Adopted Levels, Gammas

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. A. Mccutchan	NDS 113,1735 (2012)	1-Mar-2012

Q(β^-)=−2921.1 *12*; S(n)=10198.10 *19*; S(p)=9977.0 *16*; Q(α)=−5333.3 *9* 2012Wa38
Note: Current evaluation has used the following Q record −2921.1 1210198.1019 *9977.0 15* −5333.3 *8* 2011AuZZ.
S(2n)=17250.4 *3*, S(2p)=18578.5 *17* (2011AuZZ).
α: Additional information 1.

^{68}Zn Levels

Cross Reference (XREF) Flags

A	^{68}Cu β^- decay (30.9 s)	I	^{68}Zn(n,n′γ)	Q	^{68}Zn(^{28}Si,^{29}Si),(^{28}Si,^{30}Si)
B	^{68}Cu β^- decay (3.75 min)	J	^{68}Zn(p,p′)	R	^{68}Zn(d,d′),(^{3}He,^{3}He′)
C	^{68}Ga ε decay	K	^{68}Zn(e,e′)	S	^{26}Mg(^{48}Ca,α2nγ)
D	^{65}Cu(α,pγ)	L	Coulomb excitation	T	^{65}Cu(α,p)
E	^{66}Zn(t,p)	M	Coulomb excitation: projectile	U	^{64}Ni(^{6}Li,d)
F	^{67}Zn(n,γ) E=thermal	N	^{70}Zn(p,t)	V	^{66}Zn(α,^{2}He)
G	^{67}Zn(d,p)	O	^{68}Zn(α,α′)	W	^{69}Ga(d,^{3}He)
H	^{68}Zn(γ,γ′)	P	^{68}Zn(p,p′γ)	X	^{208}Pb(^{64}Ni,Xγ)

E(level)†	J$^\pi$	T$_{1/2}$	XREF	Comments
0.0‡	0$^+$	stable	ABCDEFGHIJKLMNOP R TUVWX	
1077.37‡ *4*	2$^+$@	1.61 ps *2*	ABCDEFGHIJKLMNOPQR TUVWX	Q=−0.106 *16*; μ=+1.08 *6* T$_{1/2}$: weighted average of 1.48 ps *8* from B(E2)↑ in (e,e′), 1.68 ps *11* from Coul. Ex., and 1.62 ps *2* from DSAM in Coul. Ex.:Proj. Others: 1.50 ps *14* from B(E2)↑ in (d,d′), 1.88 ps *16* from (γ,γ′) (1981Ca10) and 0.90 ps *21* from DSAM in Coul. Ex. (1974Iv01). μ: from C-γ(θ,H,t) in Coul. Ex.: Projectile. Others +1.0 *2* from transient field (1978BeZJ) and +0.9 *3* from IMPAC (1979Fa06). Q: from (e,e′) (1981Ko06). Other: +0.09 *3* from GOSIA analysis of multi-step Coul. ex. (2004Ko03).
1655.91 *8*	0$^+$	96 ps *16*	A C EF HIJ MNOP R W	T$_{1/2}$: weighted average of 103 ps *18* from B(E2)↑ in Coul. Ex.:Projectile and 70 ps *35* from centroid-shift measurement in (p,p′γ). J$^\pi$: L(p,t)=L(t,p)=0.
1883.20 *5*	2$^+$	1.01 ps *5*	A CDEFG IJK MNOP R TU W	μ=+1.12 *20* J$^\pi$: L(p,t)=2. T$_{1/2}$: from DSAM in Coul. Ex.:Projectile. Others: 1.6 ps *3* from B(E2)↑ in (e,e′), 1.47 ps 12 from B(E2)↑ in Coul. Ex.:Projectile, >0.11 ps from DSAM in (α,pγ). μ: from C-γ(θ,H,t) in Coul. Ex.: Projectile.
2338.45 *5*	2$^+$@	0.31 ps *3*	ABC EFG IJ MNO U W	T$_{1/2}$: from DSAM in Coul. Ex.:Projectile. Others: 0.24 ps *+11−6* from DSAM in (n,n′γ) and 0.043 ps *4* from B(E2)↑ in Coul. Ex.:Projectile.
2370.3 *15*			AB R T V	J$^\pi$: 1293γ to 2$^+$.
2417.40‡ *6*	4$^+$	0.73 ps *7*	B DEFG IJ MNO U WX	μ=+0.56 *52* J$^\pi$: J from L(p,t)=L(^{6}Li,d)=4. T$_{1/2}$: weighted average of 0.76 ps *6* (2005Le12) and 0.82 ps *6* (2005Le38) from DSAM in Coul. Ex.: Projectile and 0.60 ps *6* (2004Ko03) from B(E2)↑ in Coul. Ex.:Projectile. μ: from C-γ(θ,H,t) in Coul. Ex.: Projectile.

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Adopted Levels, Gammas (continued)

^{68}Zn Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$	XREF	Comments
2510.2 *15*			AB N	XREF: N(?). Jπ: 1433γ to 2+.
2750.76 *8*	3−[@]	0.257 ps *6*	A EFG IJKLMNO QR UV	μ=1.08 *72* $T_{1/2}$: from DSAM in Coul. Ex.:Projectile. Others: 0.45 ps *+14−8* from DSAM in (n,n′γ) and 0.42 ps *14* from DSAM in Coul. Ex. B(E3)↑: 0.038 *8* from (e,e′) and 0.0220 *17* from (d,d′). μ: from C-γ(θ,H,t) in Coul. Ex.: Projectile.
2821.79 *8*	2+[@]	0.15[&] ps *3*	ABC EFGHIJ N U W	
2955.9 *22*	*b*		B e g J n w	
2959.49 *13*	(4+)[b]		eFg I nO U wX	Jπ: proposed by (2000Wi18),(1997Be77) in ^{208}Pb(^{64}Ni,Xγ).
3009.27 *7*	3+	0.28[&] ps *+14−8*	FG IJ W	Jπ: L(p,p′)=4, J=4 ruled out by γγ(θ) in (n,γ), 1126γ to 2+ rules out J=5.
3102.51 *11*	0+		EF I P	Jπ: L(t,p)=0.
3153.8? *4*	*c*		e I	
3160.1 *3*	*c*		e I o	
3164.4 *14*			IJ o	Jπ: L(p,p′)=(1) for E=3168 *5* and L(α,α′)=(5) for E=3170 *30* discrepant. E(level): possible multiplet of levels in this region.
3184.18 *13*	1,2+[d]	22[&] fs *6*	Fg I r w	
3186.6 *11*	(1,2+)		A g J r w	Jπ: 1530γ to 0+.
3281.58 *16*	4+[@]		EF I n r w	
3287.09 *13*	2+	0.08[&] ps *+2−1*	FG IJ n r w	Jπ: L(p,p′)=2+4 for 3282 and 3287 levels, L=1, j=1/2 transfer in (d,p) gives 2+,3+, 3287γ to 0+.
3334.7?			F	
3346.09 *20*	1+	6.1[a] fs *16*	HIJ N T W	Jπ: J from γγ(θ) in (γ,γ′); π from L(d,^{3}He). L(p,t)=(0) for 3345 discrepant. $T_{1/2}$: Other: 15 fs *+7−6* from DSAM in (n,n′γ).
3386? *3*			I	
3400.9 *5*	1,2+[e]	45[&] fs *+17−14*	I	
3425.07 *15*	*f*		eFG I W	
3429.46 *15*	1,2+[df]		eF IJ r W	
3451.0 *3*			I no r	
3458.83 *16*	5−[@]		B DEFG IJ no U X	XREF: J(3465).
3487.7 *15*			A e w	
3496.08 *11*	3+,4+	62[&] fs *10*	eF IJ w	Jπ: 3+,4+,5+ from L(p,p′)=4; ≠5+ from primary γ from 2−,3− capture state.
3586.64 *10*	4+[@]		EFG IJ N R	XREF: J(3595)N(3577).
3610.8 *6*	(6)−	<2.5 ns	B D G O X	Jπ: D transition to 5− and yield function favor J=6; π from L(d,p)=4. $T_{1/2}$: upper limit from γγ(t) of 152γ in ^{65}Cu(α,pγ).
3622 *5*	3−		E J	E(level): from (p,p′). Other: 3620 *10* in (t,p). Jπ: L(t,p)=(p,p′)=3.
3624.32 *21*	(1,2+)		I	Jπ: γ to g.s.
3630.32 *11*	(2+)		F I R	Jπ: 1213γ to 4+, 3630γ to 0+.
3664.7 *3*	(1,2)+		FG IJ W	XREF: J(3658). Jπ: J from γ to 0+; π from L(d,p)=1.
3687.5[‡] *5*	(6+)		DE I X	Jπ: J=6 from yield function in (α,pγ); π from γ to

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Adopted Levels, Gammas (continued)

^{68}Zn Levels (continued)

