Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. D. Nesaraja	NDS 115, 1 (2014)	31-Jul-2013

Q(β^-)=−3990 *30*; S(n)=8193.2 *23*; S(p)=7303.9 *20*; Q(α)=−3613.8 *15* 2012Wa38
2012Gr19: Summary and compilation of the discovery of the Ge isotopes.

^{69}Ge Levels

Cross Reference (XREF) Flags

A	^{69}Ge IT decay (5.1 μs)	E	^{69}Ga(p,nγ)	I	^{70}Ge(^{3}He,α), ^{69}Ga(^{3}He,t)
B	^{69}Ge IT decay (2.81 μs)	F	^{70}Ge(p,d)	J	(HI,xnγ)
C	^{69}As ε decay	G	^{70}Ge(p,dγ)		
D	^{66}Zn(α,nγ)	H	^{70}Ge(d,t), (pol d,t)		

E(level)[†]	J$^\pi$	T$_{1/2}$	XREF	Comments
0	5/2$^-$	39.05 h *10*	ABCDEFGHIJ	%ε+%β^+=100 μ=0.735 *7* (1970Ol02); Q=0.024 *5* (1970Ol02) μ,Q: from atomic beam measurements . Compiled by 2011StZZ. J$^\pi$: from atomic beam measurements (1976Fu06); π from L(p,d)=3. T$_{1/2}$: from β^+ counting in ^{69}Ge ε decay (1969Zo01). Others: 39.6 h *5* (1948Mc32), 40.4 h *3* (1957Nu20), 38.5 h *5* (1963Sc27) and 35.5 h *8* (1965Te02), 38.4 h *8* (1975Bu07).
86.76 *2*	1/2$^-$[‡]	5.1 μs *2*	A CDEFGHIJ	%IT=100 T$_{1/2}$: weighted average of 5.1 μs *2* from ^{69}Ge IT decay and 5.1 μs *2* from ^{69}As ε decay both from delayed coincidences.
232.70 *2*	3/2$^-$	176 ps *12*	CDEFGHIJ	J$^\pi$: L(p,d)=1 and M1 to 5/2$^-$ level. T$_{1/2}$: from delayed coincidences in ^{69}As ε decay.
373.95 *2*	3/2$^-$[‡]		CDEFGHIJ	
397.94 *2*	9/2$^+$	2.81 μs *5*	BCDEFGH J	%IT=100 μ=−1.001 *3* μ: from g-factor measured by stroboscopic resonance in ^{69}Ga(p,nγ) (1970Ch05). Compiled by 2011StZZ. J$^\pi$: from L(p,d)=4 and M2 γ to 5/2$^-$ level. T$_{1/2}$: weighted average of 2.84 μs *7* from ^{69}Ga(p,nγ) and 2.79 μs *6* from ^{66}Zn(α,nγ). Other: 3.2 μs *6* from ^{69}Ge IT decay.
812.18 *2*	5/2$^+$[‡]		CDEFGH J	
862.02 *3*	7/2$^-$	1.9 ps *+6−4*	CDE G J	J$^\pi$: 7/2 from $\gamma(\theta)$ in ^{69}Ga(p,nγ); π from E2 to 3/2$^-$ level. T$_{1/2}$: From ^{66}Zn(α,nγ). Other: 2.8 ps *14* in ^{69}Ga(p,nγ).
933.142 *23*	5/2$^-$	1.5 ps *7*	CDE G J	J$^\pi$: 5/2 from $\gamma(\theta)$ in ^{69}Ga(p,nγ); π from E2 to 1/2$^-$ level. T$_{1/2}$: from DSA in ^{69}Ga(p,nγ). Other:>1.7 ps from DSA in ^{66}Zn(α,nγ).
994.92 *4*	1/2$^-$[‡]	0.62 ps *+21−10*	CDEFGHI	T$_{1/2}$: from DSA in ^{66}Zn(α,nγ). Other: 1.2 ps *7* from DSA in ^{69}Ga(p,nγ).
1159.90 *4*	3/2$^-$	1.2 ps *6*	CDEFGH	J$^\pi$: from L(p,d)=1; dipole γ to 5/2$^-$. T$_{1/2}$: from DSA in ^{69}Ga(p,nγ).
1195.72 *3*	5/2$^-$	0.68 ps *20*	CDE G J	J$^\pi$: from $\gamma(\theta)$ in ^{66}Zn(α,nγ); π: M1+E2 γ to 3/2$^-$ level. T$_{1/2}$: Weighted average of 0.97 ps *21* from DSA in (HI,xnγ) and 0.55 ps *14* from DSA in ^{69}Ga(p,nγ).
1210.11 *6*	7/2$^+$		DE	J$^\pi$: from $\gamma(\theta)$ of 812γ in ^{69}Ga(p,nγ); π=+ from E1 to 5/2$^-$.
1278.39 *5*	1/2$^-$,3/2$^-$[#]	1.8 ps *12*	DEF	T$_{1/2}$: from DSA in ^{69}Ga(p,nγ).
1306.90 *4*	3/2$^-$[‡]	0.50 ps *17*	CDEFGH	T$_{1/2}$: from DSA in ^{69}Ga(p,nγ).

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{69}Ge Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$	XREF	Comments
1350.60 *4*	11/2$^+$	0.56 ps *6*	DE G J	Jπ: 11/2 from γ(θ) in (HI,xnγ); π from M1 to 9/2$^+$ level. $T_{1/2}$: weighted average of DSA measurements, 0.50 ps *11* in ^{69}Ga(p,nγ), 0.59 ps *7* in (HI,xnγ), and 0.49 ps *+17−11* in ^{66}Zn(α,nγ).
1407.18 *3*	13/2$^+$	1.6 ps *1*	D FG J	XREF: F(?). Jπ: 13/2 from γ(θ) in (HI,xnγ); π from E2 to 9/2$^+$ level. $T_{1/2}$: Weighted average of DSA measurements, 1.59 ps *7* in (HI,xnγ) and 1.18 ps *+35−21* in ^{66}Zn(α,nγ).
1414.79 *5*	5/2$^-$	1.0 ps *4*	CDEFGH	Jπ: 5/2 from γ(θ) in ^{69}Ga(p,nγ); π from L(p,d)=3. $T_{1/2}$: from DSA in ^{69}Ga(p,nγ).
1430.18 *6*	9/2$^-$	0.58 ps *7*	CDE J	Jπ: 9/2 from γ(θ) in (HI,xnγ); π from E2 to 5/2$^-$ level. $T_{1/2}$: Weighted average of DSA measurements, 0.61 ps *19* in (HI,xnγ), 0.54 ps *14* in ^{69}Ga(p,nγ), 0.83 ps *+21−14* and 0.51 ps *10* in ^{66}Zn(α,nγ).
1432.63 *7*	3/2$^+$	1.4 ps *+10−5*	DE	Jπ: 1/2,3/2 from γ(θ) in ^{69}Ga(p,nγ); M1 to 5/2$^+$ rules out 1/2 and gives π=+. $T_{1/2}$: from DSA in ^{66}Zn(α,nγ).
1438 *2*	(1/2$^+$)		F HI	Jπ: from L(d,t)=(0).
1465.96 *5*	9/2$^+$[‡]	2.1 ps *14*	DEFGH J	$T_{1/2}$: from DSA in ^{69}Ga(p,nγ).
1478.72 *6*	7/2$^-$[@]	0.30 ps *8*	CDEFGH	$T_{1/2}$: from DSA in ^{69}Ga(p,nγ). $T_{1/2}$=0.35 ps *+97−17* from DSA in ^{66}Zn(α,nγ).
1539.25 *9*	3/2$^-$	0.35 ps *14*	CDEF H	Jπ: 3/2,1/2 from γ(θ) of 1452γ in ^{69}Ga(p,nγ); excitation function excludes 1/2; π from L(p,d)=1. $T_{1/2}$: from DSA in ^{69}Ga(p,nγ).
1590.82 *9*	7/2$^+$	0.63 ps *+23−14*	DE G J	Jπ: 7/2 from γ(θ) in (HI,xnγ); π=+ from M1 to 5/2$^+$. $T_{1/2}$: Weighted average of DSA measurements, 0.76 ps *+28−21* in ^{66}Zn(α,nγ), 0.55 ps *+28−14* in (HI,xnγ); other: 2.1 ps *14* in ^{69}Ga(p,nγ).
1601.33 *6*	5/2$^+$	0.52 ps *17*	DE J	Jπ: 5/2 from γ(θ) in ^{69}Ga(p,nγ); π=+ from M1 to 5/2$^+$. $T_{1/2}$: from DSA in ^{69}Ga(p,nγ).
1610.84 *19*	5/2$^-$[@]		CDEFGH	
1613.29 *8*	7/2$^-$	>0.69 ps	CDE G	Jπ: from γ(θ) in ^{69}Ga(p,nγ); π=− from E2 to 3/2$^-$. $T_{1/2}$: from DSA in ^{66}Zn(α,nγ).
1666.23 *12*	1/2$^{(-)}$[@]		DE	
1725.8 *3*	1/2$^-$,3/2$^-$		DEF H	Jπ: from L=1 in ^{70}Ge(p,d); ^{70}Ge(pol d,t) prefers (3/2)$^-$.
1763.45 *22*	1/2$^+$[#]		DEF H	
1767.11 *12*	3/2$^-$		CDE	Jπ: 3/2$^-$,5/2$^-$,7/2$^-$ from allowed log *ft*=5.83 *5* in ^{69}As ε decay, γ transition to 1/2$^-$ level rule out 7/2$^-$.
1882.42 *11*	5/2$^{(-)}$[@]		D	
1891.00 *16*	3/2$^-$		CDEF	Jπ: 3/2$^-$,1/2 from L(p,d)=1; log *ft*=6.21 *5* from 5/2$^-$ rules out 1/2$^-$.
1919.65 *8*	7/2$^-$[@]		D F	
1920.28 *7*	9/2$^-$	>1.04 ps	D J	Jπ: from γ(θ) and γ yields in ^{66}Zn(α,nγ). $T_{1/2}$: from DSA in ^{66}Zn(α,nγ).
1989 *5*	3/2$^+$,5/2$^+$[#]		F	
2000.7 *3*	5/2$^-$[@]		CD	
2009.87 *20*	3/2$^-$[@]		D f	
2012.53 *8*	5/2$^-$[@]		D f	
2018.11 *5*	13/2$^+$	1.46 ps *24*	D G J	Jπ: 13/2 from γ(θ) in (HI,xnγ); π from M1 to 11/2$^+$. $T_{1/2}$: from (HI,xnγ); other: $T_{1/2}$>1.4 ps from DSA in ^{66}Zn(α,nγ).
2025.21 *9*	5/2$^+$[@]		D	
2057.56 *9*	5/2$^{(-)}$[@]		D	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{69}Ge Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$	XREF	Comments
2067.50 *10*	5/2−[@]		D	
2091 *4*	1/2+[#]		F H	
2106 *4*	1/2−,3/2−[#]		F H	
2119.21 *8*	11/2+[@]		D G	
2143.4 *3*	7/2+,9/2+[#]		D F H	
2148.58 *6*	9/2−[@]		D	
2151.23 *10*			D	
2178.23 *15*	7/2+[@]		D	
2194 *4*	1/2−,3/2−[#]		F	
2223.17 *6*	9/2−[@]		D	
2236.4 *3*	3/2−[@]		CD	
2246.70 *16*	5/2−[@]		CD	
2248.16 *7*	11/2−[@]	0.49 ps *+28−21*	D J	Jπ: from γ(θ) in ^{66}Zn(α,nγ); γ to 7/2− and RUL. $T_{1/2}$: from DSA in ^{66}Zn(α,nγ).
2258.10 *8*	9/2−[@]		D	
2353.74 *17*	5/2−[@]		D F	
2359 *4*	1/2−,3/2−[#]		F	
2370.14 *11*	5/2−[@]		D F	
2386.54 *18*	9/2−[@]		D	
2395 *4*	(7/2+,9/2+)[#]		F	
2462.13 *15*	11/2−[@]		D	
2483.22 *6*	15/2+	0.62 ps *21*	D G J	Jπ: 15/2 from γ(θ) in (HI,xnγ); π from E2 to 11/2+ level. $T_{1/2}$: From (HI,xnγ). Others: 1.0 ps *+6−4* and 0.62 ps *+49−21* from DSA in (α,nγ).
2500.45 *16*	5/2−[@]		D F	
2552.29 *12*	11/2−[@]		D	
2553.83 *13*	7/2+[@]		D	
2569.71 *9*	7/2−[@]		D	
2584.60 *19*			D	
2589.67 *21*	13/2+[@]		D	
2594.55 *24*	3/2−,5/2−		C	Jπ: 3/2−,5/2−,7/2− from allowed log *ft*=5.77 *5* in ^{69}As ε decay from 5/2−; γ to 1/2− rules out 7/2−.
2604.06 *19*			D	
2615.35 *14*			D	
2617 *5*	1/2−,3/2−[#]		F	
2621.19 *14*	(9/2+)[@]		D	
2637.52 *10*	9/2+[@]		D F	XREF: F(?).
2638.78 *11*	9/2+[@]		D	
2654.72 *22*			D	
2730.07 *9*	13/2−[@]		D J	
2735.37 *21*	3/2−		C F	Jπ: from L(p,d)=1 for level at 2741 *7* and allowed log *ft*=5.73 *6* in ^{69}As ε decay.
2755.10 *6*	17/2+[@]	0.6 ps *1*	D G J	Jπ: 17/2 from γ(θ) in (HI,xnγ); π from E2 to 13/2+ level. $T_{1/2}$: Weighted average of 0.6 ps *1* in (HI,xnγ) and 0.49 ps *+28−21* from DSA in ^{66}Zn(α,nγ).
2772.89 *24*	5/2−		C F	Jπ: 5/2−,7/2− from L(p,d)=3; γ to 1/2− rules out 7/2−.
2812 *7*	1/2−,3/2−[#]		F	
2814.80 *9*	13/2−[@]		D	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{69}Ge Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$	XREF	Comments
2834.11 *8*	13/2−[@]		D J	
2856.25 *18*	5/2−,7/2−[#]		D F	E(level): unresolved doublet in ^{70}Ge(p,d).
2869.4 *3*			D	
2887.3 *3*			D	
2902.31 *9*	15/2+[@]		D	
2909.95 *23*			D	
2946.7 *4*			C	
2959 *5*	1/2−,3/2−[#]		F	
2980.61 *24*	7/2−		C F	E(level): possible separate level in (p,d) since Jπ=(3/2+,5/2+) from L(p,d)=(2) for level at 2985 *5*. Jπ: 3/2−,5/2−,7/2− from allowed log *ft*=5.45 *5* from 5/2− in ^{69}As ε decay γ transition to 9/2+ level rules out 3/2−, 5/2−.
3073 *5*	3/2+,5/2+[#]		F	
3075.83 *3*	15/2−[@]	0.33 ps *7*	D J	$T_{1/2}$: Weighted average of 0.46 ps *24* from (HI,xnγ) and 0.32 ps *7* from (α,nγ).
3075.84 *19*	11/2−[@]		D	
3092.4 *3*	11/2−[@]		D	
3095.2 *3*			D	
3144.31 *11*	9/2−[@]		D	
3157.27 *6*	17/2+[@]	1.0[&] ps *3*	D J	
3173 *5*	5/2−,7/2−[#]		F	
3207.83 *9*	15/2+[@]		D	
3232 *5*	1/2−,3/2−[#]		F	
3256.1 *3*			D	
3291.71 *21*			D	
3343.28 *15*	7/2−[@]		D	
3361.25 *25*			D	
3374 *5*			F	
3395.89 *11*	15/2−[@]		D J	
3410 *5*	5/2−,7/2−[#]		F	
3433.1 *3*	3/2−,5/2−,7/2−		C	Jπ: from log *ft*=5.19 *12* in ^{69}As ε decay from 5/2−.
3460 *5*	(7/2+,9/2+)[#]		F	
3482 *5*			F	
3508.24 *9*	15/2+[@]		D	
3519.54 *21*			D	
3541.1 *3*	7/2−[@]		D	
3560.00 *16*			D	
3562.0 *3*	11/2+[@]		D	
3605.09 *11*	17/2−[@]	2.1[&] ps *7*	D J	
3615 *7*	1/2−,3/2−[#]		F I	
3622 *7*			F	
3636.83 *21*			D	
3645.11 *10*	11/2−[@]		D	
3666.80 *8*	17/2−[@]		D J	
3680 *7*	1/2−,3/2−[#]		F	
3721.63 *21*			D	
3729 *7*			F	E(level): unresolved doublet in (p,d).
3749.14 *5*	19/2−[@]	6.5 ps *6*	D J	
3759.7 *3*			D	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{69}Ge Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$	XREF	Comments
3798 *7*	5/2⁻,7/2⁻[#]		F I	E(level): unresolved doublet in (p,d).
3813.71 *13*	13/2⁻[@]		D	
3828			F	
3925.9 *3*	15/2⁺[@]		D	
3940.04 *21*	13/2⁺[@]		D	
3956.17 *16*	13/2⁺[@]		D	
3963.87 *9*			D J	
3990.5 *4*			D	
4067.89 *7*	19/2⁻[@]		D J	
4107.7 *3*			D	
4267.11 *8*	21/2⁻[@]	3.1 ps *3*	D J	$T_{1/2}$: from (HI,xnγ).
4305.73 *15*	21/2(+)[@]	0.6[&] ps *3*	J	
4493.5 *3*			J	
4566.38 *13*			J	
4594.28 *8*	23/2⁻[@]	13.6 ps *4*	J	$T_{1/2}$: from recoil-distance data in (HI,xnγ).
4714.77 *11*			J	
4837.09 *23*			J	
5006.2 *4*	(25/2⁻)		J	Jπ: from γ(θ) and yields in (HI,xnγ).
5089.9 *3*			J	
5467?			J	
5593.04 *14*	23/2⁻[@]		J	
5737.82 *11*			J	
5802?			J	
5834.78 *12*	27/2⁻[@]	3.5[&] ps *6*	J	
5841.7 *5*			J	
5897.96 *24*	(25/2⁺)[@]	<0.3[&] ps	J	
6041.85 *13*			J	
6086.85 *14*			J	
6291.74 *13*	(25/2⁺)[@]		J	
6504.2 *8*			J	
6548.47 *14*	(25/2⁺)[@]		J	
6591.1 *6*			J	
6839.56 *11*	25/2(−)[@]	1.5[&] ps *4*	J	
7000 *50*	1/2⁻,3/2⁻		I	Jπ: from L(^{3}He,α)=1; 3/2⁻ favored if analog of ^{69}Ga g.s.. Γα/Γ≤0.01 at 95% confidence level from (^{3}He,t) reaction.
7147.58 *13*	29/2(+)[@]		J	
7405.5 *4*			J	
7412.4 *4*			J	
7578.56 *23*	29/2(−)[@]	3.5[&] ps *21*	J	
7780.21 *16*	31/2(−)[@]	0.21[&] ps *14*	J	
7903.58 *17*	33/2(+)[@]	0.8[&] ps *4*	J	
8708.87 *25*	(33/2⁻)[@]		J	
9012.32 *19*	(35/2⁻)[@]		J	
9182.29 *19*	(37/2⁺)[@]		J	

[†] From a least-squares fit to Eγ connecting levels.
[‡] From L values and vector-analyzing powers in ^{70}Ge(d,t).
[#] From L values in ^{70}Ge(p,d).

