^{190}Os(γ,γ') 1999Fr06

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, [1] and Jun Chen[2]	NDS 169,1 (2020)	15-Oct-2020

1999Fr06: Eγ<4.1 and <2.7 MeV photon beams were produced from the bremsstrahlung facility at the high-flux Dynamitron accelerator of the Institut fur Strahlenphysik of the Universitat Stuttgart. Target was 549 mg metallic ^{190}Os powder with 97% enrichment placed between two ^{27}Al disks. Measured Eγ, cross sections. Deduced levels.

Other:

1999Ab40, 1999Ab39: E=20 MeV. Measured yields.

1992BaZB: E=9.5 MeV. Measured isomeric yield ratio.

1973VeZO, 1973VeZV: measure σ.

^{190}Os Levels

Additional information 1.

E(level)†	J$^\pi$‡	Total σ (eV*b)	Comments
0	0$^+$		
186.7	2$^+$		E(level),J$^\pi$: from the Adopted Levels.
1115.5	1	8.5 *15*	B(M1)=0.17 *3*, B(E1)=0.190×10^{-4} *32*.
1326.9	1,(2)	7.2 *35*	B(M1)=0.12 *6*, B(E1)=0.13×10^{-4} *7*.
1482.0	1	4.1 *12*	B(M1)=0.062 *18*, B(E1)=0.068×10^{-4} *21*.
1547.2	1	8.9 *4*	B(M1)=0.130 *6*, B(E1)=0.144×10^{-4} *6*.
1724.8	1	6.1 *10*	B(M1)=0.079 *13*, B(E1)=0.087×10^{-4} *14*.
2011.0	1	6.1 *10*	B(M1)=0.068 *10*, B(E1)=0.076×10^{-4} *12*.
2296.5	1	5.7 *12*	B(M1)=0.109 *8*, B(E1)=0.114×10^{-4} *11*.
2328.2	1	6.1 *19*	B(M1)=0.059 *19*, B(E1)=0.066×10^{-4} *22*.
2393.5	1	4.7 *12*	B(M1)=0.044 *10*, B(E1)=0.049×10^{-4} *12*.
2408.0	1	5.5 *9*	B(M1)=0.082 *17*, B(E1)=0.090×10^{-4} *20*.
2590.6	1	5.9 *4*	B(M1)=0.072 *10*, B(E1)=0.079×10^{-4} *11*.
2622.7	1	3.8 *3*	B(M1)=0.033 *3*, B(E1)=0.035×10^{-4} *3*.
2643.7	1	18.1 *8*	B(M1)=0.184 *13*, B(E1)=0.203×10^{-4} *14*.
2704.1	1	5.49 *16*	B(M1)=0.073 *18*, B(E1)=0.080×10^{-4} *21*.
2714.1	1	5.0 *3*	B(M1)=0.073 *10*, B(E1)=0.081×10^{-4} *11*.
2737.9	1	5.9 *20*	B(M1)=0.135 *19*, B(E1)=0.149×10^{-4} *21*.
2773.5	1	7.4 *8*	B(M1)=0.074 *10*, B(E1)=0.082×10^{-4} *11*.
2817.2	1	5.4 *7*	B(M1)=0.043 *6*, B(E1)=0.048×10^{-4} *5*.
3015.7	1	4.3 *6*	B(M1)=0.083 *13*, B(E1)=0.093×10^{-4} *13*.
3023.0	1	14.6 *15*	B(M1)=0.156 *13*, B(E1)=0.172×10^{-4} *15*.
3044.5	1	5.0 *10*	B(M1)=0.073 *13*, B(E1)=0.081×10^{-4} *15*.
3117.7	1	12.56 *11*	B(M1)=0.091 *8*, B(E1)=0.100×10^{-4} *9*.
3126.1	1	23.4 *9*	B(M1)=0.185 *14*, B(E1)=0.205×10^{-4} *15*.
3142.0	1	8.2 *4*	B(M1)=0.058 *4*, B(E1)=0.065×10^{-4} *3*.
3189.3	1	12.4 *8*	B(M1)=0.088 *6*, B(E1)=0.097×10^{-4} *7*.
3244.6	1	7.5 *10*	B(M1)=0.052 *7*, B(E1)=0.058×10^{-4} *8*.
3348.3	1	10.2 *12*	B(M1)=0.069 *8*, B(E1)=0.076×10^{-4} *9*.
3414.8	1	4.2 *11*	B(M1)=0.028 *7*, B(E1)=0.031×10^{-4} *8*.
3445.9	1	3.3 *18*	B(M1)=0.036 *17*, B(E1)=0.040×10^{-4} *19*.
3467.4	1	4.0 *9*	B(M1)=0.026 *6*, B(E1)=0.028×10^{-4} *7*.
3516.6	1	4.4 *9*	B(M1)=0.028 *6*, B(E1)=0.031×10^{-4} *7*.
3748.9	1	10.4 *16*	B(M1)=0.062 *10*, B(E1)=0.069×10^{-4} *11*.
3798.7	1	9.9 *17*	B(M1)=0.058 *10*, B(E1)=0.065×10^{-4} *11*.