E(level)†	Jπ	$T_{1/2}$	XREF	Comments
				4+. L(t,p)=(5) for 3682 *10* discrepant. E(level): possible multiplet of levels in this region.
3709.8 *3*	(2+)		e IJ N	XREF: J(3701)N(3701). Jπ: L(p,t)=2 for a level at 3701; however, L(t,p)=0+4 for a level at 3712 *10*. γ's to 2+ and 0+ favor J=2.
3717.47 *20*	1,2+e	a	e HI o	$T_{1/2}$: adopted value of Γ_o/Γ=0.63 *4* gives $T_{1/2}$=22 fs *+8−5* for J=1 and 35 fs *+11−6* for J=2.
3725.79 *17*		33& fs *+9−6*	B F IJ o	Jπ: 2648γ to 2+.
3732.4? *10*			B V	
3776.32 *23*	1,2+d		FG IJ R U	XREF: G(3769)J(3783).
3814 *4*	(3)−		E G	XREF: E(3806)G(3815). Jπ: J from L(t,p)=(3); π from L(d,p)=4. E(level): weighted average of 3806 *10* from (t,p) and 3815 *4* from (d,p).
3814.83 *21*	1,2+e	24& fs *+8−6*	F I	E(level): γ-decay modes imply this level is distinct from the 3814 *4*, (3−) level.
3849.30 *22*	4+	0.16& ps *+15−6*	EFG IJ O	XREF: E(3841)J(3840). Jπ: L(t,p)=4.
3895.83 *17*	4+		EF IJ N	XREF: E(3886)J(3888). Jπ: L(t,p)=4.
3910.99 *24*	(3)−		FG I r	Jπ: 1494γ to 4+, 2028γ to 2+; π from L(d,p)=4.
3929? *4*			e I r	
3935.08 *18*	3+		eF IJ o	Jπ: 3+,4+,5+ from L(p,p′); ≠4+,5 from γ to 0+ g.s.
3942.9 *8*	(7−)	<6 ns	D G o T V X	$T_{1/2}$: upper limit from γγ(t) of 332γ in ^{65}Cu(α,pγ). Jπ: L(α,^{2}He)=(7), L(d,p)=4. This conflicts with yield function and γ(θ) in ^{65}Cu(α,pγ) which suggests J^π=(8−). Configuration: $(f_{5/2}g_{9/2})_{7-}$ (1990Fi07,1985Ja02).
3970.7? *12*			B J	
3989? *5*			I	
4027.7 *4*	(1−,2+)		FG I N	XREF: N(4017). Jπ: 4028γ to g.s., 1277γ to 3−, primary γ from 2−,3− capture state. E(level): doublet in (d,p) with L=(4)+(1).
4061.0 *3*	(2)+	62& fs *+21−17*	E G IJ	XREF: E(4049). Jπ: J from L(t,p)=(2); π from L(d,p)=1.
4096 *10*			J	
4102? *5*			I	
4110	4+		N	Jπ: L(p,t)=4.
4124 *10*	(4−,5−,6−)		J	Jπ: L(p,p′)=5.
4139.2 *17*	1−	33& fs *+12−9*	FG I	Jπ: 3062γ to 2+, 4139γ to 0+, π=− from L(d,p)=2.
4148 *7*	0+		E J R	XREF: R(4170). E(level): weighted average of 4145 *10* from (t,p) and 4150 *10* from (p,p′). Jπ: L(t,p)=0.
4215.4 *6*	1+,2+		FG IJ	XREF: J(4205). Jπ: 3138γ to 2+, 4216γ to 0+, π=+ from L(d,p)=1.
4229? *4*			I o	
4234 *4*	(0,1,2)−		IJ o	XREF: J(4240). Jπ: L(p,p′)=(1).
4252			e N	

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Adopted Levels, Gammas (continued)

^{68}Zn Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$	XREF	Comments
4284.0 *4*	$(2,3)^+$		eFG IJ	XREF: J(4278). Jπ: $1^+,2^+,3^+$ from L(p,p′); 1533γ to 3^-.
4325 *6*			G I R	XREF: G(4303).
4339.1 *20*	(1)	12.0[a] fs *+43–25*	HI O	Jπ: from γ(θ) in (γ,γ′).
4345 *10*	$3^+,4^+,5^+$		J	Jπ: L(p,p′)=4.
4355 *10*			G	Jπ: π=− from L(d,p).
4393 *7*	$3^+,4^+$		G J	Jπ: 1^+ to 4^+ from L(d,p)=1 and $3^+,4^+,5^+$ from L(p,p′)=4 . E(level): weighted average of 4396 *10* from (d,p) and 4389 *10* from (p,p′).
4396.8[‡] *7*	(8^+)		D V X	Jπ: L(α,^{3}He)=(8); E2(+M3) 709γ to the (6^+) 3688 level and the yield function of the 709γ. Configuration: $(g_{9/2})^2$ (1990Fi07,1985Ja02).
4408.4 *4*			F Ij	
4414 *6*	$1^+,2^+$		Ij	Jπ: L(p,p′)=2, γ to g.s.
4437 *5*			G Ij	XREF: G(4425). Jπ: π=− from L(d,p).
4444 *6*	$(1,2^+)$		Ij	Jπ: γ to g.s.
4466.2 *20*	1^-	7.0[a] fs *+29–16*	GHI	XREF: G(4452). Jπ: J from γ(θ) in (γ,γ′); π from L(d,p)=2 for 4452 *10*.
4496 *6*	$(1,2^+)$		IJ	Jπ: γ to g.s.
4503.2 *20*	(1)	[a]	HI	Jπ: from γ(θ) in (γ,γ′). $T_{1/2}$: adopted value of $\Gamma_o/\Gamma>0.29$ gives 1 fs $<T_{1/2}<12$ fs.
4512.2 *3*	(2^+)		F	Jπ: 2095γ to 4^+, 4513γ to 0^+, primary γ from $2^-,3^-$ capture state.
4520.6 *4*	$1,2^+$[d]		F IJ	
4535.6 *4*	$1,2^+$[d]		F IJ u	XREF: J(4545).
4578 *6*	$(1,2^+)$		I u	Jπ: γ to g.s.
4587 *4*	$(1^+,2^+)$		IJ	Jπ: L(p,p′)=2, γ to g.s.
4608 *6*	(1^-)		G IJ	Jπ: L(d,p)=2, γ to g.s.
4642 *4*	$1,2^+$[d]		F IJ	
4656 *10*	$2^-,3^-$		G	Jπ: L(d,p)=0.
4670 *6*	$(1,2^+)$		I	Jπ: γ to g.s.
4680 *6*			IJ	
4724.1 *5*	$1^+,2^+$		F IJ	XREF: I(4718). Jπ: L(p,p′)=2, γ to g.s.
4732.8 *11*	$1,2^+$[d]		F	
4743 *5*	$2^-,3^-$		G IJ	Jπ: L(d,p)=0.
4792 *6*			IJ	XREF: J(4782).
4851.2 *6*	$2^-,3^-$		FG J	XREF: J(4841). Jπ: L(d,p)=0.
4857.9 *6*	$1,2^+$		F I	Jπ: γ to 0^+; primary γ from $2^-,3^-$ capture state.
4865.9 *8*	(9^-)		X	Jπ: 923γ to (7^-). $J^\pi=(10^-)$ proposed by 2000Wi18,1997Be77 in ^{208}Pb(^{64}Ni,Xγ).
4873 *4*	$2^-,3^-,4^-$		IJ	Jπ: L(p,p′)=3.
4910.6 *4*	$1,2^+$[d]		F I	
4951.5 *4*	$1^-,2^-,3^-$		FG I	Jπ: π=− from L(d,p)=2; γ to 2^+; primary γ from $2^-,3^-$ capture state.
4963.0 *7*			F	
4982 *6*			I	
4992.0 *10*	$1,2^+$[d]		F I	XREF: I(4998).

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Adopted Levels, Gammas (continued)

^{68}Zn Levels (continued)

E(level)[†]	J^π	$T_{1/2}$	XREF	Comments
5019 *10*	−		G U	J^π: L(d,p)=2. E(level): from ^{67}Zn(d,p). Other 5030 *20* in ^{64}Ni(^{6}Li,d).
5120 *10*	−		G V	J^π: L(d,p)=2.
5146 *5*			I	
5162 *10*			G	
5187.7 *7*			F	
5200 *10*	2−,3−		G	J^π: L(d,p)=0.
5283.4 *6*			FG	
5298.0 *4*	1−,2+		F	J^π: 2547γ to 3− 2751, γ to g.s.
5307.5 *10*	−		FG	XREF: G(5317). J^π: from L(d,p)=2.
5400.4 *5*			F	
5403.2 *5*	1,2+[d]		F I	
5415.3 *8*	1,2+[d]		FG	
5420?			G	
5565.0 *8*			F	
5610?			G	
5635 *10*	(−)		G	J^π: L(d,p)=(2).
5693.8 *6*			F	
5860	−		G	J^π: L(d,p)=2.
5990.7 *9*	(11−)		X	J^π: 1125γ to (9−). J^π=(12−) proposed by (2000Wi18),(1997Be77) in ^{208}Pb(^{64}Ni,Xγ).
6760	−		G	J^π: L(d,p)=2.
7110	2−,3−		G	J^π: L(d,p)=0.
7362.3 *5*	1−	0.240[a] fs *+14−12*	H	J^π: from $\gamma(\theta)$ and polarization data in (γ,γ').
x[#]	J		S	J^π: based on observed feeding into known levels, the estimated spin of the lowest level in the super-deformed band is 17 *2* (1999De20).
1506.0+x[#] *10*	J+2		S	
3223.0+x[#] *15*	J+4		S	
5141.1+x[#] *18*	J+6		S	
7262.1+x[#] *20*	J+8		S	
9593.1+x[#] *23*	J+10		S	
12148.2+x[#] *25*	J+12		S	
14943+x[#] *3*	J+14		S	
18016+x?[#]	J+16		S	

[†] From least squares fit to Eγ by evaluator, except where noted.
[‡] Yrast band (2000Wi18,1997Be77).
[#] Super-deformed band (1999De20).
[@] From L transfer in (t,p) and (p,t).
[&] From DSAM in (n,n$'\gamma$).
[a] From Γ measurement in (γ,γ'). For the 4339 and 4466 levels, $\Gamma_{\gamma 0}/\Gamma_\gamma$ is assumed to be 1. Thus, the deduced half-life may be an upper limit.
[b] L(t,p)=4 for E=2955 *10*, L(p,t)=4, 4+(2) for E=2957, L(d,p)=(1)+(3) for E=2958 *4*.
[c] L(t,p)=0 for possible doublet at 3157 *10*.
[d] γ's to 0+ and 2+; primary γ from 2−,3− capture state.

