Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	S. Kumar(a), J. Chen(b) and F. G. Kondev	NDS 137, 1 (2016)	31-May-2016

Q(β^-)=−3857 *9*; S(n)=10439 *9*; S(p)=4524 *5*; Q(α)=−1842 *6* 2012Wa38

^{109}In Levels

Cross Reference (XREF) Flags

A	^{109}In IT decay (1.34 min)	E	^{108}Cd(^{3}He,d)	I	^{76}Ge(^{37}Cl,4nγ)
B	^{109}In IT decay (210.0 ms)	F	^{112}Sn(p,α)	J	^{92}Mo(^{19}F,2pγ)
C	^{109}Sn ε decay	G	^{108}Cd(p,p),(p,p′) IAR	K	^{96}Zr(^{19}F,6nγ)
D	^{108}Cd(d,nγ)	H	^{107}Ag(α,2nγ)	L	^{97}Mo(^{16}O,3npγ)

E(level)[†]	J$^\pi$	T$_{1/2}$[‡]	XREF	Comments
0[c]	9/2$^+$	4.159 h *10*	ABCDEF HIJKL	%ε+%β^+=100 μ=+5.538 *4* Q=+0.841 *13* J$^\pi$: from atomic-beam magnetic-resonance flop-in technique (1958Ma43,1959Ma19);π=+ from μ, L(^{3}He,d)=4. T$_{1/2}$: weighted average of 4.167 h 18 (203γ(t) in 2005Gy02, uncertainty is statistical only), and 4.155 h 12 (203γ(t) in 2009Ra17, weighted average of 4.143 h *4* (Au catcher), 4.184 h *6* (Pb catcher) and 4.151 h *7* (Al catcher); uncertainty is statistical only). Others: 4.30 h *15* (β(t) in 1949Ma20), 4.2 h 2 (ce(t) in 1951Mc11), 4.3 h *3* (momentum plot of positron in 1962No06), and 4.2 h *1* (203γ(t) in 1968Sm08). μ: from collinear fast-beam LASER spectroscopy (1985Ul03,1987Eb02) Other: +5.538 *11* from nuclear magnetic resonance on oriented nuclei (1981Ha26), 5.53 *6* (from atomic beam in 1959Ma19), Q: from collinear fast-beam LASER spectroscopy (1985Ul03,1987Eb02). configuration: $\pi(g_{9/2})^{-1}$. δ<r^2>(115,109)=−0.410 *7* (1985Ul03).
649.79 *10*	1/2$^-$	1.34 min *6*	A CDEF H	%IT=100 J$^\pi$: 649.87γ M4 to 9/2$^+$; L(^{3}He,d)=1. T$_{1/2}$: weighted average of 1.34 min *7* (651γ(t) in 1968Sm08), 1.35 min *20* (658γ(t) in 1966Ma39) and 1.3 min *2* (1956Ku51). configuration: $\pi(p_{1/2})^{-1}$.
980.92 *11*	3/2$^-$	0.62 ps *+30−15*	CDEF H	J$^\pi$: 331.2γ M1 ΔJ=1 to 1/2$^-$; L(^{3}He,d)=1.
1026.39[c] *8*	11/2$^+$	0.17 ps *7*	BCD HIJKL	J$^\pi$: 1026.36γ M1+E2 ΔJ=1 to 9/2$^+$; band assignment. configuration: $\pi(g_{9/2})^{-1}\otimes\nu 2^+$.
1099.31[#] *8*	5/2$^+$	0.45 ps *21*	CDE HI L	J$^\pi$: 1099.3γ E2 to 9/2$^+$; L(^{3}He,d)=2. configuration: $\pi(d_{5/2})^{-1}$.
1171.71 *16*	1/2$^+$		CDE	J$^\pi$: 521.9γ E1 to 1/2$^+$; L(^{3}He,d)=0. configuration: $\pi(s_{1/2})^{-1}$.
1321.25 *11*	5/2$^+$		CDE	J$^\pi$: 1321.2γ E2 to 9/2$^+$, 340.2γ to 3/2$^-$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
1334.73? *22*	(3/2,5/2,7/2$^-$)		C	J$^\pi$: 353.9γ to 3/2$^-$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
1428.36[c] *8*	13/2$^+$	0.28 ps *14*	BCD HIJKL	J$^\pi$: 1428.32γ E2 to 9/2$^+$, 401.97γ M1+E2 to 11/2$^+$. configuration: $\pi(g_{9/2})^{-1}\otimes\nu 4^+$.
1440.70 *21*	5/2$^-$		CD F	J$^\pi$: 791.0γ E2 to 1/2$^-$, 459.8 (M1) to 3/2$^-$.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{109}In Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[‡]	XREF	Comments
1463.59 *18*	9/2+	0.21 ps *7*	CD H L	Jπ: 437.2γ M1 to 11/2+.
1482.22? *22*	(5/2+,7/2−)		C	Jπ: 383γ to 5/2+, 501.2γ to 3/2−, 1482.3γ to 9/2+; direct feeding in ^{109}Sn ε decay (Jπ=5/2+).
1483.75 *18*	5/2+		CDE	Jπ: L(^{3}He,d)=2; 229.2γ from 9/2+; 384.5γ M1 to 5/2+, 312.0γ to 1/2+.
1574.30 *13*	(5/2+,7/2)		CD	Jπ: 1574.3γ to 9/2+; direct feeding in ^{109}Sn ε decay (Jπ=5/2+).
1713.27[#] *12*	9/2+		CD HI	Jπ: 614.1γ E2 to 5/2+, 285.0γ to 13/2+.
1722.38[@] *16*	7/2+		CDE I	Jπ: L(^{3}He,d)=4, 623.5γ M1 to 5/2+; direct feeding in ^{109}Sn ε decay (Jπ=5/2+).
1759.32 *12*	3/2,5/2,7/2		C	Jπ: 660.1γ to 5/2+; probable direct feeding in ^{109}Sn ε decay (Jπ=5/2+).
1816.65 *13*	(3/2,5/2)−		CD	Jπ: 835.7γ M1,E2 to 3/2−, 1166.6γ to 1/2−, 495.8γ to 5/2+.
1843.7 *6*	(5/2+,7/2)		C	Jπ: 1843.7γ to 9/2+; direct feeding in ^{109}Sn ε decay (Jπ=5/2+).
1900.28 *12*	13/2+	0.14 ps *7*	HI KL	Jπ: 873.95γ M1+E2 to 11/2+, 421.9γ D(+Q) from 15/2+.
1923 *19*			F	
1957.10 *11*	5/2+		C E	Jπ: L(^{3}He,d)=(2); 785.3γ to 1/2+ and 1956.9γ to 9/2+; direct feeding in ^{109}Sn ε decay (Jπ=5/2+).
2030 *6*	(1/2+,3/2+,5/2+)		E	Jπ: L(^{3}He,d)=(0,2).
2055.14 *25*	(5/2+,7/2)		C F	Jπ: 2055.2γ to 9/2+; direct feeding in ^{109}Sn ε decay (Jπ=5/2+).
2064.2 *5*	(3/2−,5/2−,7/2−)		CD	Jπ: 1083.4γ (M1,E2) to 3/2−; direct feeding in ^{109}Sn ε decay(Jπ=5/2+).
2076 *5*	(1/2+,3/2+,5/2+)		E	Jπ: L(^{3}He,d)=(0,2).
2101.86 *11*	19/2+	210.0 ms *9*	B HI KL	%IT=100 Jπ: 673.52γ M3 to 13/2+. $T_{1/2}$: weighted average: 214 ms *12* (γ(t) in 1994ByZZ), 210 ms *4* (using 402-,673-,1026-,1428γ(t) in 1979Va13), 210 ms *1* (using 405-,680-,1035-,1435γ(t) in 1966We01), 204 ms *10* (γ(t) in 1965Al15), and 210 ms *2* (1963Po10). configuration: $\nu(g_{9/2})^{-1}\otimes\nu 6^+$, where $\nu 6^+$ is a mixture of $\nu(d_{5/2},g_{7/2})$ and $\nu(g_{7/2})^{+2}$. Shell model would suggest configuration=$\pi g_{9/2}^{-3}$; However, no such isomer was observed in other odd-A In isotopes.
2102.21 *14*	17/2+		JK	Jπ: 673.85γ E2 to 13/2+.
2125.78 *11*	(5/2+,7/2)		C F	XREF: F(2128). Jπ: 1026.4γ to 5/2+, 2125.9γ to 9/2+; direct feeding in ^{109}Sn ε decay (Jπ=5/2+).
2138.43 *12*	(3/2+)		C E	XREF: E(2140). Jπ: L(^{3}He,d)=(2); 1039.0γ to 5/2+, 1488.7γ to 1/2−; direct feeding in ^{109}Sn ε decay (Jπ=5/2+).
2151.4 *3*	(3/2,5/2−)		C	Jπ: 710.7γ to 5/2−, 1501.7γ to 1/2−, 1170.2γ to 3/2−; direct feeding in ^{109}Sn ε decay (Jπ=5/2+).
2195.26[c] *22*	15/2+	0.35 ps *14*	HI L	Jπ: 766.9γ M1+E2 to 13/2+; band assignment.
2210 *5*	(1/2−,3/2,5/2+)		E	Jπ: L(^{3}He,d)=(1,2).
2218.56 *15*	(5/2+,7/2)		C	Jπ: 1119.2γ to 5/2+, 2218.5γ to 9/2+; direct feeding in ^{109}Sn ε decay (Jπ=5/2+).
2235.8 *3*	(5/2+,7/2)		C	Jπ: 522γ to 9/2+; direct feeding in ^{109}Sn ε decay (Jπ=5/2+).
2271.4 *5*	(3/2+)		C E	XREF: E(2266). Jπ: L(^{3}He,d)=(2), 1621.7γ to 1/2−, 1290.0γ to 3/2−; direct feeding in ^{109}Sn ε decay (Jπ=5/2+).
2272.2[e] *3*	13/2−		HI KL	Jπ: 1245.8γ E1 (ΔJ=1) to 11/2+, 842γ to 13/2+.
2276.5 *7*	(7/2+)		C	Jπ: 1250.1γ to 11/2+; direct feeding in ^{109}Sn ε decay

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{109}In Levels (continued)

E(level)†	Jπ	$T_{1/2}$‡	XREF	Comments
				(J^π=5/2$^+$).
2305.2 *4*	(3/2,5/2$^-$)		C E	Jπ: L(^{3}He,d)=(0,2,3); 1655.7γ to 1/2$^-$, 1205.6γ to 5/2$^+$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
2317.3@ *7*	(11/2$^+$)		I	Jπ: 595γ to 7/2$^+$, 604γ to 9/2$^+$; band assignment.
2321.92 *15*	15/2$^+$		HI	Jπ: 893.5γ M1 to 13/2$^+$, 1295.0γ to 11/2$^+$.
2332 *5*	(1/2$^+$,3/2$^+$,5/2$^+$)		E	Jπ: L(^{3}He,d)=(0,2).
2356.14 *22*	(3/2,5/2,7/2$^-$)		CDE	XREF: E(2360). Jπ: 1375.2γ to 3/2$^-$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
2410.9 *4*	(3/2,5/2$^+$)		C	Jπ: 1239.9γ to 1/2$^+$, 1429.7γ to 3/2$^-$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
2469.04 *24*	(3/2,5/2,7/2)$^+$		CDE	XREF: E(2474). Jπ: 985.3γ M1,E2 to 5/2$^+$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
2508.33 *13*	(3/2,5/2$^-$)		C f	XREF: f(2528). Jπ: 1858.7γ to 1/2$^-$, 1408.9γ to 5/2$^+$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
2532.44e *11*	15/2$^-$	0.24 ps *10*	HIJKL	Jπ: 1104.04γ E1 to 13/2$^+$ 259.6γ (M1) to 13/2$^-$; band assignment.
2542.02 *11*	(5/2$^+$,7/2)		C f	XREF: f(2528). Jπ: 2541.8γ to 9/2$^+$, 1442.7γ to 5/2$^+$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
2561.02 *19*	3/2$^+$		C ef	XREF: e(2564)f(2559). Jπ: L(^{3}He,d)=(0,2); 1911.1γ to 1/2$^-$, 1462.0γ to 5/2$^+$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
2564.2 *7*	(5/2$^+$)		C ef	XREF: e(2564)f(2559). Jπ: L(^{3}He,d)=(0,2); 2564.2γ to 9/2$^+$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
2574.8 *3*	(5/2$^+$,7/2)		C	Jπ: 2574.8γ to 9/2$^+$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
2591.85 *17*	7/2$^+$		C E	XREF: E(2585). Jπ: L(^{3}He,d)=(4), 1565.6γ to 11/2$^+$, 452.8γ to 3/2$^+$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
2602.3 *4*	(5/2$^+$,7/2)		C	Jπ: 2602.7γ to 9/2$^+$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
2617.16 *20*	(5/2,7/2)$^+$		C	Jπ: 2617.0γ to 9/2$^+$, 478.5γ to 3/2$^+$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
2674 *6*	(1/2$^+$,3/2$^+$,5/2$^+$)		E	Jπ: L(^{3}He,d)=(0,2).
2709 *6*			E	
2785.59 *14*	(5/2$^+$,7/2)		C F	XREF: F(2775). Jπ: 1072.7γ to 9/2$^+$, 1464.2γ to 5/2$^+$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
2808.8 *3*	3/2		C	Jπ: 2158.9γ to 1/2$^-$, 1709.3γ to 5/2$^+$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
2812 *7*	(1/2$^+$)		E	Jπ: L(^{3}He,d)=(0).
2813.47 *20*	(5/2$^+$,7/2)		C	Jπ: 2813.2γ to 9/2$^+$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
2845.77 *12*	3/2		C E	XREF: E(2839). Jπ: 2195.6γ to 1/2$^-$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
2851.70 *23*	7/2$^+$		C	Jπ: 1825.1γ to 11/2$^+$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
2858.58 *18*	(5/2$^+$,7/2)		C F	XREF: F(2857). Jπ: 2858.6γ to 9/2$^+$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
2868.77e *12*	17/2$^-$	0.40 ps *12*	HIJKL	Jπ: 336.36γ M1+E2 to 15/2$^-$, band assignment. $T_{1/2}$: weighted average of 0.38 ps *17* (1987KuZV) in

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{109}In Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[‡]	XREF	Comments
				^{107}Ag(α,2nγ) and 0.42 ps *17* (also 1987KuZV) in ^{97}Mo(^{16}O,3pnγ).
2871.19 *14*	5/2$^+$		C	Jπ: 1889.8γ to 3/2$^-$, 1157.8γ to 9/2$^+$, 1700.7γ to 1/2$^+$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
2888 *7*	(1/2$^+$,3/2$^+$,5/2)		E	Jπ: L(^{3}He,d)=(0,2,3).
2919.8 *7*	(5/2$^+$,7/2)		C	Jπ: 2919.8γ to 9/2$^+$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
2924.42 *13*	(3/2,5/2)		C	Jπ: 1943.5γ to 3/2$^-$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
2943.0 *4*	(5/2$^+$,7/2$^-$)		C	Jπ: 2942.8γ to 9/2$^+$, 1962.2γ to 3/2$^-$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
2958.04[e] *13*	19/2$^-$		HIJKL	Jπ: 89.24γ M1(+E2) to 17/2$^-$, 856.2γ E1 ΔI=0 to 19/2$^+$, band assignment.
2986.8 *3*	(3/2$^+$,5/2$^+$)		C E	XREF: E(2993). Jπ: L(^{3}He,d)=(2); 848.6γ to 3/2$^+$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
2995.9 *9*	(17/2$^+$)		I	Jπ: 674γ to 15/2$^+$; adopted from ^{76}Ge(^{37}Cl,4nγ).
3013.4 *3*	(5/2$^+$,7/2)		C	Jπ: 3013.4γ to 9/2$^+$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
3029.69 *21*	(5/2$^+$)		C	Jπ: 3029.7γ to 9/2$^+$, 2049.0γ to 3/2$^-$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
3034.8 *4*	(5/2$^+$,7/2)		C	Jπ: 3034.8γ to 9/2$^+$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
3050.73 *19*	(5/2$^+$,7/2)		C	Jπ: 3050.7γ to 9/2$^+$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
3065.65 *20*	(5/2$^+$,7/2)		C	Jπ: 3065.6γ to 9/2$^+$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
3067.35[i] *23*	17/2$^-$	0.21 ps *9*	HI L	Jπ: 534.9γ M1+E2 to 15/2$^-$. $T_{1/2}$: weighted average of 0.17 ps *10* (1987KuZV) in ^{107}Ag(α,2nγ) and 0.31 ps *17* (also 1987KuZV) in ^{97}Mo(^{16}O,3pnγ).
3092.10[h] *13*	19/2$^-$	0.44 ps *12*	HIJKL	Jπ: 990.25γ E1 ΔJ=0 to 19/2$^+$, 223.4γ M1 to 17/2$^-$; band assignment. $T_{1/2}$: weighted average of 0.49 ps *21* (1987KuZV) in ^{107}Ag(α,2nγ) and 0.42 ps *14* (also 1987KuZV) in ^{97}Mo(^{16}O,3pnγ).
3122.54[e] *14*	21/2$^-$		HIJKL	Jπ: 164.47γ M1(+E2) to 19/2$^-$; band assignment.
3140.3 *5*	(5/2$^+$,7/2)		C	Jπ: 3139.8γ to 9/2$^+$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
3155.2[@] *6*	(15/2$^+$)		I	Jπ: 838γ to (11/2$^+$), 1053γ to 19/2$^+$; band assignment.
3202.49[h] *14*	21/2$^-$		HIJKL	Jπ: 110.42γ and 224.5γ M1(+E2) to 19/2$^-$; band assignment.
3273.44? *24*			J	
3285.8[i] *3*	19/2$^-$	>1.0 ps	HI L	Jπ: 218.48γ M1 to 17/2$^-$.
3316.8 *3*	(5/2$^+$,7/2)		C	Jπ: 3316.7γ to 9/2$^+$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
3361.0 *6*	(5/2$^+$,7/2)		C	Jπ: 3316.7γ to 9/2$^+$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
3374.74 *24*	(19/2$^-$)	0.21 ps *10*	H L	Jπ: 416.7γ (M1) to 19/2$^-$, probably ΔJ=0.
3395.68 *20*	(5/2$^+$,7/2)		C	Jπ: 3395.6γ to 9/2$^+$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
3410.37[h] *15*	23/2$^-$	0.69 ps *21*	HIJKL	Jπ: 207.90γ M1(+E2) to 21/2$^-$; band assignment. $T_{1/2}$: from ^{97}Mo(^{16}O,3pnγ) (1987KuZV); Other: 0.42 ps *14* (1987KuZV) in ^{107}Ag(α,2nγ).
3418.5 *4*	5/2$^+$,7/2$^-$		C	Jπ: 3418.5γ to 9/2$^+$, 2437.5γ to 3/2$^-$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
3426.54 *22*	(5/2$^+$,7/2)		C	Jπ: 3427.3γ to 9/2$^+$; direct feeding in ^{109}Sn ε decay (J^π=5/2$^+$).
3462.04[e] *16*	23/2$^-$	0.8 ps *3*	HIJKL	Jπ: 339.47γ M1+E2 to 21/2$^-$; band assignment.
3484.4? *4*	(23/2)		JK	Jπ: 361.9 d+Q to 21/2$^-$.
3517.1[i] *4*	21/2$^-$	0.43 ps *10*	HI L	Jπ: 231.3γ (M1) to 19/2$^-$. $T_{1/2}$: weighted average of 0.45 ps *14* (1987KuZV) in ^{107}Ag(α,2nγ) and 0.42 ps *14* (also 1987KuZV) in ^{97}Mo(^{16}O,3pnγ).

