RR_UNC - Calculate uncertainties in reaction rates

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Reference x.s. file : IRDFF-v1-05.g60

Source spectrum file : IRDFF-v1-05_sp.g60

Reaction rate integ.flag : 1
Reaction rate norm. flag : 1

Spectrum MAT No. : 9861
Spectrum Integral : 9.996E-01
Spectrum average energy [eV] : 2.123E+06
Spectrum peak energy [eV] : 7.048E+05
Reaction rate RR = average cross-section

No.	Mat.	MT	E(50%) [MeV]	<RR> +/- Unc [mb]	Unc. x.s. [%]	Unc. Sp. [%]	Unc. Total [%]
1	3006	105	0.6607	3.2133E+02 +/- 2.762E+00	0.66	0.55	0.86
2	5000	1	1.31603	2.4392E+03 +/- 4.067E+00	0.00	0.17	0.17
3	5000	2	1.29816	2.3026E+03 +/- 3.911E+00	0.00	0.17	0.17
4	5000	101	1.31156	1.0061E+02 +/- 4.845E-01	0.00	0.48	0.48
5	5000	102	0.39757	8.1798E-03 +/- 1.058E-04	0.00	1.29	1.29
6	5000	103	3.0989	2.1246E+00 +/- 9.358E-03	0.00	0.44	0.44
7	5000	106	25.4327	8.9540E-09 +/- 1.786E-15	0.00	0.00	0.00
8	5000	107	0.90309	8.8896E+01 +/- 4.985E-01	0.00	0.56	0.56
9	5010	1	1.17641	2.5839E+03 +/- 5.822E+00	0.00	0.23	0.23
10	5010	2	1.13304	2.0392E+03 +/- 4.327E+00	0.00	0.21	0.21
11	5010	107	0.90105	4.4636E+02 +/- 2.504E+00	0.00	0.56	0.56
12	5010	800	1.85609	1.8457E+02 +/- 9.846E-01	0.50	0.18	0.53
13	5010	801	0.43614	2.6179E+02 +/- 2.874E+00	0.48	0.99	1.10
14	9019	16	14.0521	1.6341E-02 +/- 8.597E-04	2.90	4.39	5.26
15	11023	1	1.267	3.1683E+03 +/- 5.307E+00	0.00	0.17	0.17
16	11023	2	1.07839	2.6387E+03 +/- 6.597E+00	0.00	0.25	0.25
17	11023	16	15.4539	8.7651E-03 +/- 6.159E-04	1.18	6.93	7.03
18	11023	102	0.96169	2.7147E-01 +/- 3.541E-02	13.02	0.85	13.04
19	12024	103	8.26035	2.1026E+00 +/- 3.744E-02	0.80	1.59	1.78
20	13027	103	5.84264	4.7467E+00 +/- 1.116E-01	2.05	1.15	2.35
21	13027	107	8.66805	1.0171E+00 +/- 1.805E-02	0.71	1.63	1.77
22	14028	103	7.22577	7.1099E+00 +/- 2.030E-01	2.47	1.43	2.85
23	14029	13028g	16.1053	9.2758E-03 +/- 8.074E-04	4.45	7.48	8.70
24	15031	103	3.732	3.8026E+01 +/- 1.323E+00	3.42	0.65	3.48
25	16032	103	4.07406	7.4044E+01 +/- 1.915E+00	2.48	0.72	2.59