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Adopted Levels, Gammas (continued)

^{68}Zn Levels (continued)

[e] D,E2 γ to g.s.
[f] L(t,p)=2 for 3427 *10*, L(d,p)=1 for 3424 *4*.

Adopted Levels, Gammas (continued)

γ(^{68}Zn)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.	δ	α	$I_{(\gamma+ce)}$	Comments
1077.37	2+	1077.34[‡] *5*	100	0.0	0+	E2		0.000247 *4*		α(K)=0.000221 *4*; α(L)=2.22×10^{-5} *4*; α(M)=3.18×10^{-6} *5*; α(N+..)=1.273×10^{-7} *18* B(E2)(W.u.)=14.69 *19* Mult.: Q from γγ(θ) in (n,γ) and ^{68}Ga ε decay; E2 from comparison to RUL.
1655.91	0+	578.52[‡] *13*	100[‡] *5*	1077.37	2+	E2		0.001272 *18*		α(K)=0.001139 *16*; α(L)=0.0001160 *17*; α(M)=1.659×10^{-5} *24* α(N+..)=6.50×10^{-7} *10* B(E2)(W.u.)=5.5 *10* Mult.: Q from γγ(θ) in (n,γ) and ^{68}Ga ε decay; E2 from comparison to RUL.
		1659[‡] *7*		0.0	0+	E0[#]			4.2×10^{-2} *10*	$I_{(\gamma+ce)}$: from ce(K)(1659)/Iγ(578γ)=2.2×10^{-4} *4* and and I(γ+ce)(1656)/Ice(K)(1656)=0.55.
1883.20	2+	227.31[‡] *15*	0.049 *16*	1655.91	0+	(E2)[d]		0.0300		α(K)=0.0268 *4*; α(L)=0.00286 *4*; α(M)=0.000406 *6*; α(N+..)=1.476×10^{-5} *21* B(E2)(W.u.)=16 *6* I_γ: weighted average of 0.043 *16* from (n,γ), E=thermal and 0.09 *4* from ^{68}Ga ε decay.
		805.83[‡] *7*	68.0 *17*	1077.37	2+	M1+E2[@]	−1.55 *5*	0.000471 *7*		α(K)=0.000422 *6*; α(L)=4.24×10^{-5} *7*; α(M)=6.08×10^{-6} *9*; α(N+..)=2.43×10^{-7} *4* B(E2)(W.u.)=28.6 *18*; B(M1)(W.u.)=0.0050 *4* I_γ: weighted average of 65 *3* from (n,γ), E=thermal and 68.9 *17* from ^{68}Ga ε decay. δ: from ^{68}Ga ε decay. Others: −1.45 *15* from (n,γ), E=thermal and −1.5 *3* from (n,n′γ).
		1883.16[‡] *6*	100.0[‡] *19*	0.0	0+	(E2)[d]		0.000333 *5*		α(K)=6.97×10^{-5} *10*; α(L)=6.91×10^{-6} *10*; α(M)=9.91×10^{-7} *14*; α(N+..)=0.000255 *4* B(E2)(W.u.)=0.85 *5*
2338.45	2+	682.57[‡] *16*	0.331[‡] *21*	1655.91	0+	(E2)[d]		0.000789 *11*		α(K)=0.000707 *10*; α(L)=7.16×10^{-5} *10*; α(M)=1.025×10^{-5} *15*; α(N+..)=4.05×10^{-7} B(E2)(W.u.)=2.4 *3*
		1261.08[‡] *6*	100.0[‡] *21*	1077.37	2+	M1+E2[@]	−0.16 *2*	0.0001725 *25*		α(K)=0.0001418 *20*; α(L)=1.410×10^{-5} *20*; α(M)=2.02×10^{-6} *3* α(N+..)=8.20×10^{-8} *12* B(E2)(W.u.)=0.85 *23*; B(M1)(W.u.)=0.034 *4* δ: unweighted av of −0.22 *5* from (n,γ), −0.15 *2* from ^{68}Ga ε decay and −0.15 *2* from (n,n′γ).
		2338.40[‡] *8*	1.19[‡] *17*	0.0	0+	(E2)[d]		0.000529 *8*		α(K)=4.71×10^{-5} *7*; α(L)=4.67×10^{-6} *7*;

$^{68}_{30}Zn_{38}$-7

Adopted Levels, Gammas (continued)

γ(^{68}Zn) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.	δ	α	Comments
									α(M)=6.69×10^{-7} *10*; α(N+..)=0.000476 *7* B(E2)(W.u.)=0.019 *4*
2370.3		1292.9 *15*	100	1077.37	2$^+$				E_γ,I_γ: from ^{68}Cu β− decay (30.9 s + 3.75 min).
2417.40	4$^+$	534.22 *20*	0.56 *16*	1883.20	2$^+$	(E2)[d]		0.001618 *23*	α(K)=0.001448 *21*; α(L)=0.0001478 *21*; α(M)=2.11×10^{-5} *3*; α(N+..)=8.25×10^{-7} B(E2)(W.u.)=6.0 *19*
		1339.96 *5*	100 *3*	1077.37	2$^+$	E2		0.000190 *3*	α(K)=0.0001368 *20*; α(L)=1.364×10^{-5} *20*; α(M)=1.95×10^{-6} *3* α(N+..)=3.77×10^{-5} *7* B(E2)(W.u.)=10.8 *12* Mult.: Q from γγ(θ) in (n,γ), E2 from comparison to RUL. δ: δ(M3/E2)=−0.05 *6* from γγ(θ) in (n,γ),E=thermal and +0.02 *+5−2* from γ(θ) in ^{65}Cu(α,pγ). From RUL, one expects δ<2.4×10^7.
2510.2		1432.8 *15*	100	1077.37	2$^+$				E_γ,I_γ: from ^{68}Cu β− decay (30.9 s + 3.75 min).
2750.76	3$^-$	412.41 *12*	7.7 *6*	2338.45	2$^+$	(E1)		0.000964 *14*	α(K)=0.000865 *13*; α(L)=8.65×10^{-5} *13*; α(M)=1.237×10^{-5} *18*; α(N+..)=4.92×10^{-7} B(E1)(W.u.)=0.00161 *17* Mult.: D from RUL; Δπ=yes from level scheme.
		1673.29 *10*	100 *7*	1077.37	2$^+$	(E1)		0.000445 *7*	α(K)=4.66×10^{-5} *7*; α(L)=4.61×10^{-6} *7*; α(M)=6.60×10^{-7} *10*; α(N+..)=0.000393 *6* B(E1)(W.u.)=0.00031 *3* Mult.: D,E2 from RUL; Δπ=yes from level scheme.
2821.79	2$^+$	483.35[‡] *16*	2.8[‡] *3*	2338.45	2$^+$	M1+E2[@]		0.0017 *5*	α(K)=0.0015 *5*; α(L)=0.00016 *5*; α(M)=2.2×10^{-5} *7*; α(N+..)=9.E−7 *3* δ: −0.12 *6* or +1.7 *9* from γγ(θ) in ^{68}Ga ε decay.
		938.61[‡] *20*	1.86[‡] *17*	1883.20	2$^+$	M1+E2[@]	−0.7 *3*	0.000304 *12*	α(K)=0.000272 *11*; α(L)=2.72×10^{-5} *11*; α(M)=3.90×10^{-6} *16* α(N+..)=1.57×10^{-7} *6* B(E2)(W.u.)=1.8 *11*; B(M1)(W.u.)=0.0020 *8* δ: from γγ(θ) in ^{68}Ga ε decay.
		1165.92[‡] *15*	0.17[‡] *10*	1655.91	0$^+$	E2[d]		0.000211 *3*	α(K)=0.000185 *3*; α(L)=1.85×10^{-5} *3*; α(M)=2.65×10^{-6} *4*; α(N+..)=4.67×10^{-6} *7* B(E2)(W.u.)=0.16 *11*
		1744.42[‡] *13*	100[‡] *5*	1077.37	2$^+$	M1+E2[@]	+0.27 *5*	0.000241 *4*	α(K)=7.70×10^{-5} *11*; α(L)=7.63×10^{-6} *11*; α(M)=1.094×10^{-6} *16*; α(N+..)=0.0001550 B(E2)(W.u.)=0.9 *4*; B(M1)(W.u.)=0.023 *5* δ: from γγ(θ) in ^{68}Ga ε decay. Others: +0.24 *13* from (n,γ) and +0.15 *5* from (n,n′γ).
		2821.73[‡] *14*	4.9[‡] *4*	0.0	0$^+$	(E2)[d]		0.000740 *11*	α(K)=3.43×10^{-5} *5*; α(L)=3.39×10^{-6} *5*; α(M)=4.86×10^{-7} *7*; α(N+..)=0.000702 *10*

$^{68}_{30}Zn_{38}$-8

Adopted Levels, Gammas (continued)