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{69}Ge Levels (continued)

[@] From $\gamma(\theta)$, side feeding excitation functions, and linear-polarization data in (α,nγ) and/or (HI,xnγ).
[&] From recoil-distance Doppler shift (RDDS) method in (HI,xnγ).

Adopted Levels, Gammas (continued)

γ(^{69}Ge)

γ energies and relative branchings are mainly taken from ^{69}As ε decay and (p,nγ), (α,nγ), and/or (HI,xnγ).

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π	Mult.	δ	α[j]	Comments
86.76	1/2$^-$	86.78 *2*	100	0	5/2$^-$	E2[#]		1.267	B(E2)(W.u.)=0.592 *24* α(K)=1.095 *16*; α(L)=0.1484 *21*; α(M)=0.0219 *3* α(N)=0.001071 *15*
232.70	3/2$^-$	145.95 *2*	45.4 *6*	86.76	1/2$^-$	M1+E2[‡]	+0.19[g] *7*	0.034 *5*	α(K)=0.030 *4*; α(L)=0.0033 *5*; α(M)=0.00049 *7* α(N)=3.1×10^{-5} *4* B(M1)(W.u.)=0.0119 *9*; B(E2)(W.u.)=31 *22* δ: +0.16 *7* from (α,nγ).
		232.70 *4*	100	0	5/2$^-$	M1+E2[‡]	0.74 *16*	0.0169 *24*	α(K)=0.0150 *22*; α(L)=0.00163 *24*; α(M)=0.00024 *4* α(N)=1.50×10^{-5} *21* B(M1)(W.u.)=0.0043 *8*; B(E2)(W.u.)=67 *20* δ: calculated from α(K)exp in ^{69}As ε decay; others: +0.58 *+30−15* from γ(θ) in ^{66}Zn(α,nγ) and +0.27 *4* from γ(θ) in ^{69}Ga(p,nγ). +1.0 *3* from (α,nγ).
373.95	3/2$^-$	141.33 *5*	4.6 *8*	232.70	3/2$^-$	[M1]		0.0314	α(K)=0.0280 *4*; α(L)=0.00297 *5*; α(M)=0.000444 *7* α(N)=2.88×10^{-5} *4* I_γ: from ^{69}As ε decay; 2.7 *5* in ^{66}Zn(α,nγ) and 2.7 in ^{69}Ga(p,nγ).
		287.18 *3*	100 *2*	86.76	1/2$^-$	M1+E2[‡]	+0.11 *1*	0.00529	α(K)=0.00472 *7*; α(L)=0.000493 *8*; α(M)=7.36×10^{-5} *11* α(N)=4.80×10^{-6} *7* δ: weighted average of +0.11 *1* from γ(θ) in ^{69}Ga(p,nγ) and +0.09 *3* in ^{66}Zn(α,nγ). Other: +0.03 *3* from (α,nγ).
		373.93 *3*	31.5 *8*	0	5/2$^-$	M1+E2[‡]	−0.17[g] *9*	0.00283 *13*	α(K)=0.00253 *11*; α(L)=0.000262 *12*; α(M)=3.92×10^{-5} *18* α(N)=2.56×10^{-6} *11*
397.94	9/2$^+$	397.94 *3*	100	0	5/2$^-$	M2[‡]		0.00874	α(K)=0.00777 *11*; α(L)=0.000839 *12*; α(M)=0.0001257 *18* α(N)=8.15×10^{-6} *12* B(M2)(W.u.)=0.0652 *12*
812.18	5/2$^+$	414.24 *3*	40.8 *8*	397.94	9/2$^+$	E2(+M3)[‡]	+0.03[g] *3*	0.00431 *9*	α(K)=0.00384 *8*; α(L)=0.000407 *9*; α(M)=6.06×10^{-5} *13* α(N)=3.82×10^{-6} *8* Additional information 1.
		438.25 *7*	51.9 *9*	373.95	3/2$^-$	E1[i]		9.81×10^{-4}	α(K)=0.000877 *13*; α(L)=8.96×10^{-5} *13*; α(M)=1.335×10^{-5} *19* α(N)=8.66×10^{-7} *13*
		579.4 *3*	3.8 *2*	232.70	3/2$^-$				
		812.16 *3*	100 *9*	0	5/2$^-$	(E1+M2)[&]	−0.13[g] *3*	2.48×10^{-4} *9*	α(K)=0.000222 *8*; α(L)=2.26×10^{-5} *9*; α(M)=3.37×10^{-6} *13* α(N)=2.21×10^{-7} *8*

$^{69}_{32}Ge_{37}$-7

Adopted Levels, Gammas (continued)

γ(^{69}Ge) (continued)

E_i(level)	J_i^π	E_γ	I_γ [†]	E_f	J_f^π	Mult.	δ	α [j]	Comments
862.02	7/2$^-$	463.9 *6*	1.55 *11*	397.94	9/2$^+$	E1 [i]		8.49×10^{-4}	α(K)=0.000759 *11*; α(L)=7.75×10^{-5} *12*; α(M)=1.154×10^{-5} *17* α(N)=7.49×10^{-7} *11* B(E1)(W.u.)=3.0×10^{-5} *+7−10*
		487.9 *2*	1.03 *17*	373.95	3/2$^-$	E2 [i]		0.00254	α(K)=0.00226 *4*; α(L)=0.000238 *4*; α(M)=3.55×10^{-5} *5* α(N)=2.25×10^{-6} *4* B(E2)(W.u.)=6.1 *+17−22*
		629.38 *7*	6.03 *11*	232.70	3/2$^-$	E2	g	1.18×10^{-3}	α(K)=0.001057 *15*; α(L)=0.0001100 *16*; α(M)=1.640×10^{-5} *23* α(N)=1.055×10^{-6} *15* B(E2)(W.u.)=10.0 *+22−32* Mult.: Q from γ(θ) in (p,nγ); E2 from RUL.
		862.00 *3*	100 *2*	0	5/2$^-$	M1+E2 [a]	+2.4 [g] *3*	4.96×10^{-4} *8*	α(K)=0.000443 *7*; α(L)=4.55×10^{-5} *7*; α(M)=6.79×10^{-6} *11* α(N)=4.43×10^{-7} *7* B(M1)(W.u.)=0.0025 *+8−10*; B(E2)(W.u.)=29 *+7−10* δ: +2.8 *3* from γ(θ) in (α,nγ).
933.142	5/2$^-$	559.14 *4*	43 *8*	373.95	3/2$^-$	M1+E2 [a]	−1.2 *1*	0.00143 *4*	α(K)=0.00128 *3*; α(L)=0.000133 *3*; α(M)=1.98×10^{-5} *5* α(N)=1.28×10^{-6} *3* B(M1)(W.u.)=0.007 *4*; B(E2)(W.u.)=5.E+1 *3* δ: from (α,nγ); −0.35 *10* or +1.4 *4* from γ(θ) in ^{69}Ga(p,nγ).
		700.67 *10*	11 *5*	232.70	3/2$^-$	M1+E2 [i]	+0.34 *3*	6.80×10^{-4} *11*	α(K)=0.000608 *10*; α(L)=6.23×10^{-5} *10*; α(M)=9.30×10^{-6} *14* α(N)=6.12×10^{-7} *10* B(M1)(W.u.)=0.0021 *14*; B(E2)(W.u.)=0.7 *5*
		846.43 *8*	51 *3*	86.76	1/2$^-$	E2(+M3)	+0.05 [g] *10*	0.00054 *4*	α(K)=0.00048 *4*; α(L)=4.9×10^{-5} *4*; α(M)=7.4×10^{-6} *6* α(N)=4.8×10^{-7} *4* B(E2)(W.u.)=(13 *6*); B(M3)(W.u.)=(3.E+5 *+13−3*) Mult.: Q+O from γ(θ) in ^{69}Ga(p,nγ); parity from RUL. Additional information 2.
		933.13 *3*	100 *3*	0	5/2$^-$	M1+E2 [a]	+0.20 *6*	3.60×10^{-4} *6*	α(K)=0.000322 *5*; α(L)=3.28×10^{-5} *5*; α(M)=4.90×10^{-6} *8* α(N)=3.23×10^{-7} *5* B(M1)(W.u.)=0.008 *4*; B(E2)(W.u.)=0.6 *5* δ: from (α,nγ); +0.21 *8* or +1.06 *20* from γ(θ) in ^{69}Ga(p,nγ).
994.92	1/2$^-$	620.98 *18*	40 *27*	373.95	3/2$^-$	(M1) [&]		8.56×10^{-4}	α(K)=0.000765 *11*; α(L)=7.84×10^{-5} *11*; α(M)=1.172×10^{-5} *17* α(N)=7.72×10^{-7} *11* B(M1)(W.u.)=0.029 *+21−23*
		762.22 *3*	67 *27*	232.70	3/2$^-$	M1(+E2) [b]	−0.7 [h] *+5−10*	0.00060 *7*	α(K)=0.00053 *6*; α(L)=5.5×10^{-5} *6*; α(M)=8.2×10^{-6} *9*

$^{69}_{32}Ge_{37}$-8

Adopted Levels, Gammas (continued)

γ(^{69}Ge) (continued)

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π	Mult.	δ	α[j]	Comments
									α(N)=5.4×10^{-7} *6* B(M1)(W.u.)=(0.017 *+12−13*); B(E2)(W.u.)=(22 *+24−22*)
994.92	1/2$^-$	994.87 *17*	100 *7*	0	5/2$^-$	E2[a]		3.58×10^{-4}	α(K)=0.000320 *5*; α(L)=3.28×10^{-5} *5*; α(M)=4.90×10^{-6} *7* α(N)=3.20×10^{-7} *5* B(E2)(W.u.)=27 *+7−11* I_γ: there is marked disagreement between the relative branchings observed in the ^{66}Zn(α,nγ) and the ^{69}Ga(p,nγ): Iγ(994)/Iγ(762)=2.4 *7* in (α,nγ) and Iγ(994)/Iγ(762)=0.22 in (p,nγ). It is possible that there is a sizeable contribution to Iγ(994) from a 994 γ deexciting the 3749 level, which may have significant population in ^{66}Zn(α,nγ).
1159.90	3/2$^-$	927.18 *6*	23 *3*	232.70	3/2$^-$	(M1+E2)[&]	−0.6[g] *+3−24*	0.00038 *4*	B(M1)(W.u.)=(0.0027 *16*); B(E2)(W.u.)=(1.7 *16*) α(K)=0.00034 *4*; α(L)=3.5×10^{-5} *4*; α(M)=5.2×10^{-6} *6* α(N)=3.4×10^{-7} *4* δ: −0.37 *8* from (α,nγ).
		1073.11 *4*	100 *3*	86.76	1/2$^-$	M1+E2[a]	+0.31[g] *6*	2.71×10^{-4}	B(M1)(W.u.)=0.009 *5*; B(E2)(W.u.)=1.2 *8* α(K)=0.000243 *4*; α(L)=2.47×10^{-5} *4*; α(M)=3.69×10^{-6} *6* α(N)=2.43×10^{-7} *4*
		1159.94 *6*	20 *3*	0	5/2$^-$	(M1)[&]		2.32×10^{-4}	B(M1)(W.u.)=0.0016 *9* α(K)=0.000205 *3*; α(L)=2.09×10^{-5} *3*; α(M)=3.12×10^{-6} *5* α(N)=2.06×10^{-7} *3*; α(IPF)=2.81×10^{-6} *4*
1195.72	5/2$^-$	821.75 *3*	100 *9*	373.95	3/2$^-$	M1+E2[c]	−0.7[h] *5*	0.00050 *4*	α(K)=0.00045 *3*; α(L)=4.6×10^{-5} *3*; α(M)=6.9×10^{-6} *5* α(N)=4.5×10^{-7} *3* B(M1)(W.u.)=0.023 *13*; B(E2)(W.u.)=3.E+1 *3*
		963.08 *11*	16 *3*	232.70	3/2$^-$	M1+E2[a]		0.00036 *3*	α(K)=0.000323 *24*; α(L)=3.3×10^{-5} *3*; α(M)=4.9×10^{-6} *4* α(N)=3.23×10^{-7} *23* δ: −0.27 *15* or −1.6 *+5−10* from γ(θ) in ^{69}Ga(p,nγ).
		1195.78 *10*	56 *3*	0	5/2$^-$	D+Q[g]			δ: −0.1 *4* or −2.0 *+10−37* from γ(θ) in ^{69}Ga(p,nγ).
1210.11	7/2$^+$	398.0 *1*	5.4 *27*	812.18	5/2$^+$				
		812.16 *10*	100 *7*	397.94	9/2$^+$	D+Q[g]			δ: −0.33 *10* or −2.2 *5* for J^π(1210)=7/2 from γ(θ) in ^{69}Ga(p,nγ).
		1210.1 *2*	5.3 *3*	0	5/2$^-$	E1[i]		1.62×10^{-4}	α(K)=9.61×10^{-5} *14*; α(L)=9.72×10^{-6} *14*; α(M)=1.450×10^{-6} *21* α(N)=9.53×10^{-8} *14*; α(IPF)=5.45×10^{-5} *8*

$^{69}_{32}Ge_{37}$-9

Adopted Levels, Gammas (continued)

γ(^{69}Ge) (continued)

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π	Mult.	δ	α[j]	Comments
1278.39	1/2⁻,3/2⁻	904.45 *5*	100 *6*	373.95	3/2⁻				
		1045.5 *20*	97 *6*	232.70	3/2⁻				
		1191.54 *10*	58 *6*	86.76	1/2⁻				
		1278.23 *25*	48 *6*	0	5/2⁻				
1306.90	3/2⁻	933.0 *1*	44 *22*	373.95	3/2⁻				
		1074.4 *2*	13 *7*	232.70	3/2⁻				
		1220.12 *5*	100 *4*	86.76	1/2⁻	M1+E2[a]	+0.3[g] *1*	2.18×10^{-4} *4*	B(M1)(W.u.)=0.009 *4*; B(E2)(W.u.)=0.8 *6* α(K)=0.000187 *3*; α(L)=1.90×10^{-5} *3*; α(M)=2.84×10^{-6} *5* α(N)=1.87×10^{-7} *3*; α(IPF)=8.86×10^{-6} *22* δ: +1.2 *2* from (α,nγ).
		1306.85 *5*	92 *4*	0	5/2⁻	(M1(+E2))[&]	+0.0[g] *1*	2.04×10^{-4}	B(M1)(W.u.)=(0.007 *3*) α(K)=0.0001623 *23*; α(L)=1.646×10^{-5} *23*; α(M)=2.46×10^{-6} *4* α(N)=1.625×10^{-7} *23*; α(IPF)=2.22×10^{-5} *4*
1350.60	11/2⁺	952.66 *3*	100	397.94	9/2⁺	M1+E2[i]	+0.74 *5*	3.62×10^{-4} *6*	B(M1)(W.u.)=0.029 *4*; B(E2)(W.u.)=27 *4* α(K)=0.000324 *5*; α(L)=3.31×10^{-5} *5*; α(M)=4.94×10^{-6} *8* α(N)=3.24×10^{-7} *5*
1407.18	13/2⁺	1009.23 *2*	100	397.94	9/2⁺	E2[@]		3.46×10^{-4}	α(K)=0.000309 *5*; α(L)=3.17×10^{-5} *5*; α(M)=4.73×10^{-6} *7* α(N)=3.09×10^{-7} *5* B(E2)(W.u.)=20.1 *13*
1414.79	5/2⁻	1041.6 *3*	39 *6*	373.95	3/2⁻				E_γ: measured as 1041.6 *3* in ^{69}Ga(p,nγ).
		1182.10 *11*	22 *6*	232.70	3/2⁻	M1+E2[a]	+0.49[g] *10*	2.30×10^{-4}	α(K)=0.000201 *3*; α(L)=2.05×10^{-5} *4*; α(M)=3.05×10^{-6} *5* α(N)=2.02×10^{-7} *3*; α(IPF)=4.82×10^{-6} *13* B(M1)(W.u.)=0.0015 *8*; B(E2)(W.u.)=0.39 *23*
		1414.73 *6*	100 *11*	0	5/2⁻	M1+E2[a]	−0.65[g] *10*	2.06×10^{-4} *4*	α(K)=0.0001415 *21*; α(L)=1.436×10^{-5} *21*; α(M)=2.14×10^{-6} *4* α(N)=1.415×10^{-7} *21*; α(IPF)=4.80×10^{-5} *11* B(M1)(W.u.)=0.0034 *15*; B(E2)(W.u.)=1.1 *6* δ: −1.3 *4* from (α,nγ).
1430.18	9/2⁻	568.1 *2*	3.4 *8*	862.02	7/2⁻				
		1430.28 *10*	100 *2*	0	5/2⁻	E2	[h]	2.23×10^{-4}	α(K)=0.0001437 *21*; α(L)=1.462×10^{-5} *21*; α(M)=2.18×10^{-6} *3* α(N)=1.434×10^{-7} *20*; α(IPF)=6.21×10^{-5} *9* B(E2)(W.u.)=9.4 *12* Mult.: Q from γ(θ) in (α,nγ); E2 from RUL.
1432.63	3/2⁺	620.42 *10*	100 *3*	812.18	5/2⁺	M1+E2[a]	−0.6[g] *4*	0.00096 *9*	B(M1)(W.u.)=0.036 *+19−29*; B(E2)(W.u.)=5.E+1 *+6−5*

