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 RR_UNC - Calculate uncertainties in reaction rates
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 Andrej Trkov, Jozef Stefan Institute, Ljubljana, Slovenia
                  Version Jul. 2019
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 Reference x.s. file      :
..\IRDFF-II.g725
 Source spectrum file     :
..\IRDFF-II_sp.g
 Reaction rate integ.flag :      1
 Reaction rate norm. flag :      1

 Spectrum MAT No.         :   9861
 Spectrum Integral            :  1.000E+00
 Spectrum average energy [eV] :  2.121E+06
 Spectrum peak energy    [eV] :  7.397E+05
 Reaction rate RR = average cross-section

                                                                  Unc.    Unc.    Unc.
   No.  Mat.     MT    E(50%)        <RR> +/-  Unc               x.s.    Sp.     Total
                       [MeV]                 [mb]                [%]     [%]     [%]
 ----- ------ ------ ------- ------------------------          ------ ------ ------
     1   3000      1  1.87387 1.8353E+03 +/- 2.084E+00           0.00   0.11   0.11
     2   3000      2  1.80369 1.6271E+03 +/- 1.907E+00           0.00   0.12   0.12
     3   3000    205  4.00588 4.8236E+01 +/- 6.856E-01           1.26   0.66   1.42
     4   3000    207  4.08303 6.0521E+01 +/- 2.540E+00           4.15   0.65   4.20
     5   3006      1  1.49547 1.9107E+03 +/- 5.044E+00           0.00   0.26   0.26
     6   3006      2  1.43634 1.4211E+03 +/- 3.340E+00           0.00   0.23   0.23
     7   3006    105  0.65237 3.2063E+02 +/- 3.341E+00           0.89   0.55   1.04
     8   3006    205  0.65237 3.2063E+02 +/- 3.341E+00           0.89   0.55   1.04
     9   3006    207  1.70993 4.8215E+02 +/- 3.236E+01           6.70   0.40   6.71
    10   3007      1  1.89915 1.8291E+03 +/- 2.005E+00           0.00   0.11   0.11
    11   3007      2  1.82666 1.6441E+03 +/- 1.869E+00           0.00   0.11   0.11
    12   3007    205  6.00574 2.5863E+01 +/- 6.913E-01           2.37   1.23   2.67
    13   3007    207  6.00577 2.5891E+01 +/- 6.914E-01           2.37   1.23   2.67
    14   5000      1    1.315 2.4395E+03 +/- 4.079E+00           0.00   0.17   0.17
    15   5000      2  1.29775 2.3039E+03 +/- 3.921E+00           0.00   0.17   0.17
    16   5000    101  1.30154 9.9227E+01 +/- 4.821E-01           0.00   0.49   0.49
    17   5000    205  3.73676 1.0250E+01 +/- 1.227E+00          11.96   0.51  11.97
    18   5000    207   1.4856 1.0936E+02 +/- 9.275E+00           8.47   0.44   8.48
    19   5010      1  1.17189 2.5788E+03 +/- 5.854E+00           0.00   0.23   0.23
    20   5010      2  1.13304 2.0396E+03 +/- 4.337E+00           0.00   0.21   0.21
    21   5010    101  1.29912 4.9824E+02 +/- 2.422E+00           0.00   0.49   0.49
    22   5010    107  0.89788 4.3938E+02 +/- 4.736E+01          10.76   0.57  10.78