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{109}In Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[‡]	XREF	Comments
3528.7 *8*	(21/2$^+$)		I	Jπ: 1427γ to 19/2$^+$.
3653.8 *9*	(17/2$^+$)		I	Jπ: 1552γ to 19/2$^+$.
3798.3 *8*	(23/2$^+$)		I	Jπ: 1697γ to 19/2$^+$.
3800.14[h] *16*	25/2$^-$	1.7 ps *6*	HIJKL	Jπ: 389.80γ M1+E2 to 23/2$^-$, band assignment. $T_{1/2}$: weighted average of 1.4 ps *7* (1987KuZV) in ^{107}Ag(α,2nγ) and 2.7 ps *14* (also 1987KuZV) in ^{97}Mo(^{16}O,3pnγ).
3844.1[i] *11*	(23/2$^-$)		I	Jπ: 327γ to 21/2$^-$; band assignment.
4037.54[e] *23*	25/2$^-$	0.6 ps *3*	HIJKL	Jπ: 575.3γ M1 to 23/2$^-$, band assignment.
4097.4[@] *10*	(19/2$^+$)		I	Jπ: 942γ to (15/2$^+$); band assignment.
4300.8[a] *9*	(21/2$^+$)		I	Jπ: 647γ to (17/2$^+$); band assignment.
4354.6[d] *7*	(23/2$^+$)		I	Jπ: 826γ to (21/2$^+$); band assignment.
4436.0[h] *5*	27/2$^{(-)}$		I K	Jπ: 630.0γ (M1) to 25/2$^-$, band assignment.
4508.37[g] *25*	27/2$^-$		IJK	Jπ: 470.9γ (M1) to 25/2$^-$, band assignment.
4508.37+x[f]	(25/2$^-$)		I	Additional information 1. Jπ: feeding to J^π=19/2$^-$ (band 8) and J^π=23/2$^-$ and 25/2$^-$ (band 11) levels in ^{76}Ge(^{37}Cl,4nγ) (1997VaZS).
4565.4[d] *7*	(25/2$^+$)		I	Jπ: 211γ (M1) to (23/2$^+$); band assignment.
4572.6 *9*	(25/2$^+$)		I	Jπ: 774γ to (23/2$^+$); proposed by 1997VaZS based on band structure.
4743.7[a] *10*	(25/2$^+$)		I	Jπ: 443γ to (21/2$^+$); band assignment.
4756.6[@] *11*	(23/2$^+$)		I	Jπ: 659γ to (19/2$^+$); band assignment.
4832.4[g] *4*	29/2$^{(-)}$		IJK	Jπ: 324.0γ (M1) to 27/2$^{(-)}$, band assignment.
4927.8[d] *7*	(27/2$^+$)		I	Jπ: 355γ (M1) to (25/2$^+$); band assignment.
5024.7[h] *7*	29/2$^{(-)}$		I K	Jπ: 588.7γ (M1) to 27/2$^{(-)}$, band assignment.
5219.8[@] *10*	(27/2$^+$)		I	Jπ: 463γ to (23/2$^+$); band assignment.
5241.4[g] *11*	31/2$^{(-)}$		IJK	Jπ: 409.0γ (M1) to 29/2$^{(-)}$, band assignment.
5275.2+x[f] *10*	(29/2$^-$)		I	Jπ: 767γ to (25/2$^-$); band assignment.
5397.5[a] *9*	(29/2$^+$)		I	Jπ: 470γ to (27/2$^+$, 654γ to (25/2$^+$); band assignment.
5424.8[d] *10*	(29/2$^+$)		IJ	XREF: J(?). Jπ: 497γ (M1) to (27/2$^+$); band assignment.
5580.1?[h] *9*	31/2$^{(-)}$		K	Jπ: 555.4γ (M1) to 29/2$^{(-)}$, band assignment.
5761.9[b] *16*	(29/2$^+$)		I	Jπ: band assignment.
5796.6[g] *12*	33/2$^{(-)}$		IJK	Jπ: 554.7γ (M1) to 31/2$^{(-)}$, band assignment.
5851.1[@] *10*	(31/2$^+$)		I	Jπ: 631γ to (27/2$^+$); band assignment.
5918.0[d] *10*	(31/2$^+$)		I	Jπ: 493γ (M1) to (29/2$^+$), 990γ to (27/2$^+$); band assignment.
6005.9[b] *12*	(31/2$^+$)		I	Jπ: 581γ (M1) to (29/2$^+$); band assignment.
6263.3[a] *13*	(33/2$^+$)		I	Jπ: band assignment.
6272.0[b] *13*	(33/2$^+$)		I	Jπ: band assignment.
6293.2+x[f] *15*	(33/2$^-$)		I	Jπ: band assignment.
6428.6[g] *16*	(35/2$^-$)		I	Jπ: band assignment.
6433.4[d] *12*	(33/2$^+$)		I	Jπ: band assignment.
6506.8[&] *13*	(31/2$^+$)		I	Jπ: band assignment.
6639.0[b] *16*	(35/2$^+$)		I	Jπ: band assignment.
6668.1[@] *14*	(35/2$^+$)		I	Jπ: band assignment.
6927.4[d] *15*	(35/2$^+$)		I	Jπ: band assignment.
7120.0[b] *19*	(37/2$^+$)		I	Jπ: band assignment.
7151.1[&] *14*	(35/2$^+$)		I	Jπ: band assignment.
7288.2[a] *15*	(37/2$^+$)		I	Jπ: band assignment.
7384.2+x[f] *18*	(37/2$^-$)		I	Jπ: band assignment.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{109}In Levels (continued)

E(level)[†]	Jπ	XREF	Comments
7423.4[d] 19	(37/2+)	I	Jπ: band assignment.
7642.1[@] 17	(39/2+)	I	Jπ: band assignment.
7712.0[b] 22	(39/2+)	I	Jπ: band assignment.
7981.1[&] 15	(39/2+)	I	Jπ: band assignment.
8005.4[d] 21	(39/2+)	I	Jπ: band assignment.
8310.2+x[f] 20	(41/2−)	I	Jπ: band assignment.
8329.0[b] 24	(41/2+)	I	Jπ: band assignment.
8463[a] 6	(41/2+)	I	Jπ: band assignment.
8632.4[d] 23	(41/2+)	I	Jπ: band assignment.
8786.1[@] 20	(43/2+)	I	Jπ: band assignment.
8977[b] 3	(43/2+)	I	Jπ: band assignment.
8981.1[&] 18	(43/2+)	I	Jπ: band assignment.
9292.2+x[f] 23	(45/2−)	I	Jπ: band assignment.
9317[d] 3	(43/2+)	I	Jπ: band assignment.
9783[a] 6	(45/2+)	I	Jπ: band assignment.
10105.1[@] 23	(47/2+)	I	Jπ: band assignment.
10218.1[&] 21	(47/2+)	I	Jπ: band assignment.
10428.2+x[f] 25	(49/2−)	I	Jπ: band assignment.
10746 5	1/2+	G	Jπ: from IAR.
11055 5	3/2+	G	Jπ: from IAR.
11189?[a] 6	(49/2+)	I	Jπ: band assignment.
11598 5	1/2+	G	Jπ: from IAR.
11634.1[@] 25	(51/2+)	I	Jπ: band assignment.
11642.1[&] 12	(51/2+)	I	Jπ: band assignment.
11730+x[f] 3	(53/2−)	I	Jπ: band assignment.
13244+x[f] 3	(57/2−)	I	Jπ: band assignment.
13338.0[@] 14	(55/2+)	I	Jπ: band assignment.
14821.1+x[f] 15	(61/2−)	I	Jπ: band assignment.

[†] From a least-squares fit to Eγ.
[‡] From 1987KuZV (and 1988Vi07) in ^{107}Ag(α,2nγ) by DSAM, unless otherwise noted.
[#] Band(A): Band 1: ΔJ=2 band based on 5/2+ at 1099 keV.
[@] Band(B): Band 2: ΔJ=2 band based on 7/2+ at 1722 keV.
[&] Band(C): Band 3: ΔJ=2 band based on (31/2+) at 6507 keV.
[a] Band(D): Band 4: ΔJ=2 band based on (21/2+) at 4300 keV.
[b] Band(E): Band 5: ΔJ=1 band based on (29/2+) at 5762 keV.
[c] Band(F): Band 6: ground state band.
[d] Band(G): Band 7: ΔJ=1 band based on 23/2+ at 4354 keV.
[e] Band(H): Band 8: ΔJ=1 band based on 13/2− at 2272 keV.
[f] Band(I): Band 9: ΔJ=2 band based on (25/2−) at 4508.37+x keV.
[g] Band(J): Band 10: ΔJ=1 band based on 27/2− at 4508.37 keV.
[h] Band(K): Band 11: ΔJ=1 band based on 19/2− at 3092 keV. Configuration=$\pi g_{9/2}^{-1}\otimes\nu[h_{11/2},(d_{5/2}/g_{7/2})]$ before alignment and $\pi g_{9/2}^{-1}\otimes\nu[h_{11/2},(d_{5/2}/g_{7/2})^3]$ after alignment around $\hbar\omega\approx 0.7$ MeV.
[i] Band(L): Band 12: ΔJ=1 band based on 17/2− at 3067 keV.

Adopted Levels, Gammas (continued)

γ(^{109}In)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[&]	δ[&b]	α[a]	Comments
649.79	1/2$^-$	649.8 *2*	100	0	9/2$^+$	M4		0.0695	α(K)=0.0582 *9*; α(L)=0.00914 *13*; α(M)=0.00182 *3* α(N)=0.000331 *5*; α(O)=2.25×10^{-5} *4* B(M4)(W.u.)=10.0 *5* E_γ: Other: 650.1 *3* from ^{108}Cd(d,nγ), and 649.8 *3* from ^{107}Ag(α,2nγ). Mult.: α(exp)=0.07 *2*(1956Pe56), α(exp)=0.08 *3*, K/L=6.2 *9* (1965Kh04) from ^{109}Sn ε decay.
980.92	3/2$^-$	331.2 *2*	100	649.79	1/2$^-$	M1		0.0203	α(K)=0.01761 *25*; α(L)=0.00215 *3*; α(M)=0.000417 *6* α(N)=7.65×10^{-5} *11*; α(O)=5.72×10^{-6} *8* B(M1)(W.u.)=0.96 *+30−31* E_γ: Other: 331.2 *3* from ^{108}Cd(d,nγ) and 331.0 *4* from ^{107}Ag(α,2nγ). Mult.: A_2/A_0=−0.14 *4*, A_4/A_0=+0.08 *5*(1979Va13) in ^{107}Ag(α,2nγ); α(K)exp=12×10^{-3} (1965Kh04),α(K)exp=28×10^{-3} (1970Sh05) in ^{109}Sn ε decay; A_2/A_0=−0.08 *4* (1975Di12) in ^{108}Cd(d,nγ).
1026.39	11/2$^+$	1026.4 *1*	100	0	9/2$^+$	M1+E2	+0.41 *13*	0.00133 *3*	α(K)=0.001160 *23*; α(L)=0.000138 *3*; α(M)=2.66×10^{-5} *5* α(N)=4.88×10^{-6} *9*; α(O)=3.67×10^{-7} *8* B(M1)(W.u.)=0.10 *5*; B(E2)(W.u.)=14 *10* E_γ: Other: 1026.0 *5* from ^{108}Cd(d,nγ), 1026.35 *8* from ^{107}Ag(α,2nγ), 1026.2 *5* from ^{96}Zr(^{19}F,6nγ), 1025.3 *6* (1994ByZZ) in ^{109}In IT decay (0.210 s), 1027.6 *1* (1997Ko51) in ^{92}Mo(^{19}F,2pγ). Mult.: α(K)exp=1.1×10^{-3} *3*, pol=−0.47 *5*, δ=+0.40 *+9−4*, A_2/A_0=+0.25 *1*, A_4/A_0=−0.04 *2* (1979Va13) in ^{107}Ag(α,2nγ); R=0.65 *3* (1997Ko51) in ^{92}Mo(^{19}F,2pγ); α(K)exp=1.08×10^{-3} *10*, A_2/A_0=+0.15 *3* (1975Di12) in ^{108}Cd(d,nγ); α(K)exp=0.0046 (1970Sh05) in ^{109}Sn ε decay. δ: deduced by evaluators using experimental conversion coefficients and mixing ratio from γ(θ) using the BrIccMixing program.
1099.31	5/2$^+$	119.0 *6*	0.2 *1*	980.92	3/2$^-$	[E1]		0.1062 *22*	α(K)=0.0922 *19*; α(L)=0.01142 *24*; α(M)=0.00220 *5* α(N)=0.000396 *8*; α(O)=2.61×10^{-5} *6* B(E1)(W.u.)=0.0008 *6*
		1099.2 *2*	100[‡] *5*	0	9/2$^+$	E2		9.85×10^{-4}	α(K)=0.000858 *12*; α(L)=0.0001035 *15*; α(M)=2.00×10^{-5} *3* α(N)=3.66×10^{-6} *6*; α(O)=2.68×10^{-7} *4* B(E2)(W.u.)=25 *12* E_γ: Other: 1099.2 *5* from ^{108}Cd(d,nγ), and 1099.5 *3* from ^{107}Ag(α,2nγ). Mult.: α(K)exp=0.79×10^{-3} *14*, A_2/A_0=+0.01 *3* (1975Di12) in ^{108}Cd(d,nγ); α(K)exp=0.89×10^{-3} *20*, pol=0.11 *13*,

$^{109}_{49}In_{60}$-7

Adopted Levels, Gammas (continued)

γ(^{109}In) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[&]	δ[&b]	α[a]	Comments
									A_2/A_0=+0.01 *2*, A_4/A_0=−0.03*3* (1979Va13) in ^{107}Ag(α,2nγ); α(K)exp=0.0013 (1970Sh05) in ^{109}Sn ε decay.
1171.71	1/2$^+$	521.9 *2*	100	649.79	1/2$^-$	E1		0.00204	α(K)=0.001780 *25*; α(L)=0.000211 *3*; α(M)=4.07×10^{-5} *6* α(N)=7.43×10^{-6} *11*; α(O)=5.41×10^{-7} *8* E_γ: Other: 522.2 *3* in ^{108}Cd(d,nγ). Mult.: α(K)exp=1.5×10^{-3} *3*, A_2/A_0=+0.004 *30* (1975Di12) in ^{108}Cd(d,nγ); α(K)exp=0.012 (1970Sh05) in ^{109}Sn ε decay.
1321.25	5/2$^+$	222.2 *7*	0.51 *25*	1099.31	5/2$^+$	[M1]		0.0571 *10*	α(K)=0.0496 *8*; α(L)=0.00614 *10*; α(M)=0.001192 *20* α(N)=0.000218 *4*; α(O)=1.62×10^{-5} *3*
		340.2 *3*	2.0 *5*	980.92	3/2$^-$	[E1]		0.00586	α(K)=0.00511 *8*; α(L)=0.000611 *9*; α(M)=0.0001179 *17* α(N)=2.15×10^{-5} *3*; α(O)=1.534×10^{-6} *22*
		1321.3 *2*	100 *6*	0	9/2$^+$	E2		6.98×10^{-4}	α(K)=0.000584 *9*; α(L)=6.95×10^{-5} *10*; α(M)=1.343×10^{-5} *19* α(N)=2.46×10^{-6} *4*; α(O)=1.82×10^{-7} *3*; α(IPF)=2.80×10^{-5} *4* E_γ: Other: 1320.8 *5* in ^{108}Cd(d,nγ). Mult.: α(K)exp=0.59×10^{-3} *20*, A_2/A_0=+0.04 *3* (1975Di12) in ^{108}Cd(d,nγ).
1334.73?	(3/2,5/2,7/2$^-$)	353.9 *2*	100	980.92	3/2$^-$				
1428.36	13/2$^+$	401.97 *6*	22.5 *11*	1026.39	11/2$^+$	M1+E2	+0.07 *+5−4*	0.01244	α(K)=0.01082 *16*; α(L)=0.001317 *19*; α(M)=0.000255 *4* α(N)=4.68×10^{-5} *7*; α(O)=3.50×10^{-6} *5* B(M1)(W.u.)=0.22 *12*; B(E2)(W.u.)=6 *+9−6* E_γ: from ^{107}Ag(α,2nγ). Others: 402.2 *5* from ^{109}In IT decay (0.210 s), 401.6 *4* from ^{108}Cd(d,nγ), 402 *1* from ^{76}Ge(^{37}Cl,4nγ), 402.0 *2* from ^{92}Mo(^{19}F,2pγ), and 402.2 *5* from ^{96}Zr(^{19}F,6nγ). I_γ: weighted average of 26 *7* from ^{109}In IT decay (0.210 s), 23.1 *23* from ^{108}Cd(d,nγ), 23.8 *10* from ^{107}Ag(α,2nγ), and 19.5 *14* from ^{96}Zr(^{19}F,6nγ). Other: 19.0 *5* from ^{92}Mo(^{19}F,2pγ). Mult.: α(K)exp=10×10^{-3} *4*, pol=−0.25 *3*, δ=+0.07 *03*, A_2/A_0=−0.11 *2*, A_4/A_0=−0.03 *3*(1979Va13) in ^{107}Ag(α,2nγ);