γ(^{68}Zn) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.	δ	α	Comments
									B(E2)(W.u.)=0.057 *13* I_γ: Other: 10 *3* in (n,γ), E=thermal.
2955.9		585.6 *15*	100	2370.3					E_γ,I_γ: from ^{68}Cu β- decay (3.75 min).
2959.49	(4$^+$)	542.05 *16*	12.0 *20*	2417.40	4$^+$				
		1883.1[&] *5*	100 *27*	1077.37	2$^+$				
3009.27	3$^+$	591.71 *16*	5.7 *6*	2417.40	4$^+$				
		670.89 *17*	4.8 *6*	2338.45	2$^+$				I_γ: Other: 18 *3* in (n,n′γ).
		1126.07 *6*	100 *5*	1883.20	2$^+$	M1+E2[@]	−0.36 *+20−27*	0.000201 *6*	α(K)=0.000179 *5*; α(L)=1.79×10^{-5} *5*; α(M)=2.56×10^{-6} *7*; α(N+..)=1.39×10^{-6} *10* B(E2)(W.u.)=6 *+7−6*; B(M1)(W.u.)=0.040 *+13−21* δ: from γγ(θ) in (n,γ), E=thermal.
		1932.1 *3*	11.7 *12*	1077.37	2$^+$	(M1+E2)	−0.15 *3*	0.000301 *5*	α(K)=6.39×10^{-5} *9*; α(L)=6.33×10^{-6} *9*; α(M)=9.07×10^{-7} *13*; α(N+..)=0.000230 *4* B(E2)(W.u.)=0.010 *+5−7*; B(M1)(W.u.)=0.0010 *+4−6* Mult.,δ: D+Q from γ(θ) in (n,n′γ),Δπ=no from level scheme. δ: from γ(θ) in (n,n′γ).
3102.51	0$^+$	1219.3[a] *1*	100[a]	1883.20	2$^+$	[E2]		0.000199 *3*	α(K)=0.0001676 *24*; α(L)=1.674×10^{-5} *24*; α(M)=2.40×10^{-6} *4*; α(N+..)=1.185×10^{-5}
		2025.1[f]	≤3	1077.37	2$^+$				E_γ,I_γ: from (p,p′γ).
3153.8?		815.7[af] *5*	100[a] *21*	2338.45	2$^+$				
		1270.0[af] *5*	<79[a]	1883.20	2$^+$				I_γ: the 1270γ is a doublet with Iγ=68 *11*.
3160.1		2082.7[a] *3*	100[a]	1077.37	2$^+$				
3164.4		747.0[af] *14*	100[a]	2417.40	4$^+$				
3184.18	1,2$^+$	845.2 *6*	6.5 *15*	2338.45	2$^+$				
		1300.87 *20*	25.5 *20*	1883.20	2$^+$				
		2106.83 *18*	100 *15*	1077.37	2$^+$				
		3184.3 *6*	32 *4*	0.0	0$^+$				
3186.6	(1,2$^+$)	1529.7 *15*	56 *17*	1655.91	0$^+$				E_γ,I_γ: from ^{68}Cu β- decay (30.9 s).
		2110.1 *15*	100 *28*	1077.37	2$^+$				E_γ,I_γ: from ^{68}Cu β- decay (30.9 s).
3281.58	4$^+$	864.17 *14*	100[a] *9*	2417.40	4$^+$				I_γ: weighted average of (n,γ) and (n,n′γ).
		1397.0[af] *6*	18[a] *3*	1883.20	2$^+$				I_γ: weighted average of (n,γ) and (n,n′γ).
3287.09	2$^+$	465.20[f] *18*	1.6 *3*	2821.79	2$^+$				
		1403.7 *3*	4.3 *14*	1883.20	2$^+$				
		1630.9 *3*	14.5 *14*	1655.91	0$^+$				I_γ: Other: 38 *15* in (n,n′γ).
		2209.75 *16*	100 *12*	1077.37	2$^+$	(M1+E2)[@]		0.00044 *4*	α(K)=5.12×10^{-5} *12*; α(L)=5.07×10^{-6} *12*; α(M)=7.27×10^{-7} *16*; α(N+..)=0.00038 *4* δ: −0.07 *10* for J^π(3287)=1$^+$ and +0.63 *+22−37* for J^π=2$^+$ from (n,γ) E=thermal.

$^{68}_{30}Zn_{38}$-9

Adopted Levels, Gammas (continued)

γ(^{68}Zn) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.	δ	α	Comments
3287.09	2+	3287.2 *3*	48 *5*	0.0	0+				I_γ: Other: 5 *4* in (n,n′γ).
3334.7?		996.2[f] *5*	52 *14*	2338.45	2+				
		1451.8[f] *6*	62 *14*	1883.20	2+				
		2257.2[f] *7*	100 *19*	1077.37	2+				
3346.09	1+	1462.0[af] *23*	27[a] *10*	1883.20	2+				
		2270[a] *3*	34[a] *11*	1077.37	2+				
		3346.0[a] *2*	100[a] *17*	0.0	0+	(M1)		0.000856 *12*	α(K)=2.53×10^{-5} *4*; α(L)=2.50×10^{-6} *4*; α(M)=3.58×10^{-7} *5*; α(N+..)=0.000828 *12* B(M1)(W.u.)=0.060 *21* Mult.: D,E2 from comparison to RUL, from level scheme transition is 1+ to 0+.
3386?		2310[af] *3*	100[a] *50*	1077.37	2+				
		3383[af] *5*	30[a] *17*	0.0	0+				
3400.9	1,2+	1517.7[a] *5*	89[a] *22*	1883.20	2+				
		2322[af] *3*	100[a] *45*	1077.37	2+				
		3402[a] *5*	24[a] *12*	0.0	0+				
3425.07		1542.0 *2*	53 *5*	1883.20	2+				
		2347.5 *2*	100 *15*	1077.37	2+				
3429.46	1,2+	1091.04[f] *18*	28 *2*	2338.45	2+				
		1546.13 *16*	100 *8*	1883.20	2+				
		2352.4 *3*	50 *10*	1077.37	2+				
		3430.2 *11*	12 *4*	0.0	0+				
3451.0		630.0[a] *13*	46[a] *19*	2821.79	2+				
		1114.0[af] *18*	95[a] *40*	2338.45	2+				
		2373.5[af] *3*	100[a] *26*	1077.37	2+				
3458.83	5−	499.9[&f] *5*		2959.49	(4+)				E_γ: observed only in 208Pb(^{64}Ni,Xγ) as sole depopulating transition from a 3459 level.
		1041.26 *16*		2417.40	4+	(E1+M2)	+0.07 *5*	0.000120 *4*	α(K)=0.000108 *4*; α(L)=1.07×10^{-5} *4*; α(M)=1.53×10^{-6} *6*; α(N+..)=6.17×10^{-8} *22* Mult.: D+Q from γ(θ) in ^{65}Cu(α,pγ), Δπ=yes from level scheme. δ: from γ(θ) in ^{65}Cu(α,pγ).
3487.7		736.9 *15*	100	2750.76	3−				E_γ,I_γ: from ^{68}Cu β- decay (30.9 s).
3496.08	3+,4+	744.8 *6*	3.1 *15*	2750.76	3−				
		1612.2 *6*	5.4 *15*	1883.20	2+				
		2418.7 *1*	100 *12*	1077.37	2+				
3586.64	4+	835.87[a] *6*	100[a] *19*	2750.76	3−				
		2508[a] *4*	46[a] *13*	1077.37	2+				

$^{68}_{30}Zn_{38}$-10

Adopted Levels, Gammas (continued)

γ(^{68}Zn) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.	δ	α	Comments
3610.8	(6)$^-$	152.0 *5*	100	3458.83	5$^-$	M1(+E2)	−0.05 *+8−6*	0.0205 *12*	α(K)=0.0183 *10*; α(L)=0.00190 *12*; α(M)=0.000272 *16*; α(N+..)=1.07×10^{-5} *6* B(M1)(W.u.)>0.0024 E_γ: from ^{65}Cu(α,pγ). Mult.: D+Q from γ(θ) in ^{65}Cu(α,pγ), Δπ=no from level scheme. δ: from γ(θ) in ^{65}Cu(α,pγ).
3624.32	(1,2$^+$)	2546.9[a] *2*	100[a] *25*	1077.37	2$^+$				
		3626[a] *5*	26[a] *12*	0.0	0$^+$				
3630.32	(2$^+$)	348.7[f] *3*	3.5 *7*	3281.58	4$^+$				
		621.06 *14*	42 *4*	3009.27	3$^+$				
		879.59 *15*	100 *13*	2750.76	3$^-$				
		1212.7 *3*	23 *3*	2417.40	4$^+$				
		3630.2 *6*	68 *9*	0.0	0$^+$				
3664.7	(1,2)$^+$	1781.5 *3*	100 *10*	1883.20	2$^+$				
		2587.2 *7*	65 *19*	1077.37	2$^+$				
		3664.8 *10*	36 *9*	0.0	0$^+$				
3687.5	(6$^+$)	1270.1 *5*	100	2417.40	4$^+$	(E2+M3)	+0.14 *5*	0.000201 *8*	α(K)=0.000161 *7*; α(L)=1.61×10^{-5} *7*; α(M)=2.30×10^{-6} *10*; α(N+..)=2.13×10^{-5} *5* E_γ: from ^{65}Cu(α,pγ). Mult.: Q+O from γ(θ) in ^{65}Cu(α,pγ), Δπ=no from level scheme. δ: from γ(θ) in ^{65}Cu(α,pγ).
3709.8	(2$^+$)	1371.6[a] *3*	100[a] *19*	2338.45	2$^+$				
		3708.2[a] *8*	71[a] *10*	0.0	0$^+$				
3717.47	1,2$^+$	2061.5[a] *2*	58[a] *9*	1655.91	0$^+$				
		3717.5[a] *5*	100[a] *10*	0.0	0$^+$				
3725.79		904.6 *4*	11 *3*	2821.79	2$^+$				
		975.4[f] *4*	13 *3*	2750.76	3$^-$				E_γ: Other: 978.0 *17* in (n,n′γ). I_γ: Other: 30 *17* in (n,n′γ).
		1387.21 *19*	63 *5*	2338.45	2$^+$				
		2648.1 *6*	100 *30*	1077.37	2$^+$				
3732.4?		1222.2[f] *15*	100	2510.2					E_γ,I_γ: from ^{68}Cu β^- decay (3.75 min).
3776.32	1,2$^+$	1437.76 *24*	62 *5*	2338.45	2$^+$				
		2699.5 *10*	35 *11*	1077.37	2$^+$				
		3777.0[f] *9*	100 *18*	0.0	0$^+$				
3814.83	1,2$^+$	2737.4[a] *2*	100 *27*	1077.37	2$^+$				
		3817[a] *5*	37 *6*	0.0	0$^+$				
3849.30	4$^+$	1431.86 *22*	100 *9*	2417.40	4$^+$				