    23   5010    205  3.73456 5.1465E+01 +/- 6.168E+00          11.97   0.51  11.99
    24   5010    207  1.47677 5.4790E+02 +/- 4.662E+01           8.50   0.44   8.51
    25   5010    800  1.81743 1.8424E+02 +/- 4.532E+01          24.60   0.20  24.60
    26   5010    801  0.42562 2.5514E+02 +/- 2.127E+01           8.27   1.01   8.33
    27   5011      1  1.33707 2.4048E+03 +/- 3.809E+00           0.00   0.16   0.16
    28   5011      2  1.32086 2.3696E+03 +/- 3.982E+00           0.00   0.17   0.17
    29   5011    205  12.8385 1.0895E-02 +/- 1.886E-03          17.01   3.22  17.31
    30   5011    207  11.4595 4.1587E-01 +/- 6.256E-02          14.87   2.27  15.04
    31   9019     16  14.0522 1.6335E-02 +/- 8.979E-04           2.90   4.67   5.50
    32  11023      1  1.26786 3.1672E+03 +/- 5.311E+00           0.00   0.17   0.17
    33  11023      2   1.0794 2.6375E+03 +/- 6.594E+00           0.00   0.25   0.25
    34  11023     16  15.5953 8.5729E-03 +/- 7.305E-04           1.28   8.43   8.52
    35  11023    102  1.00583 2.7523E-01 +/- 1.069E-02           3.80   0.83   3.88
    36  12000  11024g 8.26095 1.6608E+00 +/- 2.958E-02           0.80   1.59   1.78
    37  12024    103  8.26047 2.1020E+00 +/- 3.744E-02           0.80   1.59   1.78
    38  13027     16  16.1556 7.7248E-03 +/- 8.647E-04           3.54  10.62  11.19
    39  13027    103  5.84274 4.7445E+00 +/- 1.116E-01           2.05   1.15   2.35
    40  13027    107  8.66807 1.0167E+00 +/- 1.804E-02           0.71   1.63   1.77
    41  13027  11024g 8.66807 1.0167E+00 +/- 1.804E-02           0.71   1.63   1.77
    42  13027  13026g 15.9694 6.8607E-03 +/- 6.958E-04           3.81   9.40  10.14
    43  13027  13026m 17.9578 8.6409E-04 +/- 2.211E-04           9.44  23.79  25.59
    44  14000  13028g 7.22591 6.5546E+00 +/- 1.871E-01           2.47   1.43   2.85
    45  14028    103   7.2258 7.1069E+00 +/- 2.029E-01           2.47   1.43   2.85
    46  14029  13028g  16.106 9.2743E-03 +/- 1.087E-03           4.45  10.85  11.72
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68	47	15031	103	3.73196	3.8009E+01	+/- 1.323E+00	3.42	0.65	3.48
69	48	16000	15032g	4.07413	7.0307E+01	+/- 1.818E+00	2.48	0.72	2.59
70	49	16032	103	4.07412	7.4015E+01	+/- 1.914E+00	2.48	0.72	2.59
71	50	21045	1	1.73928	3.3736E+03	+/- 6.920E+00	0.00	0.21	0.21
72	51	21045	2	1.44933	2.6245E+03	+/- 7.570E+00	0.00	0.29	0.29
73	52	21045	102	0.56682	4.9078E+00	+/- 4.471E-01	9.05	1.07	9.11
74	53	22000	21046g	0	1.1411E+00	+/- 3.733E-02	3.05	1.19	3.27
75	54	22000	21047g	0	1.4567E+00	+/- 4.071E-02	2.73	0.61	2.79
76	55	22000	21048g	0	3.1447E-01	+/- 1.738E-02	5.30	1.57	5.53
77	56	22000	22045g	16.1204	1.0384E-03	+/- 1.136E-04	4.23	10.09	10.94
78	57	22046	16	16.1202	1.2585E-02	+/- 1.376E-03	4.23	10.08	10.94
79	58	22046	103	6.08127	1.3814E+01	+/- 4.524E-01	3.05	1.19	3.28
80	59	22047	103	3.81717	1.9533E+01	+/- 5.471E-01	2.73	0.61	2.80
81	60	22048	103	8.35358	4.2637E-01	+/- 2.358E-02	5.30	1.57	5.53