$^{109}_{49}In_{60}$-8

Adopted Levels, Gammas (continued)

γ(^{109}In) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult. &	α a	Comments
								α(K)exp=15×10^{-3} *5* (1975Di12) in ^{108}Cd(d,nγ), R=1.10 *3* (1997Ko51) in ^{92}Mo(^{19}F,2pγ).
								δ: deduced by evaluators using experimental conversion coefficient and mixing ratio from γ(θ) using the BrIccMixing program.
1428.36	13/2$^+$	1428.32 *10*	100 *3*	0	9/2$^+$	E2	6.30×10^{-4}	α(K)=0.000500 *7*; α(L)=5.92×10^{-5} *9*; α(M)=1.143×10^{-5} *16* α(N)=2.09×10^{-6} *3*; α(O)=1.557×10^{-7} *22*; α(IPF)=5.74×10^{-5} *8* B(E2)(W.u.)=9 *5* E_γ: from ^{107}Ag(α,2nγ). Others: 1427.5 *5* from ^{109}In IT decay (0.210 s), 1428.4 *6* from ^{108}Cd(d,nγ), 1428 *1* from ^{76}Ge(^{37}Cl,4nγ), 1429.4 *1* from ^{92}Mo(^{19}F,2pγ), and 1428.4 *5* from ^{96}Zr(^{19}F,6nγ). I_γ: weighted average of 100 *20* from ^{109}In IT decay (0.210 s), 100 *19* from ^{108}Cd(d,nγ), 100.0 *3* from ^{92}Mo(^{19}F,2pγ), and 100 *6* from ^{96}Zr(^{19}F,6nγ). Mult.: α(K)exp=0.53×10^{-3} *8*, pol=+0.33 *6*, A_2/A_0=+0.32 *1*, A_4/A_0=−0.16 *2* (1979Va13) in ^{107}Ag(α,2nγ); R=1.56 *2* (1997Ko51) in ^{92}Mo(^{19}F,2pγ); A_2/A_0=+0.32 *12* (1975Di12) in ^{108}Cd(d,nγ).
1440.70	5/2$^-$	459.8 *4*	8.7 *23*	980.92	3/2$^-$	(M1)	0.00892	α(K)=0.00776 *11*; α(L)=0.000940 *14*; α(M)=0.000182 *3* α(N)=3.34×10^{-5} *5*; α(O)=2.50×10^{-6} *4* E_γ: Other: 460.1 *5* in ^{108}Cd(d,nγ). I_γ: weighted average of 13 *6* from ^{109}Sn ε decay and 7.9 *26* from ^{108}Cd(d,nγ). Mult.: α(K)exp=8×10^{-3} *4* (1975Di12) in ^{108}Cd(d,nγ).
		791.0 *3*	100 *4*	649.79	1/2$^-$	E2	0.00209	α(K)=0.00181 *3*; α(L)=0.000226 *4*; α(M)=4.37×10^{-5} *7* α(N)=7.97×10^{-6} *12*; α(O)=5.70×10^{-7} *8* E_γ: weighted average of 790.9 *3* from ^{109}Sn ε decay and 791.2 *5* from ^{108}Cd(d,nγ). I_γ: weighted average of 100 *4* from ^{109}Sn ε decay and 100 *13* from ^{108}Cd(d,nγ). Mult.: α(K)exp=1.4×10^{-3} *4*, A_2/A_0=+0.09 *8* (1975Di12) in ^{108}Cd(d,nγ).
1463.59	9/2$^+$	437.2 *3*	55 *6*	1026.39	11/2$^+$	M1	0.01010	α(K)=0.00879 *13*; α(L)=0.001065 *15*; α(M)=0.000206 *3* α(N)=3.78×10^{-5} *6*; α(O)=2.84×10^{-6} *4* B(M1)(W.u.)=0.44 *17* E_γ: Others: 437.6 *5* in ^{108}Cd(d,nγ) and 437.0 *2* in ^{107}Ag(α,2nγ). I_γ: weighted average of 50 *13* from ^{109}Sn ε decay, 55 *7* from ^{108}Cd(d,nγ). Mult.: α(K)exp=10×10^{-3} *4*, A_2/A_0=−0.25 *7* (1975Di12) in ^{108}Cd(d,nγ.
		1463.6 *4*	100 *15*	0	9/2$^+$	[E2]	6.14×10^{-4}	α(K)=0.000476 *7*; α(L)=5.63×10^{-5} *8*; α(M)=1.088×10^{-5} *16* α(N)=1.99×10^{-6} *3*; α(O)=1.483×10^{-7} *21*; α(IPF)=6.88×10^{-5} *10* B(E2)(W.u.)=8 *4*

$^{109}_{49}In_{60}$-9

Adopted Levels, Gammas (continued)

γ(^{109}In) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[&]	α[a]	Comments
								E_γ: Other: 1463.4 *5* from ^{108}Cd(d,nγ). I_γ: weighted average of 100 *30* from ^{109}Sn ε decay and 100 *17* from ^{108}Cd(d,nγ).
1482.22?	(5/2$^+$,7/2$^-$)	383	100	1099.31	5/2$^+$			
		501.2 *3*	30 *10*	980.92	3/2$^-$			E_γ: could correspond to the 501.0γ from the 1483.9 level observed in ^{108}Cd(d,nγ).
		1482.3 *3*	47 *10*	0	9/2$^+$			
1483.75	5/2$^+$	312.0 *3*	25.0 *25*	1171.71	1/2$^+$			E_γ: Other: 311.6 *5* from ^{108}Cd(d,nγ). I_γ: Other: 9 *3* in ^{108}Cd(d,nγ). Other: 25 *3* from ^{109}Sn ε decay.
		384.5 *4*	100 *9*	1099.31	5/2$^+$	M1	0.01390	α(K)=0.01209 *18*; α(L)=0.001472 *21*; α(M)=0.000285 *4* α(N)=5.23×10^{-5} *8*; α(O)=3.91×10^{-6} *6* E_γ: Other: 384.2 *3* from ^{108}Cd(d,nγ). I_γ: from ^{108}Cd(d,nγ). Mult.: α(K)exp=12.4×10^{-3} *13*, A_2/A_0=−0.07 *4* (1975Di12) in ^{108}Cd(d,nγ).
		501.0 *6*	16.0 *23*	980.92	3/2$^-$			E_γ,I_γ: from ^{108}Cd(d,nγ) only. This γ could correspond to the 501.2γ from the 1482.2 level observed in ^{109}Sn ε decay. Mult.: α(K)exp≈3.6×10^{-3}, 1975Di12 in ^{108}Cd(d,nγ) suggest (M1,E2), but not compatible with parity.
1574.30	(5/2$^+$,7/2)	1574.4 *2*	100	0	9/2$^+$			E_γ: Other: 1573.9 *5* from ^{108}Cd(d,nγ).
1713.27	9/2$^+$	229.2 *3*	7 *3*	1483.75	5/2$^+$	[E2]	0.0837	α(K)=0.0696 *11*; α(L)=0.01146 *17*; α(M)=0.00226 *4* α(N)=0.000400 *6*; α(O)=2.23×10^{-5} *4*
		285.0 *5*	20 *5*	1428.36	13/2$^+$	[E2]	0.0402	α(K)=0.0338 *6*; α(L)=0.00516 *8*; α(M)=0.001012 *16* α(N)=0.000180 *3*; α(O)=1.076×10^{-5} *17* E_γ,I_γ: from ^{108}Cd(d,nγ) only.
		614.1 *3*	100 *6*	1099.31	5/2$^+$	E2	0.00397	α(K)=0.00343 *5*; α(L)=0.000442 *7*; α(M)=8.58×10^{-5} *12* α(N)=1.558×10^{-5} *22*; α(O)=1.084×10^{-6} *16* E_γ: Others: 614.2 *4* from ^{108}Cd(d,nγ), and 614.2 *3* from ^{107}Ag(α,2nγ). Mult.: M1 or E2 from α(K)exp=2.5×10^{-3} *9* (1975Di12) in ^{108}Cd(d,nγ), ΔJ=2 based on J^π(1713)=9/2$^+$ deduced from γ transitions to 5/2$^+$ and 13/2$^+$ rules out M1. A_2/A_0=−0.12 *6*, A_4/A_0=+0.024 *24* (1979Va13) in ^{107}Ag(α,2nγ) is for an unresolved doublet with transition in ^{109}Cd produced in ^{109}In decay and in the (α, pnγ) reaction.
		687[@] *1*		1026.39	11/2$^+$			
		1713.5 *2*	55 *7*	0	9/2$^+$			E_γ: Other: 1712.5 *8* from ^{108}Cd(d,nγ). I_γ: Other: 50 *10* from ^{108}Cd(d,nγ).
1722.38	7/2$^+$	623.4 *4*	100 *28*	1099.31	5/2$^+$	M1	0.00428	α(K)=0.00373 *6*; α(L)=0.000447 *7*; α(M)=8.65×10^{-5} *13* α(N)=1.588×10^{-5} *23*; α(O)=1.194×10^{-6} *17* E_γ: Other: 623.6 *4* from ^{108}Cd(d,nγ). Mult.: α(K)exp=3.5×10^{-3} *13* (1975Di12) in ^{108}Cd(d,nγ).
		1722.2 *2*	49 *4*	0	9/2$^+$			E_γ: Other:1721.5 *8* from ^{108}Cd(d,nγ). I_γ: Other: 40 *8* from ^{108}Cd(d,nγ).

$^{109}_{49}In_{60}$-10

Adopted Levels, Gammas (continued)

γ(^{109}In) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.&	δ&b	α[a]	Comments
1759.32	3/2,5/2,7/2	437.4 *3*	75 *27*	1321.25	$5/2^+$				
		660.1 *1*	100 *13*	1099.31	$5/2^+$				
1816.65	$(3/2,5/2)^-$	376.1 *5*	10	1440.70	$5/2^-$				
		482.7 *6*	14 *7*	1334.73?	$(3/2,5/2,7/2^-)$				
		495.8 *4*	45 *10*	1321.25	$5/2^+$				
		835.7 *1*	100 *14*	980.92	$3/2^-$	M1,E2		0.00216	α(K)=0.00189 *3*; α(L)=0.000224 *4*; α(M)=4.34×10^{-5} *6* α(N)=7.96×10^{-6} *12*; α(O)=6.00×10^{-7} *9* E_γ: Other: 833.0 *5* from ^{108}Cd(d,nγ). Mult.: α(K)exp=1.7×10^{-3} *7* (1975Di12) in ^{108}Cd(d,nγ).
		1166.6 *3*	52 *10*	649.79	$1/2^-$				
1843.7	$(5/2^+,7/2)$	1843.7 *6*	100	0	$9/2^+$				
1900.28	$13/2^+$	873.95‡ *10*	100‡	1026.39	$11/2^+$	M1+E2	+0.34 *+18−17*	0.00192 *5*	α(K)=0.00168 *4*; α(L)=0.000200 *4*; α(M)=3.86×10^{-5} *8* α(N)=7.08×10^{-6} *15*; α(O)=5.32×10^{-7} *13* E_γ: Other: 874.0 *5* from ^{96}Zr(^{19}F,6nγ). Mult.: α(K)exp=1.3×10^{-3} *3*, pol=−0.48 *6*, A_2/A_0=0.19 *2*, A_4/A_0=0.00*3*, δ=+0.32 *+17−7* (1979Va13) in ^{107}Ag(α,2nγ); δ: deduced by evaluators using experimental conversion coefficient and mixing ratio from γ(θ) using the BrIccMixing program.
1957.10	$5/2^+$	473.2 *5*	17 *6*	1483.75	$5/2^+$	[M1]		0.00831	α(K)=0.00724 *11*; α(L)=0.000875 *13*; α(M)=0.0001694 *25* α(N)=3.11×10^{-5} *5*; α(O)=2.33×10^{-6} *4*
		785.3 *2*	25 *6*	1171.71	$1/2^+$				
		976.3 *1*	100 *8*	980.92	$3/2^-$				
		1956.9 *2*	36 *6*	0	$9/2^+$				
2055.14	$(5/2^+,7/2)$	2055.2 *3*	100	0	$9/2^+$				
2064.2	$(3/2^-,5/2^-,7/2^-)$	1083.3 *4*	100	980.92	$3/2^-$	(M1,E2)		1.21×10^{-3}	α(K)=0.001053 *15*; α(L)=0.0001244 *18*; α(M)=2.40×10^{-5} *4* α(N)=4.41×10^{-6} *7*; α(O)=3.34×10^{-7} *5*

$^{109}_{49}In_{60}$-11

Adopted Levels, Gammas (continued)

γ(^{109}In) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[&]	δ[&b]	α[a]	Comments
2101.86	19/2$^+$	673.52 *8*	100	1428.36	13/2$^+$	M3		0.0251	E_γ: Other: 1083.9 *5* from ^{108}Cd(d,nγ). Mult.: α(K)exp≈1×10^{-3} (1975Di12) in ^{108}Cd(d,nγ). α(K)=0.0214 *3*; α(L)=0.00298 *5*; α(M)=0.000586 *9* α(N)=0.0001071 *15*; α(O)=7.70×10^{-6} *11* B(M3)(W.u.)=0.00945 *5* E_γ: from 1979Va13 in ^{107}Ag(α,2nγ). Others: 673.5 *1* from ^{109}In IT decay (0.210 s), 673.2 from ^{96}Zr(^{19}F,6nγ) (2012Ne03), 674 *1* from ^{76}Ge(^{37}Cl,4nγ) (1997VaZS). 1979Va13 also report a unplaced prompt γ ray at Eγ=673.85 with mult=E2. This prompt γ ray is also reported by 2012Ne03 in ^{96}Zr(^{19}F,6nγ) and by 1997Ko51 in ^{92}Mo(^{19}F,2pγ), and is placed from a J^π=17/2$^+$ level, slightly above the E=2101.8 level. Mult.: α(K)exp=19.9×10^{-3} *20*, K/L=7.5 *7* (1979Va13) in ^{107}Ag(α,2nγ).
2102.21	17/2$^+$	673.85 *12*	100	1428.36	13/2$^+$	E2		0.00312	α(K)=0.00270 *4*; α(L)=0.000342 *5*; α(M)=6.65×10^{-5} *10* α(N)=1.209×10^{-5} *17*; α(O)=8.51×10^{-7} *12* E_γ: placement as suggested in by 1997Ko51 and 2012Ne03. Unplaced in 1979Va13. Others: 673.9 *3* (1997Ko51) in ^{92}Mo(^{19}F,2pγ), 673.8 *5* (2012Ne03) in ^{96}Zr(^{19}F,6nγ). 1997VaZS in ^{76}Ge(^{37}Cl,4nγ) has placed an unresolved doublet of Eγ=674 *1* from the isomer at E=2101.8 (J^π=19/2$^+$) and from a level at E=2995.4 (J^π=17/2$^+$). The evaluators have adopted the placement here for the latter. Mult.: α(K)exp=2.4×10^{-3} *5*, A_2/A_0=+0.26 *2*, A_4/A_0=−0.18 *3* (1979Va13) in ^{107}Ag(α,2nγ), DCO(Q)=1.13 *14* (2012Ne03) in ^{96}Zr(^{19}F,6nγ).
2125.78	(5/2$^+$,7/2)	1026.4 *1*	87 *15*	1099.31	5/2$^+$				E_γ: not resolved with 1026.4γ from the E=1026 level.
		2125.9 *2*	100 *7*	0	9/2$^+$				
2138.43	(3/2$^+$)	181.8 *6*	1.3 *7*	1957.10	5/2$^+$				
		816.2[c] *4*	12[c] *3*	1321.25	5/2$^+$				
		1039.0 *2*	100 *4*	1099.31	5/2$^+$				
		1488.7 *1*	90 *7*	649.79	1/2$^-$				
2151.4	(3/2,5/2$^-$)	710.7 *3*	100 *22*	1440.70	5/2$^-$				
		1170.2	21	980.92	3/2$^-$				
		1501.7 *4*	36 *14*	649.79	1/2$^-$				
2195.26	15/2$^+$	766.9[‡] *2*	100[‡]	1428.36	13/2$^+$	M1+E2	+0.190 *10*	0.00262	α(K)=0.00229 *4*; α(L)=0.000273 *4*; α(M)=5.27×10^{-5} *8* α(N)=9.68×10^{-6} *14*; α(O)=7.29×10^{-7} *11* B(M1)(W.u.)=0.13 *6*; B(E2)(W.u.)=7 *3* Mult.: α(K)exp=2.1×10^{-3} *4*, pol=−0.85 *9*, δ=+0.19 *+1−3*, A_2/A_0=+0.05 *2*, A_4/A_0=−0.043 (1979Va13) in ^{107}Ag(α,2nγ).