$^{69}_{32}Ge_{37}$-10

Adopted Levels, Gammas (continued)

γ(^{69}Ge) (continued)

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π	Mult.	δ	α[j]	Comments
									α(K)=0.00086 *8*; α(L)=8.8×10^{-5} *9*; α(M)=1.32×10^{-5} *13* α(N)=8.6×10^{-7} *8*
1432.63	3/2$^+$	1058.65 *13*	22 *3*	373.95	3/2$^-$				Placement from level energy differences in ^{69}Ga(p,nγ).
		1199.7 *5*	8 *1*	232.70	3/2$^-$				
		1346.1 *6*	4 *1*	86.76	1/2$^-$				
1465.96	9/2$^+$	115.3 *1*	1.7 *8*	1350.60	11/2$^+$				
		255.8 *2*	11.3 *3*	1210.11	7/2$^+$	M1+E2[i]	+0.11 *2*	0.00707 *13*	B(M1)(W.u.)=0.05 *4*; B(E2)(W.u.)=15 *12* α(K)=0.00631 *11*; α(L)=0.000660 *12*; α(M)=9.86×10^{-5} *18* α(N)=6.43×10^{-6} *11*
		604.0 *2*	3.8 *9*	862.02	7/2$^-$	E1[i]		4.46×10^{-4}	B(E1)(W.u.)=2.5×10^{-5} *18* α(K)=0.000399 *6*; α(L)=4.07×10^{-5} *6*; α(M)=6.06×10^{-6} *9* α(N)=3.95×10^{-7} *6*
		653.7 *1*	13.7 *17*	812.18	5/2$^+$	E2		1.06×10^{-3}	B(E2)(W.u.)=14 *10* α(K)=0.000949 *14*; α(L)=9.86×10^{-5} *14*; α(M)=1.471×10^{-5} *21* α(N)=9.48×10^{-7} *14*
		1068.05 *8*	100 *2*	397.94	9/2$^+$	M1+E2[a]	−1.40 *9*	2.92×10^{-4} *5*	Mult.: Q from γ(θ) in ^{69}Ga(p,nγ); E2 from RUL. B(M1)(W.u.)=0.0022 *15*; B(E2)(W.u.)=6 *4* α(K)=0.000261 *4*; α(L)=2.67×10^{-5} *4*; α(M)=3.99×10^{-6} *6* α(N)=2.61×10^{-7} *4* δ: weighted average of −1.43 *10* from ^{69}Ga(p,nγ) and −1.3 *2* from (HI,xnγ). −1.85 *4* from (α,nγ).
1478.72	7/2$^-$	545.50 *20*	18.9 *6*	933.142	5/2$^-$	M1+E2[i]	−0.19 *2*	1.17×10^{-3}	α(K)=0.001042 *16*; α(L)=0.0001072 *16*; α(M)=1.601×10^{-5} *24* α(N)=1.052×10^{-6} *16* B(M1)(W.u.)=0.046 *13*; B(E2)(W.u.)=9 *3* δ: +0.05 *5* for J(1479)=7/2 from ^{69}Ga(p,nγ).
		1105.20 *20*	44.6 *9*	373.95	3/2$^-$	E2		2.81×10^{-4}	α(K)=0.000251 *4*; α(L)=2.56×10^{-5} *4*; α(M)=3.83×10^{-6} *6* α(N)=2.50×10^{-7} *4*; α(IPF)=9.18×10^{-7} *14* B(E2)(W.u.)=17 *5* Mult.: Q from γ(θ) in (p,nγ); E2 from RUL.
		1245.9 *4*	14.9 *6*	232.70	3/2$^-$	E2[i]		2.31×10^{-4}	α(K)=0.000192 *3*; α(L)=1.96×10^{-5} *3*; α(M)=2.93×10^{-6} *5* α(N)=1.92×10^{-7} *3*; α(IPF)=1.647×10^{-5} *25* B(E2)(W.u.)=3.1 *9*
		1478.65 *9*	100 *14*	0	5/2$^-$	(M1+E2)[&]		2.16×10^{-4} *13*	α(K)=0.000131 *4*; α(L)=1.33×10^{-5} *4*;

$^{69}_{32}Ge_{37}$-11

Adopted Levels, Gammas (continued)

γ(^{69}Ge) (continued)

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π	Mult.	δ	α[j]	Comments
									α(M)=1.99×10^{-6} *6* α(N)=1.31×10^{-7} *4*; α(IPF)=7.0×10^{-5} *9* δ: +0.05 *2* or +4.8 *8* from γ(θ) in ^{69}Ga(p,nγ) for J(1479)=7/2.
1539.25	3/2$^-$	1165.30 *13*	<53	373.95	3/2$^-$	M1+E2[i]	+0.45 *5*	2.35×10^{-4}	B(M1)(W.u.)=0.005 *+6−5*; B(E2)(W.u.)=1.1 *+13−11* α(K)=0.000207 *3*; α(L)=2.10×10^{-5} *3*; α(M)=3.14×10^{-6} *5* α(N)=2.07×10^{-7} *3*; α(IPF)=3.38×10^{-6} *7*
		1306.4 *2*	≤24	232.70	3/2$^-$				
		1452.46 *13*	40 *13*	86.76	1/2$^-$	M1+E2[a]	−0.45 *25*	2.05×10^{-4} *5*	B(M1)(W.u.)=0.0038 *22*; B(E2)(W.u.)=0.6 *6* α(K)=0.0001335 *22*; α(L)=1.353×10^{-5} *23*; α(M)=2.02×10^{-6} *4* α(N)=1.335×10^{-7} *22*; α(IPF)=5.6×10^{-5} *3* δ: from (p,nγ); −0.7 *2* from (α,nγ).
		1539.5 *3*	100 *4*	0	5/2$^-$				
1590.82	7/2$^+$	778.62 *12*	100 *2*	812.18	5/2$^+$	M1+E2[a]	+0.45 *3*	5.47×10^{-4}	α(K)=0.000489 *8*; α(L)=5.00×10^{-5} *8*; α(M)=7.47×10^{-6} *11* α(N)=4.91×10^{-7} *8* B(M1)(W.u.)=0.040 *+10−15*; B(E2)(W.u.)=21 *+6−8* δ: weighted average of +0.48 *6* from ^{69}Ga(p,nγ) and +0.43 *4* from (HI,xnγ).
		1192.7 *3*	52 *10*	397.94	9/2$^+$	M1+E2[i]	−0.28 *4*	2.24×10^{-4}	α(K)=0.000196 *3*; α(L)=1.99×10^{-5} *3*; α(M)=2.97×10^{-6} *5* α(N)=1.96×10^{-7} *3*; α(IPF)=5.63×10^{-6} *10* B(M1)(W.u.)=0.0065 *+20−28*; B(E2)(W.u.)=0.55 *+22−28*
1601.33	5/2$^+$	168.7 *1*	<12	1432.63	3/2$^+$				
		391.3 *1*	44 *2*	1210.11	7/2$^+$	M1+E2[i]	−0.25 *7*	0.00262 *10*	B(M1)(W.u.)=0.14 *5*; B(E2)(W.u.)=8.E+1 *6* α(K)=0.00234 *9*; α(L)=0.000243 *10*; α(M)=3.62×10^{-5} *15* α(N)=2.37×10^{-6} *9*
		789.03 *11*	100 *2*	812.18	5/2$^+$	M1+E2[a]	+0.2 *1*	5.14×10^{-4} *10*	B(M1)(W.u.)=0.038 *13*; B(E2)(W.u.)=4 *4* α(K)=0.000459 *9*; α(L)=4.69×10^{-5} *9*; α(M)=7.01×10^{-6} *13* α(N)=4.62×10^{-7} *9* δ: from (α,nγ); +0.36 *13* or +0.8 *+4−2* from γ(θ) in (p,nγ).
		1227.4 *1*	22 *2*	373.95	3/2$^-$	E1[i]		1.70×10^{-4}	B(E1)(W.u.)=4.3×10^{-5} *15* α(K)=9.37×10^{-5} *14*; α(L)=9.47×10^{-6} *14*; α(M)=1.413×10^{-6} *20* α(N)=9.29×10^{-8} *13*; α(IPF)=6.58×10^{-5} *10*
		1601.3 *3*	44 *2*	0	5/2$^-$	D+Q[g]	−0.06[g] *6*		
1610.84	5/2$^-$	1237.1 *4*	26 *5*	373.95	3/2$^-$				
		1378.4 *4*	100 *5*	232.70	3/2$^-$	M1+E2[i]	+0.39 *2*	2.02×10^{-4}	α(K)=0.0001475 *21*; α(L)=1.496×10^{-5} *21*; α(M)=2.23×10^{-6} *4* α(N)=1.476×10^{-7} *21*; α(IPF)=3.75×10^{-5} *6*
		1611.1 *5*	53 *5*	0	5/2$^-$	(M1+E2)[&]	−1.7[g] *+3−8*	2.50×10^{-4} *6*	α(K)=0.0001120 *17*; α(L)=1.136×10^{-5} *17*;

$^{69}_{32}Ge_{37}$-12

Adopted Levels, Gammas (continued)

γ(^{69}Ge) (continued)

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π	Mult.	δ	α[j]	Comments
									α(M)=1.70×10^{-6} *3* α(N)=1.118×10^{-7} *17*; α(IPF)=0.000124 *4*
1613.29	7/2$^-$	680.4 *4*	13 *1*	933.142	5/2$^-$	M1+E2[i]	+0.04 *3*	7.01×10^{-4}	B(M1)(W.u.)<0.0064; B(E2)(W.u.)<0.085 α(K)=0.000627 *9*; α(L)=6.41×10^{-5} *9*; α(M)=9.58×10^{-6} *14* α(N)=6.31×10^{-7} *9*
		1239.2 *3*	12 *6*	373.95	3/2$^-$				
		1380.8 *3*	100 *2*	232.70	3/2$^-$	E2[i]		2.21×10^{-4}	B(E2)(W.u.)<4.7 α(K)=0.0001546 *22*; α(L)=1.573×10^{-5} *22*; α(M)=2.35×10^{-6} *4* α(N)=1.542×10^{-7} *22*; α(IPF)=4.79×10^{-5} *7*
		1613.2 *1*	80 *2*	0	5/2$^-$	M1+E2[i]	−1.97[i] *6*	2.52×10^{-4}	B(M1)(W.u.)<0.00064; B(E2)(W.u.)<1.4 α(K)=0.0001120 *16*; α(L)=1.136×10^{-5} *16*; α(M)=1.695×10^{-6} *24* α(N)=1.117×10^{-7} *16*; α(IPF)=0.0001266 *18*
1666.23	1/2$^{(-)}$	1292.4 *2*	≤10	373.95	3/2$^-$				
		1433.45 *15*	100 *30*	232.70	3/2$^-$				
1725.8	1/2$^-$,3/2$^-$	1351.7 *5*	40 *7*	373.95	3/2$^-$				
		1639.0 *5*	100 *5*	86.76	1/2$^-$				Probably distinct from the 1639γ deexciting the 2946.8 level.
		1726.0 *5*	35 *4*	0	5/2$^-$				
1763.45	1/2$^+$	330.6 *5*	<67	1432.63	3/2$^+$				
		951.0 *5*	<67	812.18	5/2$^+$				
		1389.6 *3*	100 *8*	373.95	3/2$^-$				
		1677.0 *7*	92 *8*	86.76	1/2$^-$				
1767.11	3/2$^-$	1534.3 *2*	100 *6*	232.70	3/2$^-$	M1+E2[i]	+0.5[i] *2*	2.17×10^{-4} *5*	α(K)=0.0001203 *19*; α(L)=1.219×10^{-5} *19*; α(M)=1.82×10^{-6} *3* α(N)=1.202×10^{-7} *18*; α(IPF)=8.2×10^{-5} *3*
		1680.5 *2*	79 *6*	86.76	1/2$^-$	M1+E2[i]	−0.97[i] *11*	2.59×10^{-4} *5*	α(K)=0.0001023 *15*; α(L)=1.036×10^{-5} *15*; α(M)=1.547×10^{-6} *22* α(N)=1.021×10^{-7} *15*; α(IPF)=0.000145 *3*
		1767.0 *2*	94 *12*	0	5/2$^-$	M1+E2[i]	+1.2[i] *2*	2.89×10^{-4} *6*	α(K)=9.34×10^{-5} *14*; α(L)=9.45×10^{-6} *14*; α(M)=1.411×10^{-6} *21* α(N)=9.31×10^{-8} *14*; α(IPF)=0.000185 *5*
1882.42	5/2$^{(-)}$	1649.7 *1*	100	232.70	3/2$^-$	(M1)[i]		2.35×10^{-4}	α(K)=0.0001040 *15*; α(L)=1.052×10^{-5} *15*; α(M)=1.571×10^{-6} *22* α(N)=1.040×10^{-7} *15*; α(IPF)=0.0001183 *17*
1891.00	3/2$^-$	1658.3 *2*	86 *6*	232.70	3/2$^-$	M1+E2[i]	−1.2[i] *4*	2.57×10^{-4} *8*	α(K)=0.0001053 *17*; α(L)=1.067×10^{-5} *18*; α(M)=1.59×10^{-6} *3* α(N)=1.051×10^{-7} *17*; α(IPF)=0.000139 *7*
		1804.0 *3*	100 *9*	86.76	1/2$^-$	M1+E2[i]	−0.3[i] *1*	2.79×10^{-4} *5*	α(K)=8.84×10^{-5} *13*; α(L)=8.93×10^{-6} *13*;

$^{69}_{32}Ge_{37}$-13

Adopted Levels, Gammas (continued)

γ(^{69}Ge) (continued)

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π	Mult.	δ	α[j]	Comments
									α(M)=1.334×10^{-6} *19* α(N)=8.83×10^{-8} *13*; α(IPF)=0.000181 *4*
1891.00	3/2$^-$	1891.3 *4*	65 *5*	0	5/2$^-$				
1919.65	7/2$^-$	306.3 *2*	33 *5*	1613.29	7/2$^-$	M1[i]		0.00442	α(K)=0.00395 *6*; α(L)=0.000411 *6*; α(M)=6.13×10^{-5} *9* α(N)=4.01×10^{-6} *6*
		723.8 *2*	100 *15*	1195.72	5/2$^-$	M1+E2[i]	−1.3 *3*	0.00073 *3*	α(K)=0.000654 *24*; α(L)=6.7×10^{-5} *3*; α(M)=1.01×10^{-5} *4* α(N)=6.55×10^{-7} *23*
		986.8 *2*	62 *5*	933.142	5/2$^-$				
		1686.9 *1*	82 *5*	232.70	3/2$^-$				
1920.28	9/2$^-$	441.3 *3*	13 *9*	1478.72	7/2$^-$				
		724.5 *2*	18 *4*	1195.72	5/2$^-$	E2[i]		8.00×10^{-4}	α(K)=0.000715 *10*; α(L)=7.40×10^{-5} *11*; α(M)=1.104×10^{-5} *16* α(N)=7.14×10^{-7} *10* B(E2)(W.u.)<14
		1058.2 *3*	100 *2*	862.02	7/2$^-$	M1+E2[i]	−1.66[i] *4*	3.01×10^{-4}	α(K)=0.000269 *4*; α(L)=2.75×10^{-5} *4*; α(M)=4.10×10^{-6} *6* α(N)=2.69×10^{-7} *4* B(M1)(W.u.)<0.0024; B(E2)(W.u.)<8.9
		1920.4 *1*	73 *1*	0	5/2$^-$	E2[i]		3.62×10^{-4}	α(K)=8.09×10^{-5} *12*; α(L)=8.19×10^{-6} *12*; α(M)=1.222×10^{-6} *18* α(N)=8.06×10^{-8} *12*; α(IPF)=0.000272 *4* B(E2)(W.u.)<0.44
2000.7	5/2$^-$	2000.7 *3*	100	0	5/2$^-$	M1+E2[i]	−2.0[i] *2*	3.84×10^{-4}	α(K)=7.46×10^{-5} *11*; α(L)=7.55×10^{-6} *11*; α(M)=1.127×10^{-6} *16* α(N)=7.44×10^{-8} *11*; α(IPF)=0.000301 *5*
2009.87	3/2$^-$	1635.9 *2*	100	373.95	3/2$^-$	M1+E2[i]	−1.3[i] *2*	2.52×10^{-4} *5*	α(K)=0.0001083 *16*; α(L)=1.098×10^{-5} *16*; α(M)=1.638×10^{-6} *24* α(N)=1.080×10^{-7} *16*; α(IPF)=0.000131 *3*
2012.53	5/2$^-$	597.9 *4*	50 *7*	1414.79	5/2$^-$	M1+E2[i]	+1.0 *2*	0.00115 *6*	α(K)=0.00103 *5*; α(L)=0.000107 *5*; α(M)=1.59×10^{-5} *8* α(N)=1.03×10^{-6} *5*
		816.9 *1*	67 *33*	1195.72	5/2$^-$				
		1779.7 *1*	100 *33*	232.70	3/2$^-$				
2018.11	13/2$^+$	552.1 *1*	5.3 *13*	1465.96	9/2$^+$				
		610.8 *1*	6.5 *3*	1407.18	13/2$^+$	M1+E2[i]	−2.0 *2*	1.21×10^{-3} *2*	α(K)=0.001080 *20*; α(L)=0.0001123 *21*; α(M)=1.67×10^{-5} *4* α(N)=1.080×10^{-6} *20* B(M1)(W.u.)=0.00057 *14*; B(E2)(W.u.)=9.4 *17*
		667.56 *6*	100 *2*	1350.60	11/2$^+$	M1+E2	+0.48 *6*	7.81×10^{-4} *16*	α(K)=0.000698 *14*; α(L)=7.17×10^{-5} *15*; α(M)=1.071×10^{-5} *22* α(N)=7.02×10^{-7} *14* B(M1)(W.u.)=0.027 *5*; B(E2)(W.u.)=22 *6*