82	61	23051	107	9.97529	3.8552E-02	+/- 1.374E-03	3.02	1.89	3.56
83	62	23051	21048g	9.97529	3.8552E-02	+/- 1.374E-03	3.02	1.89	3.56
84	63	24000	24051g	14.7195	8.1788E-02	+/- 5.298E-03	2.68	5.90	6.48
85	64	25055	1	1.68035	3.5398E+03	+/- 8.541E+00	0.00	0.24	0.24
86	65	25055	2	1.47579	2.5211E+03	+/- 9.084E+00	0.00	0.36	0.36
87	66	25055	16	12.9165	4.7290E-01	+/- 1.853E-02	2.32	3.16	3.92
88	67	25055	102	0.74967	2.8100E+00	+/- 7.798E-01	27.72	1.33	27.75
89	68	26000	24051g	0	6.4974E-02	+/- 2.514E-03	3.60	1.42	3.87
90	69	26000	25054g	0	5.0530E+00	+/- 1.598E-01	3.06	0.81	3.16
91	70	26000	25056g	0	1.3421E+00	+/- 4.004E-02	2.60	1.46	2.98
92	71	26000	26053g	16.6092	2.1416E-04	+/- 2.758E-05	5.00	11.87	12.88
93	72	26054	1	1.58387	3.6254E+03	+/- 1.139E+01	0.00	0.31	0.31
94	73	26054	2	1.26706	3.0817E+03	+/- 1.199E+01	0.00	0.39	0.39
95	74	26054	16	16.6092	3.6640E-03	+/- 4.719E-04	5.00	11.87	12.88
96	75	26054	103	4.43834	8.6449E+01	+/- 2.734E+00	3.06	0.81	3.16
97	76	26054	107	7.42963	1.1116E+00	+/- 4.302E-02	3.60	1.42	3.87
98	77	26056	103	7.57906	1.4626E+00	+/- 4.364E-02	2.60	1.46	2.98
99	78	26058	1	1.32969	4.7216E+03	+/- 7.723E+00	0.00	0.16	0.16
100	79	26058	2	1.13699	3.1590E+03	+/- 9.203E+00	0.00	0.29	0.29
101	80	26058	102	0.73382	2.0143E+00	+/- 2.220E-01	11.00	0.65	11.02
102	81	27059	1	1.55299	3.7090E+03	+/- 6.627E+00	0.00	0.18	0.18
103	82	27059	2	1.16735	2.9359E+03	+/- 8.381E+00	0.00	0.29	0.29
104	83	27059	16	13.0897	4.0779E-01	+/- 1.493E-02	1.52	3.33	3.66
105	84	27059	17	22.3768	9.8020E-05	+/- 7.458E-05	7.31	75.74	76.09
106	85	27059	102	0.90285	4.8642E+00	+/- 2.031E-01	4.08	0.90	4.17
107	86	27059	103	5.94298	1.7132E+00	+/- 6.246E-02	3.46	1.16	3.65
108	87	27059	107	8.37156	2.2097E-01	+/- 8.555E-03	3.54	1.56	3.87
109	88	27059	25056g	8.37156	2.2097E-01	+/- 8.555E-03	3.54	1.56	3.87
110	89	28000	27058g	0	7.9864E+01	+/- 1.506E+00	1.74	0.74	1.89
111	90	28000	27060g	0	7.3400E-01	+/- 1.664E-02	1.81	1.37	2.27
112	91	28000	28057g	14.9857	5.8855E-03	+/- 3.999E-04	1.29	6.67	6.79
113	92	28058	16	14.9857	8.6453E-03	+/- 5.874E-04	1.29	6.67	6.79
114	93	28058	103	4.20306	1.1731E+02	+/- 2.213E+00	1.74	0.74	1.89
115	94	28060	103	7.05428	2.7985E+00	+/- 6.344E-02	1.81	1.37	2.27
116	95	29000	27060g	7.27355	4.7887E-01	+/- 1.569E-02	2.97	1.38	3.28
117	96	29000	29062g	13.8405	1.3743E-01	+/- 6.191E-03	1.38	4.29	4.51
118	97	29000	29064g	0.99647	7.3993E+00	+/- 6.072E-01	8.18	0.62	8.21
119	98	29063	1	1.5125	3.6336E+03	+/- 5.392E+00	0.00	0.15	0.15
120	99	29063	2	1.11316	2.8147E+03	+/- 7.474E+00	0.00	0.27	0.27
121	100	29063	16	13.8405	1.9874E-01	+/- 8.954E-03	1.38	4.29	4.51
122	101	29063	102	0.96389	1.0409E+01	+/- 8.780E-01	8.41	0.62	8.44
123	102	29063	107	7.27355	6.9251E-01	+/- 2.270E-02	2.97	1.38	3.28
124	103	29065	16	12.6796	6.5334E-01	+/- 2.299E-02	1.89	2.97	3.52
125	104	30000	29064g	4.16697	2.0970E+01	+/- 3.900E-01	1.69	0.78	1.86
