Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	A. Hashizume	NDS 112, 1647 (2011)	1-Oct-2009

$Q(\beta^-)$=3228 *11*; S(n)=5527 *15*; S(p)=1.299×10^4 *3*; $Q(\alpha)$=−8482 *11* 2012Wa38
Note: Current evaluation has used the following Q record.
$Q(\beta^-)$=3201 *24*; S(n)=5550 *27*; S(p)=12970 *50*; $Q(\alpha)$=−8610 *50* 2003Au03
Mass excess (Penning-Trap spectrometer): −83463 *11* (2008Dw01).
Binding energy and two-neutron separation energy are calculated by HFB (Hartree-Fock-Bogoliubov) with effective interactions. (2008Ma17).
Assignment: ^{235}U(n,F) E=th, on-line mass separation.
Nuclear structure calculations on the levels and their properties: 2009Sa31, 2007Ji14, 2000Yo08, 1998Ho11, 1996An11, 1992In02, 1985Ha17, 1979Mi14.

^{127}Sn Levels

Cross Reference (XREF) Flags

A	^{127}In β^- decay (1.09 s)	D	^{127}Sn IT decay (4.52 μs)
B	^{127}In β^- decay (3.67 s)	E	^{9}Be(^{238}U,Xγ)
C	^{127}In β^- decay (1.04 s)		

E(level)[†]	J^π[#@&a]	$T_{1/2}$[‡]	XREF	Comments
0.0	11/2$^-$	2.10 h *4*	ABCDE	%β^-=100 μ=−1.329 *7* μ: laser spectroscopy (2004Le13,2005Le34). Configuration=(ν $h_{11/2}$). J^π: log $f^{1u}t$=9.45 to 7/2$^+$, syst of 11/2$^-$ states in odd-Sn isotopes. The result of theoretical calculation of μ=−1.225 (2005Le34) confirms the $h_{11/2}$ assignment. $T_{1/2}$: weighted av of 2.05 h *5* (1956Ca32), 2.15 h *10* (1962Dr01), 2.2 h *2* (1962Ha16), 2.10 h *5* (1962Uh01), 2.22 h *15* (1963La15), 2.45 h 30 (1963Ma20). Other: 1.5 h (1951Ba41).
5.07 *6*	3/2$^+$	4.13 min *3*	AB	%β^-=100 μ=+0.757 *4*; Q=+0.30 *13* μ,Q: laser spectroscopy (2004Le13,2005Le34). Configuration=(ν $d_{3/2}$). J^π: log *ft*=5.6 to 5/2$^+$, syst of 3/2$^+$ states in odd-Sn isotopes. The result of theoretical calculation of μ=+0.831 (2005Le34) confirms the $d_{3/2}$ assignment. $T_{1/2}$: from (1974Gr29). Others: ≈2.5 min (1962Dr01), 4.6 min *4* (1962Ha16), 4.1 min *8* (1963Tr10), 4.4 min *5* (1965Ka08), 4.0 min *3* (1965Ka08), 4.4 min *1* (1970OsZZ), 3.5 min *5* (1977Lu06).
257.76 *8*	(1/2)$^+$		AB	Configuration=(ν $s_{1/2}$). J^π: M1 γ to 3/2$^+$.
646.31 *4*	(9/2)$^-$		ABCD	Configuration=(^{128}Sn 2$^+$)(ν $(h_{11/2})^{-1}$). J^π: M1,E2 γ to 11/2$^-$, systematics of odd-Sn isotopes favors 9/2$^-$.
809.94 *6*	(5/2$^+$)		AB	J^π: In ^{127}In(1.09 s, 9/2$^+$) decay, 11 levels assigned (7/2 or 9/2) make γ transitions to this level, and this level goes to 3/2$^+$ level by γ.
953.95 *9*	(1/2,3/2)		AB	Configuration=(^{128}Sn 2$^+$)(ν $(d_{3/2})^{-1}$) and/or (^{128}Sn 2$^+$)(ν $(s_{1/2})^{-1}$). J^π: log *ft*=7.0 from (1/2$^-$), γ to (1/2$^+$) and (5/2$^+$).
963.61 *6*	(7/2$^-$)		AB	Configuration=(^{128}Sn 2$^+$)(ν $(h_{11/2})^{-1}$). J^π: γ to 11/2$^-$ and (9/2$^-$), systematics in odd-Sn isotopes favors 7/2$^-$.
1053.62 *6*	(7/2$^+$)		A	Configuration=(^{128}Sn 2$^+$)(ν $d_{3/2})^{-1}$). J^π: log *ft*=5.8 from (9/2$^+$), γ to 3/2$^+$.
1090.61 *12*	(1/2,3/2)		B	Configuration=(^{128}Sn 2$^+$)(ν $(d_{3/2})^{-1}$) and/or (^{128}Sn 2$^+$)(ν $(s_{1/2})^{-1}$). J^π: log *ft*=6.5 from (1/2$^-$).