$^{68}_{30}Zn_{38}$-11

Adopted Levels, Gammas (continued)

γ(^{68}Zn) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.	α	Comments
3849.30	4+	1511.1 *7*	13 *6*	2338.45	2+	[E2]	0.000210 *3*	α(K)=0.0001068 *15*; α(L)=1.063×10^{-5} *15*; α(M)=1.523×10^{-6} *22* α(N)=6.15×10^{-8} *9* B(E2)(W.u.)=3.1 *+19−31*
3895.83	4+	936.7 *3*	22 *5*	2959.49	(4+)			
		1478.31 *18*	100 *8*	2417.40	4+			
		1557.1 *6*	8 *4*	2338.45	2+			I_γ: Other: 47 *20* in (n,n′γ).
3910.99	(3)−	629.3[f] *3*	29 *7*	3281.58	4+			
		1493.5 *3*	95 *12*	2417.40	4+			
		1572.5 *9*	22 *7*	2338.45	2+			
		2027.9 *4*	100 *15*	1883.20	2+			
3929?		2852[af] *4*	100[a]	1077.37	2+			
3935.08	3+	1113.34 *20*	9.6 *12*	2821.79	2+			
		1184.5[f] *3*	12 *3*	2750.76	3−			
		1596.3 *5*	7.6 *20*	2338.45	2+			I_γ: Other: 29 *14* in (n,n′γ).
		2857.6 *4*	100 *28*	1077.37	2+			
		3935.1 *13*	6 *3*	0.0	0+			
3942.9	(7−)	332.1 *5*	100	3610.8	(6)−		0.00771 *12*	E_γ,I_γ: from ^{65}Cu(α,pγ).
3970.7?		1014.5[f] *15*	100 *45*	2955.9				E_γ,I_γ: from ^{68}Cu β− decay (3.75 min).
		1149.4[f] *20*	32 *13*	2821.79	2+			E_γ,I_γ: from ^{68}Cu β− decay (3.75 min).
3989?		3989[af] *5*	100[a]	0.0	0+			
4027.7	(1−,2+)	1018.3 *4*	16 *5*	3009.27	3+			
		1276.9 *6*	27 *11*	2750.76	3−			
		4028.3 *8*	100 *14*	0.0	0+			
4061.0	(2)+	1724[a] *3*	65[a] *20*	2338.45	2+			
		2983.5[a] *3*	100[a] *15*	1077.37	2+			
4102?		4102[af] *5*	100[a]	0.0	0+			
4139.2	1−	3062.4[f] *5*	100 *10*	1077.37	2+			
		4139.1 *17*	19 *9*	0.0	0+			
4215.4	1+,2+	3137.8 *6*	100 *16*	1077.37	2+			
		4215.9 *15*	27 *12*	0.0	0+			
4229?		3152[af] *4*	100[a]	1077.37	2+			
4234	(0,1,2)−	3157[af] *4*	100[a]	1077.37	2+			
4284.0	(2,3)+	1274.8 *8*	20 *8*	3009.27	3+			
		1533.2 *4*	39 *8*	2750.76	3−			
		3206.4 *9*	100 *14*	1077.37	2+			
4325		4325[a] *6*	100[a]	0.0	0+			
4339.1	(1)	4339[b] *2*	100[b]	0.0	0+			

$^{68}_{30}Zn_{38}$-12

Adopted Levels, Gammas (continued)

γ(^{68}Zn) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.	δ	α	Comments
4396.8	(8$^+$)	709.3 *5*	100	3687.5	(6$^+$)	E2(+M3)	+0.05 *+2−8*	0.000716 *12*	α(K)=0.000642 *11*; α(L)=6.49×10^{-5} *11*; α(M)=9.30×10^{-6} *16* α(N+..)=3.67×10^{-7} *7* E_γ,I_γ: from ^{65}Cu(α,pγ). Mult.: Q+O from γ(θ) in ^{65}Cu(α,pγ), Δπ=no from level scheme. δ: from γ(θ) in ^{65}Cu(α,pγ).
4408.4		1448.8 *5*	13 *3*	2959.49	(4$^+$)				
		3331.0 *4*	100 *10*	1077.37	2$^+$				
4414	1$^+$,2$^+$	4414[a] *6*	100[a]	0.0	0$^+$				
4437		3360[af] *5*	100[a] *17*	1077.37	2$^+$				
		4440[a] *6*	<164[a]	0.0	0$^+$				
4444	(1,2$^+$)	4444[a] *6*	100[a]	0.0	0$^+$				
4466.2	1$^-$	4466[b] *2*	100[b]	0.0	0$^+$	[E1]		0.00186 *3*	α(K)=1.208×10^{-5} *17*; α(L)=1.188×10^{-6} *17*; α(M)=1.702×10^{-7} *24*; α(N+..)=0.00184 *3* B(E1)(W.u.)=0.00065 *+15−27*
4496	(1,2$^+$)	4496[a] *6*	100[a]	0.0	0$^+$				
4503.2	(1)	3427[af] *5*	≤150[a]	1077.37	2$^+$				
		4503[b] *2*	100[a] *40*	0.0	0$^+$				
4512.2	(2$^+$)	2094.6 *3*	100 *12*	2417.40	4$^+$				
		3434.9 *8*	78 *16*	1077.37	2$^+$				
		4513.3 *8*	80 *14*	0.0	0$^+$				
4520.6	1,2$^+$	1698.0[f] *8*	25 *7*	2821.79	2$^+$				I_γ: Other: 200 *120* in (n,n′γ), relative to Iγ(4521γ)=100 *65*.
		2181.7 *5*	46 *8*	2338.45	2$^+$				I_γ: Other: 300 *130* in (n,n′γ), relative to Iγ(4521γ)=100 *65*.
		4521.0 *6*	100 *9*	0.0	0$^+$				
4535.6	1,2$^+$	3458.1 *4*	100 *12*	1077.37	2$^+$				
		4535.5 *9*	30 *6*	0.0	0$^+$				
4578	(1,2$^+$)	4578[a] *6*	100[a]	0.0	0$^+$				
4587	(1$^+$,2$^+$)	3511[a] *5*	100[a] *16*	1077.37	2$^+$				
		4585[a] *6*	28[a] *9*	0.0	0$^+$				
4608	(1$^-$)	4608[a] *6*	100[a]	0.0	0$^+$				
4642	1,2$^+$	2300[af] *3*	37[a] *30*	2338.45	2$^+$				
		3567[a] *5*	100[a] *18*	1077.37	2$^+$				
		4639[a] *6*	42[a] *18*	0.0	0$^+$				
4670	(1,2$^+$)	3592[af] *5*	100[a] *56*	1077.37	2$^+$				
		4670[a] *6*	62[a] *41*	0.0	0$^+$				

$^{68}_{30}Zn_{38}$-13

Adopted Levels, Gammas (continued)