126	105	30000	29067g	4.741	4.5149E-02	+/- 2.376E-03	5.20	0.83	5.26
127	106	30064	103	4.16697	4.2647E+01	+/- 7.932E-01	1.69	0.78	1.86
128	107	30067	103	4.70905	1.1054E+00	+/- 5.873E-02	5.25	0.81	5.31
129	108	30068	1	1.37745	3.9955E+03	+/- 6.331E+00	0.00	0.16	0.16
130	109	30068	2	1.06446	3.2739E+03	+/- 8.620E+00	0.00	0.26	0.26
131	110	30068	29067g	15.5657	2.6534E-03	+/- 4.698E-04	14.68	9.91	17.71
132	111	33075	16	12.9142	6.2024E-01	+/- 4.072E-02	5.75	3.17	6.56
133	112	39089	16	13.9015	3.4591E-01	+/- 1.567E-02	1.24	4.35	4.53
134	113	40000	40089g	14.424	1.1215E-01	+/- 6.049E-03	0.91	5.32	5.39
135	114	40090	16	14.4235	2.1793E-01	+/- 1.174E-02	0.91	5.31	5.39
136	115	41093	1	1.24717	5.6864E+03	+/- 9.668E+00	0.00	0.17	0.17

137	116	41093	2	0.94327	4.3825E+03	+/- 1.393E+01	0.00	0.32	0.32
138	117	41093	102	0.65159	2.4214E+01	+/- 5.760E-01	2.19	0.92	2.38
139	118	41093	41093m	2.68482	1.4603E+02	+/- 3.809E+00	2.59	0.35	2.61
140	119	41093	41092m	11.3282	7.8986E-01	+/- 1.883E-02	0.84	2.23	2.38
141	120	41093	41094g	0.65159	6.0471E+00	+/- 1.438E-01	2.19	0.92	2.38
142	121	41093	41094m	0.65159	1.8167E+01	+/- 4.322E-01	2.19	0.92	2.38
143	122	42000	41092m	5.39115	1.1368E+00	+/- 4.258E-02	3.60	1.02	3.75
144	123	42092	41092m	5.39114	7.8236E+00	+/- 2.931E-01	3.60	1.02	3.75
145	124	45103	45103m	2.37843	7.2452E+02	+/- 2.859E+01	3.94	0.25	3.95
146	125	47109	1	1.36259	5.7298E+03	+/- 6.921E+00	0.00	0.12	0.12
147	126	47109	2	1.03871	3.6024E+03	+/- 9.932E+00	0.00	0.28	0.28
148	127	47109	47110n	0.73434	9.3470E+00	+/- 7.079E-01	7.55	0.53	7.57
149	128	48000	1	1.38055	5.8248E+03	+/- 6.454E+00	0.00	0.11	0.11
150	129	48000	2	1.11325	4.2993E+03	+/- 9.889E+00	0.00	0.23	0.23
151	130	48000	101	0.99485	6.2167E+01	+/- 2.521E-01	0.00	0.41	0.41
152	131	49000	49114m	1.36123	8.9112E+00	+/- 2.568E-01	2.84	0.46	2.88
153	132	49113	1	1.45827	5.4888E+03	+/- 4.629E+00	0.00	0.08	0.08
154	133	49113	2	1.22405	4.3601E+03	+/- 7.982E+00	0.00	0.18	0.18
155	134	49113	102	1.13426	2.1350E+02	+/- 7.802E-01	0.00	0.37	0.37
156	135	49113	49113m	2.73029	1.5799E+02	+/- 1.963E+00	1.18	0.39	1.24
157	136	49113	49114g	1.09394	4.2154E+01	+/- 1.362E+00	3.20	0.46	3.23
158	137	49113	49114m	1.14386	1.7135E+02	+/- 5.659E+00	3.28	0.35	3.30
159	138	49115	1	1.45932	5.4876E+03	+/- 4.588E+00	0.00	0.08	0.08
160	139	49115	2	1.21816	4.3549E+03	+/- 8.006E+00	0.00	0.18	0.18
161	140	49115	102	1.10168	1.5324E+02	+/- 5.840E-01	0.00	0.38	0.38
162	141	49115	49115m	2.67343	1.9048E+02	+/- 3.243E+00	1.66	0.37	1.70
163	142	49115	49114m	11.8082	1.6303E+00	+/- 8.981E-02	4.95	2.42	5.51
164	143	49115	49116g	1.04333	2.9565E+01	+/- 7.685E-01	2.57	0.42	2.60
165	144	49115	49116m	1.1159	1.2368E+02	+/- 3.264E+00	2.61	0.37	2.64
166	145	53127	16	11.5795	2.1027E+00	+/- 8.048E-02	3.03	2.33	3.83
167	146	57139	1	1.61537	5.8818E+03	+/- 3.928E+00	0.00	0.07	0.07
168	147	57139	2	1.38503	4.5543E+03	+/- 5.330E+00	0.00	0.12	0.12
169	148	57139	102	1.29321	6.6351E+00	+/- 3.386E-01	5.08	0.48	5.10
