.09
203	182	93237	1	1.55557	7.5560E+03	+/-	2.812E+01	0.00	0.37	0.37
204	183	93237	2	1.32028	4.3160E+03	+/-	1.840E+01	0.00	0.43	0.43
205	184	93237	18	1.96468	1.3413E+03	+/-	2.349E+01	1.69	0.47	1.75

206	185	94239	1	1.54197	7.7680E+03	+/-	2.902E+01	0.00	0.37	0.37
207	186	94239	2	1.34035	4.3333E+03	+/-	1.823E+01	0.00	0.42	0.42
208	187	94239	18	1.69097	1.7933E+03	+/-	2.330E+01	1.25	0.37	1.30
209	188	95241	1	1.50268	7.7951E+03	+/-	2.942E+01	0.00	0.38	0.38
210	189	95241	2	1.31717	4.8466E+03	+/-	2.087E+01	0.00	0.43	0.43
211	190	95241	18	2.13851	1.3678E+03	+/-	3.929E+01	2.82	0.55	2.87
212										
213										