γ(^{68}Zn) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π
4680		4680[a] *6*	100[a]	0.0	0^+
4724.1	$1^+,2^+$	1902.2 *5*	61 *16*	2821.79	2^+
		4724.3 *8*	100 *14*	0.0	0^+
4732.8	$1,2^+$	1723.5[f] *5*	42 *9*	3009.27	3^+
		3077.2[f] *8*	100 *20*	1655.91	0^+
		3655.2 *16*	44 *22*	1077.37	2^+
		4732.8 *14*	38 *11*	0.0	0^+
4743	$2^-,3^-$	3666[af] *5*	100[a]	1077.37	2^+
4792		4792[a] *6*	100[a]	0.0	0^+
4851.2	$2^-,3^-$	916.1[f] *4*	9 *4*	3935.08	3^+
		1186.9[f] *6*	16 *5*	3664.7	$(1,2)^+$
		2512.7 *6*	100 *30*	2338.45	2^+
4857.9	$1,2^+$	3201.1 *9*	88 *21*	1655.91	0^+
		4858.4 *8*	100 *18*	0.0	0^+
4865.9	(9^-)	923.0[&] *5*	100[&]	3942.9	(7^-)
4873	$2^-,3^-,4^-$	2122[af] *3*	100[a] *58*	2750.76	3^-
		2990[a] *4*	≤344[a]	1883.20	2^+
4910.6	$1,2^+$	3027.7[f] *14*	11 *6*	1883.20	2^+
		3254.4 *10*	13 *6*	1655.91	0^+
		3833.1 *4*	100 *12*	1077.37	2^+
4951.5	$1^-,2^-,3^-$	1767.2 *4*	30 *6*	3184.18	$1,2^+$
		3068.8 *8*	37 *9*	1883.20	2^+
		3874.1 *8*	100 *23*	1077.37	2^+
4963.0		3885.5 *7*	100	1077.37	2^+
4982		4982[a] *6*	100[a]	0.0	0^+
4992.0	$1,2^+$	3107.5[f] *15*	85 *41*	1883.20	2^+
		3913.9 *18*	100 *29*	1077.37	2^+
		4992.0 *11*	76 *18*	0.0	0^+
5146		2732[af] *4*	100 *47*	2417.40	4^+
		4069[af] *5*	<6	1077.37	2^+
5187.7		2770.4 *7*	100 *30*	2417.40	4^+
		4109.8 *13*	31 *14*	1077.37	2^+
5283.4		2866.1 *7*	100 *30*	2417.40	4^+
		2944.5[f] *9*	52 *15*	2338.45	2^+
		3399.8 *11*	52 *17*	1883.20	2^+
5298.0	$1^-,2^+$	2547.0 *4*	100 *30*	2750.76	3^-
		2959.7[f] *8*	43 *13*	2338.45	2^+
		3415.6 *9*	91 *26*	1883.20	2^+

$^{68}_{30}Zn_{38}$-14

Adopted Levels, Gammas (continued)

γ(^{68}Zn) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.	Comments
5298.0	1$^-$,2$^+$	4221.7 *17*	29 *15*	1077.37	2$^+$		
		5297.3 *11*	30 *7*	0.0	0$^+$		
5307.5	$^-$	3651.5 *10*	100	1655.91	0$^+$		
5400.4		2391.2 *6*	50 *11*	3009.27	3$^+$		
		2982.9 *6*	100 *30*	2417.40	4$^+$		
5403.2	1,2$^+$	3519.4 *6*	100 *22*	1883.20	2$^+$		
		5403.9 *8*	76 *10*	0.0	0$^+$		
5415.3	1,2$^+$	4337.3 *15*	100 *37*	1077.37	2$^+$		
		5415.3 *9*	57 *12*	0.0	0$^+$		
5565.0		2814.4 *11*	58 *18*	2750.76	3$^-$		
		3147.3 *11*	52 *16*	2417.40	4$^+$		
		3226.4[f] *7*	100 *14*	2338.45	2$^+$		
5693.8		3276.3 *6*	100	2417.40	4$^+$		
5990.7	(11$^-$)	1124.7[&] *5*	100[&]	4865.9	(9$^-$)		
7362.3	1$^-$	4540[b]		2821.79	2$^+$		
		5706[b]		1655.91	0$^+$		
		6285[b]		1077.37	2$^+$		
		7362[b]		0.0	0$^+$	E1	Γ_o/Γ=0.85 from (γ,γ'). Mult.: from $\gamma(\theta)$ (lin pol) in (γ,γ').
1506.0+x	J+2	1506[c]		x	J	Q[e]	
3223.0+x	J+4	1717[c]		1506.0+x	J+2	Q[e]	
5141.1+x	J+6	1918[c]		3223.0+x	J+4	Q[e]	
7262.1+x	J+8	2121[c]		5141.1+x	J+6	Q[e]	
9593.1+x	J+10	2331[c]		7262.1+x	J+8	Q[e]	
12148.2+x	J+12	2555[c]		9593.1+x	J+10	Q[e]	
14943+x	J+14	2795[c]		12148.2+x	J+12		
18016+x?	J+16	3073[c,f]		14943+x	J+14		

[†] From (n,γ) E=thermal, except where noted.
[‡] From ^{68}Ga ε decay.
[#] From ce data in (p,p$'\gamma$) or ^{68}Ga ε decay.
[@] D+Q from $\gamma\gamma(\theta)$, M1+E2 from comparison to RUL.
[&] From ^{208}Pb(^{64}Ni,Xγ). $\Delta E\gamma$=0.5 keV assumed by evaluator.
[a] From (n,n$'\gamma$).
[b] From (γ,γ').
[c] From ^{26}Mg(^{48}Ca,α2nγ). $\Delta E\gamma$=1 keV assumed by evaluator.

$^{68}_{30}Zn_{38}$-15

Adopted Levels, Gammas (continued)

γ(^{68}Zn) (continued)

[d] D,E2 from RUL; ΔJ^{π}=2,no from level scheme.
[e] From $\gamma(\theta)$ in ^{26}Mg(^{48}Ca,α2nγ).
[f] Placement of transition in the level scheme is uncertain.

$^{68}_{30}$Zn$_{38}$-16

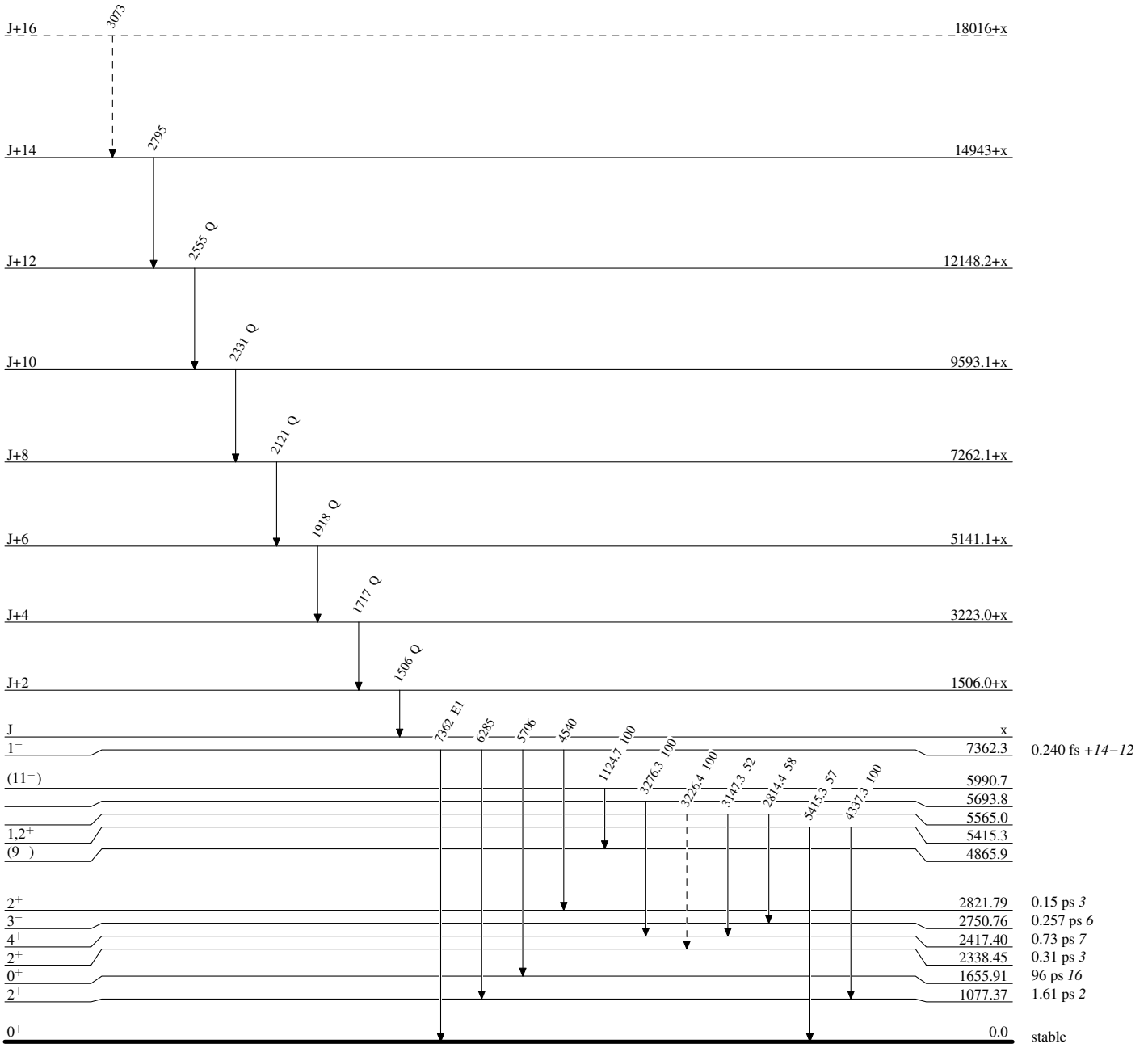
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{68}_{30}Zn_{38}$