$^{69}_{32}Ge_{37}$-14

Adopted Levels, Gammas (continued)

γ(^{69}Ge) (continued)

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π	Mult.	δ	α[j]	Comments
									Mult.: from γ(θ) and linear-polarization data in ^{66}Zn(α,nγ). δ: weighted average of +0.45 *4* from γ(θ) in (HI,xnγ) and +0.58 *7* from γ(θ) in ^{66}Zn(α,nγ).
2018.11	13/2$^+$	1620.23 *7*	38 *1*	397.94	9/2$^+$	E2[i]		2.60×10^{-4}	α(K)=0.0001119 *16*; α(L)=1.136×10^{-5} *16*; α(M)=1.695×10^{-6} *24* α(N)=1.116×10^{-7} *16*; α(IPF)=0.0001352 *19* B(E2)(W.u.)=0.52 *9*
2025.21	5/2$^+$	434.4 *1*	66 *2*	1590.82	7/2$^+$	M1+E2[i]	+0.185 *3*	0.00198	α(K)=0.001772 *25*; α(L)=0.000183 *3*; α(M)=2.74×10^{-5} *4* α(N)=1.79×10^{-6} *3*
		559.3 *2*	28 *9*	1465.96	9/2$^+$				
		815.2 *2*	100 *3*	1210.11	7/2$^+$				
		1213.0 *3*	28 *9*	812.18	5/2$^+$				
2057.56	5/2$^{(-)}$	1195.7 *2*	100	862.02	7/2$^-$				
		1824.8 *1*	90 *10*	232.70	3/2$^-$	(M1+E2)[i]	+0.05[i] *5*	2.82×10^{-4}	α(K)=8.63×10^{-5} *12*; α(L)=8.72×10^{-6} *13*; α(M)=1.302×10^{-6} *19* α(N)=8.62×10^{-8} *12*; α(IPF)=0.000186 *3*
2067.50	5/2$^-$	871.6 *3*	<100	1195.72	5/2$^-$				
		1834.8 *1*	100 *20*	232.70	3/2$^-$	M1+E2[i]	−1.6[i] *2*	3.17×10^{-4} *6*	α(K)=8.74×10^{-5} *13*; α(L)=8.84×10^{-6} *13*; α(M)=1.320×10^{-6} *19* α(N)=8.71×10^{-8} *13*; α(IPF)=0.000220 *4*
2119.21	11/2$^+$	712.1 *1*	100 *2*	1407.18	13/2$^+$	M1+E2[i]	+0.01 *1*	6.34×10^{-4}	α(K)=0.000567 *8*; α(L)=5.80×10^{-5} *9*; α(M)=8.67×10^{-6} *13* α(N)=5.71×10^{-7} *8*
		909.1 *1*	22 *1*	1210.11	7/2$^+$	E2[i]		4.45×10^{-4}	α(K)=0.000398 *6*; α(L)=4.09×10^{-5} *6*; α(M)=6.10×10^{-6} *9* α(N)=3.97×10^{-7} *6*
		1721.0 *2*	74 *2*	397.94	9/2$^+$	M1+E2[i]	+0.67[i] *10*	2.64×10^{-4} *5*	α(K)=9.72×10^{-5} *14*; α(L)=9.84×10^{-6} *14*; α(M)=1.468×10^{-6} *21* α(N)=9.70×10^{-8} *14*; α(IPF)=0.000156 *4*
2143.4	7/2$^+$,9/2$^+$	710.8 *3*		1432.63	3/2$^+$				
2148.58	9/2$^-$	669.9 *1*	29 *20*	1478.72	7/2$^-$				
		718.5 *3*	<10	1430.18	9/2$^-$				
		733.7 *2*	27 *2*	1414.79	5/2$^-$	E2[i]		7.74×10^{-4}	α(K)=0.000691 *10*; α(L)=7.15×10^{-5} *10*; α(M)=1.066×10^{-5} *15* α(N)=6.90×10^{-7} *10*
		1215.4 *1*	100 *2*	933.142	5/2$^-$	E2[i]		2.38×10^{-4}	α(K)=0.000203 *3*; α(L)=2.07×10^{-5} *3*; α(M)=3.09×10^{-6} *5* α(N)=2.03×10^{-7} *3*; α(IPF)=1.094×10^{-5} *16*
		1286.6 *1*	75 *2*	862.02	7/2$^-$	M1+E2[i]	−1.33 *7*	2.18×10^{-4}	α(K)=0.0001751 *25*; α(L)=1.78×10^{-5} *3*;

$^{69}_{32}Ge_{37}$-15

Adopted Levels, Gammas (continued)

γ(^{69}Ge) (continued)

E_i(level)	J_i^π	E_γ	I_γ †	E_f	J_f^π	Mult.	δ	α [j]	Comments
									α(M)=2.66×10^{-6} *4* α(N)=1.749×10^{-7} *25*; α(IPF)=2.27×10^{-5} *4*
2151.23		800.7 *2*	38 *5*	1350.60	11/2$^+$	M1+E2 [i]	+0.29 *9*	5.03×10^{-4} *10*	α(K)=0.000449 *9*; α(L)=4.59×10^{-5} *9*; α(M)=6.86×10^{-6} *13* α(N)=4.52×10^{-7} *9*
		941.1 *1*	100 *5*	1210.11	7/2$^+$	M1+E2 [i]	−1.2 *1*	3.85×10^{-4}	α(K)=0.000345 *6*; α(L)=3.53×10^{-5} *6*; α(M)=5.27×10^{-6} *9* α(N)=3.45×10^{-7} *6*
2178.23	7/2$^+$	712.2 *2*	<27	1465.96	9/2$^+$				
		1366.1 *2*	100 *5*	812.18	5/2$^+$	M1+E2 [i]	−0.84 *12*	2.09×10^{-4} *4*	α(K)=0.0001527 *23*; α(L)=1.551×10^{-5} *23*; α(M)=2.31×10^{-6} *4* α(N)=1.526×10^{-7} *23*; α(IPF)=3.79×10^{-5} *10*
2223.17	9/2$^-$	302.9 *1*	20 *2*	1920.28	9/2$^-$	M1 [i]		0.00454	α(K)=0.00405 *6*; α(L)=0.000422 *6*; α(M)=6.30×10^{-5} *9* α(N)=4.13×10^{-6} *6*
		744.6 *2*	40 *20*	1478.72	7/2$^-$				
		793.0 *2*	100 *2*	1430.18	9/2$^-$	M1+E2 [i]	−0.19 *7*	5.08×10^{-4}	α(K)=0.000454 *8*; α(L)=4.64×10^{-5} *8*; α(M)=6.93×10^{-6} *11* α(N)=4.57×10^{-7} *8*
		1027.5 *1*	54 *4*	1195.72	5/2$^-$	E2 [i]		3.32×10^{-4}	α(K)=0.000297 *5*; α(L)=3.04×10^{-5} *5*; α(M)=4.53×10^{-6} *7* α(N)=2.96×10^{-7} *5*
		1290.1 *2*	≤20	933.142	5/2$^-$				
		1361.0 *1*	34 *4*	862.02	7/2$^-$	M1+E2 [i]	+1.2 *1*	2.12×10^{-4} *4*	α(K)=0.0001555 *23*; α(L)=1.580×10^{-5} *23*; α(M)=2.36×10^{-6} *4* α(N)=1.553×10^{-7} *22*; α(IPF)=3.86×10^{-5} *7*
		2223.3 *3*	60 *20*	0	5/2$^-$				
2236.4	3/2$^-$	1240.0 *10*	38 *15*	994.92	1/2$^-$				
		1303 *1*	12 *4*	933.142	5/2$^-$				
		2149.7 *3*	100 *4*	86.76	1/2$^-$	M1+E2 [i]	−1.7 [i] *1*	4.42×10^{-4}	α(K)=6.55×10^{-5} *10*; α(L)=6.61×10^{-6} *10*; α(M)=9.87×10^{-7} *14* α(N)=6.52×10^{-8} *10*; α(IPF)=0.000369 *6*
2246.70	5/2$^-$	1434.3 *3*	35 *4*	812.18	5/2$^+$				
		1872.4 *4*	15 *4*	373.95	3/2$^-$				
		2014.1 *3*	100 *8*	232.70	3/2$^-$	M1+E2 [i]	−1.7 [i] *1*	3.86×10^{-4}	α(K)=7.36×10^{-5} *11*; α(L)=7.44×10^{-6} *11*; α(M)=1.111×10^{-6} *16* α(N)=7.34×10^{-8} *11*; α(IPF)=0.000304 *5*
		2246.9 *3*	25 *2*	0	5/2$^-$				
2248.16	11/2$^-$	817.9 *2*	3.9 *4*	1430.18	9/2$^-$	M1+E2 [i]	+0.9 *1*	5.21×10^{-4} *10*	α(K)=0.000465 *9*; α(L)=4.77×10^{-5} *9*; α(M)=7.12×10^{-6} *14* α(N)=4.66×10^{-7} *9* B(M1)(W.u.)=0.0017 *+8−10*; B(E2)(W.u.)=3.2 *+15−19*
		1386.1 *1*	100 *2*	862.02	7/2$^-$	E2 [i]		2.21×10^{-4}	α(K)=0.0001534 *22*; α(L)=1.560×10^{-5} *22*; α(M)=2.33×10^{-6} *4* α(N)=1.530×10^{-7} *22*; α(IPF)=4.93×10^{-5} *7* B(E2)(W.u.)=13 *+6−8*
2258.10	9/2$^-$	843.4 *2*	19 *3*	1414.79	5/2$^-$	E2 [i]		5.37×10^{-4}	α(K)=0.000480 *7*; α(L)=4.95×10^{-5} *7*; α(M)=7.38×10^{-6} *11* α(N)=4.79×10^{-7} *7*

$^{69}_{32}Ge_{37}$-16

Adopted Levels, Gammas (continued)

γ(^{69}Ge) (continued)

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π	Mult.	δ	α[j]	Comments
2258.10	9/2⁻	1062.2 *3*	<11	1195.72	5/2⁻				
		1324.9 *1*	100 *2*	933.142	5/2⁻	E2[i]		2.22×10⁻⁴	α(K)=0.0001686 *24*; α(L)=1.717×10⁻⁵ *24*; α(M)=2.56×10⁻⁶ *4* α(N)=1.682×10⁻⁷ *24*; α(IPF)=3.39×10⁻⁵ *5*
		1396.1 *2*	44 *22*	862.02	7/2⁻				
2353.74	5/2⁻	920.9 *3*	<17	1432.63	3/2⁺				
		1491.8 *2*	100 *33*	862.02	7/2⁻	M1+E2[i]	−0.65 *15*	2.13×10⁻⁴ *4*	α(K)=0.0001276 *19*; α(L)=1.293×10⁻⁵ *20*; α(M)=1.93×10⁻⁶ *3* α(N)=1.275×10⁻⁷ *19*; α(IPF)=7.01×10⁻⁵ *21*
2370.14	5/2⁻	756.8 *3*	54 *27*	1613.29	7/2⁻	M1+E2[i]	+0.7 *2*	6.08×10⁻⁴ *22*	α(K)=0.000543 *20*; α(L)=5.57×10⁻⁵ *21*; α(M)=8.3×10⁻⁶ *3* α(N)=5.45×10⁻⁷ *19*
		940.1 *2*	54 *27*	1430.18	9/2⁻				
		1174.2 *2*	38 *22*	1195.72	5/2⁻				
		1508.2 *2*	100 *5*	862.02	7/2⁻	M1+E2[i]	−1.7[i] *1*	2.27×10⁻⁴	α(K)=0.0001275 *18*; α(L)=1.295×10⁻⁵ *19*; α(M)=1.93×10⁻⁶ *3* α(N)=1.273×10⁻⁷ *18*; α(IPF)=8.41×10⁻⁵ *13*
2386.54	9/2⁻	773.2 *2*	100 *33*	1613.29	7/2⁻	M1+E2[i]	−0.9 *1*	5.95×10⁻⁴ *12*	α(K)=0.000531 *11*; α(L)=5.46×10⁻⁵ *11*; α(M)=8.15×10⁻⁶ *17* α(N)=5.33×10⁻⁷ *11*
		1524.6 *3*	<56	862.02	7/2⁻				
2462.13	11/2⁻	996.2 *2*	93 *47*	1465.96	9/2⁺				
		1031.9 *2*	100 *5*	1430.18	9/2⁻	M1+E2[i]	−0.02 *2*	2.91×10⁻⁴	α(K)=0.000260 *4*; α(L)=2.65×10⁻⁵ *4*; α(M)=3.95×10⁻⁶ *6* α(N)=2.61×10⁻⁷ *4*
2483.22	15/2⁺	465.0 *3*	4 *2*	2018.11	13/2⁺				
		1076.27 *17*	100 *6*	1407.18	13/2⁺	M1+E2[e]	+0.44[f] *6*	2.72×10⁻⁴	α(K)=0.000243 *4*; α(L)=2.48×10⁻⁵ *4*; α(M)=3.70×10⁻⁶ *6* α(N)=2.44×10⁻⁷ *4* B(M1)(W.u.)=0.014 *5*; B(E2)(W.u.)=3.5 *15*
		1132.59 *8*	72 *4*	1350.60	11/2⁺	E2		2.67×10⁻⁴	α(K)=0.000237 *4*; α(L)=2.43×10⁻⁵ *4*; α(M)=3.62×10⁻⁶ *5* α(N)=2.37×10⁻⁷ *4*; α(IPF)=2.01×10⁻⁶ *3* B(E2)(W.u.)=12 *5* Mult.: Q from γ(θ) in (HI,xnγ); E2 from RUL.
2500.45	5/2⁻	889.5 *3*	95 *10*	1610.84	5/2⁻	M1+E2[i]	−0.6 *2*	4.15×10⁻⁴ *12*	α(K)=0.000371 *10*; α(L)=3.79×10⁻⁵ *11*; α(M)=5.66×10⁻⁶ *16* α(N)=3.72×10⁻⁷ *10*
		1070.3 *2*	100 *10*	1430.18	9/2⁻				
		1638.4 *3*	90 *10*	862.02	7/2⁻	M1+E2[i]	+1.6[i] *2*	2.56×10⁻⁴	α(K)=0.0001083 *16*; α(L)=1.098×10⁻⁵ *16*; α(M)=1.639×10⁻⁶ *24* α(N)=1.081×10⁻⁷ *16*; α(IPF)=0.000135 *3*
2552.29	11/2⁻	304.1 *2*	<23	2248.16	11/2⁻				
		939.0 *2*	98 *5*	1613.29	7/2⁻				
		1122.3 *3*	33 *2*	1430.18	9/2⁻				
		1690.2 *2*	100 *5*	862.02	7/2⁻	E2[i]		2.81×10⁻⁴	α(K)=0.0001031 *15*; α(L)=1.045×10⁻⁵ *15*; α(M)=1.560×10⁻⁶ *22* α(N)=1.027×10⁻⁷ *15*; α(IPF)=0.0001658 *24*

$^{69}_{32}Ge_{37}$-17

Adopted Levels, Gammas (continued)

γ(^{69}Ge) (continued)

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π	Mult.	δ	α[j]	Comments
2553.83	7/2$^+$	963.0 *1*	100 *3*	1590.82	7/2$^+$	M1+E2[i]	−0.84 *9*	3.57×10^{-4} *6*	α(K)=0.000319 *6*; α(L)=3.26×10^{-5} *6*; α(M)=4.86×10^{-6} *8* α(N)=3.19×10^{-7} *5*
2569.71	7/2$^-$	346.7 *3*		2223.17	9/2$^-$				
		1139.7 *2*	≤9	1430.18	9/2$^-$				
		1707.6 *1*	100 *2*	862.02	7/2$^-$	M1+E2[i]	+0.17[i] *9*	2.50×10^{-4}	α(K)=9.76×10^{-5} *14*; α(L)=9.88×10^{-6} *14*; α(M)=1.474×10^{-6} *21* α(N)=9.76×10^{-8} *14*; α(IPF)=0.0001407 *23*
2584.60		971.0 *5*	≤50	1613.29	7/2$^-$				
		1722.6 *2*	100 *50*	862.02	7/2$^-$				
2589.67	13/2$^+$	1123.7 *2*	100 *5*	1465.96	9/2$^+$	E2[i]		2.72×10^{-4}	α(K)=0.000242 *4*; α(L)=2.47×10^{-5} *4*; α(M)=3.68×10^{-6} *6* α(N)=2.41×10^{-7} *4*; α(IPF)=1.578×10^{-6} *24*
2594.55	3/2$^-$,5/2$^-$	1287.4 *3*	100 *17*	1306.90	3/2$^-$				
		2361.0 *10*	100 *17*	232.70	3/2$^-$				
		2508.3 *4*	52 *8*	86.76	1/2$^-$				
2604.06		2371.2 *3*	<100	232.70	3/2$^-$				
2615.35		1024.5 *2*	87 *43*	1590.82	7/2$^+$				
		1208.3 *3*	87 *43*	1407.18	13/2$^+$				
		1264.7 *2*	100 *9*	1350.60	11/2$^+$	M1+E2[i]	−0.8 *1*	2.16×10^{-4} *4*	α(K)=0.000178 *3*; α(L)=1.81×10^{-5} *3*; α(M)=2.70×10^{-6} *4* α(N)=1.78×10^{-7} *3*; α(IPF)=1.71×10^{-5} *4*
2621.19	(9/2$^+$)	596.0 *2*	25 *13*	2025.21	5/2$^+$				
		603.1 *2*	58 *13*	2018.11	13/2$^+$				
		1190.9 *3*	100 *50*	1430.18	9/2$^-$				
2637.52	9/2$^+$	620.2 *5*	22 *11*	2018.11	13/2$^+$				
		1158.7 *2*	67 *2*	1478.72	7/2$^-$	E1+M2[i]	+0.1 *2*	0.00015 *3*	α(K)=0.000107 *25*; α(L)=1.1×10^{-5} *3*; α(M)=1.6×10^{-6} *4* α(N)=1.1×10^{-7} *3*; α(IPF)=2.58×10^{-5} *19*
		1207.3 *1*	100 *33*	1430.18	9/2$^-$				
2638.78	9/2$^+$	613.7 *2*	11 *2*	2025.21	5/2$^+$				
		620.7 *2*	33 *17*	2018.11	13/2$^+$				
		1047.5 *4*	100 *42*	1590.82	7/2$^+$				
		1172.7 *2*	24 *2*	1465.96	9/2$^+$	M1+E2[i]	−2.5 *2*	2.48×10^{-4}	α(K)=0.000217 *3*; α(L)=2.21×10^{-5} *4*; α(M)=3.30×10^{-6} *5* α(N)=2.17×10^{-7} *3*; α(IPF)=4.94×10^{-6} *8*
		1288.2 *2*	25 *8*	1350.60	11/2$^+$				
2654.72		1224.6 *3*	90 *20*	1430.18	9/2$^-$				
		1792.6 *3*	<100	862.02	7/2$^-$				
2730.07	13/2$^-$	481.7 *3*	<3	2248.16	11/2$^-$				
		809.7 *3*	14 *10*	1920.28	9/2$^-$				
		1299.9 *1*	100 *2*	1430.18	9/2$^-$	E2[i]		2.24×10^{-4}	α(K)=0.0001755 *25*; α(L)=1.79×10^{-5} *3*;