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^{190}Os(γ,γ') 1999Fr06 (continued)

^{190}Os Levels (continued)

E(level)[†]	J$^\pi$[‡]	Total σ (eV*b)	Comments
3869.9	1	9.2 *18*	B(M1)=0.053 *11*, B(E1)=0.059×10^{-4} *12*.
3924.8	1	12.1 *26*	B(M1)=0.069 *15*, B(E1)=0.077×10^{-4} *17*.
3981.9	1	11.6 *36*	B(M1)=0.065 *21*, B(E1)=0.072×10^{-4} *23*.

[†] From Eγ data.
[‡] From 1999Fr06 based on $\gamma\gamma(\theta)$, with excited states above the first 2$^+$ state dipole states except the 1327 level which could be quadrupole also. The $\gamma\gamma(\theta)$ results, however, are not quoted by 1999Fr06.

γ(^{190}Os)

E$_i$(level)	J$_i^\pi$	E$_\gamma$[†]	I$_\gamma$[†]	E$_f$	J$_f^\pi$	Comments
186.7	2$^+$	186.7		0	0$^+$	E$_\gamma$: from the Adopted Gammas.
1115.5	1	1115.5		0	0$^+$	
1326.9	1,(2)	1326.9		0	0$^+$	
1482.0	1	1482.0		0	0$^+$	
1547.2	1	1547.2		0	0$^+$	
1724.8	1	1724.8		0	0$^+$	
2011.0	1	2011.0		0	0$^+$	
2296.5	1	2109.8	98 *41*	186.7	2$^+$	Reduced transition intensity=1.26 *53*.
		2296.5	100	0	0$^+$	
2328.2	1	2328.2		0	0$^+$	
2393.5	1	2393.5		0	0$^+$	
2408.0	1	2221.3	64 *16*	186.7	2$^+$	Reduced transition intensity=0.81 *13*.
		2408.0	100	0	0$^+$	
2590.6	1	2403.9	42 *9*	186.7	2$^+$	Reduced transition intensity=0.53 *11*.
		2590.6	100	0	0$^+$	
2622.7	1	2622.7		0	0$^+$	
2643.7	1	2457.0	20 *3*	186.7	2$^+$	Reduced transition intensity=0.25 *4*.
		2643.7	100	0	0$^+$	
2704.1	1	2517.4	60 *36*	186.7	2$^+$	Reduced transition intensity=0.74 *44*.
		2704.1	100	0	0$^+$	
2714.1	1	2527.4	76 *12*	186.7	2$^+$	Reduced transition intensity=0.94 *15*.
		2714.1	100	0	0$^+$	
2737.9	1	2551.2	113 *73*	186.7	2$^+$	Reduced transition intensity=1.4 *9*.
		2737.9	100	0	0$^+$	
2773.5	1	2586.8	24 *9*	186.7	2$^+$	Reduced transition intensity=0.30 *11*.
		2773.5	100	0	0$^+$	
2817.2	1	2817.2		0	0$^+$	
3015.7	1	2829.0	148 *82*	186.7	2$^+$	Reduced transition intensity=1.8 *10*.
		3015.7	100	0	0$^+$	
3023.0	1	2836.3	42 *6*	186.7	2$^+$	Reduced transition intensity=0.51 *7*.
		3023.0	100	0	0$^+$	
3044.5	1	2857.8	92 *19*	186.7	2$^+$	Reduced transition intensity=1.11 *23*.
		3044.5	100	0	0$^+$	
3117.7	1	3117.7		0	0$^+$	
3126.1	1	2939.4	10 *3*	186.7	2$^+$	Reduced transition intensity=0.12 *3*.
		3126.1	100	0	0$^+$	
3142.0	1	3142.0		0	0$^+$	
3189.3	1	3189.3		0	0$^+$	
3244.6	1	3244.6		0	0$^+$	
3348.3	1	3348.3		0	0$^+$	
3414.8	1	3414.8		0	0$^+$	
3445.9	1	3259.2	74 *47*	186.7	2$^+$	Reduced transition intensity=0.87 *55*.

