Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Huo Junde, Huang Xiaolong, J. K. Tuli	NDS 106,159 (2005)	1-Apr-2005

Q(β^-)=−6071 *5*; S(n)=9122 *6*; S(p)=6223 *6*; Q(α)=−2870 *5* 2012Wa38
Note: Current evaluation has used the following Q record −6.01E3 109105 316222 6-2870 5 2003Au03.

^{67}Ge Levels

Cross Reference (XREF) Flags

A ^{67}As ε decay
B ^{57}Fe(^{12}C,2nγ)
C ^{64}Zn(α,nγ), ^{63}Cu(^{6}Li,2nγ)
D ^{70}Ge(^{3}He,^{6}He)

E(level)†	J$^\pi$	$T_{1/2}$	XREF	Comments
0	1/2$^-$	18.9 min *3*	ABCD	%ε+%β^+=100 J=1/2 from $\gamma(\theta)$ and $\gamma\gamma(\theta)$ in ^{64}Zn(α,nγ), π=− from log *ft*=5.61 *4* to 1/2$^-$. $T_{1/2}$: weighted average of 18.7 min *5* (1959Ri35) and 19.0 min *3* (1969Ba07).
18.20 *5*	5/2$^-$	13.7‡ μs *9*	ABC	J=5/2 from $\gamma(\theta)$ and $\gamma\gamma(\theta)$ in ^{64}Zn(α,nγ); π=− from E2 to 1/2$^-$.
122.58 *14*	3/2$^{(-)}$		A CD	J=3/2 from $\gamma(\theta)$ and $\gamma\gamma(\theta)$ in ^{64}Zn(α,nγ); π=− from shell model systematics.
243.61 *16*	3/2$^{(-)}$		A C	J=3/2 from $\gamma(\theta)$ and $\gamma\gamma(\theta)$ in ^{64}Zn(α,nγ); π=(−) from log *ft*=5.64 *7* from (5/2$^-$).
711.55 *24*	5/2$^{(-)}$		A Cd	J=5/2 from $\gamma(\theta)$ and $\gamma\gamma(\theta)$ in ^{64}Zn(α,nγ); π=− from shell model systematics.
714.70 *25*			Cd	
751.70 *6*	9/2$^+$	146 ns *4*	BC	μ=−0.849 *18* (1989Ra17); g=−0.1887 *26* (1991Le34) μ: From ^{64}Zn(α,nγ). J=9/2 from $\gamma(\theta)$ and polarization studies in ^{57}Fe(^{12}C,2nγ); π=+ from M2 to 5/2$^-$. $T_{1/2}$: from 2000Ch07. Others: 110.9 ns *14* (1979Al04), 70 ns *7* (1973BeVT), 102 ns *10* (1978Na10).
808.13 *18*			A C	
929.4 *3*			CD	
1019.90 *20*	5/2$^{(-)}$		A C	J=5/2 from $\gamma(\theta)$ and $\gamma\gamma(\theta)$ in ^{64}Zn(α,nγ); π=− from shell model systematics.
1080 *30*			D	
1150.0 *3*			C	
1159.0 *4*			C	
1256.7 *3*			C	
1273.8 *4*			A C	
1293.9 *4*			A CD	
1431.8 *10*			C	
1641.89 *14*	11/2$^+$#		B	
1652.8 *4*			A C	
1698.4 *4*			A C	
1747.29 *7*	13/2$^+$#		B	
1900.8 *4*			A C	
2096.8 *8*			A C	
2156.4 *8*			C	
2218.2 *10*			A C	
2251.3 *8*			A C	
2421.12 *15*	(13/2$^+$)#		B	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{67}Ge Levels (continued)

E(level)[†]	XREF	E(level)[†]	Jπ	XREF	E(level)[†]	Jπ	XREF
2524.4 *8*	A C	3074.12 *10*	$(17/2^+)^{\#}$	B	4733.05 *12*	$(21/2^-)^{\#}$	B
2597.2 *8*	C	3603.96 *10*	$(15/2^-)^{\#}$	B	4847.98 *11*	$(23/2^-)^{\#}$	B
2690 *30*	D	4313.60 *11*	$(19/2^-)^{\#}$	B			

† From a least-squares fit to the Eγ data.
‡ From pulsed beam measurements in ^{64}Zn(α,nγ), ^{63}Cu(^{6}Li,2nγ).
# From γ(θ), polarization and excitation function data in ^{57}Fe(^{12}C,2nγ).