26	21045	1	1.74058	3.3722E+03 +/- 6.915E+00	0.00	0.21	0.21
27	21045	2	1.45053	2.6231E+03 +/- 7.562E+00	0.00	0.29	0.29
28	21045	102	0.56692	4.9035E+00 +/- 4.467E-01	9.05	1.07	9.11
29	22046	16	16.1197	1.2588E-02 +/- 1.144E-03	4.23	8.05	9.09
30	22046	103	6.0811	1.3820E+01 +/- 4.526E-01	3.05	1.19	3.28
31	22047	103	3.81747	1.9540E+01 +/- 5.473E-01	2.73	0.61	2.80
32	22047	21046g	14.9881	1.9815E-02 +/- 1.859E-03	7.47	5.67	9.38
33	22048	103	8.35308	4.2652E-01 +/- 2.358E-02	5.30	1.57	5.53
34	22048	21047g	16.1025	4.6456E-03 +/- 5.171E-04	8.15	7.58	11.13
35	22049	21048g	16.1587	2.8205E-03 +/- 2.957E-04	7.34	7.49	10.48
36	23051	107	9.97532	3.8565E-02 +/- 1.373E-03	3.02	1.88	3.56
37	24052	16	14.7192	9.7637E-02 +/- 5.971E-03	2.68	5.49	6.12
38	25055	1	1.68163	3.5382E+03 +/- 8.534E+00	0.00	0.24	0.24
39	25055	16	13.0905	4.1624E-01 +/- 1.550E-02	1.82	3.25	3.72
40	25055	102	0.74985	2.8075E+00 +/- 7.793E-01	27.72	1.33	27.76
41	26054	16	16.6086	3.6644E-03 +/- 3.752E-04	4.99	8.94	10.24
42	26054	103	4.43869	8.6507E+01 +/- 2.736E+00	3.06	0.81	3.16
43	26054	107	7.42994	1.1120E+00 +/- 4.318E-02	3.61	1.42	3.88
44	26056	103	7.57898	1.4632E+00 +/- 4.366E-02	2.60	1.46	2.98
45	26058	1	1.33067	4.7187E+03 +/- 7.705E+00	0.00	0.16	0.16
46	26058	102	0.73398	2.0127E+00 +/- 2.218E-01	11.00	0.65	11.02
47	27059	1	1.5543	3.7073E+03 +/- 6.620E+00	0.00	0.18	0.18
48	27059	2	1.16796	2.9340E+03 +/- 8.370E+00	0.00	0.29	0.29
49	27059	16	13.0897	4.0793E-01 +/- 1.469E-02	1.52	3.27	3.60
50	27059	17	22.3685	9.7261E-05 +/- 7.566E-06	7.32	2.64	7.78
51	27059	102	0.90303	4.8604E+00 +/- 2.029E-01	4.08	0.90	4.18
52	27059	103	5.94284	1.7140E+00 +/- 6.249E-02	3.46	1.16	3.65
53	27059	107	8.37152	2.2105E-01 +/- 8.558E-03	3.54	1.56	3.87
54	28058	16	14.9857	8.6491E-03 +/- 5.280E-04	1.29	5.97	6.11
55	28058	103	4.20304	1.1737E+02 +/- 2.214E+00	1.74	0.74	1.89
56	28060	103	7.05502	2.8001E+00 +/- 6.347E-02	1.81	1.37	2.27
57	29063	1	1.51396	3.6319E+03 +/- 5.384E+00	0.00	0.15	0.15