$^{109}_{49}In_{60}$-12

Adopted Levels, Gammas (continued)

γ(^{109}In) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[&]	α[a]	Comments
								δ: deduced by evaluators from the experimental conversion coefficient and mixing ratio from γ(θ) using the BrIccMixing program.
2218.56	(5/2$^+$,7/2)	261.1 *12*	11 *4*	1957.10	5/2$^+$			
		401.8 *4*	2.9 *10*	1816.65	(3/2,5/2)$^-$			
		897.5 *2*	31 *4*	1321.25	5/2$^+$			
		1119.2 *3*	100 *5*	1099.31	5/2$^+$			
		2218.5 *5*	7.0 *7*	0	9/2$^+$			
2235.8	(5/2$^+$,7/2)	522	100	1713.27	9/2$^+$			
		2235.8 *3*	18.0 *25*	0	9/2$^+$			
2271.4	(3/2$^+$)	1290.0	33	980.92	3/2$^-$			
		1621.7 *5*	100 *20*	649.79	1/2$^-$			
2272.2	13/2$^-$	842[@] *1*		1428.36	13/2$^+$			
		1245.8 *3*	100	1026.39	11/2$^+$	E1	4.04×10^{-4}	α(K)=0.000301 *5*; α(L)=3.49×10^{-5} *5*; α(M)=6.72×10^{-6} *10* α(N)=1.232×10^{-6} *18*; α(O)=9.19×10^{-8} *13*; α(IPF)=5.97×10^{-5} *9* E_γ: from ^{107}Ag(α,2nγ). Other: 1245.7 *5* from ^{96}Zr(^{19}F,6nγ), 1246 *1* from ^{76}Ge(^{37}Cl,4nγ). Mult.: α(K)exp<0.34×10^{-3}, pol=+0.14 *5*, A_2/A_0=−0.26 *3*, A_4/A_0=−0.09 *6* (1979Va13) in ^{107}Ag(α,2nγ).
2276.5	(7/2$^+$)	1250.1 *10*	100 *38*	1026.39	11/2$^+$			
		2276.5 *8*	100 *38*	0	9/2$^+$			
2305.2	(3/2,5/2$^-$)	1205.6 *5*	81 *13*	1099.31	5/2$^+$			
		1655.7 *6*	100 *19*	649.79	1/2$^-$			
2317.3	(11/2$^+$)	595[@] *1*		1722.38	7/2$^+$			
		604[@] *1*		1713.27	9/2$^+$			
2321.92	15/2$^+$	421.9[‡] *2*	80[‡] *5*	1900.28	13/2$^+$	M1(+E2)	0.01103	α(K)=0.00959 *14*; α(L)=0.001165 *17*; α(M)=0.000226 *4* α(N)=4.14×10^{-5} *6*; α(O)=3.10×10^{-6} *5* Mult.: A_2/A_0=−0.19 *2*, A_4/A_0=−0.05*4* (1979Va13) in ^{107}Ag(α,2nγ).
		893.5[‡] *2*	100[‡] *6*	1428.36	13/2$^+$	M1	0.00186	α(K)=0.001620 *23*; α(L)=0.000192 *3*; α(M)=3.72×10^{-5} *6* α(N)=6.82×10^{-6} *10*; α(O)=5.15×10^{-7} *8* E_γ: others: 893 *1* from 1997VaZS in ^{76}Ge(^{37}Cl,4nγ). 2012Ne03 in ^{96}Zr(^{19}F,6nγ) have tentatively placed a γ-ray of Eγ=893.7 *5* from a level at E=2996. The evaluators has adopted the placement here. Mult.: α(K)exp=1.7×10^{-3} *4*, pol=−0.51 *8*, A_2/A_0=+0.10 *2*, A_4/A_0=−0.06*3* (1979Va13) in ^{107}Ag(α,2nγ).

$^{109}_{49}In_{60}$-13

Adopted Levels, Gammas (continued)

γ(^{109}In) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[&]	α[a]	Comments
2321.92	15/2$^+$	1295.0[@] *5*		1026.39	11/2$^+$			
2356.14	(3/2,5/2,7/2$^-$)	597.2 *12*	38 *15*	1759.32	3/2,5/2,7/2			
		1375.2 *2*	100 *15*	980.92	3/2$^-$			E_γ,I_γ: other: Eγ=1375 *1*, Iγ=100 *33* from ^{108}Cd(d,nγ).
2410.9	(3/2,5/2$^+$)	454.4[d] *20*	46 *15*	1957.10	5/2$^+$			
		594.6[d] *3*	23 *15*	1816.65	(3/2,5/2)$^-$			
		1239.9 *7*	100 *23*	1171.71	1/2$^+$			
		1429.7 *4*	77 *15*	980.92	3/2$^-$			
2469.04	(3/2,5/2,7/2)$^+$	250.1 *6*	31 *15*	2218.56	(5/2$^+$,7/2)			
		985.3 *2*	100 *15*	1483.75	5/2$^+$	M1,E2	1.49×10^{-3}	α(K)=0.001300 *19*; α(L)=0.0001539 *22*; α(M)=2.97×10^{-5} *5* α(N)=5.46×10^{-6} *8*; α(O)=4.13×10^{-7} *6* E_γ,I_γ: other: Eγ=984.3 *10*, Iγ=100 *43* from ^{108}Cd(d,nγ). Mult.: α(K)exp=1.08×10^{-3} *10* (1975Di12) in ^{108}Cd(d,nγ).
2508.33	(3/2,5/2$^-$)	1187.8 *5*	35 *13*	1321.25	5/2$^+$			
		1408.9 *2*	100 *9*	1099.31	5/2$^+$			
		1858.7 *2*	57 *9*	649.79	1/2$^-$			
2532.44	15/2$^-$	259.6 *5*	6.6 *7*	2272.2	13/2$^-$	(M1)	0.0380	α(K)=0.0330 *5*; α(L)=0.00406 *6*; α(M)=0.000788 *12* α(N)=0.0001445 *22*; α(O)=1.076×10^{-5} *16* B(M1)(W.u.)=0.32 *14* E_γ: weighted average of 259.0 *4* from ^{107}Ag(α,2nγ), 260 *1* from ^{76}Ge(^{37}Cl,4nγ), and 260.4 *5* from ^{96}Zr(^{19}F,6nγ). I_γ: from ^{96}Zr(^{19}F,6nγ). Other: 7 *4* from ^{107}Ag(α,2nγ). Mult.: A_2/A_0=−0.14 *7*, A_4/A_0=−0.16 *14* (1979Va13) in ^{107}Ag(α,2nγ).
		1104.04[‡] *10*	100[‡] *4*	1428.36	13/2$^+$	E1	4.33×10^{-4}	α(K)=0.000375 *6*; α(L)=4.35×10^{-5} *6*; α(M)=8.38×10^{-6} *12* α(N)=1.536×10^{-6} *22*; α(O)=1.143×10^{-7} *16*; α(IPF)=4.33×10^{-6} *7* B(E1)(W.u.)=0.0009 *4* E_γ: others: 1104.0 *10* from ^{92}Mo(^{19}F,2pγ), and 1103.8 *5* from ^{96}Zr(^{19}F,6nγ), 1104 *1* from ^{76}Ge(^{37}Cl,4nγ). Mult.: α(K)exp=0.38×10^{-3} *9*, pol=+0.35 *5*, A_2/A_0=−0.266 *10*, A_4/A_0=−0.022 *17* (1979Va13) in ^{107}Ag(α,2nγ); R=0.77 *2* (1997Ko51) in ^{92}Mo(^{19}F,2pγ); DCO(Q)=0.50 *5* (2012Ne03) in ^{96}Zr(^{19}F,6nγ).
2542.02	(5/2$^+$,7/2)	828.8 *2*	33 *4*	1713.27	9/2$^+$			
		1078.5	3.5	1463.59	9/2$^+$			
		1220.9 *5*	5.8 *23*	1321.25	5/2$^+$			
		1442.7 *1*	27.6 *23*	1099.31	5/2$^+$			
		2541.8 *3*	100 *6*	0	9/2$^+$			
2561.02	3/2$^+$	1462.0 *6*	36 *10*	1099.31	5/2$^+$			
		1580.7 *5*	20 *2*	980.92	3/2$^-$			
		1911.1 *2*	100 *4*	649.79	1/2$^-$			

$^{109}_{49}In_{60}$-14

Adopted Levels, Gammas (continued)

$\gamma(^{109}In)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[&]	δ[&b]	α[a]	Comments
2564.2	(5/2$^+$)	2564.2 *7*	100	0	9/2$^+$				
2574.8	(5/2$^+$,7/2)	2574.8 *3*	100	0	9/2$^+$				
2591.85	7/2$^+$	373.7 *3*	17 *4*	2218.56	(5/2$^+$,7/2)				
		452.8[d] *5*	11 *4*	2138.43	(3/2$^+$)				
		465.8 *8*	11 *4*	2125.78	(5/2$^+$,7/2)				
		869.3 *4*	49 *6*	1722.38	7/2$^+$				
		1107.2 *8*	34 *6*	1483.75	5/2$^+$				E$_\gamma$,I$_\gamma$: unresolved with 1107.7γ from E=2924 level.
		1128.2 *3*	100 *4*	1463.59	9/2$^+$				
		1492.4 *8*	96 *13*	1099.31	5/2$^+$				
		1565.6 *5*	17 *4*	1026.39	11/2$^+$				
		2591.6 *4*	43 *4*	0	9/2$^+$				
2602.3	(5/2$^+$,7/2)	879.2 *5*	100 *25*	1722.38	7/2$^+$				
		2602.7 *4*	13 *2*	0	9/2$^+$				
2617.16	(5/2,7/2)$^+$	478.5 *4*	22 *11*	2138.43	(3/2$^+$)				
		857.9 *2*	100 *22*	1759.32	3/2,5/2,7/2				
		2617.0 *10*	11 *6*	0	9/2$^+$				
2785.59	(5/2$^+$,7/2)	1072.7 *3*	6.7 *17*	1713.27	9/2$^+$				
		1211.4 *3*	28 *3*	1574.30	(5/2$^+$,7/2)				
		1464.2 *2*	100 *33*	1321.25	5/2$^+$				
		1686.2 *3*	20.8 *25*	1099.31	5/2$^+$				
		2785.4 *3*	48 *3*	0	9/2$^+$				
2808.8	3/2	1709.3 *6*	13 *4*	1099.31	5/2$^+$				
		2158.9 *4*	100 *13*	649.79	1/2$^-$				
2813.47	(5/2$^+$,7/2)	1054.2 *2*	100 *10*	1759.32	3/2,5/2,7/2				
		2813.2 *4*	62 *10*	0	9/2$^+$				
2845.77	3/2	539.4[d] *2*	15 *4*	2305.2	(3/2,5/2$^-$)				
		888.7 *1*	45 *11*	1957.10	5/2$^+$				
		1271.5 *3*	34 *6*	1574.30	(5/2$^+$,7/2)				
		1524.9 *3*	36 *4*	1321.25	5/2$^+$				
		2195.6 *2*	100 *6*	649.79	1/2$^-$				
2851.70	7/2$^+$	1092.2 *5*	86 *24*	1759.32	3/2,5/2,7/2				
		1130.5 *8*	14 *10*	1722.38	7/2$^+$				
		1388.2 *5*	38 *10*	1463.59	9/2$^+$				
		1825.1[c] *3*	100[c] *10*	1026.39	11/2$^+$				
		2852.2 *10*	10 *5*	0	9/2$^+$				
2858.58	(5/2$^+$,7/2)	732.5 *5*	57 *8*	2125.78	(5/2$^+$,7/2)				
		1759.2 *5*	100 *6*	1099.31	5/2$^+$				
		2858.6 *2*	92 *8*	0	9/2$^+$				
2868.77	17/2$^-$	336.30[‡] *6*	100[‡] *4*	2532.44	15/2$^-$	M1(+E2)	+0.03 *3*	0.0195	α(K)=0.01694 *24*; α(L)=0.00207 *3*; α(M)=0.000402 *6* α(N)=7.36×10^{-5} *11*; α(O)=5.50×10^{-6} *8* E$_\gamma$: others: 336 *1* from ^{76}Ge(^{37}Cl,4nγ), 335.9 *1* from ^{92}Mo(^{19}F,2pγ), and 336.6 *5* from ^{96}Zr(^{19}F,6nγ).

Adopted Levels, Gammas (continued)

γ(^{109}In) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[&]	δ[&b]	α[a]	Comments
									Mult.,δ: α(K)exp=18×10^{-3} *8*, pol=−0.14 *4*,δ=0.03 *3* from γ(θ), A_2/A_0=−0.113 *8*, A_4/A_0=−0.033 *14* (1979Va13) in ^{107}Ag(α,2nγ); R=0.98 *3* (1997Ko51) in ^{92}Mo(^{19}F,2pγ); DCO(Q)=0.69 *4* (2012Ne03) in ^{96}Zr(^{19}F,6nγ).
2868.77	17/2$^-$	547.1[‡] *3*	13.5[‡] *12*	2321.92	15/2$^+$	(E1)		0.00183	α(K)=0.001596 *23*; α(L)=0.000189 *3*; α(M)=3.64×10^{-5} *6* α(N)=6.66×10^{-6} *10*; α(O)=4.85×10^{-7} *7* B(E1)(W.u.)=0.00053 *17* Mult.: A_2/A_0=−0.30 *5*, A_4/A_0=−0.02 *8* (1979Va13) in ^{107}Ag(α,2nγ).
2871.19	5/2$^+$	310.3 *5*	9.8	2561.02	3/2$^+$				
		362.9 *1*	16 *4*	2508.33	(3/2,5/2$^-$)				
		459.8[d] *4*	14 *6*	2410.9	(3/2,5/2$^+$)				E_γ,I_γ: unresolved with Eγ=459.9γ from E=1441 level.
		745.3 *9*	22 *6*	2125.78	(5/2$^+$,7/2)				
		816.2[c] *4*	35[c] *8*	2055.14	(5/2$^+$,7/2)				
		1157.8 *3*	33 *6*	1713.27	9/2$^+$				
		1700.7 *13*	7.8 *20*	1171.71	1/2$^+$				
		1889.8 *3*	100 *10*	980.92	3/2$^-$				
		2871.2 *9*	5 *1*	0	9/2$^+$				
2919.8	(5/2$^+$,7/2)	2919.8 *7*	100	0	9/2$^+$				
2924.42	(3/2,5/2)	967.2 *4*	44 *8*	1957.10	5/2$^+$				
		1107.7 *8*	44 *8*	1816.65	(3/2,5/2)$^-$				E_γ,I_γ: unresolved with 1107.7γ from E=2592 level.
		1350.1 *1*	83 *8*	1574.30	(5/2$^+$,7/2)				
		1603.3 *3*	36 *6*	1321.25	5/2$^+$				
		1825.1[c] *3*	58[c] *6*	1099.31	5/2$^+$				
		1943.5 *3*	100 *11*	980.92	3/2$^-$				
2943.0	(5/2$^+$,7/2$^-$)	1962.2 *5*	100 *20*	980.92	3/2$^-$				
		2942.8 *4*	74 *10*	0	9/2$^+$				
2958.04	19/2$^-$	89.24[‡] *8*	100[‡] *5*	2868.77	17/2$^-$	M1(+E2)	≤+0.05	0.707 *11*	α(K)=0.611 *9*; α(L)=0.0779 *13*; α(M)=0.01514 *25* α(N)=0.00277 *5*; α(O)=0.000203 *3* E_γ: other: 88.9 *5* from ^{96}Zr(^{19}F,6nγ), 89 *1* from ^{76}Ge(^{37}Cl,4nγ). Mult.,δ: A_2/A_0=−0.206 *9*, A_4/A_0=+0.01 *2*, δ=0.01 *4* (1979Va13) in ^{107}Ag(α,2nγ); R=1.02 *1* (1997Ko51) in ^{92}Mo(^{19}F,2pγ).
		856.2[‡] *2*	42[‡] *2*	2101.86	19/2$^+$	E1		6.98×10^{-4}	α(K)=0.000610 *9*; α(L)=7.13×10^{-5} *10*;

$^{109}_{49}In_{60}$-16

Adopted Levels, Gammas (continued)