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Adopted Levels, Gammas (continued)

^{127}Sn Levels (continued)

E(level)†	Jπ#@&a	$T_{1/2}$‡	XREF	Comments
1094.61 *15*	(15/2$^-$)		CDE	Configuration=(^{128}Sn 2$^+$)(ν ($h_{11/2}$)$^{-1}$). Jπ: γ to 11/2$^-$ in ^{9}Be(^{238}U,xγ).
1233.41 *24*	(3/2$^+$)		AB	Configuration=(^{128}Sn 2$^+$)(ν ($d_{3/2}$)$^{-1}$) and/or (^{128}Sn 2$^+$)(ν ($s_{1/2}$)$^{-1}$). Jπ: log *ft*=7.1 from (1/2$^-$).
1242.79 *13*	(13/2$^-$)		CDE	Jπ: γ from (15/2$^+$), γ to (11/2$^-$): from systematics of Sn isotopes (2000Pi03). Though 2004Ga24 have also proposed that this level is 13/2$^-$, the β-ray feeding intensity obtained from in and out γ-ray balance (log *ft*=6.4 from (21/2$^-$)) contradict this assignment. 2004Ga24 suggest this contradiction is due to unobserved γ-rays. Configuration=(^{128}Sn 2$^+$)(ν ($h_{11/2}$)$^{-1}$).
1331.55 *11*	(5/2$^+$)		AB	Configuration=(ν $d_{5/2}$). Jπ: γ to (1/2$^+$) and to 3/2$^+$, systematics of odd Sn isotopes.
1501.5? *4*			C	The order of feeding 2103.8γ and 406.9γ is not known, and so this level may actually be at 3198.3.
1555.91 *6*	(7/2$^-$,9/2$^+$)		A	Jπ: log *ft*=6.5 from (9/2$^+$), γ to 11/2$^-$.
1602.65 *6*	(7/2$^+$)		A	Configuration=(ν $g_{7/2}$). Jπ: log *ft*=4.4 from (9/2$^+$), γ to 3/2$^+$.
1618.40 *16*	(7/2,9/2$^+$)		A	Jπ: log *ft*=5.9 from (9/2$^+$), γ to (5/2$^+$) and 11/2$^-$.
1625.32 *19*			CD	Jπ: log *ft*=6.9 from (21/2$^-$), γ to (9/2$^+$): In view of the difference of large Q value (6510) and maximum energy of level proposed (3899.5) in the $T_{1/2}$ =1.04 s β-decay, it is likely that the decay scheme is not yet complete. Only one γ feeding to this level from decay process of the 4.52 μs isomer is reported. The discrepancy between the log *ft* and possible multipolarity of decaying γ could be attributed to not yet reported feeding γ 's to this level (evaluator).
1702.59 *7*	(7/2$^+$)		A	Jπ: log *ft*=6.0 from (9/2$^+$), γ to 3/2$^+$.
1810.13 *15*	(15/2$^+$)		CDE	Jπ: γ to (13/2$^+$) and to (15/2$^+$).
1819.9 *3*	(1/2,3/2)		B	Jπ: log *ft*=8.0 from (1/2$^-$), γ to 3/2$^+$.
1826.67 *16*	(19/2$^+$)	4.52 μs *15*	CDE	Configuration=(ν ($d_{3/2}$)$^{-1}$)(ν ($h_{11/2}$)$^{-2}$) (2008Lo07). Jπ: from systematics of odd Sn isotopes (2000Pi03), γ to (15/2$^+$). $T_{1/2}$: weighted average of 4.4 μs *2* (2008Lo07), 4.8 μs *3* (2004Ga24) and 4.5 μs *3* (2000Pi03); other: 3.1 μs *9* (1980De35).
1909.54 *7*	(7/2$^+$)		A	Jπ: log *ft*=5.6 from (9/2$^+$), γ to 3/2$^+$.
1916.45 *18*	(19/2$^-$)		C	Jπ: log *ft*=6.6 from (21/2$^-$), γ to (15/2$^-$).
1930.97 *17*	(23/2$^+$)	1.19 μs *13*	C E	Configuration=(ν ($d_{3/2}$)$^{-1}$)(ν ($h_{11/2}$)$^{-2}$) (2008Lo07). Jπ: (E2) γ to (19/2$^+$), from systematics of odd Sn isotopes. $T_{1/2}$: weighted average of 0.9 μs *3* (2008Lo07) and 1.26 μs *15* (2004Ga24).
2024.21 *8*	(7/2$^+$)		A	Jπ: log *ft*=5.6 from (9/2$^+$), γ to (3/2$^+$).
2042.52 *11*	(7/2$^+$)		A	Jπ: log *ft*=6.1 from (9/2$^+$), γ to (3/2$^+$).
2045.98 *20*	(19/2)		C	Jπ: log *ft*=6.6 from (21/2$^-$), γ's to (15/2$^+$) and to (19/2$^+$).
2047.4 *3*	(19/2$^-$)		C E	Jπ: γ from (23/2$^-$), γ to (15/2$^-$).
2083.5 *4*			C	
2165.8 *3*	(19/2)		C	Jπ: log *ft*=6.7 from (21/2$^-$), γ to (15/2$^-$). (2004Ga24) reported as (19/2).
2232.10 *20*	(21/2$^+$)		C E	Jπ: log *ft*=6.2 from (21/2$^-$), γ to (19/2$^+$), γ to (23/2$^+$), from systematics of odd Sn isotopes.
2260.3 *9*	(1/2,3/2)		B	Jπ: log *ft*=7.0 from (1/2$^-$), γ to (1/2$^+$).
2311.8 *3*	(19/2,17/2)		C	γ from (19/2$^-$), γ to (15/2$^-$) and (19/2).
2410.4 *9*	(23/2$^-$)		E	Jπ: members of configuration=(ν ($h_{11/2}$)$^{-3}$) quasiparticle multiplet from shell model calculation (2008Lo07).
2442.69 *10*	(7/2,9/2)		A	Jπ: log *ft*=5.9 from (9/2$^+$), γ to (7/2$^+$).
2464.79 *10*	(7/2,9/2)		A	Jπ: log *ft*=6.0 from (9/2$^+$), γ to (5/2$^+$) and 11/2$^+$.
2515.25 *15*	(7/2,9/2)		A	Jπ: log *ft*=6.4 from (9/2$^+$), γ to (5/2$^+$) and 11/2$^+$.
2552.4 *10*	(27/2$^-$)	0.25 μs *3*	E	$T_{1/2}$: From (2008Lo07). Jπ: member of configuration=(ν ($h_{11/2}$)$^{-3}$) quasiparticle multiplet from shell model calculation (2008Lo07).
2630.5 *4*	(19/2,21/2)		C	Jπ: log *ft*=6.6 from (21/2$^-$), γ to (19/2).