$^{69}_{32}Ge_{37}$-18

Adopted Levels, Gammas (continued)

$\gamma(^{69}Ge)$ (continued)

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π	Mult.	δ	α[j]	Comments
									α(M)=2.67×10^{-6} *4* α(N)=1.751×10^{-7} *25*; α(IPF)=2.80×10^{-5} *4*
2735.37	3/2$^-$	1320.3 *3*	100 *20*	1414.79	5/2$^-$				
		2503.0 *4*	56 *6*	232.70	3/2$^-$				
		2735.4 *4*	100 *20*	0	5/2$^-$				
2755.10	17/2$^+$	271.7 *2*	1.4 *6*	2483.22	15/2$^+$				
		737.0 *3*	0.8 *3*	2018.11	13/2$^+$				
		1347.92 *12*	100 *5*	1407.18	13/2$^+$	E2[i]		2.21×10^{-4}	α(K)=0.0001626 *23*; α(L)=1.655×10^{-5} *24*; α(M)=2.47×10^{-6} *4* α(N)=1.622×10^{-7} *23*; α(IPF)=3.95×10^{-5} *6* B(E2)(W.u.)=12.3 *23* Mult.: Q from $\gamma(\theta)$ in (HI,xnγ); E2 from RUL.
2772.89	5/2$^-$	2398.7 *3*	100 *9*	373.95	3/2$^-$				
		2686.4 *4*	55 *27*	86.76	1/2$^-$				
2814.80	13/2$^-$	796.7 *2*	40 *5*	2018.11	13/2$^+$	E1[i]		2.42×10^{-4}	α(K)=0.000216 *3*; α(L)=2.19×10^{-5} *3*; α(M)=3.27×10^{-6} *5* α(N)=2.14×10^{-7} *3*
		1407.6 *1*	100 *10*	1407.18	13/2$^+$				
		1464.2 *2*	65 *3*	1350.60	11/2$^+$	E1[i]		3.03×10^{-4}	α(K)=6.92×10^{-5} *10*; α(L)=6.99×10^{-6} *10*; α(M)=1.042×10^{-6} *15* α(N)=6.86×10^{-8} *10*; α(IPF)=0.000225 *4*
2834.11	13/2$^-$	816.1 *3*	13 *9*	2018.11	13/2$^+$				
		1426.8 *3*	17 *9*	1407.18	13/2$^+$				
		1483.4 *1*	100 *9*	1350.60	11/2$^+$	E1[i]		3.16×10^{-4}	α(K)=6.78×10^{-5} *10*; α(L)=6.84×10^{-6} *10*; α(M)=1.020×10^{-6} *15* α(N)=6.71×10^{-8} *10*; α(IPF)=0.000240 *4*
2856.25	5/2$^-$,7/2$^-$	1377.4 *3*	37 *17*	1478.72	7/2$^-$				
		1426.1 *2*	100 *33*	1430.18	9/2$^-$				
2869.4		2007.3 *3*	100	862.02	7/2$^-$				
2887.3		869.2 *3*	100 *50*	2018.11	13/2$^+$				
2902.31	15/2$^+$	884.3 *2*	57 *2*	2018.11	13/2$^+$	M1+E2[i]	+2.3 *1*	4.65×10^{-4}	α(K)=0.000415 *6*; α(L)=4.27×10^{-5} *6*; α(M)=6.37×10^{-6} *9* α(N)=4.15×10^{-7} *6*
		1495.1 *1*	75 *2*	1407.18	13/2$^+$	M1+E2[i]	+1.60 *5*	2.24×10^{-4}	α(K)=0.0001296 *19*; α(L)=1.316×10^{-5} *19*; α(M)=1.96×10^{-6} *3* α(N)=1.294×10^{-7} *19*; α(IPF)=7.90×10^{-5} *12*
		1551.7 *2*	100 *3*	1350.60	11/2$^+$	E2[i]		2.42×10^{-4}	α(K)=0.0001219 *17*; α(L)=1.238×10^{-5} *18*; α(M)=1.85×10^{-6} *3* α(N)=1.216×10^{-7} *17*; α(IPF)=0.0001062 *15*
2909.95		539.8 *2*	100	2370.14	5/2$^-$				
2946.7		1639 *1*	51	1306.90	3/2$^-$				Probably distinct from the 1639.0γ deexciting the 1725.8 level.
		2946.8 *4*	100 *8*	0	5/2$^-$				
2980.61	7/2$^-$	2167.2 *4*	100 *13*	812.18	5/2$^+$				
		2583.3 *3*	100 *13*	397.94	9/2$^+$				

$^{69}_{32}Ge_{37}$-19

Adopted Levels, Gammas (continued)

γ(^{69}Ge) (continued)

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π	Mult.	δ	α[j]	Comments
3075.83	15/2$^-$	241.7 *3*	8.7 *7*	2834.11	13/2$^-$	M1+E2[i]	+0.05 *3*	0.00797 *14*	α(K)=0.00711 *13*; α(L)=0.000744 *14*; α(M)=0.0001113 *20* α(N)=7.26×10^{-6} *13* B(M1)(W.u.)=0.32 *8*; B(E2)(W.u.)=21 *+26−21*
		1057.9 *2*	10 *7*	2018.11	13/2$^+$				
		1155.9 *2*	9.7 *7*	1920.28	9/2$^-$				
		1668.63 *1*	100.0 *18*	1407.18	13/2$^+$	E1+M2[i]	−0.06[i] *2*	4.49×10^{-4}	α(K)=5.65×10^{-5} *9*; α(L)=5.70×10^{-6} *9*; α(M)=8.50×10^{-7} *14* α(N)=5.60×10^{-8} *9*; α(IPF)=0.000386 *6* B(E1)(W.u.)=0.00020 *5*; B(M2)(W.u.)=1.2 *9*
3075.84	11/2$^-$	346.2 *5*	100 *3*	2730.07	13/2$^-$	M1+E2[i]	−0.94 *24*	0.0054 *7*	α(K)=0.0048 *6*; α(L)=0.00051 *7*; α(M)=7.6×10^{-5} *10* α(N)=4.8×10^{-6} *6*
		438.5 *5*	<17	2637.52	9/2$^+$				
		827.7 *3*		2248.16	11/2$^-$				
		1645.4 *3*	67 *33*	1430.18	9/2$^-$				
3092.4	11/2$^-$	1172.1 *3*	100	1920.28	9/2$^-$	M1+E2[i]	−1.9 *2*	2.46×10^{-4}	α(K)=0.000216 *4*; α(L)=2.20×10^{-5} *4*; α(M)=3.28×10^{-6} *5* α(N)=2.16×10^{-7} *4*; α(IPF)=4.77×10^{-6} *10*
3095.2		1688.0 *3*	100	1407.18	13/2$^+$				
3144.31	9/2$^-$	414.3 *3*	<13	2730.07	13/2$^-$				
		540.2 *2*		2604.06					
		896.1 *2*	25 *3*	2248.16	11/2$^-$	M1+E2[i]	+0.45 *11*	4.01×10^{-4} *8*	α(K)=0.000359 *7*; α(L)=3.66×10^{-5} *7*; α(M)=5.47×10^{-6} *11* α(N)=3.60×10^{-7} *7*
		995.8 *2*	100 *7*	2148.58	9/2$^-$	M1+E2[i]	+0.34 *8*	3.17×10^{-4}	α(K)=0.000284 *5*; α(L)=2.89×10^{-5} *5*; α(M)=4.32×10^{-6} *7* α(N)=2.85×10^{-7} *5*
		1737.1 *2*	20 *3*	1407.18	13/2$^+$				
3157.27	17/2$^+$	402.2 *3*	15 *7*	2755.10	17/2$^+$				
		674.0 *3*	36.5 *24*	2483.22	15/2$^+$	M1+E2[i]	+0.45 *4*	7.59×10^{-4} *13*	α(K)=0.000678 *12*; α(L)=6.96×10^{-5} *12*; α(M)=1.040×10^{-5} *18* α(N)=6.82×10^{-7} *12* B(M1)(W.u.)=0.014 *5*; B(E2)(W.u.)=10 *4*
		1139.16 *8*	100 *5*	2018.11	13/2$^+$	E2[i]		2.64×10^{-4}	α(K)=0.000234 *4*; α(L)=2.39×10^{-5} *4*; α(M)=3.57×10^{-6} *5* α(N)=2.34×10^{-7} *4*; α(IPF)=2.38×10^{-6} *4* B(E2)(W.u.)=12 *4*
3207.83	15/2$^+$	453.0 *3*	58 *6*	2755.10	17/2$^+$	M1+E2[i]	−0.02 *4*	0.00175 *3*	α(K)=0.001562 *23*; α(L)=0.0001610 *24*; α(M)=2.41×10^{-5} *4* α(N)=1.581×10^{-6} *23*
		1189.7 *2*	67 *17*	2018.11	13/2$^+$				
		1800.6 *1*	39 *6*	1407.18	13/2$^+$				
		1857.2 *2*	100 *6*	1350.60	11/2$^+$	E2[i]		3.38×10^{-4}	α(K)=8.61×10^{-5} *12*; α(L)=8.72×10^{-6} *13*;

$^{69}_{32}Ge_{37}$-20

Adopted Levels, Gammas (continued)

γ(^{69}Ge) (continued)

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π	Mult.	δ	α[j]	Comments
									α(M)=1.302×10^{-6} *19* α(N)=8.58×10^{-8} *12*; α(IPF)=0.000242 *4*
3256.1		1848.9 *3*	100	1407.18	13/2$^+$				
3291.71		1861.5 *2*	<100	1430.18	9/2$^-$				
3343.28	7/2$^-$	1084.9 *3*	76 *12*	2258.10	9/2$^-$	M1+E2[i]	+0.24 *12*	2.64×10^{-4} *5*	α(K)=0.000236 *4*; α(L)=2.40×10^{-5} *4*; α(M)=3.59×10^{-6} *6* α(N)=2.37×10^{-7} *4*
		1194.9 *3*		2148.58	9/2$^-$				
		1913.1 *2*	100 *6*	1430.18	9/2$^-$	M1+E2[i]	−0.7[i] *2*	3.27×10^{-4} *8*	α(K)=8.00×10^{-5} *12*; α(L)=8.08×10^{-6} *12*; α(M)=1.206×10^{-6} *18* α(N)=7.98×10^{-8} *12*; α(IPF)=0.000238 *7*
3361.25		1242.1 *3*		2119.21	11/2$^+$				
		1953.9 *4*	100	1407.18	13/2$^+$				
3395.89	15/2$^-$	1147.7 *1*	100	2248.16	11/2$^-$	E2[i]		2.61×10^{-4}	α(K)=0.000230 *4*; α(L)=2.35×10^{-5} *4*; α(M)=3.51×10^{-6} *5* α(N)=2.30×10^{-7} *4*; α(IPF)=2.94×10^{-6} *5*
3433.1	3/2$^-$,5/2$^-$,7/2$^-$	1823.1 *4*	75 *50*	1610.84	5/2$^-$				
		2499.2 *4*	100 *25*	933.142	5/2$^-$				
		3058.5 *10*	53 *5*	373.95	3/2$^-$				
3508.24	15/2$^+$	351.0 *2*	100 *4*	3157.27	17/2$^+$	M1+E2[i]	−0.02 *4*	0.00319	α(K)=0.00284 *5*; α(L)=0.000295 *5*; α(M)=4.41×10^{-5} *7* α(N)=2.89×10^{-6} *5*
		606.0 *2*		2902.31	15/2$^+$				
		1025.1 *1*	70 *4*	2483.22	15/2$^+$				
		2100.6 *2*	45 *2*	1407.18	13/2$^+$	M1+E2[i]	+0.49[i] *8*	3.90×10^{-4} *7*	α(K)=6.73×10^{-5} *10*; α(L)=6.79×10^{-6} *10*; α(M)=1.014×10^{-6} *15* α(N)=6.71×10^{-8} *10*; α(IPF)=0.000315 *6*
3519.54		2168.9 *2*	100	1350.60	11/2$^+$				
3541.1	7/2$^-$	2110.9 *3*	100	1430.18	9/2$^-$	M1+E2[i]	+0.20[i] *7*	3.85×10^{-4}	α(K)=6.64×10^{-5} *10*; α(L)=6.71×10^{-6} *10*; α(M)=1.001×10^{-6} *14* α(N)=6.63×10^{-8} *10*; α(IPF)=0.000311 *5*
3560.00		922.4 *2*	100 *32*	2637.52	9/2$^+$				
		1311.9 *2*	64 *32*	2248.16	11/2$^-$				
3562.0	11/2$^+$	2154.8 *3*	100	1407.18	13/2$^+$	M1+E2[i]	+0.15[i] *2*	4.01×10^{-4}	α(K)=6.40×10^{-5} *9*; α(L)=6.46×10^{-6} *9*; α(M)=9.65×10^{-7} *14* α(N)=6.39×10^{-8} *9*; α(IPF)=0.000330 *5*
3605.09	17/2$^-$	529.3 *2*	24 *12*	3075.83	15/2$^-$				
		771.0 *3*	10 *7*	2834.11	13/2$^-$				
		874.9 *2*	100 *5*	2730.07	13/2$^-$	E2[i]		4.90×10^{-4}	α(K)=0.000438 *7*; α(L)=4.50×10^{-5} *7*; α(M)=6.72×10^{-6} *10* α(N)=4.37×10^{-7} *7* B(E2)(W.u.)=19 *7*

$^{69}_{32}Ge_{37}$-21

Adopted Levels, Gammas (continued)

γ(^{69}Ge) (continued)

E_i(level)	J_i^π	E_γ	I_γ [†]	E_f	J_f^π	Mult.	δ	α [j]	Comments
3605.09	17/2$^-$	1121.9 *2*	29 *5*	2483.22	15/2$^+$	E1 [i]		1.36×10^{-4}	α(K)=0.0001102 *16*; α(L)=1.115×10^{-5} *16*; α(M)=1.664×10^{-6} *24* α(N)=1.093×10^{-7} *16*; α(IPF)=1.283×10^{-5} *19* B(E1)(W.u.)=2.4×10^{-5} *10*
3636.83		1618.7 *2*	100	2018.11	13/2$^+$				
3645.11	11/2$^-$	569.3 *1*	21 *8*	3075.83	15/2$^-$				
		811.3 *4*	42 *21*	2834.11	13/2$^-$				
		1396.8 *2*	100 *17*	2248.16	11/2$^-$	M1+E2 [i]	+0.04 *17*	1.99×10^{-4}	α(K)=0.0001427 *21*; α(L)=1.446×10^{-5} *21*; α(M)=2.16×10^{-6} *3* α(N)=1.428×10^{-7} *21*; α(IPF)=4.00×10^{-5} *8*
3666.80	17/2$^-$	591.0 *2*	100 *29*	3075.83	15/2$^-$	M1+E2 [i]	−0.07 *3*	9.58×10^{-4}	α(K)=0.000856 *13*; α(L)=8.78×10^{-5} *13*; α(M)=1.312×10^{-5} *19* α(N)=8.64×10^{-7} *13*
		832.6 *1*	86 *29*	2834.11	13/2$^-$				
		1183.6 *1*	100 *29*	2483.22	15/2$^+$	E1 [i]		1.50×10^{-4}	α(K)=0.0001000 *14*; α(L)=1.011×10^{-5} *15*; α(M)=1.509×10^{-6} *22* α(N)=9.91×10^{-8} *14*; α(IPF)=3.86×10^{-5} *6*
3721.63		1238.4 *2*	100	2483.22	15/2$^+$				
3749.14	19/2$^-$	591.86 *6*	24 *3*	3157.27	17/2$^+$	(E1(+M2)) [i]	−0.01 [i] *2*	4.68×10^{-4}	α(K)=0.000419 *6*; α(L)=4.27×10^{-5} *7*; α(M)=6.36×10^{-6} *10* α(N)=4.14×10^{-7} *6* B(E1)(W.u.)=(4.6×10^{-5} *8*); B(M2)(W.u.)=(0.06 *+24−6*)
		673.37 *5*	32 *3*	3075.83	15/2$^-$	E2 [i]		9.78×10^{-4}	α(K)=0.000873 *13*; α(L)=9.07×10^{-5} *13*; α(M)=1.352×10^{-5} *19* α(N)=8.72×10^{-7} *13* B(E2)(W.u.)=7.6 *11* Mult.: Q from γ(θ) in (HI,xnγ); E2 from RUL.
		994.04 *3*	100 *5*	2755.10	17/2$^+$	E1+M2 [@]	−0.03 [f] *2*	1.55×10^{-4} *2*	α(K)=0.0001389 *21*; α(L)=1.407×10^{-5} *22*; α(M)=2.10×10^{-6} *4* α(N)=1.377×10^{-7} *21* B(E1)(W.u.)=4.0×10^{-5} *5*; B(M2)(W.u.)=0.17 *+23−17*
		2341.6 *3*	0.5 *5*	1407.18	13/2$^+$				
3759.7		1741.6 *3*	100	2018.11	13/2$^+$				
3813.71	13/2$^-$	738.0 *3*	<40	3075.83	15/2$^-$				
		979.5 *2*	76 *8*	2834.11	13/2$^-$				
		1083.5 *2*	100 *8*	2730.07	13/2$^-$	M1+E2 [i]	−0.98 *21*	2.78×10^{-4} *6*	α(K)=0.000249 *5*; α(L)=2.54×10^{-5} *5*; α(M)=3.79×10^{-6} *8* α(N)=2.49×10^{-7} *5*
		1565.9 *3*	56 *8*	2248.16	11/2$^-$	M1+E2 [i]	−0.02 [i] *7*	2.17×10^{-4}	α(K)=0.0001147 *16*; α(L)=1.161×10^{-5} *17*; α(M)=1.734×10^{-6} *25* α(N)=1.147×10^{-7} *16*; α(IPF)=8.85×10^{-5} *13*
3925.9	15/2$^+$	768.6 *3*	100	3157.27	17/2$^+$	M1+E2 [i]	+0.27 *7*	5.48×10^{-4} *10*	α(K)=0.000490 *9*; α(L)=5.01×10^{-5} *9*; α(M)=7.48×10^{-6} *13* α(N)=4.93×10^{-7} *9*
3940.04	13/2$^+$	1921.9 *2*	100	2018.11	13/2$^+$	M1+E2 [i]	+1.0 [i] *2*	3.39×10^{-4} *8*	α(K)=7.97×10^{-5} *12*; α(L)=8.06×10^{-6} *12*;