γ(^{109}In) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[&]	δ[&b]	α[a]	$I_{(\gamma+ce)}$	Comments
										α(M)=1.374×10^{-5} *20* α(N)=2.52×10^{-6} *4*; α(O)=1.86×10^{-7} *3* E_γ: others: 856.2 *5* from ^{96}Zr(^{19}F,6nγ), 856 *1* from ^{76}Ge(^{37}Cl,4nγ). I_γ: other: 19.8 *13* from ^{96}Zr(^{19}F,6nγ). Mult.: α(K)exp≤1.0×10^{-3}, pol=−0.48 *6*, A_2/A_0=+0.38 *3*, A_4/A_0=−0.04 *5* (1979Va13) in ^{107}Ag(α,2nγ).
2986.8	(3/2$^+$,5/2$^+$)	848.6 *8*	45 *18*	2138.43	(3/2$^+$)					
		1227.4 *3*	100 *27*	1759.32	3/2,5/2,7/2					
		1546.6 *8*	36 *9*	1440.70	5/2$^-$					
2995.9	(17/2$^+$)	674[@] *1*		2321.92	15/2$^+$					
3013.4	(5/2$^+$,7/2)	3013.4 *3*	100	0	9/2$^+$					
3029.69	(5/2$^+$)	158.6[d] *6*	14 *5*	2871.19	5/2$^+$					
		216.9[d] *7*	9 *5*	2813.47	(5/2$^+$,7/2)					
		220.5 *6*	18 *9*	2808.8	3/2					
		560.3 *7*	14 *5*	2469.04	(3/2,5/2,7/2)$^+$					
		1455.3 *5*	100 *14*	1574.30	(5/2$^+$,7/2)					
		1930.5 *3*	77 *9*	1099.31	5/2$^+$					
		2049.0 *5*	45 *9*	980.92	3/2$^-$					
		3029.5 *6*	7 *3*	0	9/2$^+$					
3034.8	(5/2$^+$,7/2)	3034.8 *4*	100	0	9/2$^+$					
3050.73	(5/2$^+$,7/2)	1951.3 *5*	25	1099.31	5/2$^+$					
		3050.7 *2*	100 *17*	0	9/2$^+$					
3065.65	(5/2$^+$,7/2)	3065.6 *2*	100	0	9/2$^+$					
3067.35	17/2$^-$	534.9[‡] *2*	100	2532.44	15/2$^-$	M1+E2	+0.14 *7*	0.00616		α(K)=0.00537 *8*; α(L)=0.000648 *9*; α(M)=0.0001254 *18* α(N)=2.30×10^{-5} *4*; α(O)=1.724×10^{-6} *25* Mult.,δ: pol=−0.64 *15*, δ=0.14 *7*, A_2/A_0=−0.04 *3*, A_4/A_0=−0.06 *5* (1979Va13) in ^{107}Ag(α,2nγ).
3092.10	19/2$^-$	223.4 *2*	20[‡] *2*	2868.77	17/2$^-$	M1		0.0563		α(K)=0.0489 *7*; α(L)=0.00606 *9*; α(M)=0.001175 *17* α(N)=0.000215 *3*; α(O)=1.602×10^{-5} *23* B(M1)(W.u.)=0.57 *17* E_γ: weighted average of 223.4 *3* from ^{107}Ag(α,2nγ), 223 *1* from ^{76}Ge(^{37}Cl,4nγ), 223.5 *2* from ^{92}Mo(^{19}F,2pγ), and 223.1 *5* from ^{96}Zr(^{19}F,6nγ). Mult.: α(K)exp=24×10^{-3} *12*, A_2/A_0=−0.18 *3*, A_4/A_0=+0.09 *5* (1979Va13) in ^{107}Ag(α,2nγ).

$^{109}_{49}In_{60}$-17

Adopted Levels, Gammas (continued)

$\gamma(^{109}In)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[&]	δ[&b]	α[a]	$I_{(\gamma+ce)}$	Comments
3092.10	19/2$^-$	989.8[d] *5*	37 *4*	2102.21	17/2$^+$					E_γ,I_γ: from ^{96}Zr(^{19}F,6nγ) only.
		990.25[‡] *12*	100[‡] *6*	2101.86	19/2$^+$	E1		5.25×10^{-4}		α(K)=0.000459 *7*; α(L)=5.35×10^{-5} *8*; α(M)=1.031×10^{-5} *15* α(N)=1.89×10^{-6} *3*; α(O)=1.402×10^{-7} *20* B(E1)(W.u.)=0.00044 *13* E_γ: others: 990 *1* from ^{76}Ge(^{37}Cl,4nγ), 989.4 *10* from ^{92}Mo(^{19}F,2pγ), and 990.4 *5* from ^{96}Zr(^{19}F,6nγ). Mult.: α(K)exp=0.45×10^{-3} *15*, pol=−0.62 *14*, A_2/A_0=+0.32 *3*, A_4/A_0=−0.01 *5* (1979Va13) in ^{107}Ag(α,2nγ); R=0.85 *7* (1997Ko51) in ^{92}Mo(^{19}F,2pγ).
3122.54	21/2$^-$	164.47[‡] *6*	100	2958.04	19/2$^-$	M1(+E2)	≤+0.05	0.1284 *19*	9	ce(K)/(γ+ce)=0.0986 *13*; ce(L)/(γ+ce)=0.01234 *18*; ce(M)/(γ+ce)=0.00240 *4* ce(N)/(γ+ce)=0.000439 *7*; ce(O)/(γ+ce)=3.25×10^{-5} *5* α(K)=0.1113 *16*; α(L)=0.01393 *20*; α(M)=0.00270 *4* α(N)=0.000495 *7*; α(O)=3.67×10^{-5} *6* E_γ: others: 164 *1* from ^{76}Ge(^{37}Cl,4nγ), 164.7 *2* from ^{92}Mo(^{19}F,2pγ), and 164.6 *5* from ^{96}Zr(^{19}F,6nγ). Mult.: α(K)exp=159×10^{-3} *50*, δ=0.01 *5*, A_2/A_0=−0.197 *9*, A_4/A_0=−0.017 *15* (1979Va13) in ^{107}Ag(α,2nγ); R=0.82 *2* (1997Ko51) in ^{92}Mo(^{19}F,2pγ); DCO(Q)=0.78 *8* (2012Ne03) in ^{96}Zr(^{19}F,6nγ).
		1021[@] *1*		2101.86	19/2$^+$					
3140.3	(5/2$^+$,7/2)	1819.0 *4*	100 *33*	1321.25	5/2$^+$					
		3139.8[d] *6*	23 *7*	0	9/2$^+$					
3155.2	(15/2$^+$)	838[@] *1*		2317.3	(11/2$^+$)					
		1053[@] *1*		2101.86	19/2$^+$					
		1727[@] *1*		1428.36	13/2$^+$					
3202.49	21/2$^-$	110.42[‡] *10*	56[‡] *3*	3092.10	19/2$^-$	M1(+E2)	≤−0.12	0.391 *8*		α(K)=0.338 *6*; α(L)=0.0434 *14*; α(M)=0.0084 *3* α(N)=0.00154 *5*; α(O)=0.0001121 *21* E_γ: others: 110 *1* from ^{76}Ge(^{37}Cl,4nγ), 110.1 *3* from ^{92}Mo(^{19}F,2pγ), and 110.4

$^{109}_{49}In_{60}$-18

Adopted Levels, Gammas (continued)

γ(^{109}In) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[&]	δ[&b]	α[a]	Comments
									5 from ^{96}Zr(^{19}F,6nγ). I_γ: others: 23.5 *6* from ^{92}Mo(^{19}F,2pγ), 89 *5* from ^{96}Zr(^{19}F,6nγ). Mult.,δ: A_2/A_0=−0.24 *2*, A_4/A_0=+0.04 *2*,δ=−0.05 *7* (1979Va13) in ; R=0.73 *1* (1997Ko51);DCO(D)=0.99 *21* (2012Ne03).
3202.49	21/2$^-$	244.6 *2*	100[‡] *5*	2958.04	19/2$^-$	M1(+E2)	≤0.04	0.0444	α(K)=0.0385 *6*; α(L)=0.00476 *7*; α(M)=0.000923 *14* α(N)=0.0001692 *24*; α(O)=1.260×10^{-5} *18* E_γ: weighted average of 244.5 *3* from ^{107}Ag(α,2nγ), 244 *1* from ^{76}Ge(^{37}Cl,4nγ), 244.7 *2* from ^{92}Mo(^{19}F,2pγ), and 244.6 *5* from ^{96}Zr(^{19}F,6nγ). I_γ: others: 100 *1* from ^{92}Mo(^{19}F,2pγ), and 100 *5* from ^{96}Zr(^{19}F,6nγ). Mult.: α(K)exp = 34×10^{-3} *12*, pol=−0.27 *13*, δ=0.00 *4*, A_2/A_0=−0.21 *2*, A_4/A_0=0.01 *2* (1979Va13) ^{107}Ag(α,2nγ); R=0.76 *1* (1997Ko51) in ^{92}Mo(^{19}F,2pγ; DCO(Q)=0.70 *10* (2012Ne03) in ^{96}Zr(^{19}F,6nγ).
		1100.8[#] *5*	47[#] *2*	2101.86	19/2$^+$				
3273.44?		150.9[d] *2*	100	3122.54	21/2$^-$				E_γ: seen only in ^{92}Mo(^{19}F,2pγ) (1997Ko51).
3285.8	19/2$^-$	218.48[‡] *11*	100	3067.35	17/2$^-$	M1		0.0598	α(K)=0.0518 *8*; α(L)=0.00643 *9*; α(M)=0.001247 *18* α(N)=0.000229 *4*; α(O)=1.700×10^{-5} *24* B(M1)(W.u.)<2.0 Mult.: α(K)exp=36×10^{-3} *18*, A_2/A_0=−0.18 *3*, A_4/A_0=+0.13 *4* (1979Va13) in ^{107}Ag(α,2nγ).
3316.8	(5/2$^+$,7/2)	3316.7 *3*	100	0	9/2$^+$				
3361.0	(5/2$^+$,7/2)	3360.9 *6*	100	0	9/2$^+$				
3374.74	(19/2$^-$)	416.7[‡] *2*	100	2958.04	19/2$^-$	(M1)		0.01137	α(K)=0.00989 *14*; α(L)=0.001201 *17*; α(M)=0.000233 *4* α(N)=4.27×10^{-5} *6*; α(O)=3.20×10^{-6} *5* B(M1)(W.u.)=1.4 *7* Mult.: A_2/A_0=−0.27 *2*, A_4/A_0=−0.09 *4* (1979Va13) in ^{107}Ag(α,2nγ).
3395.68	(5/2$^+$,7/2)	2074.8 *9*	81 *27*	1321.25	5/2$^+$				
		3395.6 *2*	100 *14*	0	9/2$^+$				
3410.37	23/2$^-$	207.90[‡] *6*	100[‡] *5*	3202.49	21/2$^-$	M1		0.0682	α(K)=0.0592 *9*; α(L)=0.00735 *11*; α(M)=0.001426 *20* α(N)=0.000261 *4*; α(O)=1.94×10^{-5} *3* B(M1)(W.u.)=3.0 *10* E_γ: others: 208 *1* from ^{76}Ge(^{37}Cl,4nγ), 207.9 *1* from ^{92}Mo(^{19}F,2pγ), and 208.0 *5* from ^{96}Zr(^{19}F,6nγ). I_γ: others: 100.0 *2* from ^{92}Mo(^{19}F,2pγ), and 100 *5* from ^{96}Zr(^{19}F,6nγ). Mult.,δ: α(K)exp=59×10^{-3} *20*, pol=−0.42 *15*, δ=−0.02 *7*,

$^{109}_{49}In_{60}$-19

Adopted Levels, Gammas (continued)

γ(^{109}In) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[&]	δ[&b]	α[a]	Comments
									A_2/A_0=−0.217 *10*, A_4/A_0=−0.032 *17*(1979Va13) in ^{107}Ag(α,2nγ); R=0.82 *2* (1997Ko51) in ^{92}Mo(^{19}F,2pγ); DCO(Q)=0.75 *14* (2012Ne03) ^{96}Zr(^{19}F,6nγ).
3410.37	23/2$^-$	287.79[‡] *12*	10.0[‡] *4*	3122.54	21/2$^-$	(M1)		0.0290	α(K)=0.0252 *4*; α(L)=0.00310 *5*; α(M)=0.000601 *9* α(N)=0.0001102 *16*; α(O)=8.22×10^{-6} *12* B(M1)(W.u.)=0.11 *4* E_γ: others: 288 *1* from ^{76}Ge(^{37}Cl,4nγ), 287.9 *3* from ^{92}Mo(^{19}F,2pγ), and 288.0 *5* from ^{96}Zr(^{19}F,6nγ). I_γ: from ^{92}Mo(^{19}F,2pγ). Other: 17 *3* in ^{107}Ag(α,2nγ) and 10.8 *13* in ^{96}Zr(^{19}F,6nγ). Mult.: A_2/A_0=−0.13 *5*, A_4/A_0=−0.02 *8* (1979Va13) in ^{107}Ag(α,2nγ); DCO(D)=1.0 *3* (2012Ne03) ^{96}Zr(^{19}F,6nγ).
3418.5	5/2$^+$,7/2$^-$	2437.5 *4* 3418.5 *5*	100 *11* 8.5	980.92 0	3/2$^-$ 9/2$^+$				
3426.54	(5/2$^+$,7/2)	1300.7 *2* 3427.3 *8*	100 *24* 3.5 *12*	2125.78 0	(5/2$^+$,7/2) 9/2$^+$				
3462.04	23/2$^-$	339.47[‡] *8*	100	3122.54	21/2$^-$	M1+E2	+0.05 *3*	0.0190	α(K)=0.01654 *24*; α(L)=0.00202 *3*; α(M)=0.000392 *6* α(N)=7.19×10^{-5} *11*; α(O)=5.37×10^{-6} *8* B(M1)(W.u.)=0.7 *3*; B(E2)(W.u.)=12 *+16−12* E_γ: others: 339 *1* from ^{76}Ge(^{37}Cl,4nγ), 339.4 *2* from ^{92}Mo(^{19}F,2pγ), and 339.7 *5* from ^{96}Zr(^{19}F,6nγ). Mult.,δ: α(K)exp=19×10^{-3} *8*, pol=−0.26 *10*, δ=+0.05 *3* A_2/A_0=−0.097 *11*, A_4/A_0=−0.018 *9* (1979Va13) in ^{107}Ag(α,2nγ); R=1.05 *4* (1997Ko51) in ^{92}Mo(^{19}F,2pγ); DCO(Q)=0.56 *5* (2012Ne03) in ^{96}Zr(^{19}F,6nγ).
3484.4?	(23/2)	211.0 *2*	57.3 *7*	3273.44?		D			E_γ,I_γ: from ^{92}Mo(^{19}F,2pγ) (1997Ko51). 2012Ne03 in ^{96}Zr(^{19}F,6nγ) tentatively place a γ ray of 211.4 keV *5* from a level at E=4686 while 1997VaZS in ^{76}Ge(^{37}Cl,4nγ) place a γ ray of 211 keV *1* from the level at E=4565 keV. Mult.: DCO(Q)=0.56 *17*, DCO(D)=1.15 *20* (2012Ne03) in ^{96}Zr(^{19}F,6nγ).
		361.9[d] *2*	100.0 *4*	3122.54	21/2$^-$	D+Q			E_γ,I_γ: from ^{92}Mo(^{19}F,2pγ) (1997Ko51). Other: Eγ=363.5 *5* from ^{96}Zr(^{19}F,6nγ) (2012Ne03). 1997VaZS in ^{76}Ge(^{37}Cl,4nγ) have placed a γ ray of 362 from the level at E=4928. Mult.: DCO(Q)=0.63 *10* (2012Ne03) in ^{96}Zr(^{19}F,6nγ).
3517.1	21/2$^-$	231.3[‡] *2*	100	3285.8	19/2$^-$	(M1)		0.0514	α(K)=0.0446 *7*; α(L)=0.00552 *8*; α(M)=0.001071 *16* α(N)=0.000196 *3*; α(O)=1.460×10^{-5} *21* B(M1)(W.u.)=3.9 *10*

$^{109}_{49}In_{60}$-20

Adopted Levels, Gammas (continued)