Adopted Levels, Gammas (continued)

$\gamma(^{67}Ge)$

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	δ	α[@]	Comments
18.20	$5/2^-$	18.20 *5*	100 *18*	0	$1/2^-$	E2		364	B(E2)(W.u.)=3.5 *3* Mult.: from α(K)exp in ^{64}Zn(α,nγ), ^{63}Cu(^{6}Li,2nγ).
122.58	$3/2^{(-)}$	104.4 *3*	23.8 *5*	18.20	$5/2^-$	(M1+E2)[‡]	≥4	0.614	δ: from 1981MuZZ.
		122.7 *3*	100.0 *5*	0	$1/2^-$	(M1(+E2))[‡]	0.85 *85*	0.17 *13*	δ: from 1981MuZZ.
243.61	$3/2^{(-)}$	120.8 *3*	100.0 *25*	122.58	$3/2^{(-)}$	(M1+E2)[‡]	≥5	0.361	δ: from 1981MuZZ.
		225.4 *3*	14.9 *18*	18.20	$5/2^-$				
		243.6 *3*	81 *3*	0	$1/2^-$	[‡]			δ: +0.04 *16* or −1.7 *+6−10* for (M1+E2).
711.55	$5/2^{(-)}$	589.0 *3*	42	122.58	$3/2^{(-)}$	(M1+E2)[‡]	−1.1[#] *+6−23*		
		693.1 *5*	100	18.20	$5/2^-$				
714.70		471.2 *3*		243.61	$3/2^{(-)}$				
		592.0 *3*		122.58	$3/2^{(-)}$				
751.70	$9/2^+$	733.50 *3*	100	18.20	$5/2^-$	M2			B(M2)(W.u.)=0.0798 *10* Mult.: M2 from α(K)exp in ^{64}Zn(α,nγ).
808.13		685.5 *3*	61 *9*	122.58	$3/2^{(-)}$				
		789.9 *3*	24 *7*	18.20	$5/2^-$				
		808.1 *3*	100 *11*	0	$1/2^-$				
929.4		217.9 *3*		711.55	$5/2^{(-)}$				
		807.0 *10*		122.58	$3/2^{(-)}$				
		911.0 *5*		18.20	$5/2^-$				
1019.90	$5/2^{(-)}$	776.2 *2*	32	243.61	$3/2^{(-)}$				
		897.45 *21*	100	122.58	$3/2^{(-)}$	(M1+E2)[‡]	−1.0[#] *+8−24*		
1150.0		437.8 *7*		711.55	$5/2^{(-)}$				
		1131.9 *3*		18.20	$5/2^-$				
1159.0		1036.4 *3*	100	122.58	$3/2^{(-)}$				
1256.7		327.5 *7*		929.4					
		1256.7 *3*		0	$1/2^-$				
1273.8		465.0 *7*		808.13					
		1151.4 *5*	45	122.58	$3/2^{(-)}$				
		1274.3 *10*	100	0	$1/2^-$				
1293.9		1049.6 *10*	19	243.61	$3/2^{(-)}$				
		1171.3 *5*	100	122.58	$3/2^{(-)}$				
		1294.0 *5*	93	0	$1/2^-$				
1431.8		1309.2 *10*	100	122.58	$3/2^{(-)}$				
1641.89	$11/2^+$	890.18 *12*	100	751.70	$9/2^+$	M1+E2[†]	+0.50[†] *8*		
1652.8		633.0 *3*	100	1019.90	$5/2^{(-)}$				
1698.4		1576.4 *7*		122.58	$3/2^{(-)}$				
		1698.0 *5*		0	$1/2^-$				
1747.29	$13/2^+$	995.58 *3*	100	751.70	$9/2^+$	E2[†]			

$^{67}_{32}Ge_{35}$-3

Adopted Levels, Gammas (continued)