$^{69}_{32}Ge_{37}$-22

Adopted Levels, Gammas (continued)

γ(^{69}Ge) (continued)

E_i(level)	J_i^π	E_γ	I_γ [†]	E_f	J_f^π	Mult.	δ	α [j]	Comments
									α(M)=1.202×10^{-6} *18* α(N)=7.95×10^{-8} *12*; α(IPF)=0.000250 *7*
3956.17	13/2$^+$	880.0 *3*	47 *24*	3075.83	15/2$^-$				
		1226.2 *2*	<29	2730.07	13/2$^-$				
		1473.0 *3*	100 *6*	2483.22	15/2$^+$	M1+E2 [i]	+0.19 *2*	2.04×10^{-4}	α(K)=0.0001291 *18*; α(L)=1.307×10^{-5} *19*; α(M)=1.95×10^{-6} *3* α(N)=1.291×10^{-7} *18*; α(IPF)=5.98×10^{-5} *9*
3963.87		1480.6 *1*	100	2483.22	15/2$^+$				
3990.5		1260.4 *3*	100	2730.07	13/2$^-$				
4067.89	19/2$^-$	318.8 *1*	40 *20*	3749.14	19/2$^-$				
		400.9 *2*	45 *20*	3666.80	17/2$^-$				
		671.9 *2*	25 *15*	3395.89	15/2$^-$				
		910.7 *2*	25 *15*	3157.27	17/2$^+$				
		992.0 *2*	20 *10*	3075.83	15/2$^-$				
		1312.7 *1*	100 *50*	2755.10	17/2$^+$	(E1(+M2)) [d]	−0.02 [f] *4*	2.17×10^{-4}	α(K)=8.34×10^{-5} *15*; α(L)=8.43×10^{-6} *15*; α(M)=1.257×10^{-6} *22* α(N)=8.27×10^{-8} *15*; α(IPF)=0.0001235 *18*
4107.7		1031.9 *3*		3075.83	15/2$^-$				
4267.11	21/2$^-$	303.2 *1*		3963.87					
		518.60 *5*	100 *5*	3749.14	19/2$^-$	M1+E2 [e]	+0.08 [f] *1*	1.29×10^{-3}	α(K)=0.001150 *17*; α(L)=0.0001183 *17*; α(M)=1.768×10^{-5} *25* α(N)=1.162×10^{-6} *17* B(M1)(W.u.)=0.036 *5*; B(E2)(W.u.)=1.3 *4* E_γ: This transition is not included in the least-squares fit for the excitation energies since the energy fit is poor. The least-squares fit gives Eγ=518.39 *4*.
		662.0 *3*	41.3 *20*	3605.09	17/2$^-$				
4305.73	21/2$^{(+)}$	1550.6 *2*	100	2755.10	17/2$^+$				
4493.5		1738.4 *3*	100	2755.10	17/2$^+$				
4566.38		817.3 *2*	100	3749.14	19/2$^-$				
4594.28	23/2$^-$	288.3 *3*	4.3 *26*	4305.73	21/2$^{(+)}$				
		327.17 *5*	100 *5*	4267.11	21/2$^-$	M1+E2 [e]	−0.11 [f] *4*	0.00384 *8*	α(K)=0.00343 *7*; α(L)=0.000356 *8*; α(M)=5.32×10^{-5} *12* α(N)=3.48×10^{-6} *7* B(M1)(W.u.)=0.0228 *16*; B(E2)(W.u.)=4 *3*
		526.3 *1*	39.7 *26*	4067.89	19/2$^-$	E2		0.00201	α(K)=0.00179 *3*; α(L)=0.000188 *3*; α(M)=2.80×10^{-5} *4* α(N)=1.79×10^{-6} *3* B(E2)(W.u.)=12.1 *10* Mult.: Q from γ(θ) in (HI,xnγ); E2 from RUL.
		845.2 *1*	56 *4*	3749.14	19/2$^-$	E2		5.34×10^{-4}	α(K)=0.000477 *7*; α(L)=4.92×10^{-5} *7*;

$^{69}_{32}Ge_{37}$-23

Adopted Levels, Gammas (continued)

γ(^{69}Ge) (continued)

E_i(level)	J_i^π	E_γ	I_γ †	E_f	J_f^π	Mult.	Comments
							α(M)=7.34×10^{-6} *11* α(N)=4.77×10^{-7} *7* B(E2)(W.u.)=1.60 *14* Mult.: Q from $\gamma(\theta)$ in (HI,xnγ); E2 from RUL.
4714.77		148.4 *1*	33 *17*	4566.38			
		447.6 *1*	100 *50*	4267.11	21/2$^-$		
		966.0 *3*	100 *50*	3749.14	19/2$^-$		
4837.09		2082.0 *3*	100	2755.10	17/2$^+$		
5006.2	(25/2$^-$)	739.1 *3*	100	4267.11	21/2$^-$	Q[d]	
5089.9		1340.7 *3*	100	3749.14	19/2$^-$		
5467?		872[k]		4594.28	23/2$^-$		
5593.04	23/2$^-$	1325.9 *2*	100	4267.11	21/2$^-$	D+Q[d]	
5737.82		1143.5 *1*	100 *54*	4594.28	23/2$^-$		
		1171.5 *3*	100 *54*	4566.38			
5802?		795[k]		5006.2	(25/2$^-$)		
5834.78	27/2$^-$	1240.5 *1*	100	4594.28	23/2$^-$	Q[d]	
5841.7		1247.4 *5*		4594.28	23/2$^-$		
5897.96	(25/2$^+$)	1592.4 *3*	100	4305.73	21/2$^{(+)}$		
6041.85		1204.8 *3*	100 *80*	4837.09			
		1774.7 *2*	60 *40*	4267.11	21/2$^-$		
6086.85		1492.5 *3*		4594.28	23/2$^-$		
6291.74	(25/2$^+$)	1697.4 *2*	100 *40*	4594.28	23/2$^-$		
		1985.9 *3*		4305.73	21/2$^{(+)}$		
6504.2		662.5 *5*	100	5841.7			
6548.47	(25/2$^+$)	1954.2 *3*	100 *30*	4594.28	23/2$^-$		
		2242.8 *3*		4305.73	21/2$^{(+)}$		
6591.1		756.3 *5*	100	5834.78	27/2$^-$	D+Q[d]	
6839.56	25/2$^{(-)}$	291.1 *1*	6 *4*	6548.47	(25/2$^+$)		
		547.9 *2*	4 *2*	6291.74	(25/2$^+$)		
		752.7 *1*	19 *8*	6086.85			
		797.7 *1*	47 *15*	6041.85			
		1101.7 *1*	28 *9*	5737.82			
		1246.5 *1*	100 *6*	5593.04	23/2$^-$		
7147.58	29/2$^{(+)}$	855.8 *1*	16 *7*	6291.74	(25/2$^+$)		
		1249.8 *3*	4 *2*	5897.96	(25/2$^+$)		
		1312.8 *1*	100 *5*	5834.78	27/2$^-$		
7405.5		1507.5 *3*		5897.96	(25/2$^+$)		
7412.4		1819.3 *3*		5593.04	23/2$^-$		
7578.56	29/2$^{(-)}$	739.0 *2*	100	6839.56	25/2$^{(-)}$		
7780.21	31/2$^{(-)}$	1945.4 *1*	100	5834.78	27/2$^-$		
7903.58	33/2$^{(+)}$	756.0 *1*	100	7147.58	29/2$^{(+)}$		

$^{69}_{32}Ge_{37}$-24

Adopted Levels, Gammas (continued)

$\gamma(^{69}Ge)$ (continued)

E_i(level)	J_i^π	E_γ	I_γ [†]	E_f	J_f^π
8708.87	$(33/2^-)$	1130.3 *1*	100	7578.56	$29/2^{(-)}$
9012.32	$(35/2^-)$	1232.1 *1*	100	7780.21	$31/2^{(-)}$
9182.29	$(37/2^+)$	1278.7 *1*	100	7903.58	$33/2^{(+)}$

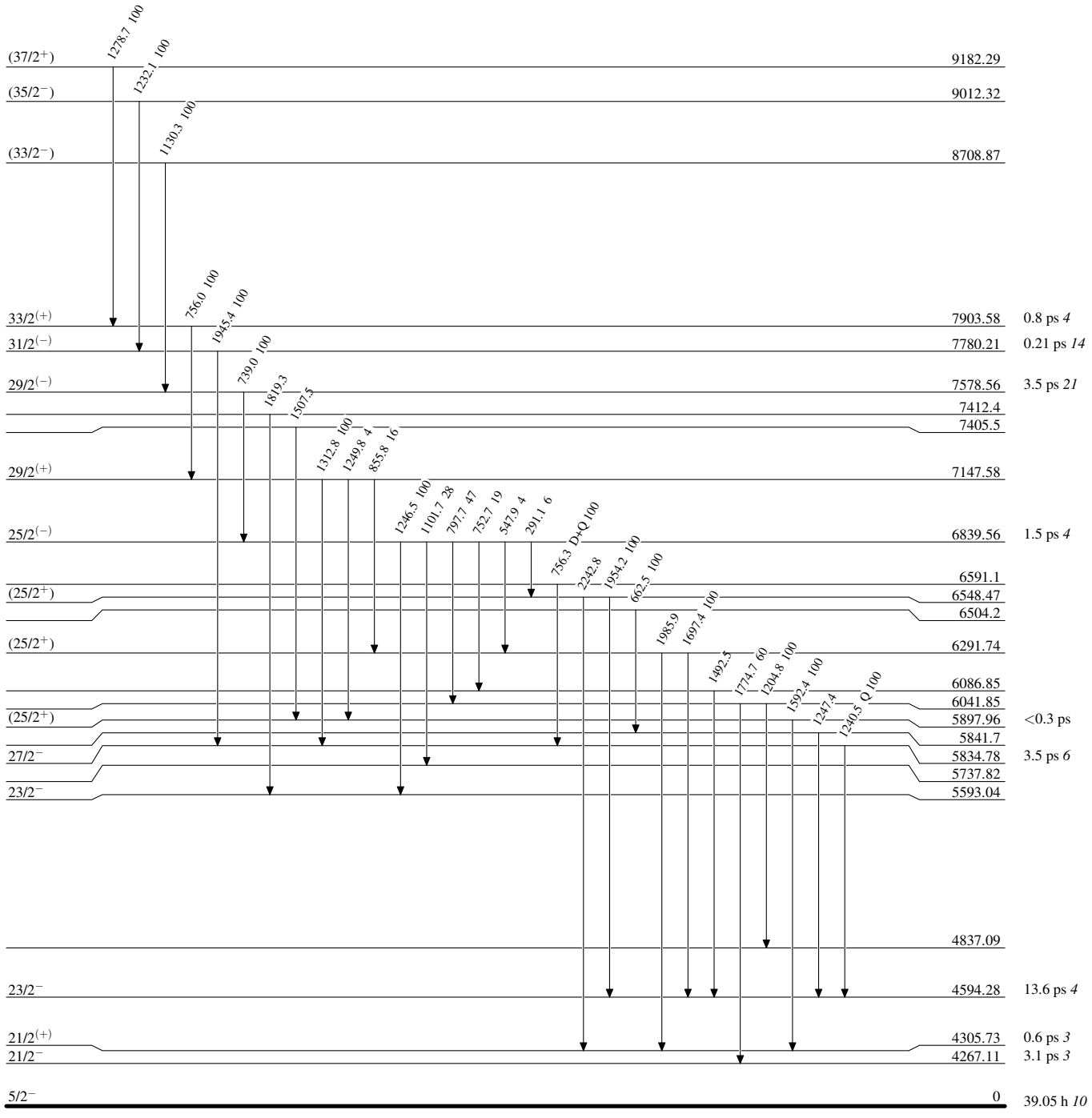
† Relative photon branching from each level is given.
‡ From α(K)exp in (p,nγ).
# From α(K)exp in ^{69}As ε decay.
@ From $\gamma(\theta)$ and linear polarization in (HI,xnγ).
& From $\gamma(\theta)$ in (p,nγ); parity from $\Delta\pi$ of initial and final levels.
a From $\gamma(\theta)$ in (p,nγ) and RUL.
b From $\gamma(\theta)$ in (α,nγ); parity from $\Delta\pi$ of initial and final levels.
c From $\gamma(\theta)$ in (α,nγ) and RUL.
d From $\gamma(\theta)$ in (HI,xnγ); parity from $\Delta\pi$ of initial and final levels.
e From $\gamma(\theta)$ in (HI,xnγ) and RUL.
f From $\gamma(\theta)$ in (HI,xnγ).
g From $\gamma(\theta)$ in (p,nγ).
h From $\gamma(\theta)$ in (α,nγ).
i From $\gamma(\theta)$ and linear-polarization data in (α,nγ) and/or (HI,xnγ).
j Additional information 3.
k Placement of transition in the level scheme is uncertain.

$^{69}_{32}Ge_{37}$-25

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level



$^{69}_{32}Ge_{37}$

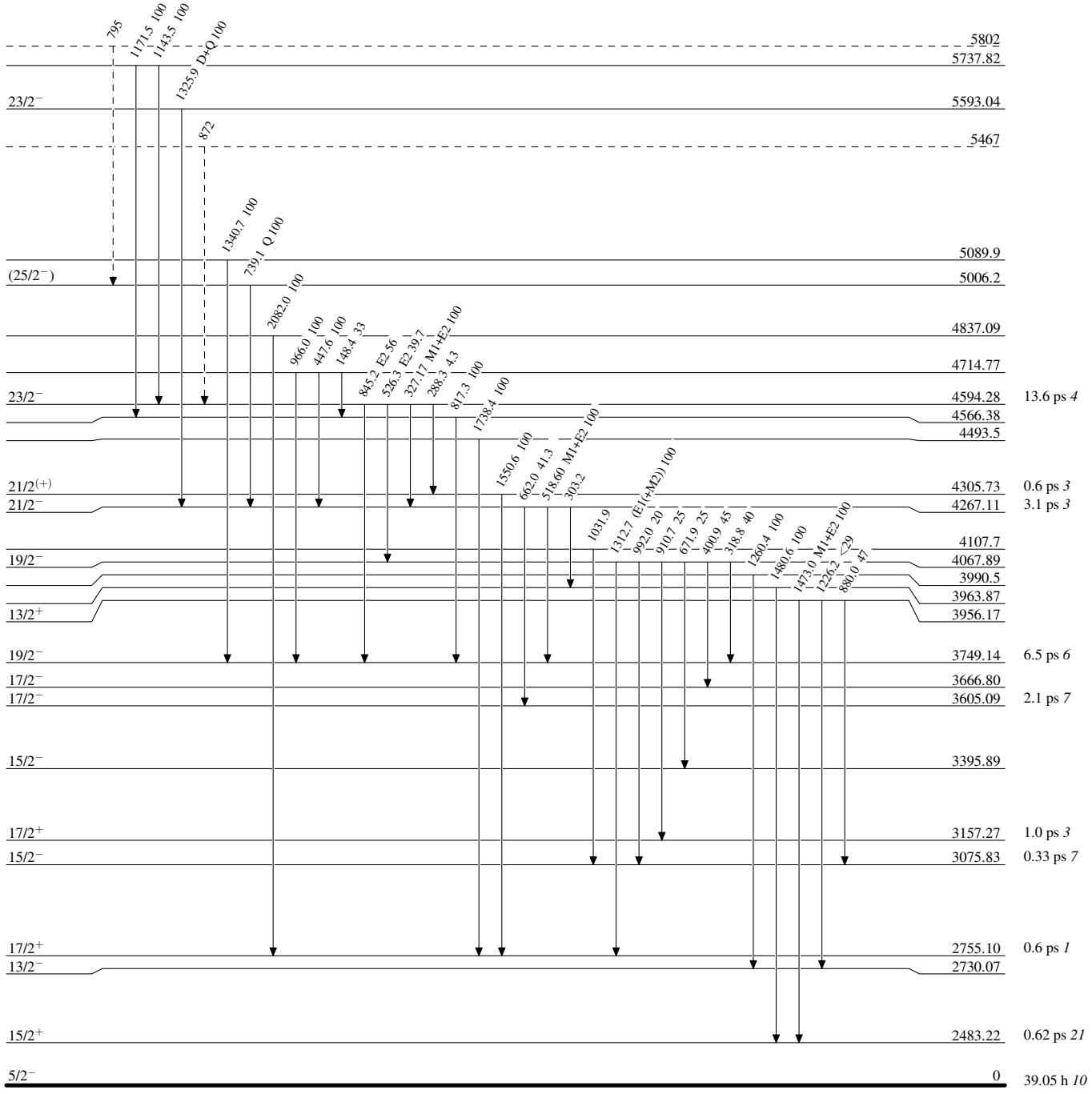
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