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Adopted Levels, Gammas (continued)

^{127}Sn Levels (continued)

E(level)[†]	J^{π}[#@&a]	XREF	Comments
2733.82 *24*		C	
2791.38 *15*	(7/2,9/2)	A	J^{π}: log *ft*=6.1 from (9/2$^+$), γ to (5/2$^+$).
2822.3 *3*	(7/2,9/2)	A	J^{π}: log *ft*=6.8 from (9/2$^+$), γ to (5/2$^+$).
2886.3 *6*	(1/2,3/2)	B	J^{π}: log *ft*=7.0 from (1/2$^-$), γ to (1/2$^+$).
3287.67 *21*		C	
3333.38 *11*	(3/2)	B	J^{π}: log *ft*=5.4 from (1/2$^-$), γ to (7/2$^+$).
3397.60 *22*	(1/2,3/2)	B	J^{π}: log *ft*=6.0 from (1/2$^-$), γ to (1/2$^+$).
3564.5 *4*	(3/2)	B	J^{π}: log *ft*=6.7 from (1/2$^-$), γ to (1/2$^+$).
3605.12 *19*	(19/2$^-$)	C	Configuration=($\nu\ h^{-1}_{11/2}d^{-1}_{3/2})_{7-}$) ($\nu\ g_{7/2})^{-1}$). J^{π}: log *ft*=4.5 from (21/2$^-$), γ to (15/2$^-$).
3647.22 *24*	(19/2,21/2)	C	J^{π}: log *ft*=5.4 from (21/2$^-$), γ to (19/2$^+$).
3860.9 *9*		C	
3899.5 *11*		C	

[†] From a least-squares fit to the adopted E(γ's) (evaluator).

[‡] γ(t) from ^{127}Sn produced by ^{9}Be(^{238}U,F) and ^{9}Be(^{136}Xe,X) (2008Lo07); γ(t) from ^{127}Sn produced by ^{233}U(n,F) and ^{239}Pu(n,F) (2000Pi03)); from $\beta\gamma$(t) delayed coincidence (2004Ga24): for all excited states, except the 5.07 level.

[#] 1998Ho11 reported shell model calculation on Sn isotopes using effective interaction under model space which includes $2s_{1/2}$ $1d_{3/2}$, $1d_{5/2}$, $0g_{7/2}$, $0h_{11/2}$ neutron hole orbitals. The results on level energies and J^{π} in ^{127}Sn agree relatively well up to 1.5 MeV. However, first 3/2$^+$ and second 5/2$^+$ have lower energies and first 7/2$^+$ has higher energies, reversing level order. 2000Yo08 calculated level energies and J^{π} using IBFM (interacting boson fermion model). The predictions and experimental results are relatively well reproduced up to 1300 keV,

[@] 2004Ga24 have proposed a model where the neutron in $s_{1/2}$ or $d_{3/2}$ orbitals couples to the 2$^+$ state in ^{128}Sn according to the systematics in even and odd Sn nuclei. The energies of 2$^+$ states in even Sn nuclei are calculated by 2000Yo08 using IBFM, 2000Zh19 by BOSM(nucleon pair shell model), 2004Ts03 by QPPM (quasiparticle phonon model), 2002Te10 by QPRHA (quasiparticle random phase approximation).