γ(^{109}In) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[&]	δ[&b]	α[a]	Comments
									Mult.: A_2/A_0=−0.25 *5*, A_4/A_0=+0.12 *3*(1979Va13) (1979Va13) in ^{107}Ag(α,2nγ).
3528.7	(21/2$^+$)	1427[@] *1*		2101.86	19/2$^+$				
3653.8	(17/2$^+$)	1552[@] *1*		2101.86	19/2$^+$				
3798.3	(23/2$^+$)	1697[@] *1*		2101.86	19/2$^+$				
3800.14	25/2$^-$	338.4 *5*	12.5 *6*	3462.04	23/2$^-$	(M1)		0.0192	α(K)=0.01667 *25*; α(L)=0.00204 *3*; α(M)=0.000395 *6* α(N)=7.24×10^{-5} *11*; α(O)=5.41×10^{-6} *8* B(M1)(W.u.)=0.037 *13* E_γ,I_γ: from ^{92}Mo(^{19}F,2pγ). Other: Eγ=338.4 *5*, Iγ=13.1 *18* from ^{96}Zr(^{19}F,6nγ). Mult.: DCO(Q)=0.56 *5* for 339.7+338.4 (2012Ne03) in ^{96}Zr(^{19}F,6nγ).
		389.80[‡] *8*	100 *1*	3410.37	23/2$^-$	M1+E2	+0.04 *3*	0.01343	α(K)=0.01168 *17*; α(L)=0.001422 *20*; α(M)=0.000275 *4* α(N)=5.05×10^{-5} *7*; α(O)=3.78×10^{-6} *6* B(M1)(W.u.)=0.19 *7*; B(E2)(W.u.)=1.7 *+26−17* E_γ: others: 390 *1* from ^{76}Ge(^{37}Cl,4nγ), 389.8 *2* from ^{92}Mo(^{19}F,2pγ), and 390.1 *5* from ^{96}Zr(^{19}F,6nγ). I_γ: weighted average of 100 *4* from ^{107}Ag(α,2nγ), 100 *1* from ^{92}Mo(^{19}F,2pγ), and 100 *6* from ^{96}Zr(^{19}F,6nγ). Mult.,δ: α(K)exp=13×10^{-3} *4*, pol=−0.35 *6*, δ=+0.04 *3*, A_2/A_0=−0.151 *12*, A_4/A_0=−0.027 *20* (1979Va13) in ^{107}Ag(α,2nγ); R=1.02 *6* (1997Ko51) in ^{92}Mo(^{19}F,2pγ; DCO(Q)=0.61 *8* (2012Ne03) in ^{96}Zr(^{19}F,6nγ).
3844.1	(23/2$^-$)	327[@] *1*		3517.1	21/2$^-$				
4037.54	25/2$^-$	575.3[‡] *2*	100	3462.04	23/2$^-$	M1		0.00518	α(K)=0.00451 *7*; α(L)=0.000542 *8*; α(M)=0.0001050 *15* α(N)=1.93×10^{-5} *3*; α(O)=1.448×10^{-6} *21* B(M1)(W.u.)=0.19 *10* E_γ: others: 576 *1* from ^{76}Ge(^{37}Cl,4nγ), 575.4 *4* from ^{92}Mo(^{19}F,2pγ), and 575.6 *5* from ^{96}Zr(^{19}F,6nγ). Mult.: α(K)exp=3.0×10^{-3} *15*, A_2/A_0=−0.29 *4*, A_4/A_0=−0.09 *6* (1979Va13) in ^{107}Ag(α,2nγ); DCO(D)=1.04 *17* (2012Ne03) in ^{96}Zr(^{19}F,6nγ).
4097.4	(19/2$^+$)	942[@] *1*		3155.2	(15/2$^+$)				
4300.8	(21/2$^+$)	647[@] *1*		3653.8	(17/2$^+$)				
		1305[@] *1*		2995.9	(17/2$^+$)				
4354.6	(23/2$^+$)	826[@] *1*		3528.7	(21/2$^+$)				
		1232[@] *1*		3122.54	21/2$^-$				
4436.0	27/2$^{(-)}$	636.0[#] *5*	100	3800.14	25/2$^-$	(M1)		0.00408	α(K)=0.00356 *5*; α(L)=0.000426 *6*; α(M)=8.24×10^{-5} *12*

$^{109}_{49}In_{60}$-21

Adopted Levels, Gammas (continued)

γ(^{109}In) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[&]	α[a]	Comments
								α(N)=1.513×10^{-5} *22*; α(O)=1.139×10^{-6} *16* Mult.: DCO(D)=0.97 *21* (2012Ne03) in ^{96}Zr(^{19}F,6nγ).
4508.37	27/2$^-$	470.6 *2*	16.0 *8*	4037.54	25/2$^-$	(M1)	0.00843	α(K)=0.00733 *11*; α(L)=0.000887 *13*; α(M)=0.0001717 *25* α(N)=3.15×10^{-5} *5*; α(O)=2.36×10^{-6} *4* E_γ,I_γ: from ^{92}Mo(^{19}F,2pγ). Other: Eγ=470.9 *5*, Iγ=41 *4* from ^{96}Zr(^{19}F,6nγ). Mult.: DCO(D)=0.93 *14* (2012Ne03) in ^{96}Zr(^{19}F,6nγ).
		708.7 *3*	100 *1*	3800.14	25/2$^-$	(M1+E2)	0.00316	α(K)=0.00276 *4*; α(L)=0.000330 *5*; α(M)=6.37×10^{-5} *9* α(N)=1.170×10^{-5} *17*; α(O)=8.81×10^{-7} *13* E_γ,I_γ: from ^{92}Mo(^{19}F,2pγ). Other: Eγ=708.1 *5*, Iγ=100 *4* from ^{96}Zr(^{19}F,6nγ). Mult.: R=0.95 *6* (1997Ko51) in ^{92}Mo(^{19}F,2pγ), DCO(D)=1.28 *19* (2012Ne03) in ^{96}Zr(^{19}F,6nγ).
4565.4	(25/2$^+$)	211[@] *1*		4354.6	(23/2$^+$)	(M1)	0.0656 *13*	α(K)=0.0569 *11*; α(L)=0.00706 *14*; α(M)=0.00137 *3* α(N)=0.000251 *5*; α(O)=1.87×10^{-5} *4* E_γ: 2012Ne03 in ^{96}Zr(^{19}F,6nγ) tentatively place a γ ray of 211.4 keV *5* from a level at E=4686; 1997Ko51 in ^{92}Mo(^{19}F,2pγ) tentatively place a γ ray of 211.0 keV *2* from a level at E=3485 keV. The evaluators have adopted the placement here by 1997VaZS in ^{76}Ge(^{37}Cl,4nγ). Mult.: DCO(Q)=0.56 *17*, DCO(D)=1.15 *20* (2012Ne03) in ^{96}Zr(^{19}F,6nγ).
		768[@] *1*		3798.3	(23/2$^+$)			
		1102[@] *1*		3462.04	23/2$^-$			
4572.6	(25/2$^+$)	774[@] *1*		3798.3	(23/2$^+$)			
4743.7	(25/2$^+$)	443[@] *1*		4300.8	(21/2$^+$)			
4756.6	(23/2$^+$)	659[@] *1*		4097.4	(19/2$^+$)			
4832.4	29/2$^{(-)}$	324.0 *3*	100 *5*	4508.37	27/2$^-$	(M1)	0.0214	α(K)=0.0186 *3*; α(L)=0.00228 *4*; α(M)=0.000442 *7* α(N)=8.10×10^{-5} *12*; α(O)=6.05×10^{-6} *9* E_γ: from ^{92}Mo(^{19}F,2pγ). Others: 324.4 *5* from ^{96}Zr(^{19}F,6nγ), 324 *1* from ^{76}Ge(^{37}Cl,4nγ). I_γ: from ^{96}Zr(^{19}F,6nγ). Mult.: R=0.90 *4* (1997Ko51) in ^{92}Mo(^{19}F,2pγ); DCO(Q)=0.73 *18* (2012Ne03) in ^{96}Zr(^{19}F,6nγ).
		396.5[#] *5*	17[#] *2*	4436.0	27/2$^{(-)}$			E_γ: other: 396 *1* from ^{76}Ge(^{37}Cl,4nγ).
4927.8	(27/2$^+$)	355[@] *1*		4572.6	(25/2$^+$)	(M1)	0.0170 *3*	α(K)=0.01477 *24*; α(L)=0.00180 *3*; α(M)=0.000349 *6* α(N)=6.41×10^{-5} *10*; α(O)=4.79×10^{-6} *8* E_γ: 2012Ne03 in ^{96}Zr(^{19}F,6nγ) tentatively place a γ ray of 354.8 keV *5* from a level at E=5408; 1997Ko51 in ^{92}Mo(^{19}F,2pγ) tentatively place a γ ray of 353.9.9 keV *2* from a level at E=(6259) keV. The evaluators have adopted the placement here by 1997VaZS in ^{76}Ge(^{37}Cl,4nγ).

$^{109}_{49}In_{60}$-22

Adopted Levels, Gammas (continued)

γ(^{109}In) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[&]	α[a]	Comments
								1997VaZS also place a γ ray of Eγ=354 *1* from the level at E=6272. Mult.: DCO(D)=1.2 *4* (2012Ne03) in ^{96}Zr(^{19}F,6nγ).
4927.8	(27/2$^+$)	362[@] *1*		4565.4	(25/2$^+$)	(M1)	0.0162 *3*	α(K)=0.01406 *22*; α(L)=0.00172 *3*; α(M)=0.000332 *6* α(N)=6.09×10^{-5} *10*; α(O)=4.56×10^{-6} *8* Eγ: 2012Ne03 in ^{96}Zr(^{19}F,6nγ) tentatively place a γ ray of 362.5 keV *5* from a level at E=3485; 1997Ko51 in ^{92}Mo(^{19}F,2pγ) tentatively place a γ ray of 361.9 keV *2* from a level at E=3485 keV. The evaluators have adopted the placement here by 1997VaZS in ^{76}Ge(^{37}Cl,4nγ). Mult.: DCO(Q)=0.63 *10* (2012Ne03) in ^{96}Zr(^{19}F,6nγ).
		891[@] *1*		4037.54	25/2$^-$			
5024.7	29/2$^{(-)}$	588.7 *5*	100	4436.0	27/2$^{(-)}$	(M1)	0.00490	α(K)=0.00427 *6*; α(L)=0.000513 *8*; α(M)=9.93×10^{-5} *14* α(N)=1.82×10^{-5} *3*; α(O)=1.370×10^{-6} *20* Eγ: from ^{96}Zr(^{19}F,6nγ). Other: 589 *1* from ^{76}Ge(^{37}Cl,4nγ). Mult.: DCO(D)=1.0 *5* (2012Ne03) in ^{96}Zr(^{19}F,6nγ).
5219.8	(27/2$^+$)	463[@] *1*		4756.6	(23/2$^+$)			
		476[@] *1*		4743.7	(25/2$^+$)			
5241.4	31/2$^{(-)}$	409[@] *1*	100	4832.4	29/2$^{(-)}$	(M1)	0.01191	α(K)=0.01036 *16*; α(L)=0.001259 *20*; α(M)=0.000244 *4* α(N)=4.47×10^{-5} *7*; α(O)=3.35×10^{-6} *6* Mult.: R=0.96 *4* (1997Ko51) in ^{92}Mo(^{19}F,2pγ); DCO(D)=1.19 *23* (2012Ne03) in ^{96}Zr(^{19}F,6nγ).
5275.2+x	(29/2$^-$)	767[@] *1*		4508.37+x	(25/2$^-$)			
5397.5	(29/2$^+$)	470[@] *1*		4927.8	(27/2$^+$)			
		654[@] *1*		4743.7	(25/2$^+$)			
5424.8	(29/2$^+$)	497[@] *1*	100	4927.8	(27/2$^+$)	(M1)	0.00737	α(K)=0.00642 *10*; α(L)=0.000775 *12*; α(M)=0.0001501 *23* α(N)=2.75×10^{-5} *4*; α(O)=2.07×10^{-6} *3* Eγ: 2012Ne03 in ^{96}Zr(^{19}F,6nγ) have tentatively placed a γ-ray of Eγ=497.2 *5* from a level at E=3982 and 1997Ko51 in ^{92}Mo(^{19}F,2pγ) have tentatively placed a γ-ray of Eγ=497.0 *3* from a level at E=4474. The evaluators have adopted the placement here by 1997VaZS in ^{76}Ge(^{37}Cl,4nγ). Mult.: DCO(D)=1.03 *16* (2012Ne03) in ^{96}Zr(^{19}F,6nγ).
5580.1?	31/2$^{(-)}$	555.4[#] *5*	100	5024.7	29/2$^{(-)}$	(M1)	0.00564	α(K)=0.00491 *7*; α(L)=0.000591 *9*; α(M)=0.0001143 *17* α(N)=2.10×10^{-5} *3*; α(O)=1.576×10^{-6} *23* Mult.: DCO(D)=0.9 *3* for 555.4+554.7 (2012Ne03) in ^{96}Zr(^{19}F,6nγ).
5796.6	33/2$^{(-)}$	555.2 *4*	100	5241.4	31/2$^{(-)}$	(M1)	0.00564	α(K)=0.00491 *7*; α(L)=0.000591 *9*; α(M)=0.0001144 *17* α(N)=2.10×10^{-5} *3*; α(O)=1.578×10^{-6} *23* Eγ: from ^{92}Mo(^{19}F,2pγ) (1997Ko51). Other: 555 *1* from ^{76}Ge(^{37}Cl,4nγ) (1997VaZS) and 554.7 *5* in ^{96}Zr(^{19}F,6nγ) (2012Ne03). 2012Ne03 also report a γ ray of Eγ=555.4 *5* from a level at E=5581. Mult.: DCO(D)=0.9 *3* for 555.4+554.7 (2012Ne03) in ^{96}Zr(^{19}F,6nγ).

$^{109}_{49}In_{60}$-23

Adopted Levels, Gammas (continued)

γ(^{109}In) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[&]	α[a]	Comments
5851.1	(31/2$^+$)	426[@] *1*		5424.8	(29/2$^+$)			
		454[@] *1*		5397.5	(29/2$^+$)			
		631[@] *1*		5219.8	(27/2$^+$)			
5918.0	(31/2$^+$)	493[#] *1*	100	5424.8	(29/2$^+$)	(M1)	0.00752	α(K)=0.00655 *10*; α(L)=0.000791 *12*; α(M)=0.0001531 *23* α(N)=2.81×10^{-5} *5*; α(O)=2.11×10^{-6} *4* E_γ: 2012Ne03 in ^{96}Zr(^{19}F,6nγ) have tentatively placed a γ-ray of Eγ=492.9 *5* from a level at E=4475 and 1997Ko51 in ^{92}Mo(^{19}F,2pγ) have tentatively placed a γ-ray of Eγ=492.0 *2* from a level at E=3977. The evaluators have adopted the placement here by 1997VaZS in ^{76}Ge(^{37}Cl,4nγ). Mult.: DCO(D)=1.20 *22* (2012Ne03) in ^{96}Zr(^{19}F,6nγ).
		990 *1*		4927.8	(27/2$^+$)			
6005.9	(31/2$^+$)	244[@] *1*		5761.9	(29/2$^+$)			
		581[@] *1*		5424.8	(29/2$^+$)	(M1)	0.00506	α(K)=0.00441 *7*; α(L)=0.000530 *8*; α(M)=0.0001025 *15* α(N)=1.88×10^{-5} *3*; α(O)=1.414×10^{-6} *21* E_γ: 2012Ne03 in ^{96}Zr(^{19}F,6nγ) have tentatively placed a γ-ray of Eγ=581.3 *5* from a level at E=5990 and 1997Ko51 in ^{92}Mo(^{19}F,2pγ) have tentatively placed a γ-ray of Eγ=581.8 *3* from a level at E=5905. The evaluators have adopted the placement here by 1997VaZS in ^{76}Ge(^{37}Cl,4nγ). 1997VaZS also place a γ ray of Eγ=582 *1* from the level at E=8005. Mult.: DCO(D)=1.1 *4* (2012Ne03) in ^{96}Zr(^{19}F,6nγ).
6263.3	(33/2$^+$)	866[@] *1*	100	5397.5	(29/2$^+$)			
6272.0	(33/2$^+$)	266[@] *1*		6005.9	(31/2$^+$)			
		354[@] *1*		5918.0	(31/2$^+$)			
6293.2+x	(33/2$^-$)	1018[@] *1*		5275.2+x	(29/2$^-$)			
6428.6	(35/2$^-$)	632[@] *1*		5796.6	33/2$^{(-)}$			
6433.4	(33/2$^+$)	515[@] *1*		5918.0	(31/2$^+$)			
		1009[@] *1*		5424.8	(29/2$^+$)			
6506.8	(31/2$^+$)	1109[@] *1*		5397.5	(29/2$^+$)			
6639.0	(35/2$^+$)	367[@] *1*	100	6272.0	(33/2$^+$)	D		E_γ: 2012Ne03 in ^{96}Zr(^{19}F,6nγ) have tentatively placed a γ-ray of Eγ=367.1 *5* from a level at E=5054 and 1997Ko51 in ^{92}Mo(^{19}F,2pγ) have tentatively placed a γ-ray of Eγ=367.6 *2* from a level at E=5423. The evaluators have adopted the placement here by 1997VaZS in ^{76}Ge(^{37}Cl,4nγ). Mult.: DCO(D)=1.0 *3* (2012Ne03) in ^{96}Zr(^{19}F,6nγ).
6668.1	(35/2$^+$)	817[@] *1*		5851.1	(31/2$^+$)			
6927.4	(35/2$^+$)	494[@] *1*		6433.4	(33/2$^+$)			
7120.0	(37/2$^+$)	481[@] *1*		6639.0	(35/2$^+$)			E_γ: 1997Ko51 (^{92}Mo(^{19}F,2pγ)) tentatively placed Eγ=481.8 keV 3 from a level at E=5905 keV.
7151.1	(35/2$^+$)	644[@] *1*		6506.8	(31/2$^+$)			

$^{109}_{49}In_{60}$-24

Adopted Levels, Gammas (continued)

γ(^{109}In) (continued)