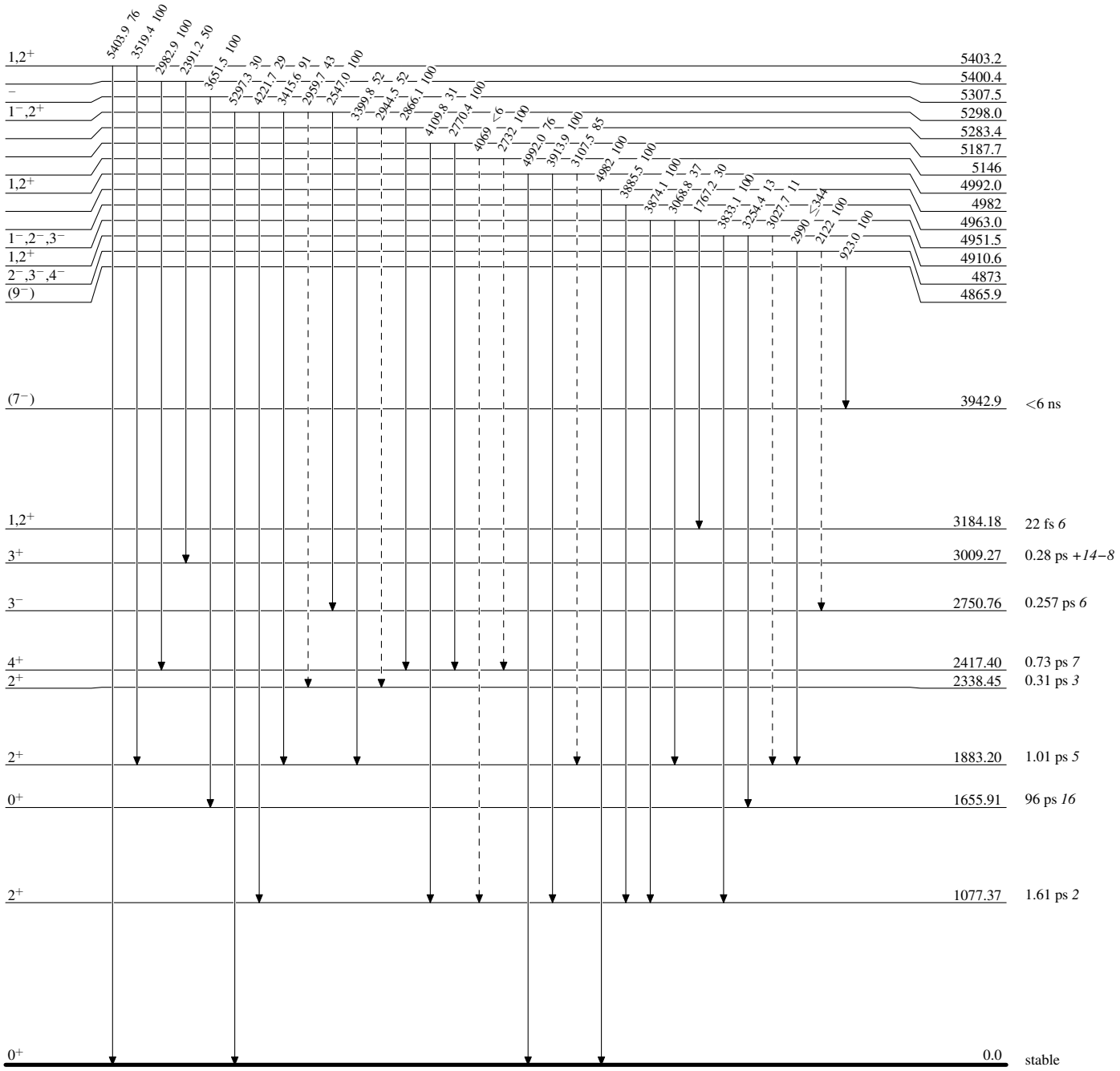
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{68}_{30}Zn_{38}$

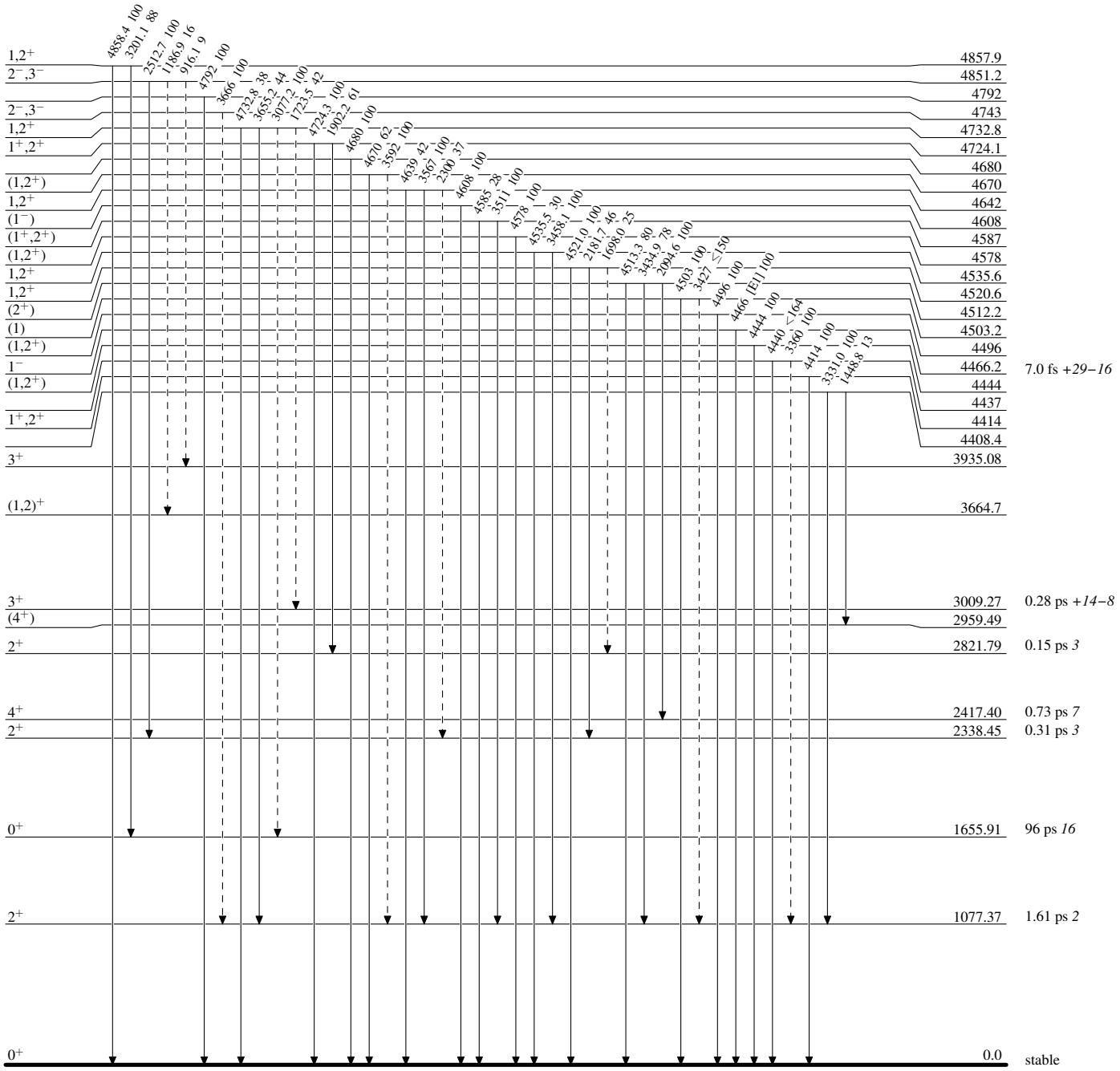
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{68}_{30}Zn_{38}$

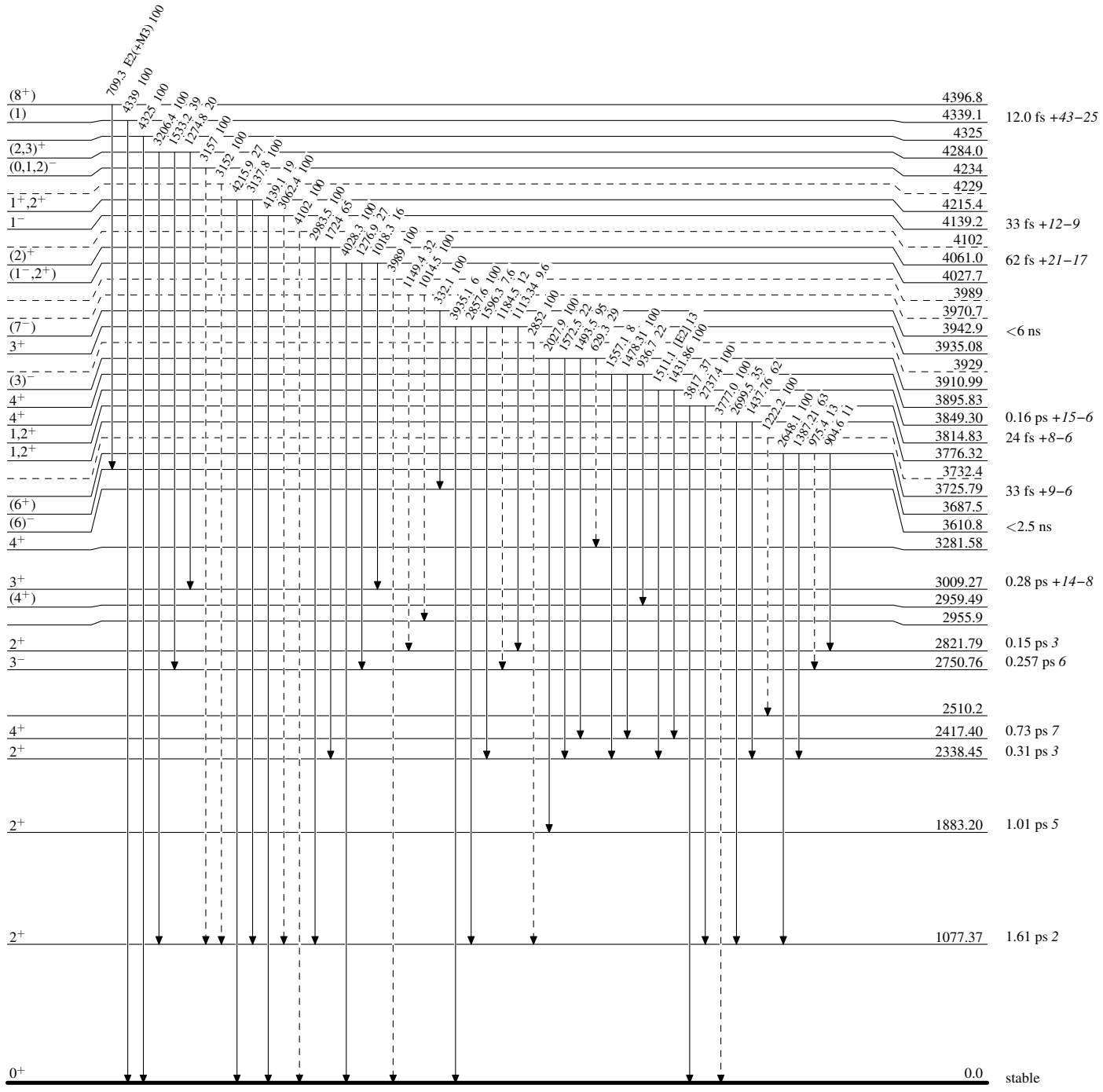
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{68}_{30}Zn_{38}$