[&] Dominant configurations of levels in ^{128}Sn are following: 1st 2$^+$: $\nu\ (h_{11/2})^{-2}$ (2004Ga24) 1st 5$^-$: $\nu\ ((h_{11/2})^{-1}\otimes(s_{1/2}))$ (2008Jo03), (1974Kr15) 1st 7$^-$: $\nu\ ((h_{11/2})^{-1}\otimes(d_{3/2}))$ (2008Jo03), (1974Kr15).

[a] The configurations shown in each level are most dominant one proposed from one of above authors.

$\gamma(^{127}Sn)$

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[&]	α[a]	Comments
257.76	(1/2)$^+$	252.70 *4*	100.0	5.07	3/2$^+$	M1	0.0446	α(K)=0.0387 *6*; α(L)=0.00482 *7*; α(M)=0.000944 *14*; α(N+..)=0.000193 *3* α(N)=0.0001776 *25*; α(O)=1.549×10^{-5} *22* Mult.: from 3.67-s decay.
646.31	(9/2)$^-$	646.34 *4*	100.0	0.0	11/2$^-$	M1,E2	0.0040 *3*	α(K)exp<0.004 α=0.0040 *3*; α(K)=0.0034 *3*; α(L)=0.000430 *21*; α(M)=8.4×10^{-5} *4*; α(N+..)=1.71×10^{-5} *10* α(N)=1.58×10^{-5} *8*; α(O)=1.34×10^{-6} *12*
809.94	(5/2$^+$)	805.00 *5*	100.0	5.07	3/2$^+$			
953.95	(1/2,3/2)	144.02 *16*	13 *3*	809.94	(5/2$^+$)			
		696.4 *3*	27 *4*	257.76	(1/2)$^+$			
		948.90 *17*	100 *10*	5.07	3/2$^+$			
963.61	(7/2$^-$)	317.61 *16*	3.5 *4*	646.31	(9/2)$^-$			
		963.61 *12*	100 *11*	0.0	11/2$^-$			
1053.62	(7/2$^+$)	243.75 *4*	7.1 *8*	809.94	(5/2$^+$)	M1,E2	0.060 *11*	α(K)exp=0.043 *17* (1980De35) α(K)=0.051 *9*; α(L)=0.0075 *23*; α(M)=0.0015 *5*; α(N+..)=0.00029 *9* α(N)=0.00027 *8*; α(O)=2.0×10^{-5} *4*
		1048.54 *3*	100 *10*	5.07	3/2$^+$			
1090.61	(1/2,3/2)	832.83[‡] *15*	80 *8*	257.76	(1/2)$^+$			
		1085.62[‡] *18*	100 *9*	5.07	3/2$^+$			
1094.61	(15/2$^-$)	1094.7[#] *2*	100.0	0.0	11/2$^-$			
1233.41	(3/2$^+$)	975.8 *4*	1.0×10^2 *3*	257.76	(1/2)$^+$			
		1228.4 *3*	9.×10^1 *3*	5.07	3/2$^+$			
1242.79	(13/2$^-$)	1242.71[#] *15*	100.0	0.0	11/2$^-$			
1331.55	(5/2$^+$)	1073.8 *8*	5.0 *15*	257.76	(1/2)$^+$			
		1326.47 *9*	100 *10*	5.07	3/2$^+$			
1501.5?		406.9[#] *7*	100.0	1094.61	(15/2$^-$)			
1555.91	(7/2$^-$,9/2$^+$)	502.6 *5*	7.6 *9*	1053.62	(7/2$^+$)			
		592.1 *4*	10.5 *17*	963.61	(7/2$^-$)			
		746.07 *8*	51 *5*	809.94	(5/2$^+$)			
		909.67 *8*	30 *3*	646.31	(9/2)$^-$			
		1555.70 *10*	100 *11*	0.0	11/2$^-$			
1602.65	(7/2$^+$)	549.14 *12*	0.50 *5*	1053.62	(7/2$^+$)			
		639.07 *4*	6.0 *6*	963.61	(7/2$^-$)			
		792.76 *5*	3.7 *4*	809.94	(5/2$^+$)			
		956.32 *9*	10.1 *10*	646.31	(9/2)$^-$			
		1597.43 *6*	100.0	5.07	3/2$^+$			
		1602.6 *5*	0.50 *20*	0.0	11/2$^-$			
1618.40	(7/2,9/2$^+$)	565.3 *10*	17 *5*	1053.62	(7/2$^+$)			
		808.8 *4*	100 *12*	809.94	(5/2$^+$)			
		972.5 *6*	7.8 *22*	646.31	(9/2)$^-$			