γ(^{67}Ge) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	δ
1900.8		248.0 *3*	100	1652.8			
		1657.0 *5*	25	243.61	$3/2^{(-)}$		
2096.8		1385.2 *10*	100	711.55	$5/2^{(-)}$		
2156.4		1912.8 *10*		243.61	$3/2^{(-)}$		
		2156.4 *10*		0	$1/2^-$		
2218.2		2218.2 *10*	100	0	$1/2^-$		
2251.3		1443.4 *10*		808.13			
		2128.4 *10*		122.58	$3/2^{(-)}$		
2421.12	$(13/2^+)$	779.23 *5*	100	1641.89	$11/2^+$	(M1+E2)[†]	+0.5[†] *1*
2524.4		1230.7 *10*		1293.9			
		2280.6 *10*		243.61	$3/2^{(-)}$		
2597.2		500.3 *3*		2096.8			
		2474.6 *10*		122.58	$3/2^{(-)}$		
3074.12	$(17/2^+)$	1326.84 *9*	100	1747.29	$13/2^+$	(E2)[†]	
3603.96	$(15/2^-)$	1856.62 *9*	100	1747.29	$13/2^+$	(E1)[†]	
4313.60	$(19/2^-)$	709.63 *6*	77 *4*	3603.96	$(15/2^-)$	(E2)[†]	
		1239.50 *9*	100 *11*	3074.12	$(17/2^+)$	(E1(+M2))[†]	+0.01[†] *4*
4733.05	$(21/2^-)$	419.45 *4*	100	4313.60	$(19/2^-)$	(M1(+E2))[†]	+0.02[†] *3*
4847.98	$(23/2^-)$	534.38 *3*	100	4313.60	$(19/2^-)$	(E2)[†]	

[†] From γ(θ) and polarization in ^{57}Fe(^{12}C,2nγ).
[‡] From γ(θ) and directional correlations with an oriented source in ^{64}Zn(α,nγ) and ΔJ^π.
[#] From γ(θ) and directional correlations with an oriented source in ^{64}Zn(α,nγ).
[@] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

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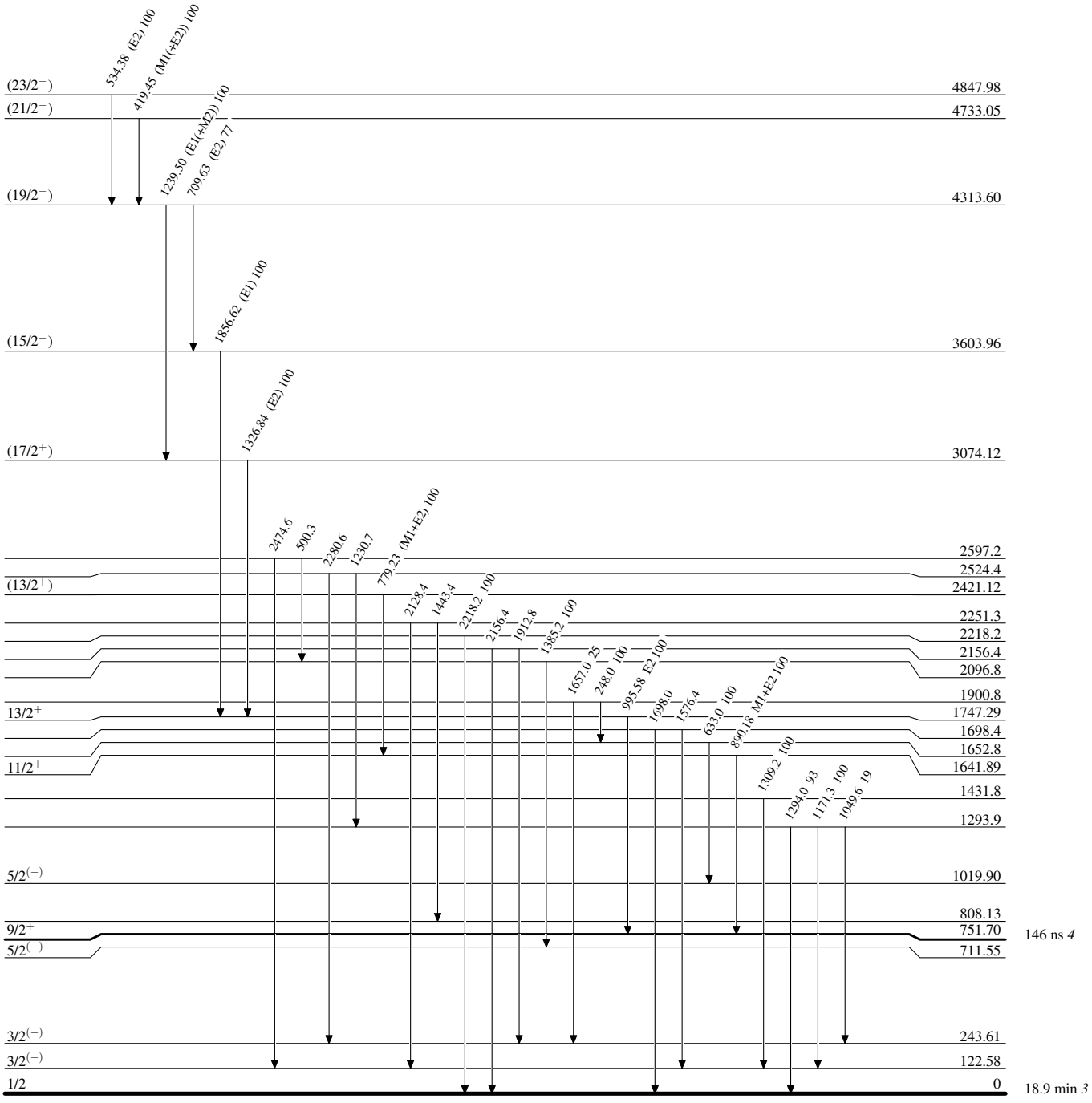
Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level