58	29063	2	1.11392	2.8129E+03	+/-	7.463E+00	0.00	0.27	0.27
59	29063	16	13.8404	1.9881E-01	+/-	8.623E-03	1.38	4.11	4.34
60	29063	102	0.96431	1.0401E+01	+/-	8.771E-01	8.41	0.62	8.43
61	29063	107	7.27339	6.9279E-01	+/-	2.270E-02	2.97	1.38	3.28
62	29065	16	12.6799	6.5380E-01	+/-	2.279E-02	1.89	2.93	3.49
63	30064	103	4.16751	4.2684E+01	+/-	7.938E-01	1.69	0.78	1.86
64	30067	103	4.7089	1.1055E+00	+/-	5.873E-02	5.25	0.81	5.31
65	33075	16	12.9144	6.2068E-01	+/-	4.058E-02	5.75	3.12	6.54
66	39089	16	13.9019	3.4611E-01	+/-	1.512E-02	1.24	4.19	4.37
67	40090	16	14.4237	2.1806E-01	+/-	1.107E-02	0.91	5.00	5.08
68	41093	1	1.24782	5.6818E+03	+/-	2.874E+01	0.48	0.17	0.51
69	41093	2	0.94359	4.3788E+03	+/-	1.575E+02	3.58	0.32	3.60
70	41093	102	0.65174	2.4189E+01	+/-	5.754E-01	2.19	0.92	2.38
71	41093	41093m	2.68588	1.4603E+02	+/-	3.809E+00	2.58	0.35	2.61
72	41093	41092m	11.3282	7.9014E-01	+/-	1.880E-02	0.84	2.23	2.38
73	41093	41094g	0.65174	6.0407E+00	+/-	5.544E-02	0.00	0.92	0.92
74	41093	41094m	0.65174	1.8148E+01	+/-	1.665E-01	0.00	0.92	0.92
75	42092	41092m	5.39137	7.8283E+00	+/-	2.932E-01	3.60	1.02	3.75
76	45103	45103m	2.37994	7.2438E+02	+/-	2.859E+01	3.94	0.25	3.95
77	47109	1	1.36349	5.7263E+03	+/-	6.898E+00	0.00	0.12	0.12
78	47109	47110n	0.73444	9.3383E+00	+/-	7.074E-01	7.56	0.53	7.57
79	48000	1	1.38201	5.8185E+03	+/-	6.405E+00	0.00	0.11	0.11
80	48000	2	1.11453	4.2937E+03	+/-	9.840E+00	0.00	0.23	0.23
81	48000	101	0.99637	6.2081E+01	+/-	2.464E-01	0.00	0.40	0.40
82	48000	102	0.99269	6.1940E+01	+/-	2.468E-01	0.00	0.40	0.40
83	48000	103	7.25236	5.1269E-02	+/-	7.046E-04	0.00	1.37	1.37
84	48000	104	15.8426	4.2671E-04	+/-	2.954E-05	0.00	6.92	6.92
85	48000	105	17.409	3.5959E-05	+/-	3.135E-06	0.00	8.72	8.72
86	48000	106	24.0281	2.4155E-07	+/-	8.635E-09	0.00	3.57	3.57
87	48000	107	4.96612	8.9939E-02	+/-	8.056E-04	0.00	0.90	0.90
88	49113	1	1.45923	5.4856E+03	+/-	4.608E+00	0.00	0.08	0.08
89	49113	2	1.22459	4.3569E+03	+/-	7.965E+00	0.00	0.18	0.18
90	49113	102	1.13464	2.1329E+02	+/-	7.792E-01	0.00	0.37	0.37
91	49113	49113m	2.73113	1.5800E+02	+/-	1.963E+00	1.18	0.39	1.24
92	49113	49114g	1.09438	4.2107E+01	+/-	1.361E+00	3.20	0.46	3.23
93	49113	49114m	1.14422	1.7118E+02	+/-	5.655E+00	3.29	0.35	3.30
94	49115	1	1.46029	5.4846E+03	+/-	4.567E+00	0.00	0.08	0.08
95	49115	2	1.2187	4.3519E+03	+/-	7.988E+00	0.00	0.18	0.18
96	49115	102	1.10217	1.5309E+02	+/-	5.832E-01	0.00	0.38	0.38
97	49115	49115m	2.67437	1.9049E+02	+/-	3.243E+00	1.66	0.37	1.70
98	49115	49114m	11.8082	1.6309E+00	+/-	8.975E-02	4.95	2.41	5.50
99	49115	49116g	1.04378	2.9534E+01	+/-	7.677E-01	2.57	0.42	2.60
100	49115	49116n	1.1164	1.2355E+02	+/-	3.261E+00	2.61	0.37	2.64