$^{127}_{50}Sn_{77}$-4

$\gamma(^{127}Sn)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[&]	α[a]	Comments
1618.40	(7/2,9/2$^+$)	1618.7 *3*	47 *4*	0.0	11/2$^-$			
1625.32		979.1[#] *5*	100.0	646.31	(9/2)$^-$			
1702.59	(7/2$^+$)	649.1 *5*	17 *3*	1053.62	(7/2$^+$)			
		748.9 *3*	12.0 *16*	953.95	(1/2,3/2)			
		892.65 *4*	100 *10*	809.94	(5/2$^+$)			
		1697.3 *2*	31 *4*	5.07	3/2$^+$			
1810.13	(15/2$^+$)	184.81[#] *13*	3.6 *5*	1625.32				
		567.26[#] *15*	22.6 *22*	1242.79	(13/2$^-$)			
		715.52[#] *4*	100 *9*	1094.61	(15/2$^-$)			
1819.9	(1/2,3/2)	1814.8 *3*	100.0	5.07	3/2$^+$			
1826.67	(19/2$^+$)	16.52[#] *11*	0.277 *22*	1810.13	(15/2$^+$)	E2	2.32×10^3 *9*	B(E2)(W.u.)=1.00 *10* α(L)=1.87×10^3 *7*; α(M)=384 *15*; α(N+..)=67.3 *25* α(N)=65.9 *25*; α(O)=1.36 *5* I_γ: Intensity is estimated from transition intensity balance of 4.52 μs isomer by evaluator.
		732.04[#] *11*	100 *11*	1094.61	(15/2$^-$)			
1909.54	(7/2$^+$)	353.63 *9*	53 *6*	1555.91	(7/2$^-$,9/2$^+$)			
		577.9 *5*	18.6 *21*	1331.55	(5/2$^+$)			
		855.94 *4*	100 *11*	1053.62	(7/2$^+$)			
		945.9 *2*	34 *5*	963.61	(7/2$^-$)			
		1099.6 *2*	50 *6*	809.94	(5/2$^+$)			
		1262.8 *5*	3.6 *11*	646.31	(9/2)$^-$			
		1904.1 *2*	23.7 *21*	5.07	3/2$^+$			
1916.45	(19/2$^-$)	821.89[#] *11*	100.0	1094.61	(15/2$^-$)			
1930.97	(23/2$^+$)	104.30[#] *6*	100.00	1826.67	(19/2$^+$)	(E2)	1.374	α(K)=1.008 *15*; α(L)=0.294 *5*; α(M)=0.0600 *9*; α(N+..)=0.01110 *16* α(N)=0.01063 *16*; α(O)=0.000474 *7* δ: B(E2)(W.u.)=1.4 *5*, if M1, hindrance factor is very large (B(M1)(W.u.)=2.2×10^5).
2024.21	(7/2$^+$)	321.7 *4*	4.4 *5*	1702.59	(7/2$^+$)			
		421.56 *8*	6.6 *8*	1602.65	(7/2$^+$)			
		468.3 *2*	100 *11*	1555.91	(7/2$^-$,9/2$^+$)			
		970.5 *2*	20.1 *22*	1053.62	(7/2$^+$)			
		1070.54 *10*	38 *6*	953.95	(1/2,3/2)			
		1214.04 *9*	79 *8*	809.94	(5/2$^+$)			
2042.52	(7/2$^+$)	424.4 *2*	100 *10*	1618.40	(7/2,9/2$^+$)			
		487.2 *3*	38 *5*	1555.91	(7/2$^-$,9/2$^+$)			
		809.7 *6*	22 *7*	1233.41	(3/2$^+$)			
		989.4 *2*	63 *7*	1053.62	(7/2$^+$)			
		1088.34 *9*	43 *9*	953.95	(1/2,3/2)			
2045.98	(19/2)	219.2[#] *2*	100 *13*	1826.67	(19/2$^+$)			

$^{127}_{50}Sn_{77}$-5

Adopted Levels, Gammas (continued)

$\gamma(^{127}Sn)$ (continued)