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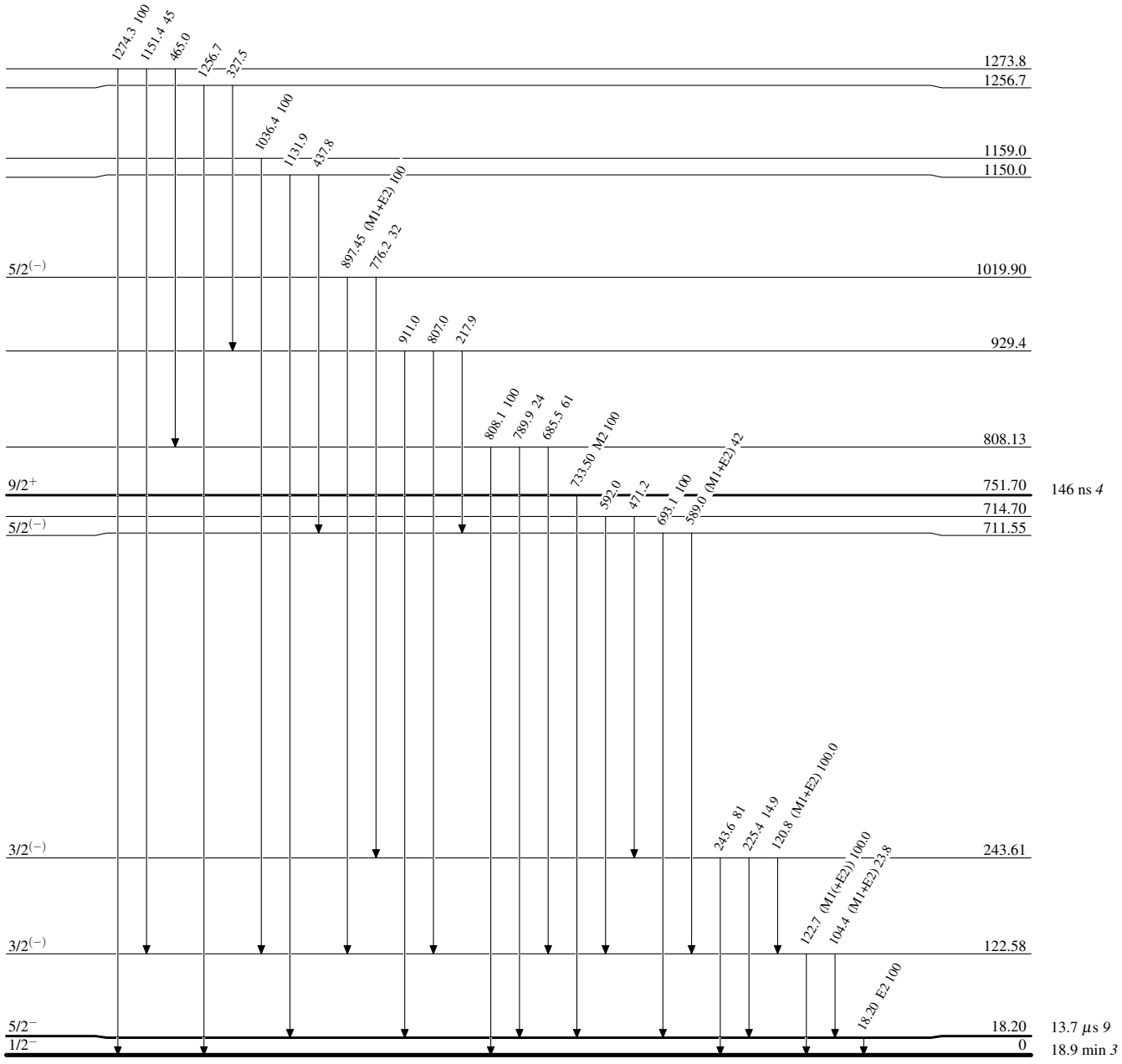
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



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