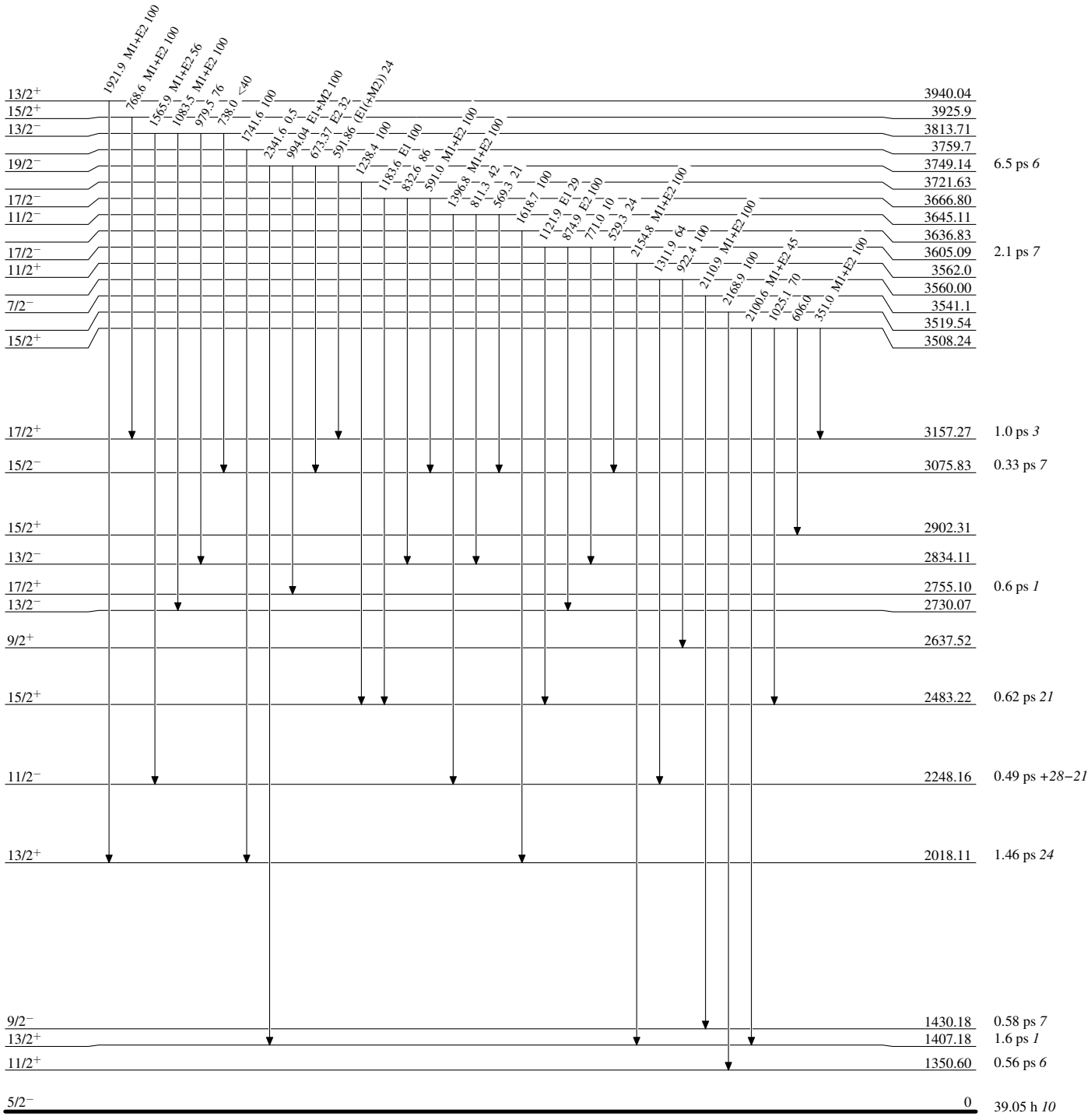


$^{69}_{32}Ge_{37}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

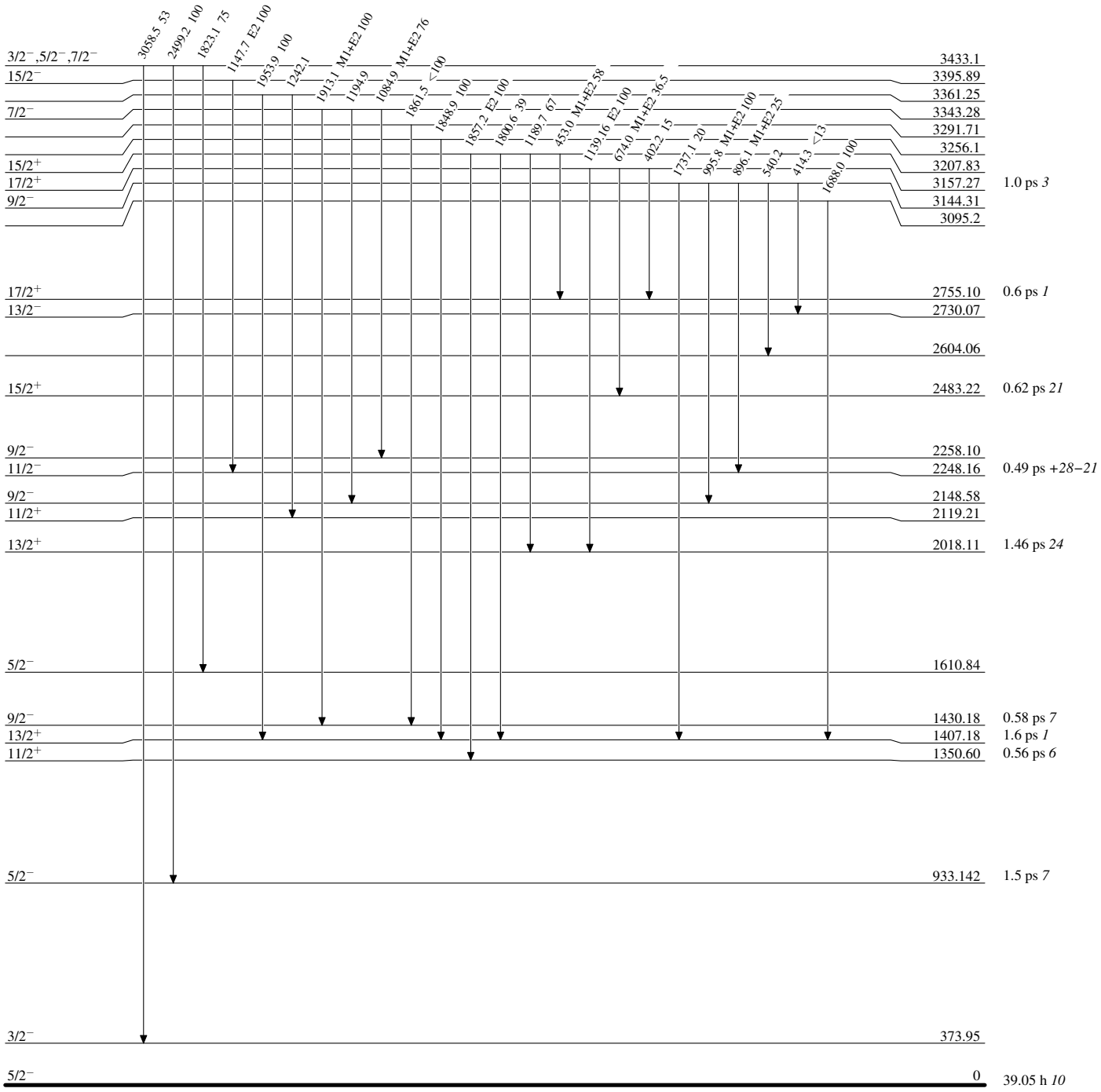


$^{69}_{32}Ge_{37}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

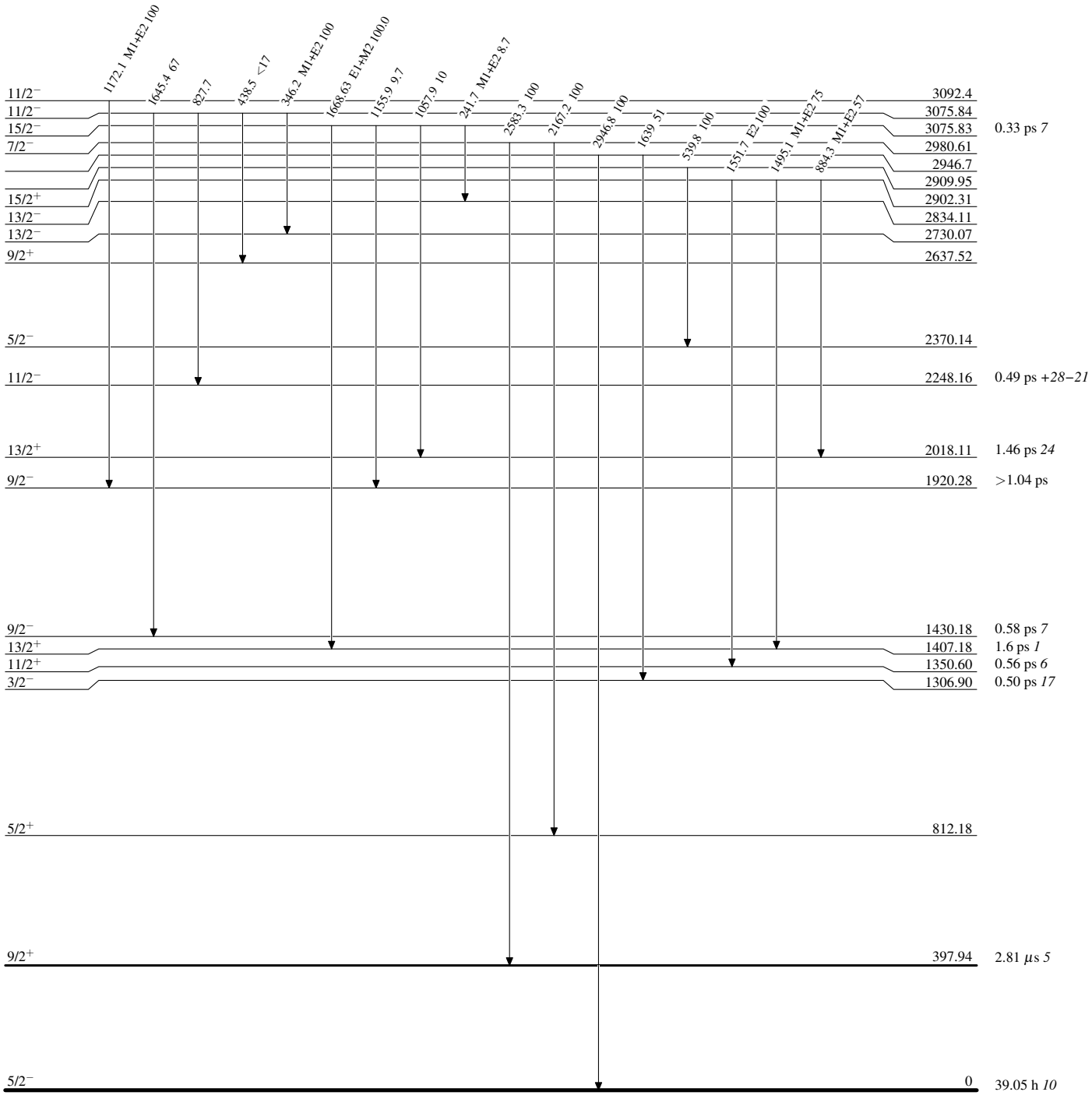


$^{69}_{32}Ge_{37}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

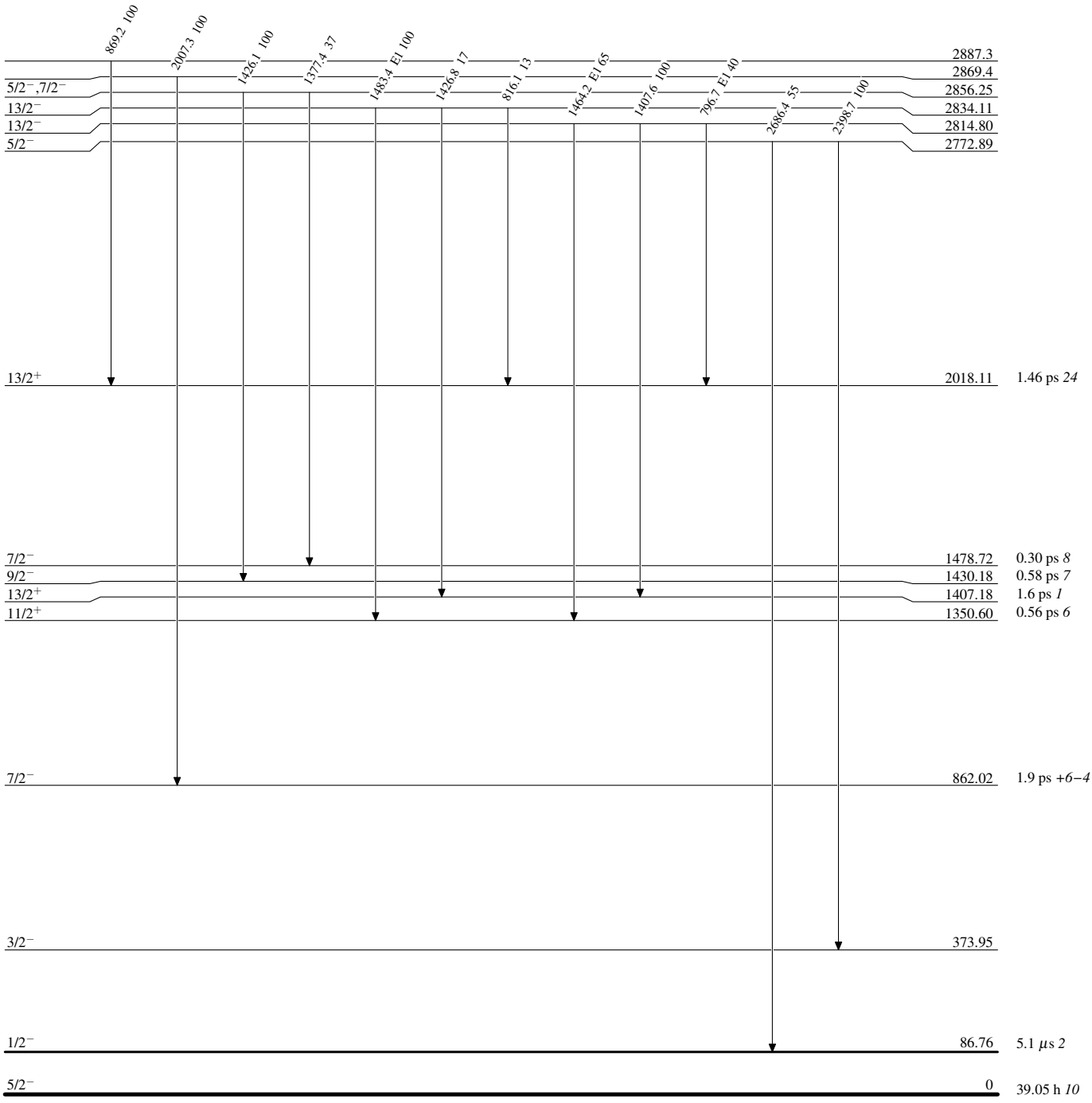


$^{69}_{32}Ge_{37}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

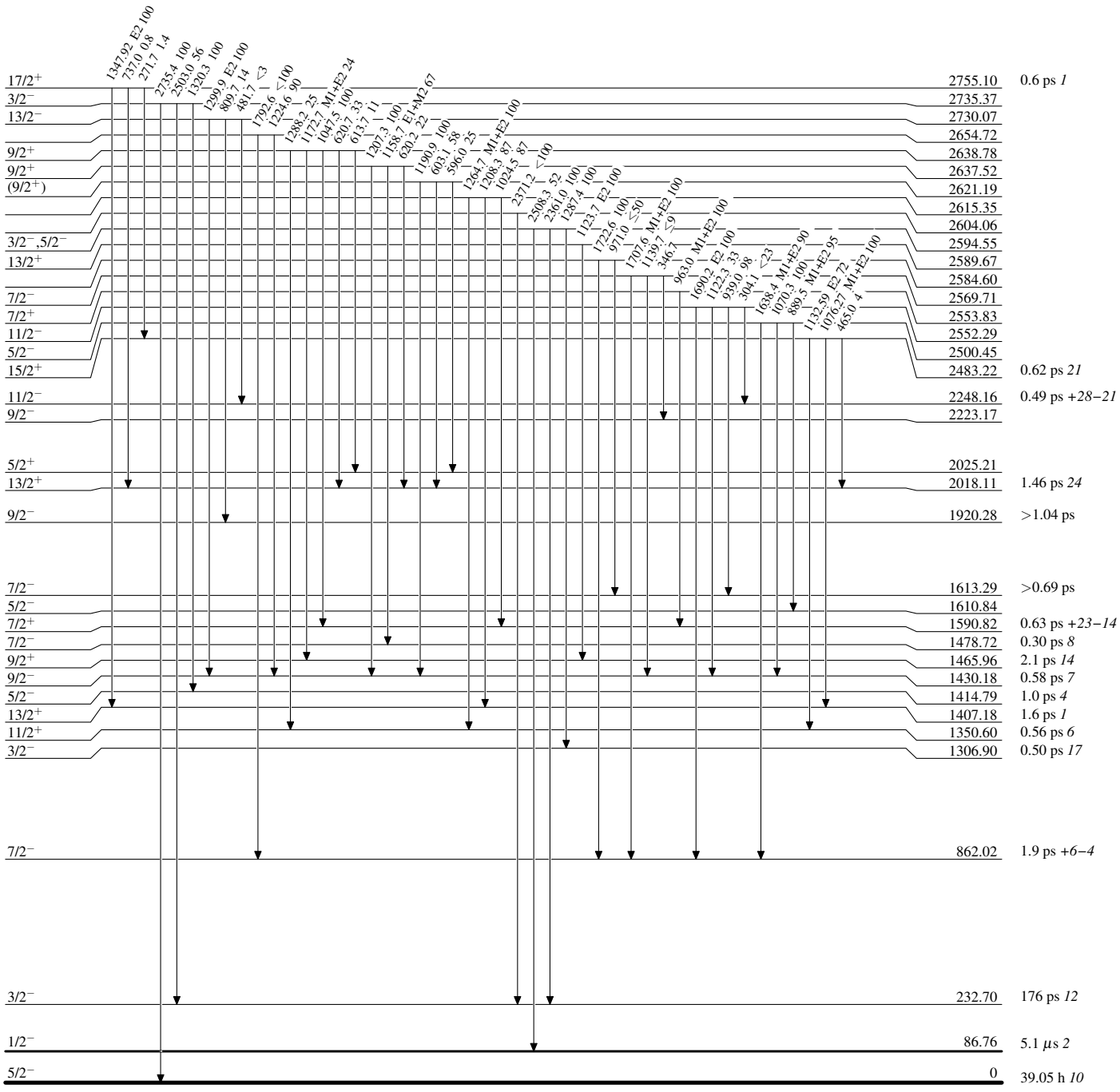


$^{69}_{32}Ge_{37}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