170	149	59141	16	11.8459	1.9870E+00	+/- 2.255E-01	11.08	2.45	11.35
171	150	64000	1	1.52584	6.6981E+03	+/- 4.649E+00	0.00	0.07	0.07
172	151	64000	2	1.2249	4.0862E+03	+/- 7.670E+00	0.00	0.19	0.19
173	152	64000	101	0.79781	9.1615E+01	+/- 6.665E-01	0.00	0.73	0.73
174	153	69169	16	10.382	6.2551E+00	+/- 2.360E-01	3.21	1.99	3.77
175	154	69169	17	18.4969	1.4740E-02	+/- 4.470E-03	5.76	29.77	30.32
176	155	73181	1	1.62407	6.9767E+03	+/- 3.549E+00	0.00	0.05	0.05
177	156	73181	2	1.47778	4.5745E+03	+/- 4.907E+00	0.00	0.11	0.11
178	157	73181	102	0.81826	8.3464E+01	+/- 4.562E+00	5.41	0.77	5.47
179	158	74186	1	1.64804	6.9458E+03	+/- 4.397E+00	0.00	0.06	0.06
180	159	74186	2	1.37591	4.5438E+03	+/- 7.768E+00	0.00	0.17	0.17
181	160	74186	102	1.02268	3.2794E+01	+/- 8.322E-01	2.50	0.45	2.54
182	161	79197	1	1.75554	6.6520E+03	+/- 4.772E+00	0.00	0.07	0.07
183	162	79197	2	1.55842	4.6137E+03	+/- 6.497E+00	0.00	0.14	0.14
184	163	79197	16	10.5422	5.5213E+00	+/- 1.521E-01	1.87	2.02	2.75
185	164	79197	102	0.72409	7.4978E+01	+/- 6.751E-01	0.52	0.74	0.90
186	165	80199	80199m	3.09845	2.9594E+02	+/- 1.083E+01	3.63	0.43	3.66
187	166	82204	82204m	5.04147	2.0374E+01	+/- 9.511E-01	4.57	0.98	4.67
188	167	83209	16	9.86634	1.0016E+01	+/- 4.414E-01	3.99	1.87	4.41
189	168	83209	17	18.2255	1.9091E-02	+/- 5.199E-03	4.88	26.79	27.23
190	169	83209	37	26.6004	2.3173E-05	+/- 1.958E-05	37.49	75.74	84.51
191	170	83209	152	29.75	1.7437E-11	+/- 1.407E-11	27.82	75.74	80.69
192	171	90232	1	1.63541	7.7015E+03	+/- 6.178E+00	0.00	0.08	0.08
193	172	90232	2	1.27343	4.7990E+03	+/- 1.067E+01	0.00	0.22	0.22
194	173	90232	18	3.00637	8.3350E+01	+/- 4.830E+00	5.78	0.42	5.80
195	174	90232	102	0.90132	9.0055E+01	+/- 2.559E+00	2.81	0.45	2.84
196	175	92235	1	1.65465	7.7071E+03	+/- 5.946E+00	0.00	0.08	0.08
197	176	92235	18	1.70344	1.2267E+03	+/- 1.480E+01	1.21	0.06	1.21
198	177	92238	1	1.64191	7.7624E+03	+/- 5.712E+00	0.00	0.07	0.07
199	178	92238	2	1.289	4.7727E+03	+/- 1.017E+01	0.00	0.21	0.21
200	179	92238	16	8.20773	2.1092E+01	+/- 1.127E+00	5.10	1.60	5.34
201	180	92238	18	2.76849	3.2154E+02	+/- 4.136E+00	1.22	0.39	1.29
202	181	92238	102	0.91877	6.7424E+01	+/- 1.384E+00	2.00	0.48	2.05
203	182	93237	1	1.64755	7.5389E+03	+/- 5.878E+00	0.00	0.08	0.08
204	183	93237	2	1.41785	4.2866E+03	+/- 8.354E+00	0.00	0.19	0.19
205	184	93237	18	2.0527	1.3598E+03	+/- 2.317E+01	1.69	0.21	1.70

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206     185 94239      1   1.6342 7.7476E+03 +/- 6.152E+00     0.00   0.08   0.08
207     186 94239      2  1.44124 4.3063E+03 +/- 7.974E+00     0.00   0.19   0.19
208     187 94239     18  1.77434 1.7978E+03 +/- 2.241E+01     1.25   0.04   1.25
209     188 95241      1  1.59383 7.7694E+03 +/- 7.019E+00     0.00   0.09   0.09
210     189 95241      2  1.42441 4.8182E+03 +/- 9.533E+00     0.00   0.20   0.20
211     190 95241     18  2.22681 1.3966E+03 +/- 3.977E+01     2.83   0.29   2.85
212
213
```