E_i(level)	J_i^π	E_γ[†]	E_f	J_f^π	E_i(level)	J_i^π	E_γ[†]	E_f	J_f^π
7151.1	(35/2$^+$)	888[@] *1*	6263.3	(33/2$^+$)	8981.1	(43/2$^+$)	1000[@] *1*	7981.1	(39/2$^+$)
7288.2	(37/2$^+$)	1025[@] *1*	6263.3	(33/2$^+$)	9292.2+x	(45/2$^-$)	982[@] *1*	8310.2+x	(41/2$^-$)
7384.2+x	(37/2$^-$)	1091[@] *1*	6293.2+x	(33/2$^-$)	9317	(43/2$^+$)	685[@] *1*	8632.4	(41/2$^+$)
7423.4	(37/2$^+$)	496[@] *1*	6927.4	(35/2$^+$)	9783	(45/2$^+$)	1320[@] *1*	8463	(41/2$^+$)
7642.1	(39/2$^+$)	974[@] *1*	6668.1	(35/2$^+$)	10105.1	(47/2$^+$)	1319[@] *1*	8786.1	(43/2$^+$)
7712.0	(39/2$^+$)	592[@] *1*	7120.0	(37/2$^+$)	10218.1	(47/2$^+$)	1237[@] *1*	8981.1	(43/2$^+$)
7981.1	(39/2$^+$)	693[@] *1*	7288.2	(37/2$^+$)	10428.2+x	(49/2$^-$)	1136[@] *1*	9292.2+x	(45/2$^-$)
		830[@] *1*	7151.1	(35/2$^+$)	11189?	(49/2$^+$)	1406[@d] *1*	9783	(45/2$^+$)
8005.4	(39/2$^+$)	582[@] *1*	7423.4	(37/2$^+$)	11634.1	(51/2$^+$)	1529[@] *1*	10105.1	(47/2$^+$)
8310.2+x	(41/2$^-$)	926[@] *1*	7384.2+x	(37/2$^-$)	11642.1	(51/2$^+$)	1424[@d] *1*	10218.1	(47/2$^+$)
8329.0	(41/2$^+$)	617[@] *1*	7712.0	(39/2$^+$)	11730+x	(53/2$^-$)	1302[@] *1*	10428.2+x	(49/2$^-$)
8463	(41/2$^+$)	1175[@] *5*	7288.2	(37/2$^+$)	13244+x	(57/2$^-$)	1514[@] *1*	11730+x	(53/2$^-$)
8632.4	(41/2$^+$)	627[@] *1*	8005.4	(39/2$^+$)	13338.0	(55/2$^+$)	1704[@d] *1*	11634.1	(51/2$^+$)
8786.1	(43/2$^+$)	1144[@] *1*	7642.1	(39/2$^+$)	14821.1+x	(61/2$^-$)	1577[@d] *1*	13244+x	(57/2$^-$)
8977	(43/2$^+$)	648[@] *1*	8329.0	(41/2$^+$)					

[†] From ^{109}Sn ε decay up to E(level)=3427 keV and from ^{76}Ge(^{37}Cl,4nγ) after that, unless otherwise noted.
[‡] From 1979Va13 in ^{107}Ag(α,2nγ).
[#] From 2012Ne03 in ^{96}Zr(^{19}F,6nγ).
[@] From ^{76}Ge(^{37}Cl,4nγ) only.
[&] Based on α(K)exp, γ(θ) and pol from ^{107}Ag(α,2nγ), ^{109}Sn ε decay, ^{108}Cd(d,nγ); and angular correlation intensity ratios (R) in ^{92}Mo(^{19}F,2pγ), and DCO ratios in ^{96}Zr(^{19}F,6nγ) for transitions from high-spin states. Intensity ratios R≈0.8 for stretched dipole with ΔJ=1 and R≈1.5 for stretched quadrupole with ΔJ=2; DCO(Q) for gate on ΔJ=2, quadrupole transition; DCO(D) for gate on ΔJ=1, dipole transition.
[a] Additional information 2.
[b] If No value given it was assumed δ=0.00 for E2/M1, δ=1.00 for E3/M2 and δ=0.10 for the other multipolarities.
[c] Multiply placed with undivided intensity.
[d] Placement of transition in the level scheme is uncertain.

$^{109}_{49}In_{60}$-25

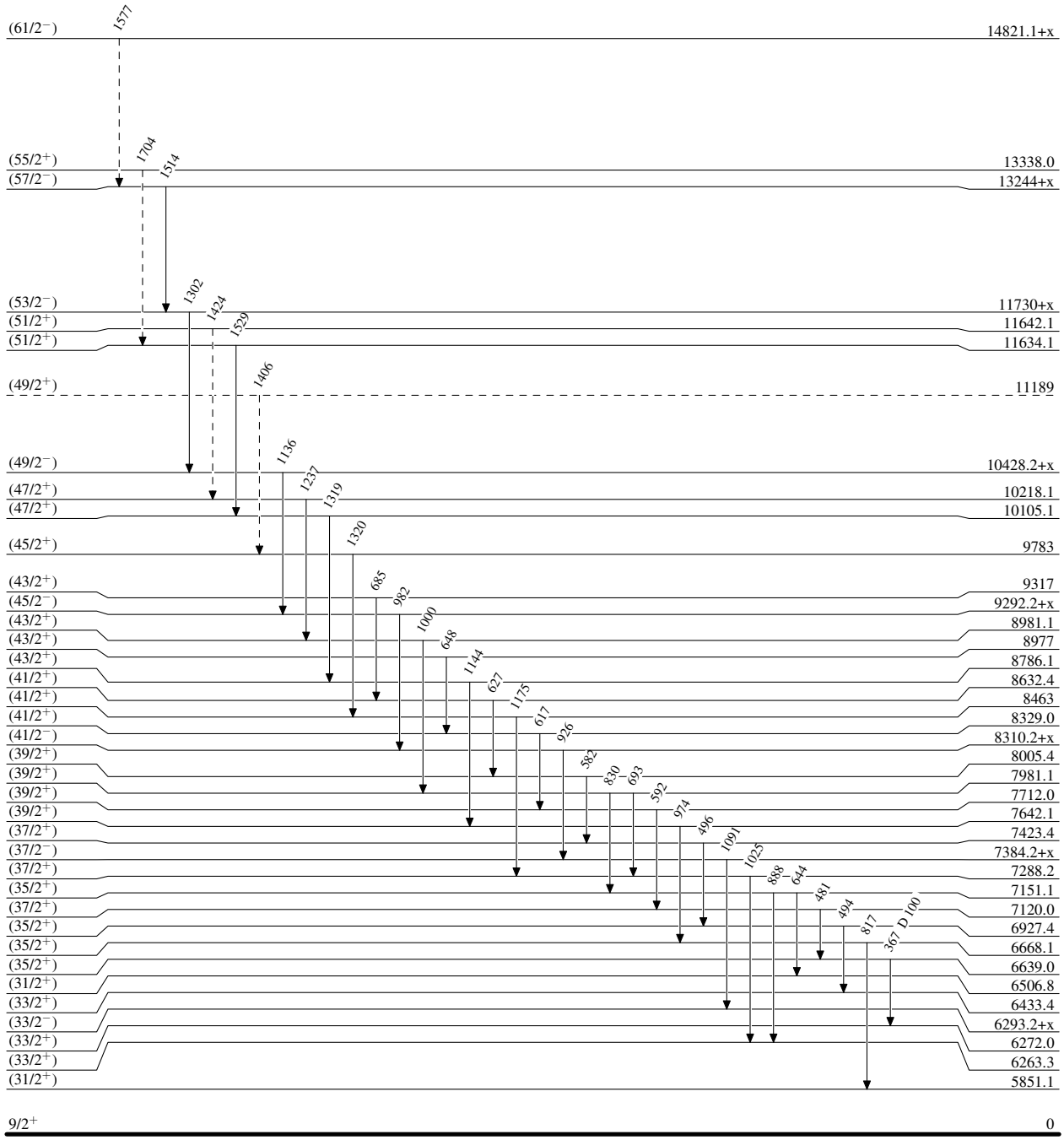
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



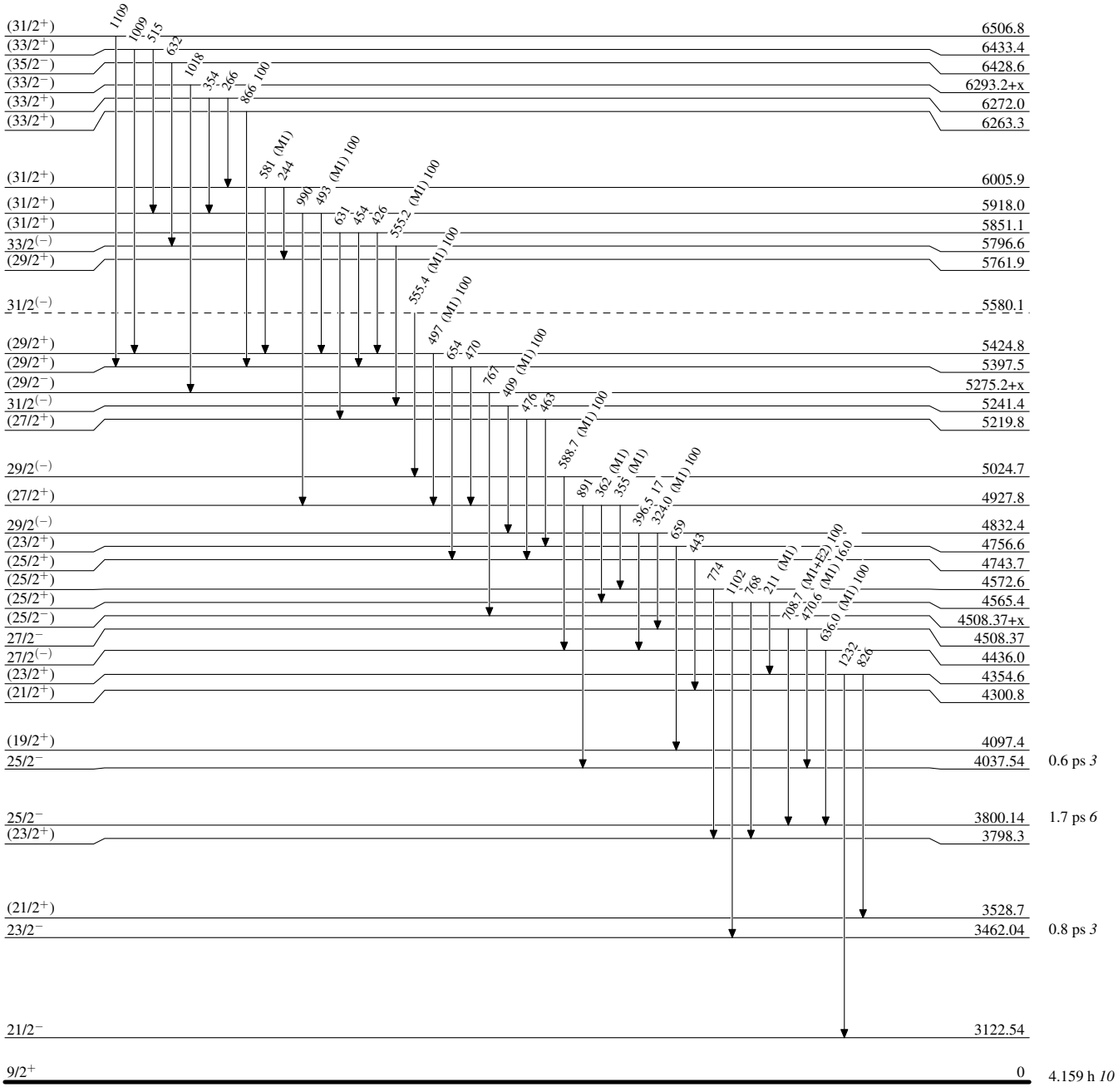
4.159 h *10*

$^{109}_{49}In_{60}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



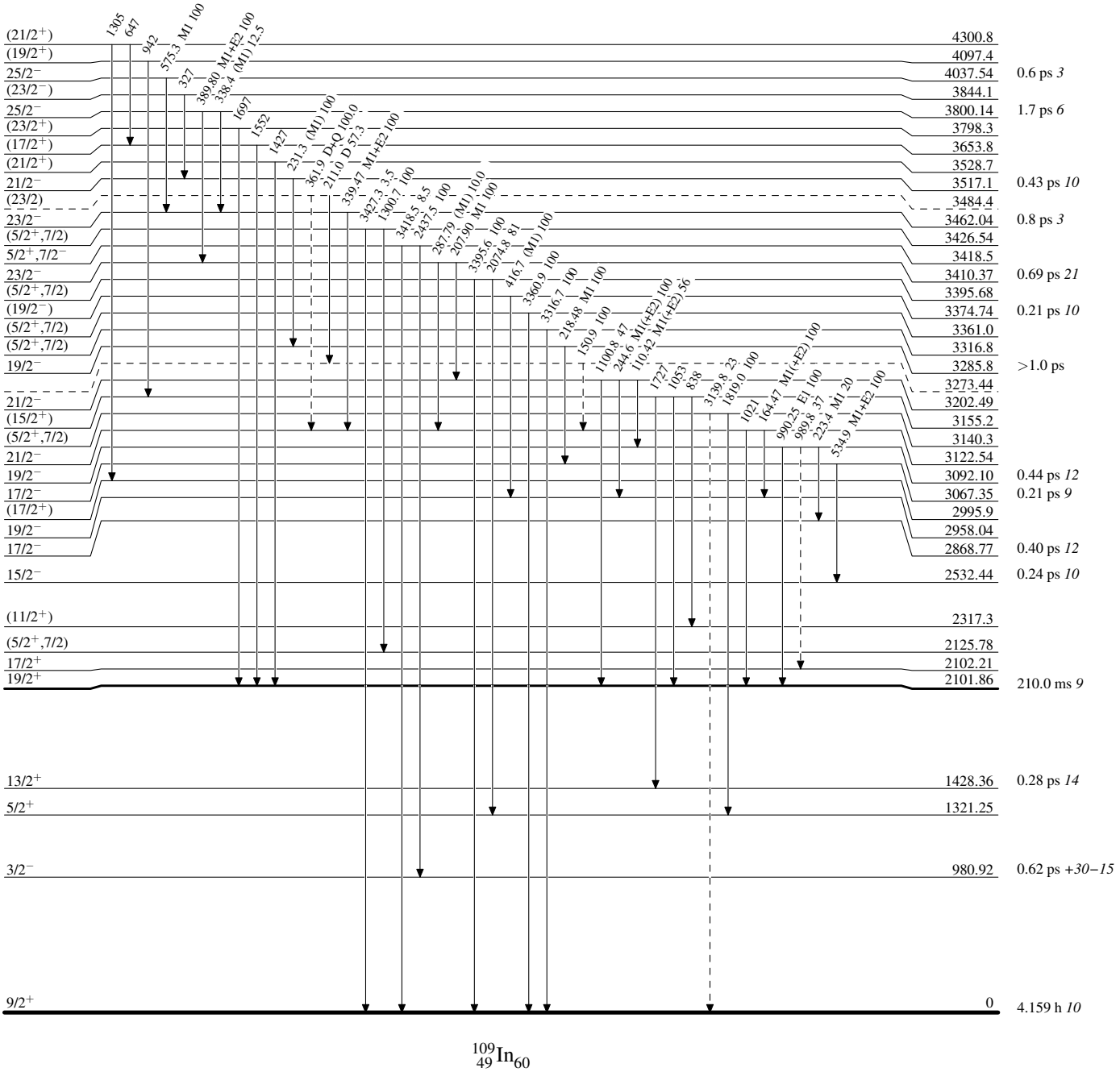
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



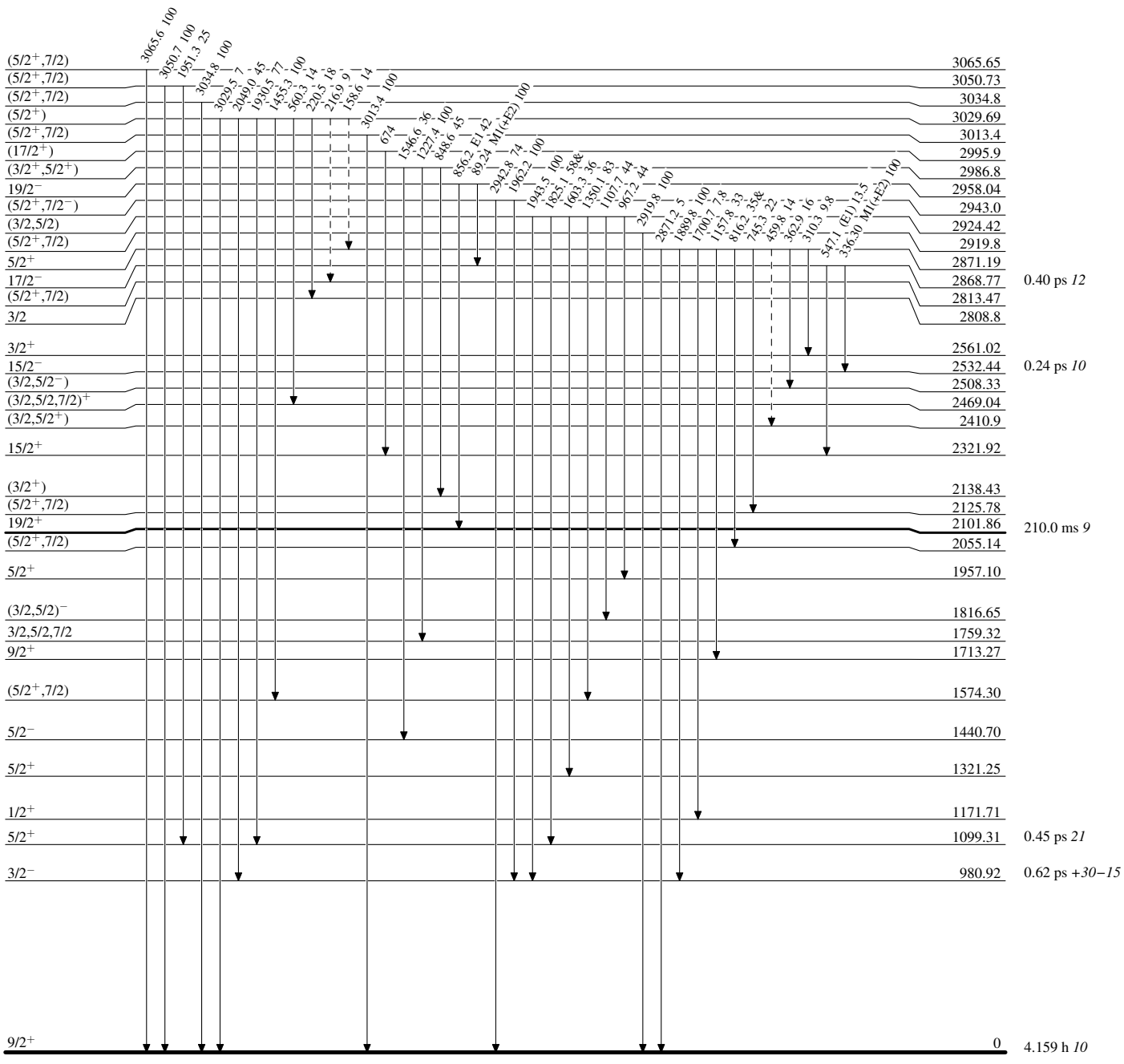
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