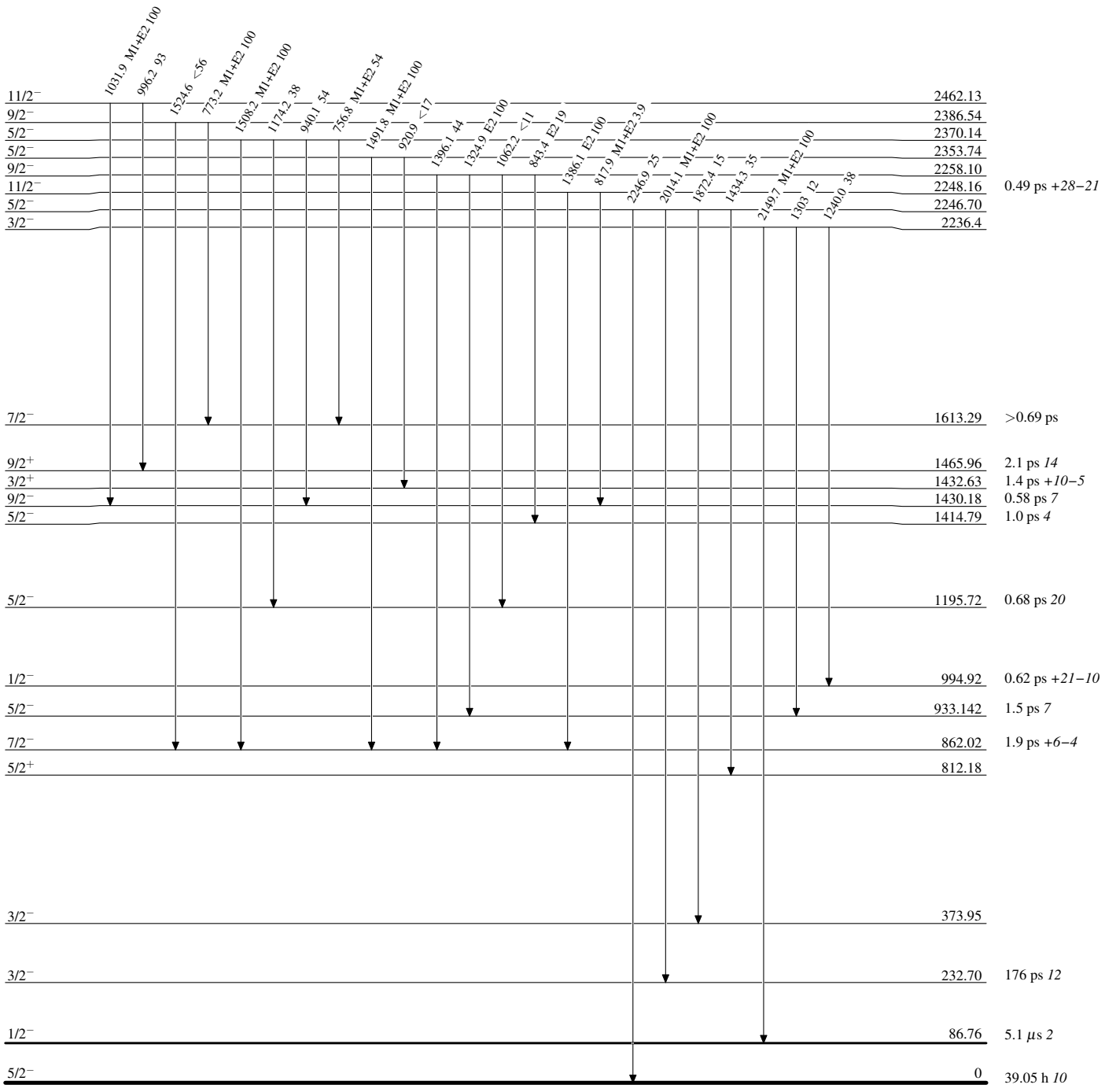


$^{69}_{32}Ge_{37}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

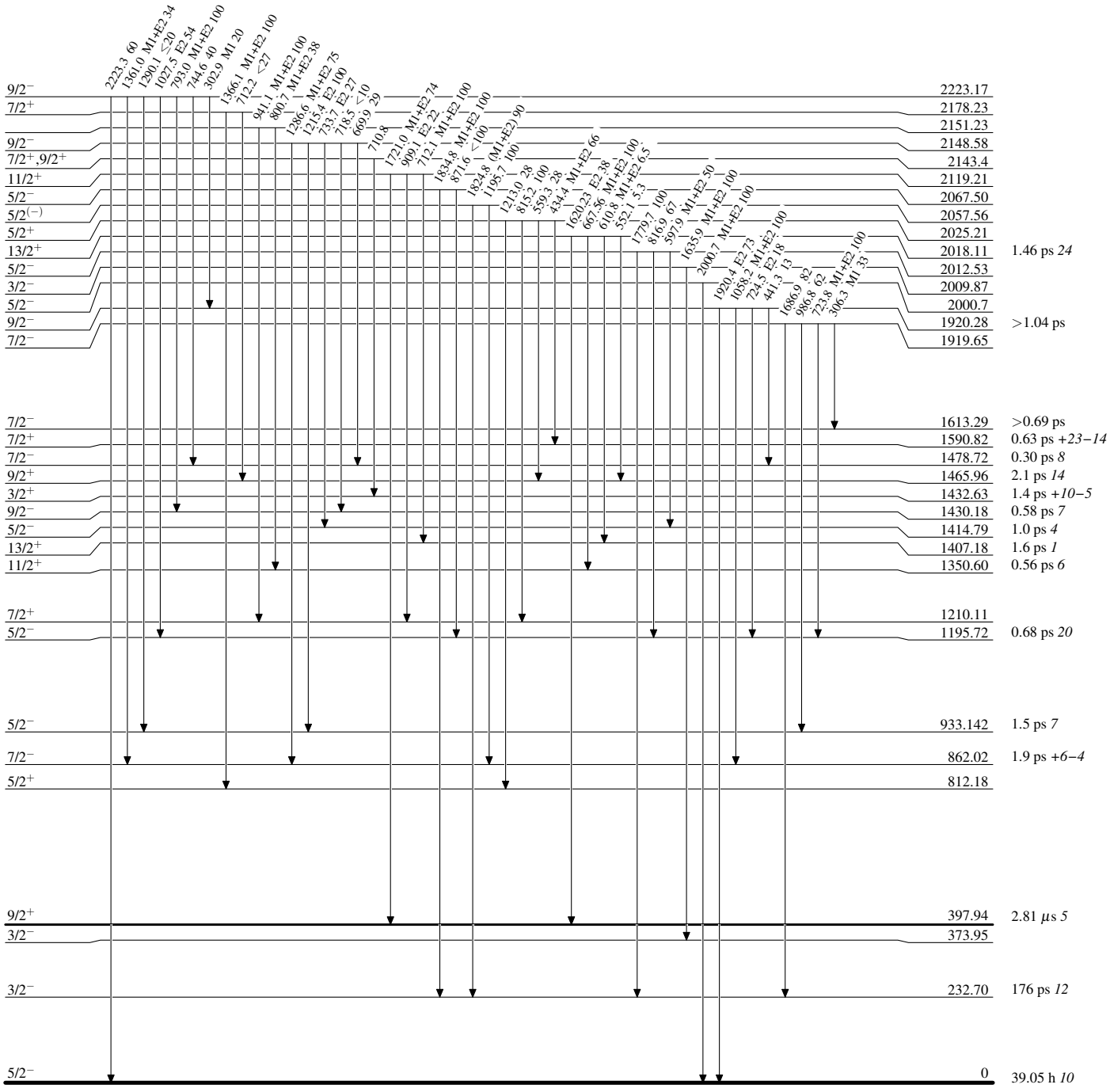


$^{69}_{32}Ge_{37}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

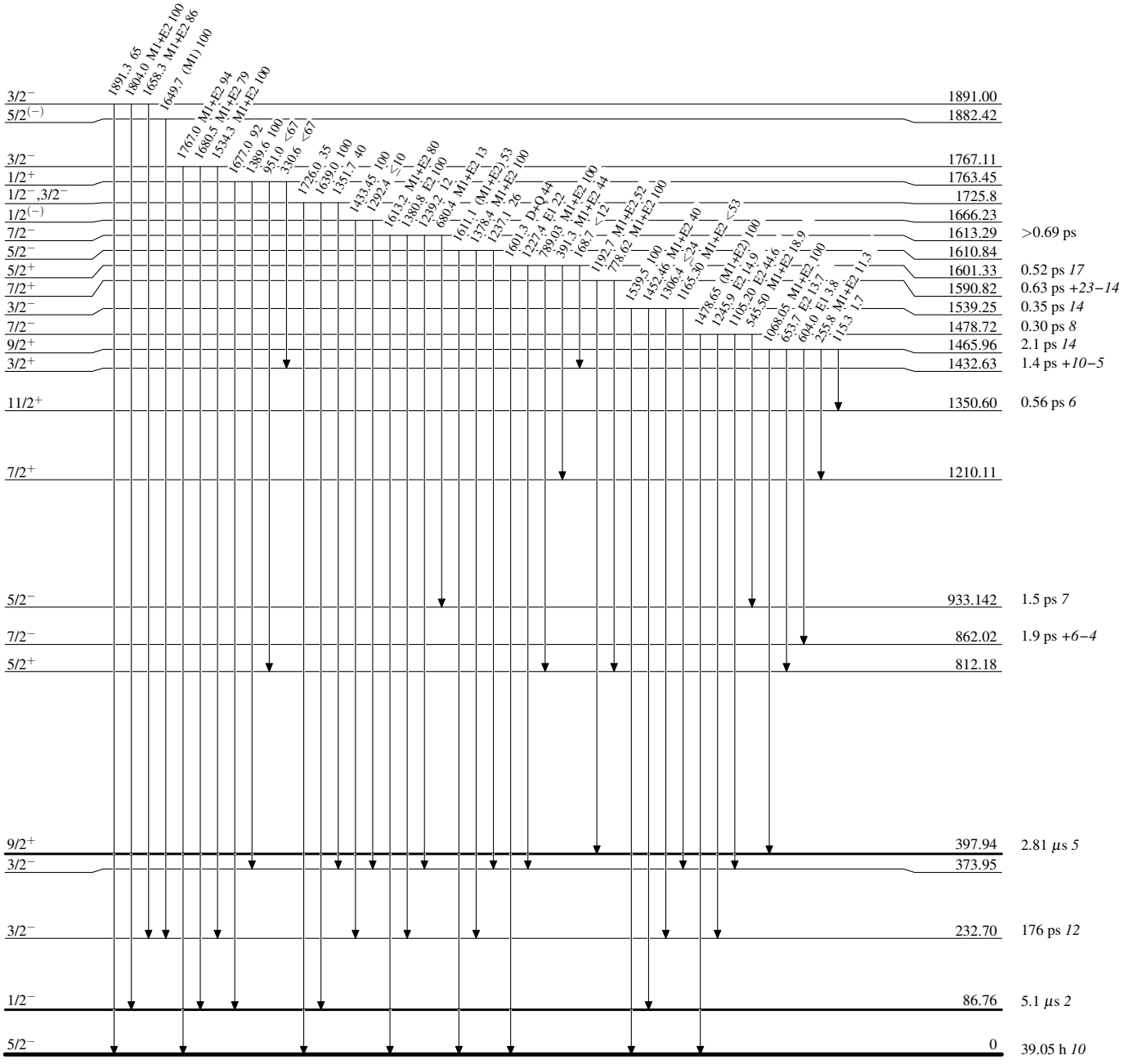


$^{69}_{32}Ge_{37}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

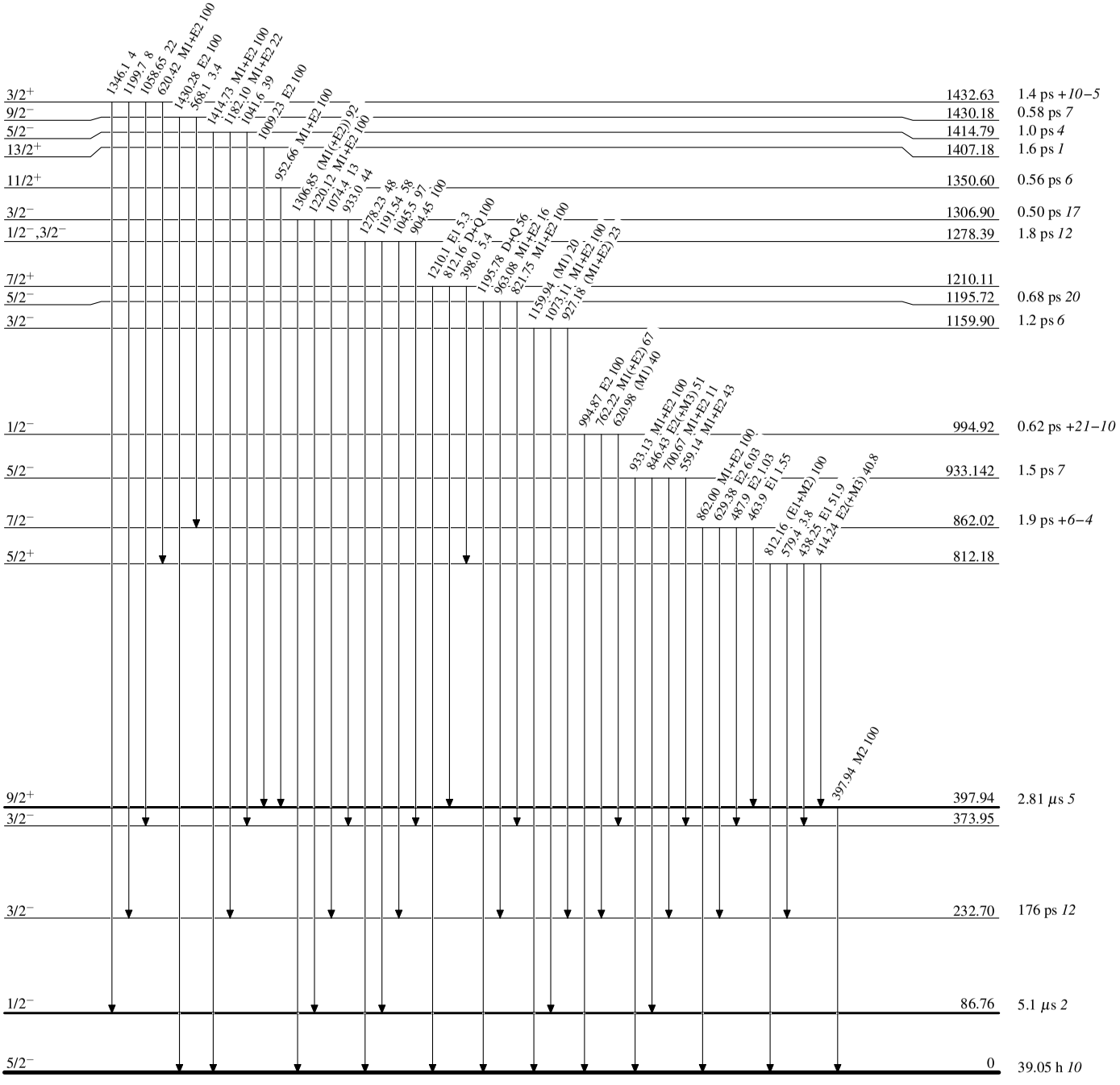


$^{69}_{32}Ge_{37}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

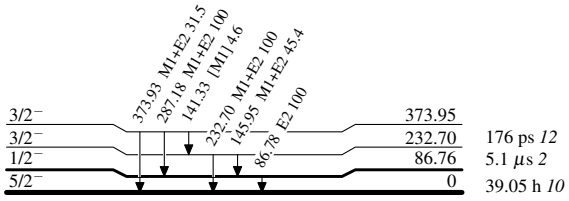


$^{69}_{32}Ge_{37}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{69}_{32}Ge_{37}$