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^{190}Os(γ,γ') 1999Fr06 (continued)

$\gamma(^{190}Os)$ (continued)

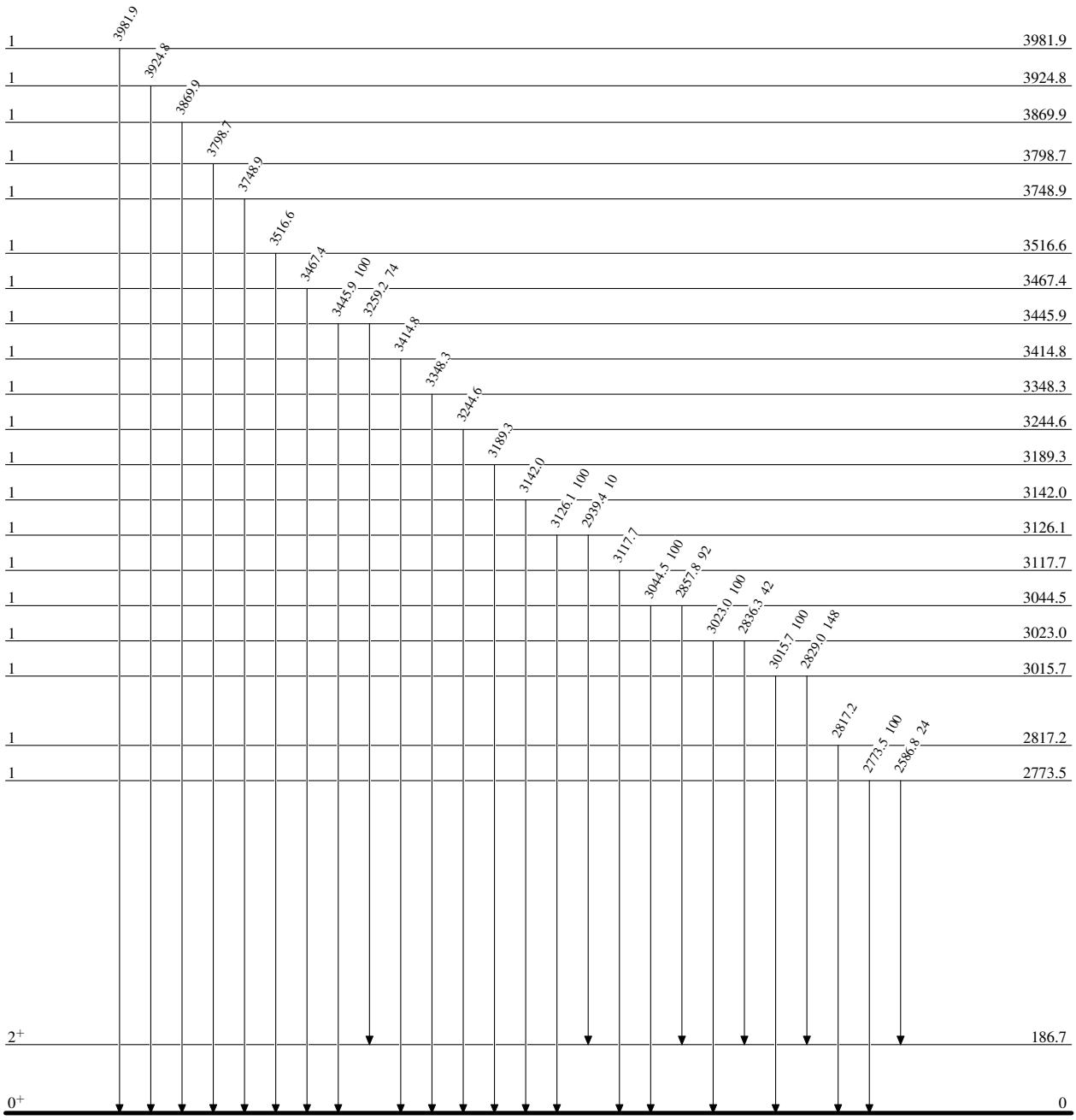
E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	E_i(level)	J_i^π	E_γ †	E_f	J_f^π
3445.9	1	3445.9	100	0	0^+	3798.7	1	3798.7	0	0^+
3467.4	1	3467.4		0	0^+	3869.9	1	3869.9	0	0^+
3516.6	1	3516.6		0	0^+	3924.8	1	3924.8	0	0^+
3748.9	1	3748.9		0	0^+	3981.9	1	3981.9	0	0^+

† From 1999Fr06. Intensities are deduced from reduced transition intensities given by 1999Fr06. Reduced transition intensity= [Iγ(to 2^+)/(Eγ(to 2^+)^3)]/[Iγ(to g.s.)/(Eγ(to g.s.)^3)].