E_i(level)	J^{π}_i	E_{γ}[†]	I_{γ}[†]	E_f	J^{π}_f	Mult.[&]	α[a]	Comments
2045.98	(19/2)	236.0[#] 2	48 9	1810.13	$(15/2^+)$			
2047.4	$(19/2^-)$	952.8[#] 3	100.0	1094.61	$(15/2^-)$			
2083.5		257.3[#] 7	100.00	1826.67	$(19/2^+)$			
2165.8	(19/2)	1071.3[#] 5	100.00	1094.61	$(15/2^-)$			
2232.10	$(21/2^+)$	301.14[#] 13	77 10	1930.97	$(23/2^+)$			
		405.4[#] 3	100 14	1826.67	$(19/2^+)$			
2260.3	(1/2,3/2)	1169.7[‡] 9	100.0	1090.61	(1/2,3/2)			
2311.8	(19/2,17/2)	395.6[#] 7	1.0×10^2 3	1916.45	$(19/2^-)$			
		1217.4[#] 10	$8.\times10^1$ 3	1094.61	$(15/2^-)$			
2410.4	$(23/2^-)$	363.1 3	28 4	2047.4	$(19/2^-)$	(E2)	0.0192	α(K)=0.01631 24; α(L)=0.00237 4; α(M)=0.000469 7; α(N+..)=9.29×10^{-5} 14 α(N)=8.65×10^{-5} 13; α(O)=6.41×10^{-6} 10
		479.7 3	100 11	1930.97	$(23/2^+)$	(E1)	0.00263 4	α=0.00263 4; α(K)=0.00229 4; α(L)=0.000274 4; α(M)=5.34×10^{-5} 8; α(N+..)=1.086×10^{-5} 16 α(N)=1.002×10^{-5} 15; α(O)=8.48×10^{-7} 12
2442.69	(7/2,9/2)	740.0 8	0.9 6	1702.59	$(7/2^+)$			
		840.4 8	10.3 15	1602.65	$(7/2^+)$			
		1111.0 6	8 3	1331.55	$(5/2^+)$			
		1389.07 8	100 10	1053.62	$(7/2^+)$			
		1632.7 3	30 5	809.94	$(5/2^+)$			
		1796.2 6	4.2 17	646.31	$(9/2)^-$			
2464.79	(7/2,9/2)	1133.2 7	4.8 17	1331.55	$(5/2^+)$			
		1411.3 2	15 5	1053.62	$(7/2^+)$			
		1818.6 4	11 4	646.31	$(9/2)^-$			
		2464.70 12	100 11	0.0	$11/2^-$			
2515.25	(7/2,9/2)	1184.0 9	6 3	1331.55	$(5/2^+)$			
		1705.3 2	16 7	809.94	$(5/2^+)$			
		2515.2 2	100 9	0.0	$11/2^-$			
2552.4	$(27/2^-)$	142.0[@] 3	100.0	2410.4	$(23/2^-)$	(E2)	0.461 8	α(K)=0.361 6; α(L)=0.0805 14; α(M)=0.0163 3; α(N+..)=0.00307 5 α(N)=0.00291 5; α(O)=0.0001541 25
2630.5	(19/2,21/2)	464.6[#] 4	65 13	2165.8	(19/2)			
		583.2[#] 5	100 12	2047.4	$(19/2^-)$			
2733.82		501.9[#] 10	16 7	2232.10	$(21/2^+)$			
		650.5[#] 9	28 10	2083.5				
		688.0[#] 3	53 7	2045.98	(19/2)			
		803.2[#] 9	100 16	1930.97	$(23/2^+)$			
2791.38	(7/2,9/2)	1737.8 3	25 7	1053.62	$(7/2^+)$			
		1827.5 6	4.7 23	963.61	$(7/2^-)$			

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Adopted Levels, Gammas (continued)

$\gamma(^{127}Sn)$ (continued)

E_i(level)	J^{π}_i	E_γ[†]	I_γ[†]	E_f	J^{π}_f
2791.38	(7/2,9/2)	1981.40 *17*	100 *11*	809.94	(5/2$^+$)
		2145.2 *4*	9.8 *18*	646.31	(9/2)$^-$
2822.3	(7/2,9/2)	1768.8 *3*	6.×10^1 *3*	1053.62	(7/2$^+$)
		1858.4 *6*	38 *12*	963.61	(7/2$^-$)
		2175.7 *7*	100 *16*	646.31	(9/2)$^-$
2886.3	(1/2,3/2)	2628.5[‡] *5*	100.00	257.76	(1/2)$^+$
3287.67		1461.02[#] *13*	100.00	1826.67	(19/2$^+$)
3333.38	(3/2)	1513.0[‡] *9*	4.5 *10*	1819.9	(1/2,3/2)
		2001.9[‡] *7*	5.9 *7*	1331.55	(5/2$^+$)
		2242.8[‡] *2*	10.0 *12*	1090.61	(1/2,3/2)
		2369.5[‡] *3*	9.9 *12*	963.61	(7/2$^-$)
		3075.62[‡] *10*	100 *11*	257.76	(1/2)$^+$
		3328.20[‡] *19*	37 *5*	5.07	3/2$^+$
3397.60	(1/2,3/2)	3139.8[‡] *2*	100.0	257.76	(1/2)$^+$
3564.5	(3/2)	3306.7[‡] *4*	100.00	257.76	(1/2)$^+$