γ Decay (Uncertain)



$^{109}_{49}In_{60}$

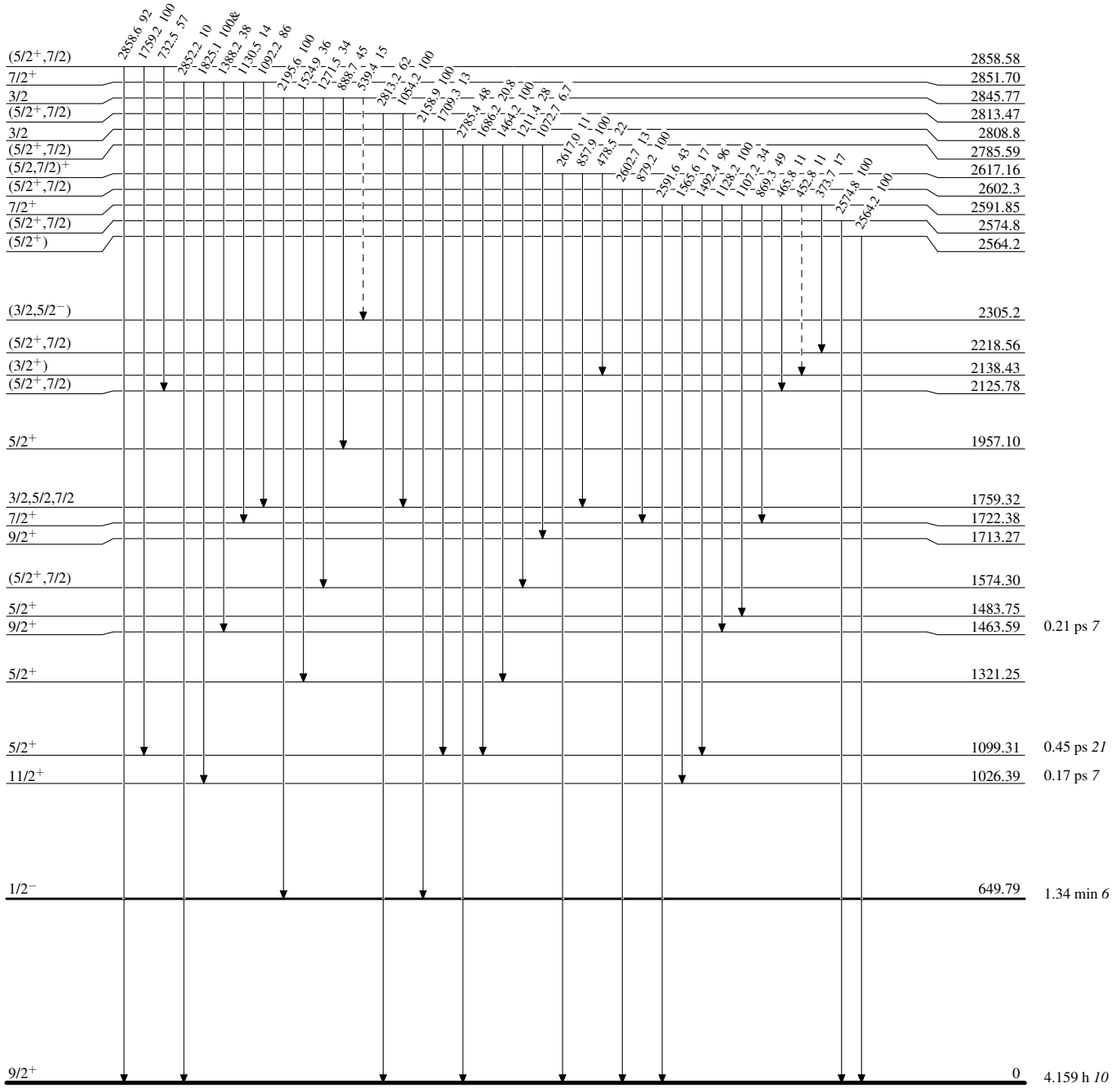
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

– – – – – – ► γ Decay (Uncertain)



$^{109}_{49}In_{60}$

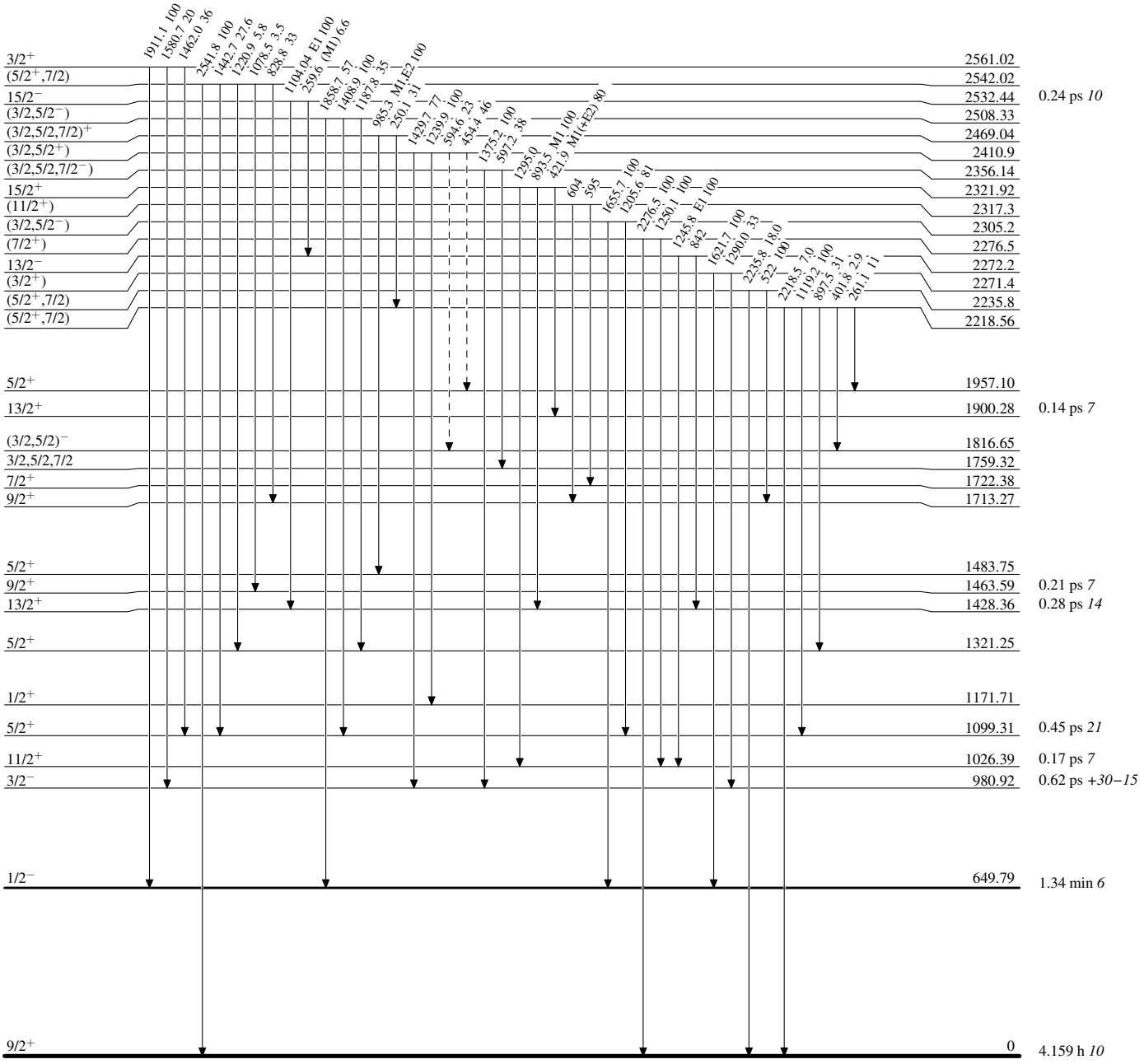
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

– – – – – – ► γ Decay (Uncertain)

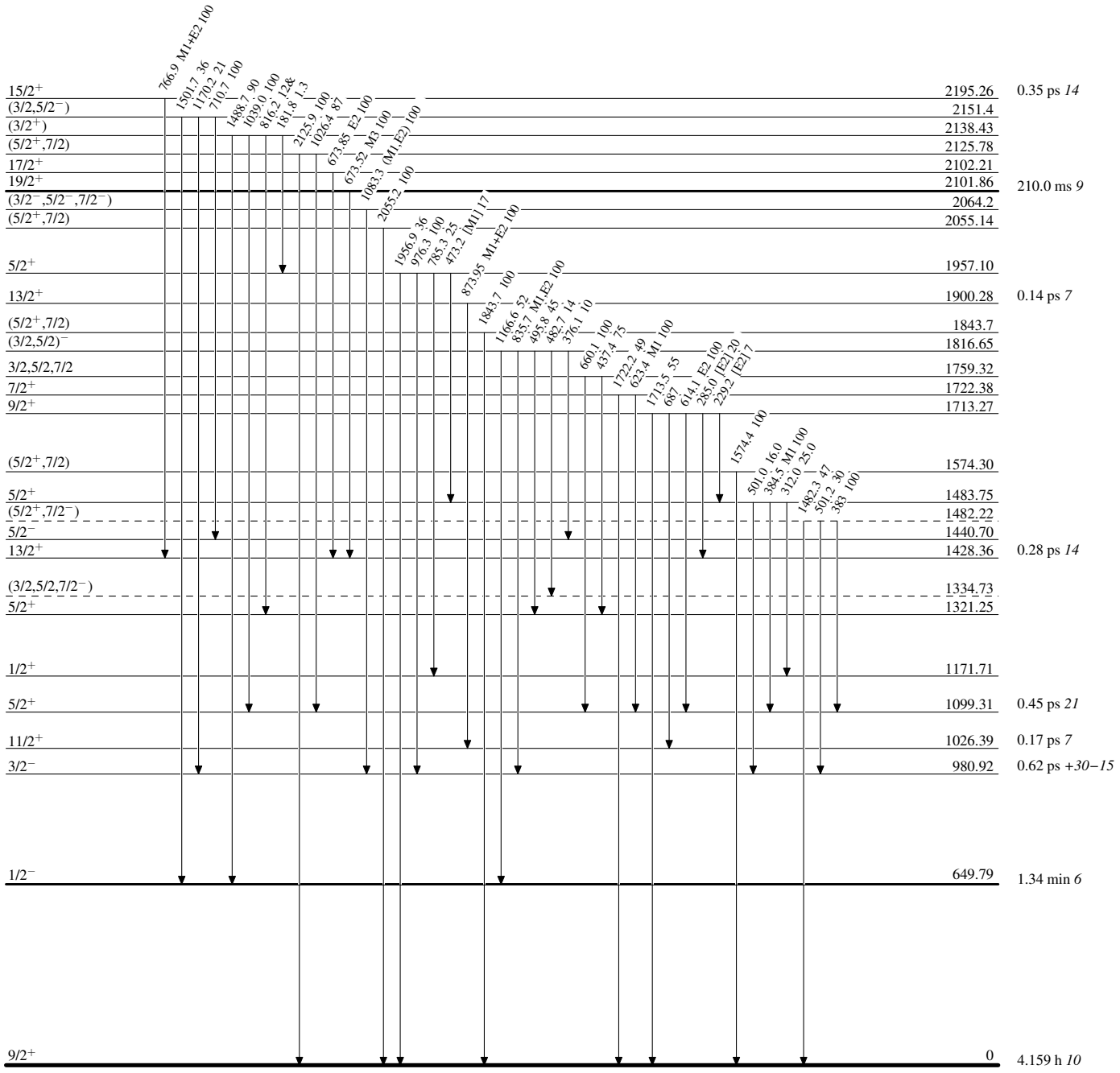


$^{109}_{49}In_{60}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

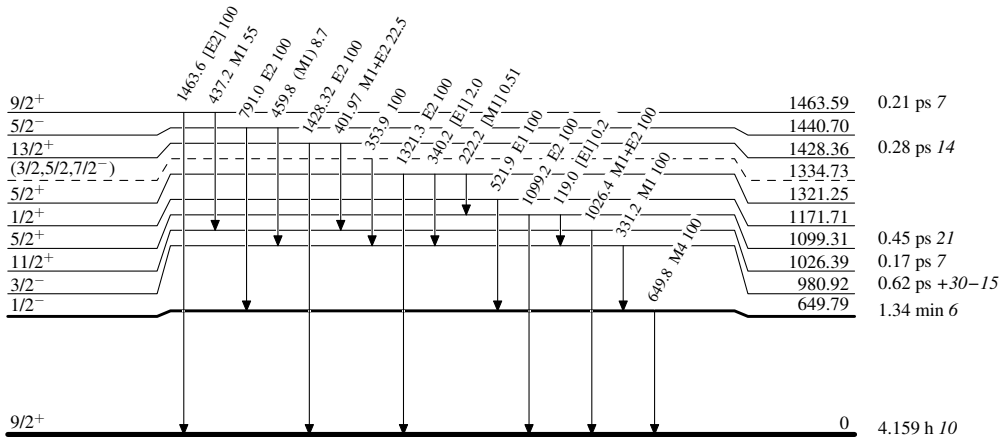


$^{109}_{49}In_{60}$

Adopted Levels, Gammas

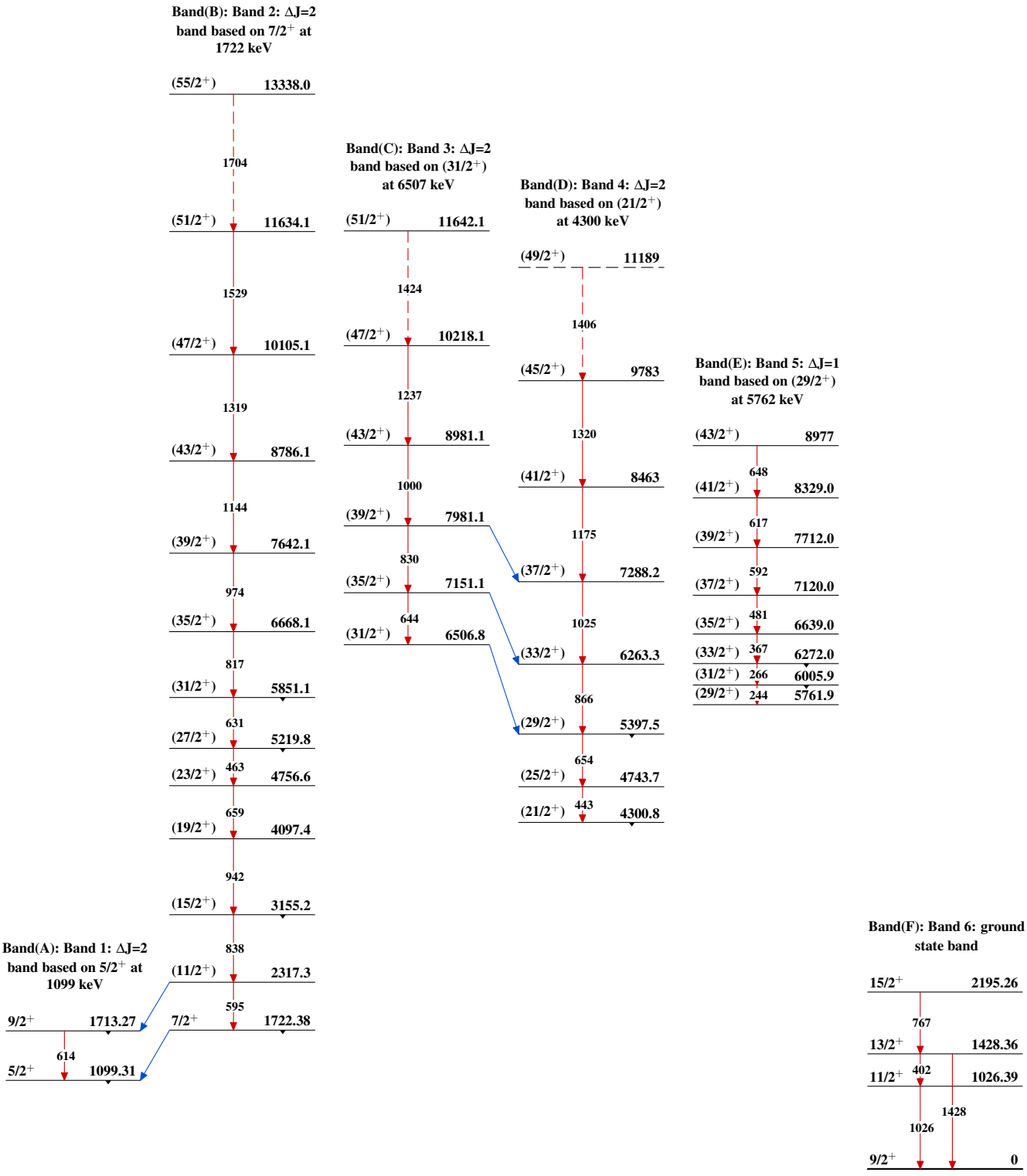
Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



$^{109}_{49}In_{60}$

Adopted Levels, Gammas



Adopted Levels, Gammas (continued)