^{190}Os(γ,γ′) 1999Fr06

Level Scheme

Intensities: Relative photon branching from each level

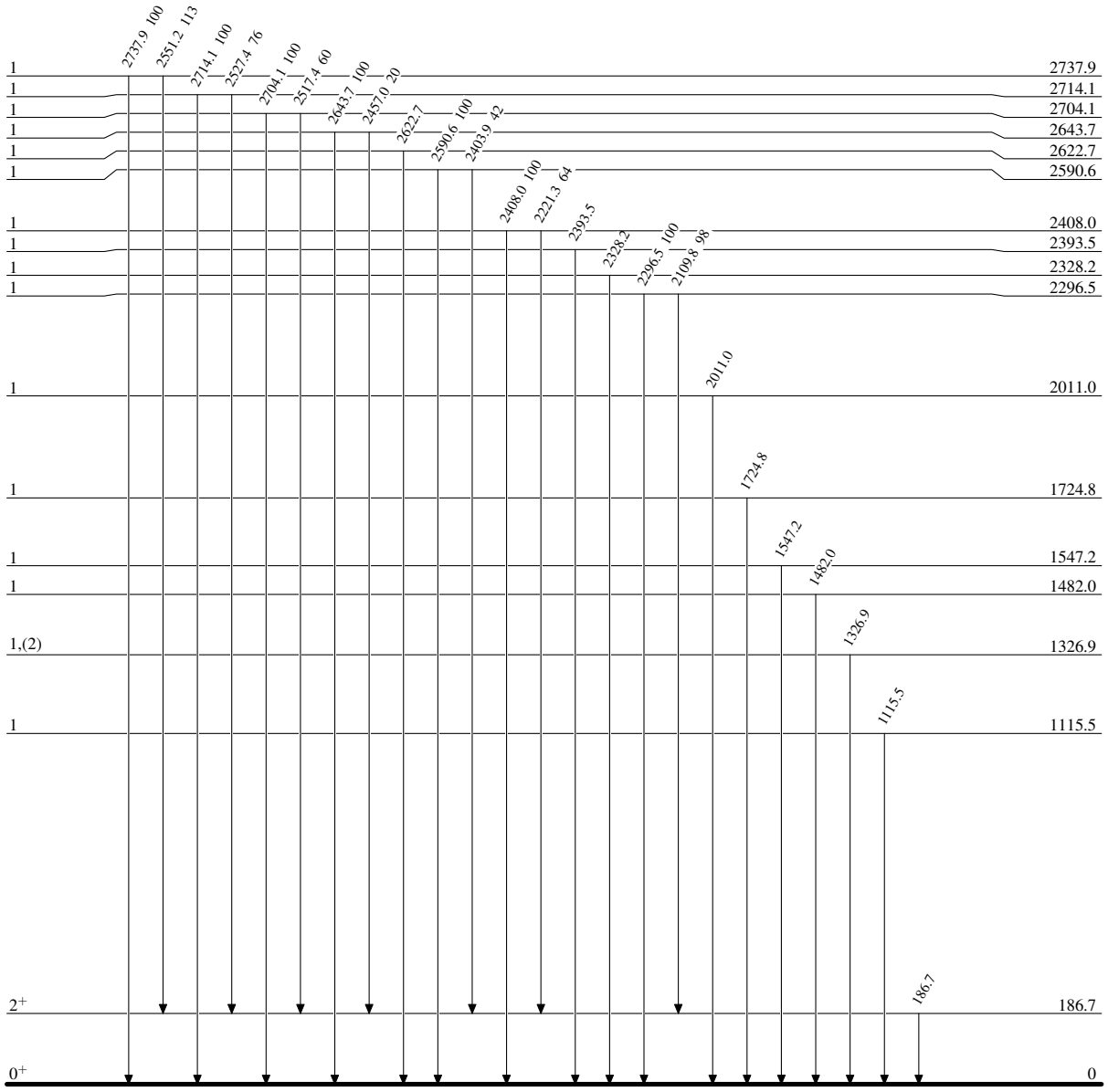


$^{190}_{76}Os_{114}$

^{190}Os(γ,γ′) 1999Fr06

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{190}_{76}Os_{114}$