E_i(level)	J^{π}_i	E_γ[†]	I_γ[†]	E_f	J^{π}_f
3605.12	(19/2$^-$)	871.4[#] *2*	23.1 *23*	2733.82	
		974.7[#] *8*	6.3 *12*	2630.5	(19/2,21/2)
		1293.3[#] *2*	9.0 *12*	2311.8	(19/2,17/2)
		1373.1[#] *7*	3.7 *12*	2232.10	(21/2$^+$)
		1439.4[#] *3*	12.7 *15*	2165.8	(19/2)
		1521.8[#] *5*	8.6 *8*	2083.5	
		1558.5[#] *9*	14.9 *23*	2045.98	(19/2)
		1689.0[#] *3*	6.0 *8*	1916.45	(19/2$^-$)
		1778.3[#] *2*	100 *10*	1826.67	(19/2$^+$)
		2103.6[#] *4*	6.3 *8*	1501.5?	
		2510.3[#] *2*	40 *5*	1094.61	(15/2$^-$)
3647.22	(19/2,21/2)	359.58[#] *13*	100 *12*	3287.67	
		1819.7[#] *7*	100 *18*	1826.67	(19/2$^+$)
3860.9		2766.3[#] *8*	100.0	1094.61	(15/2$^-$)
3899.5		2804.9[#] *11*	100.0	1094.61	(15/2$^-$)

[†] From ^{127}In β^- decay (1.09 s), except as noted.
[‡] From ^{127}In β^- decay (3.67 s).
[#] From ^{127}In β^- decay (1.04 s).
[@] From ^{9}Be(^{238}U,X).
[&] From electron conversion coefficients in ^{127}In β^- decay (3.67 s) or ^{127}In β^- decay (1.09 s).
[a] 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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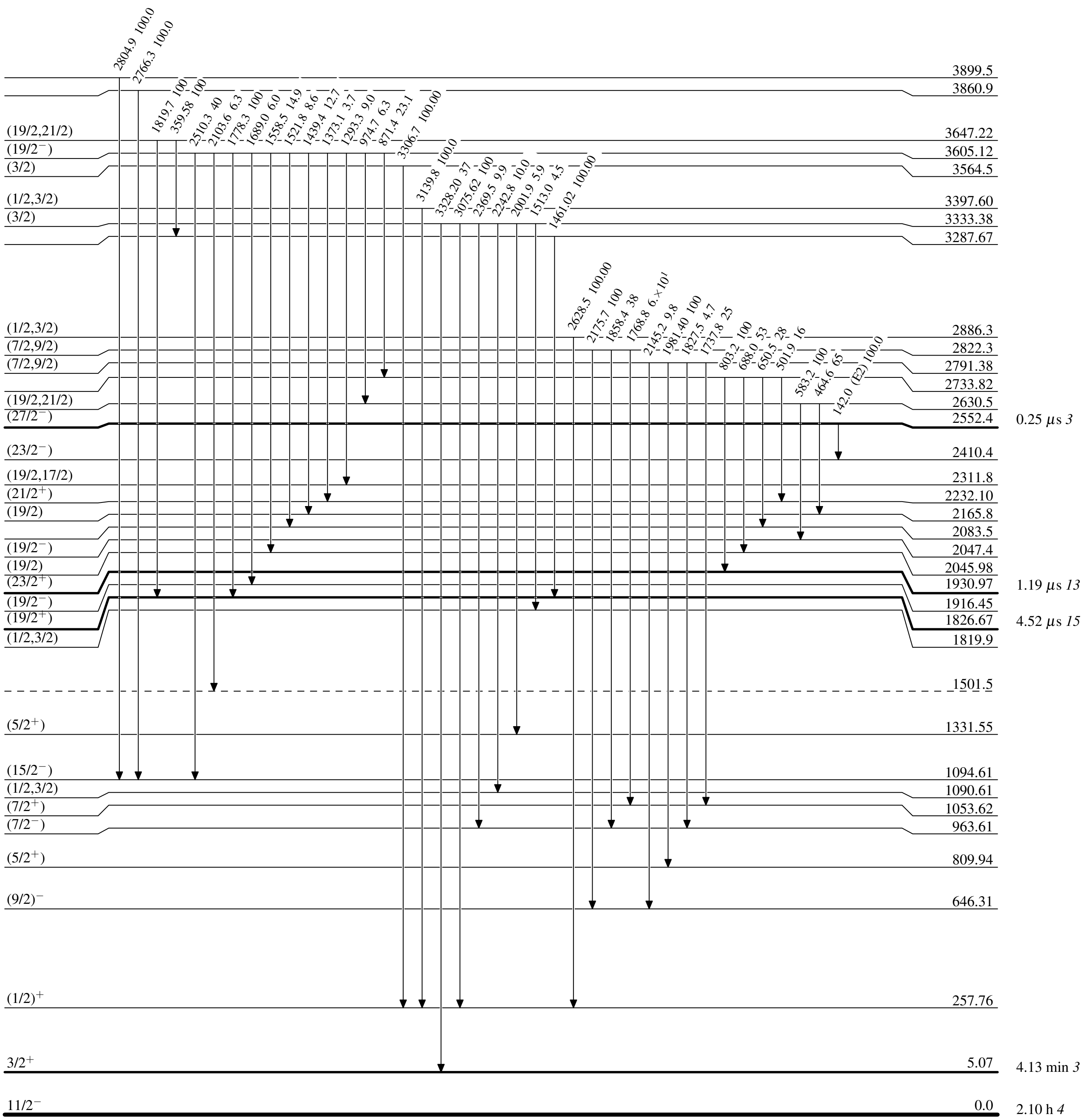
Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level