101	53127	16	11.5799	2.1040E+00	+/-	8.042E-02	3.03	2.32	3.82
102	57139	1	1.6165	5.8784E+03	+/-	3.917E+00	0.00	0.07	0.07
103	57139	2	1.3858	4.5515E+03	+/-	5.313E+00	0.00	0.12	0.12
104	57139	102	1.29346	6.6298E+00	+/-	3.383E-01	5.08	0.48	5.10
105	59141	16	11.8459	1.9877E+00	+/-	2.255E-01	11.08	2.44	11.34
106	64000	1	1.52725	6.6921E+03	+/-	4.559E+00	0.00	0.07	0.07
107	64000	2	1.22639	4.0804E+03	+/-	7.592E+00	0.00	0.19	0.19
108	64000	101	0.79796	9.1532E+01	+/-	6.635E-01	0.00	0.72	0.72
109	64000	102	0.79791	9.1528E+01	+/-	6.635E-01	0.00	0.72	0.72
110	69169	16	10.4004	6.2590E+00	+/-	1.967E-01	2.43	1.99	3.14
111	69169	17	18.4948	1.4733E-02	+/-	2.421E-03	5.77	15.39	16.44
112	73181	1	1.62515	6.9742E+03	+/-	3.534E+00	0.00	0.05	0.05
113	73181	2	1.47876	4.5722E+03	+/-	4.894E+00	0.00	0.11	0.11
114	73181	102	0.81812	8.3363E+01	+/-	4.557E+00	5.41	0.77	5.47
115	74186	1	1.64928	6.9424E+03	+/-	4.386E+00	0.00	0.06	0.06
116	74186	2	1.37693	4.5411E+03	+/-	7.753E+00	0.00	0.17	0.17
117	74186	102	1.023	3.2768E+01	+/-	8.317E-01	2.50	0.45	2.54
118	79197	1	1.75863	6.6463E+03	+/-	4.596E+00	0.00	0.07	0.07
119	79197	2	1.56168	4.6087E+03	+/-	6.334E+00	0.00	0.14	0.14
120	79197	16	10.5423	5.5232E+00	+/-	1.521E-01	1.87	2.02	2.75
121	79197	102	0.72411	7.4772E+01	+/-	6.916E-01	0.56	0.73	0.92
122	80199	80199m	3.09975	2.9605E+02	+/-	1.083E+01	3.63	0.43	3.66
123	82204	82204m	5.04141	2.0383E+01	+/-	9.516E-01	4.57	0.98	4.67
124	83209	17	18.2159	1.9046E-02	+/-	2.826E-03	5.61	13.74	14.84
125	90232	1	1.63916	7.7038E+03	+/-	6.272E+00	0.00	0.08	0.08
126	90232	2	1.27085	4.8376E+03	+/-	1.084E+01	0.00	0.22	0.22
127	90232	18	3.0052	7.9099E+01	+/-	1.699E+00	2.11	0.42	2.15
128	90232	102	0.91003	9.1221E+01	+/-	1.120E+01	12.26	0.45	12.27
129	92235	1	1.6618	7.6030E+03	+/-	5.838E+00	0.00	0.08	0.08
130	92235	18	1.70589	1.2244E+03	+/-	5.124E+00	0.41	0.05	0.42
131	92235	102	0.73484	9.0453E+01	+/-	1.648E+01	18.20	0.61	18.21
132	92238	1	1.6435	7.7505E+03	+/-	5.719E+00	0.00	0.07	0.07
133	92238	16	8.2759	2.0584E+01	+/-	4.892E-01	1.74	1.61	2.38
134	92238	18	2.78041	3.1817E+02	+/-	2.086E+00	0.52	0.40	0.66
135	92238	102	0.91926	6.7550E+01	+/-	7.892E-01	1.06	0.48	1.17
136	93237	1	1.65056	7.5292E+03	+/-	5.615E+00	0.00	0.07	0.07
137	93237	2	1.42181	4.2796E+03	+/-	8.158E+00	0.00	0.19	0.19

138	93237	18	2.0543	1.3590E+03	+/- 2.319E+01	1.69	0.21	1.71
139	94239	1	1.63628	7.7427E+03	+/- 6.134E+00	0.00	0.08	0.08
140	94239	2	1.44206	4.3105E+03	+/- 7.949E+00	0.00	0.18	0.18
141	94239	18	1.77797	1.7955E+03	+/- 8.278E+00	0.46	0.04	0.46
142	95241	1	1.59527	7.7659E+03	+/- 7.008E+00	0.00	0.09	0.09
143	95241	2	1.42592	4.8161E+03	+/- 9.520E+00	0.00	0.20	0.20
144	95241	18	2.22798	1.3963E+03	+/- 3.977E+01	2.83	0.29	2.85