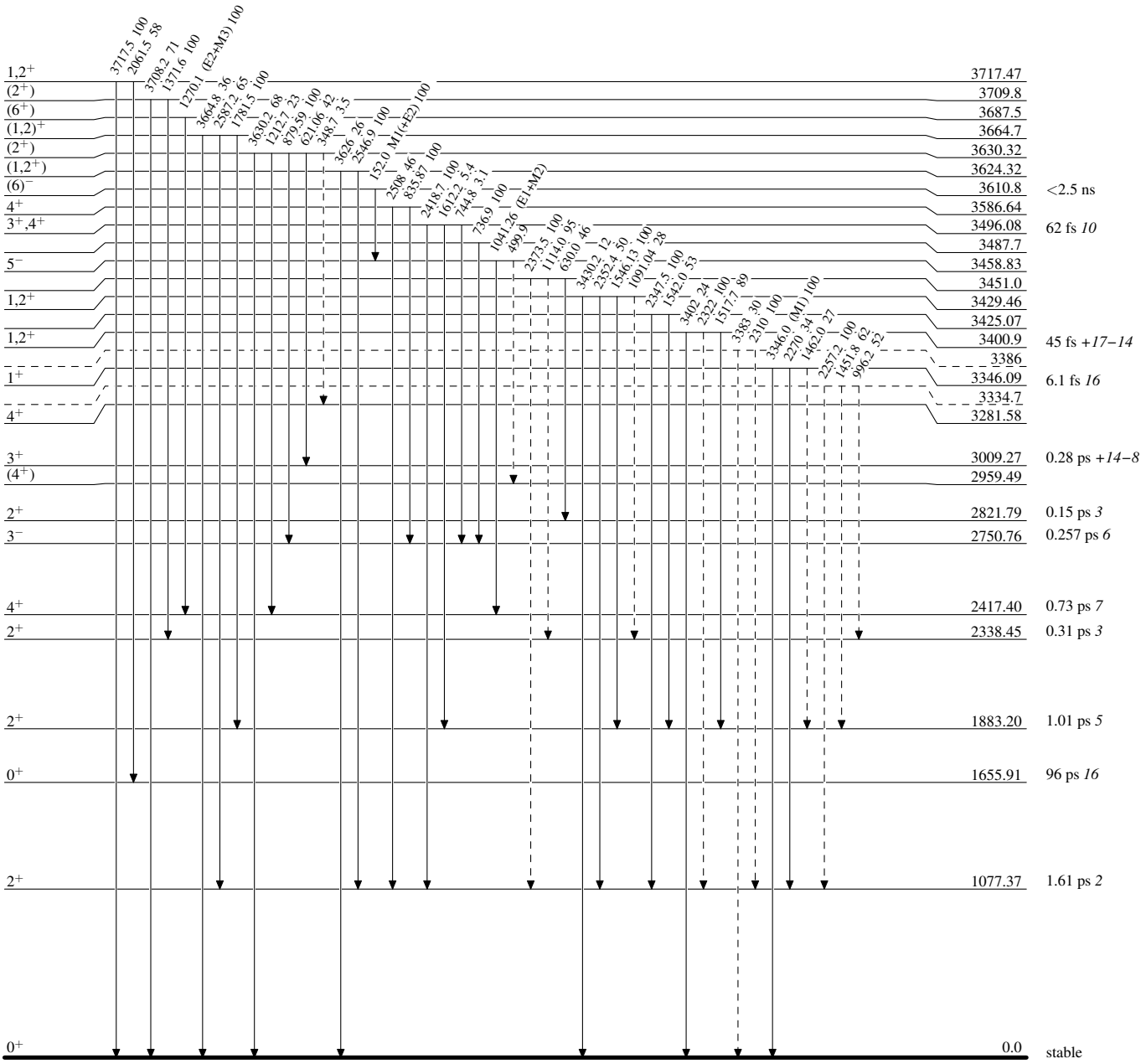
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{68}_{30}Zn_{38}$

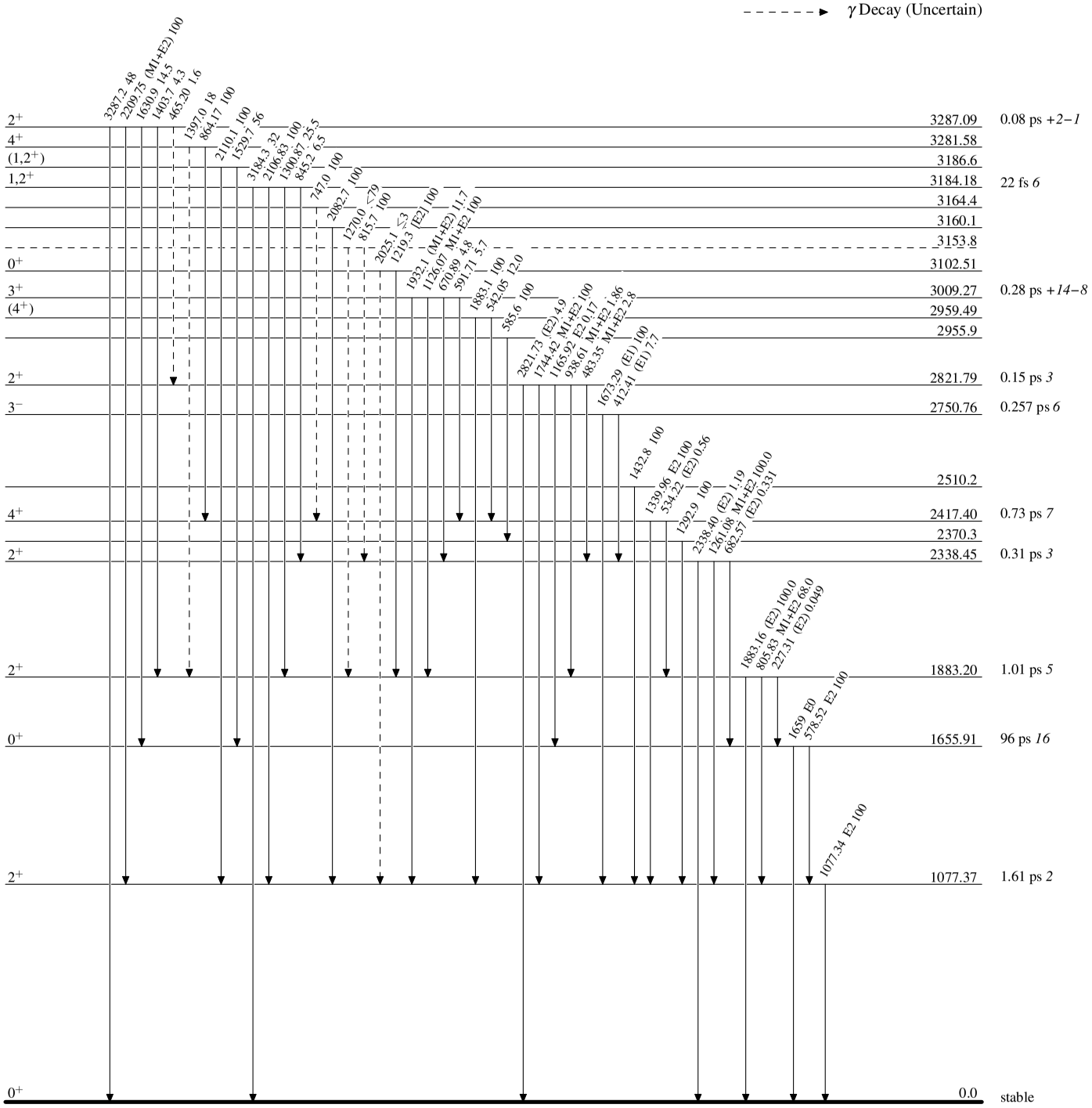
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{68}_{30}Zn_{38}$