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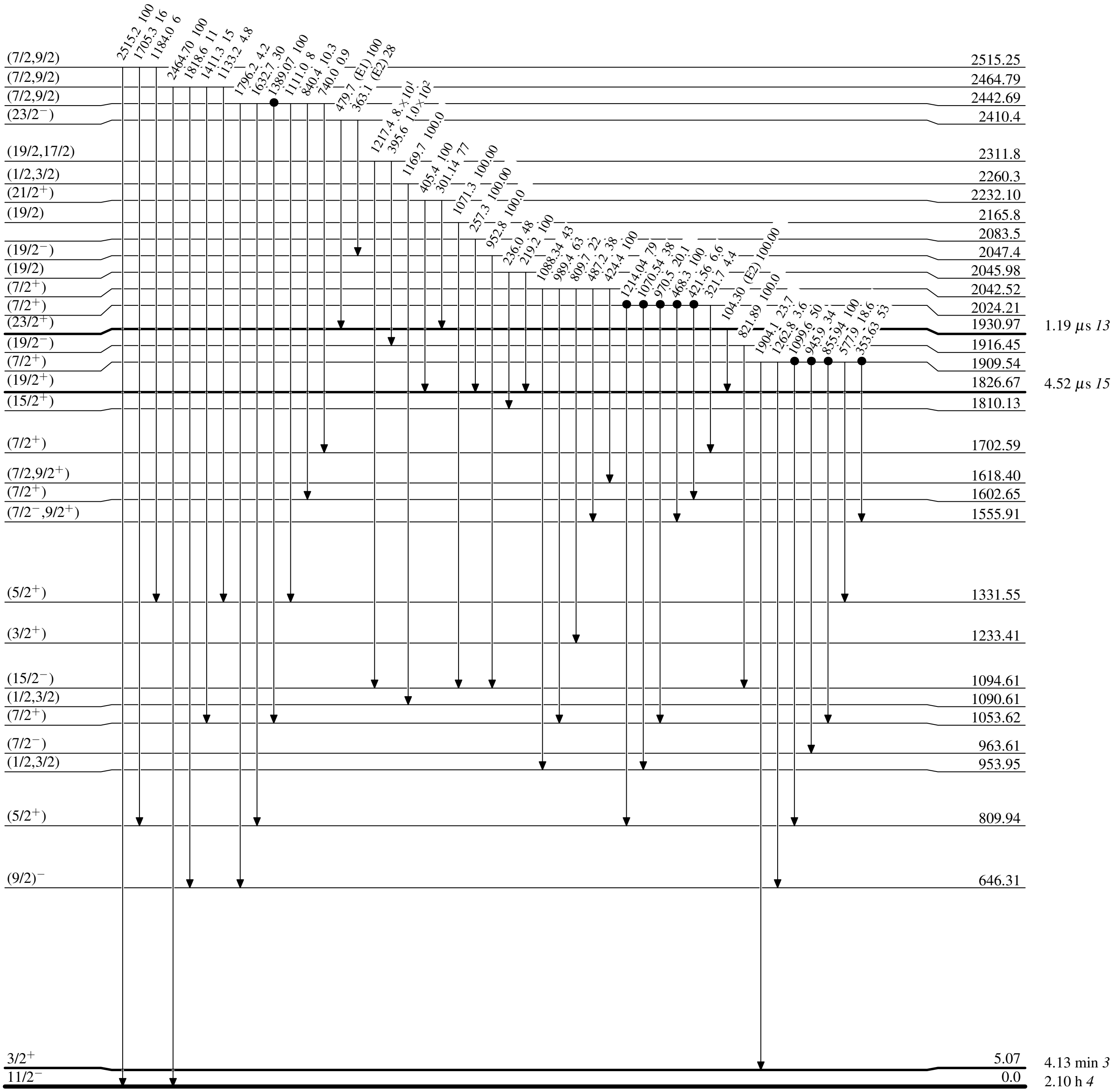
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

● Coincidence



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Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level