

Adopted Levels, Gammas

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Alexandru Negret, Balraj Singh		NDS 114, 841 (2013)	30-Jun-2013

$Q(\beta^-)=5906.3$; $S(n)=4874.3$; $S(p)=13842.6$; $Q(\alpha)=-9577.6$ 30 [2012Wa38](#)

$S(2n)=13108.1$ 27, $S(2p)=27029.3$ ([2012Wa38](#)).

The ^{75}Zn isotope produced by mass separation of fragments from neutron induced fission of ^{235}U and identified by detection of Ga x rays ([1974Gr29](#)). Other: $^{238}\text{U}(p,F)$, $E=25$ MeV ([1997Hu09](#)).

 ^{75}Zn LevelsCross Reference (XREF) Flags

- A ^{75}Cu β^- decay (1.224 s)
- B ^{76}Cu β^-n decay (0.638 s)
- C $^{76}\text{Ge}(^{14}\text{C}, ^{15}\text{O})$

E(level)	J^π	$T_{1/2}$	XREF	Comments
0.0	$(7/2^+)^{\dagger}$	10.2 s 2	ABC	$\% \beta^- = 100$ $T_{1/2}$: from 1986Ek01 .
126.94 9	$(1/2^-)^{\dagger}$		A	$\% \beta^- = ?$; $\% \text{IT} = ?$ E(level): proposed as a β -decaying isomer in ^{75}Zn (2011II01). Estimated half-life from systematics=5 s (2012Au07).
152.12 10	$(1/2^+, 3/2^-)$		A	J^π : possible decay to $(1/2^-)$ isomer; γ from $(5/2^+, 7/2^-)$; no decay to $(7/2^+)$ g.s. observed.
236.22 10	$(3/2, 5/2^-)$		A	J^π : possible β feeding from $5/2^{(-)}$; γ to $(1/2^-)$.
344.95 8	$(3/2^+, 5/2^-)$		A	J^π : possible β feeding from $5/2^{(-)}$; γ 's to $(7/2^+)$ and $(1/2^-)$.
420.52 8	$(3/2^+, 5/2^-)$		A	J^π : γ 's to $(7/2^+)$ and $(1/2^-)$.
475.66 8	$(9/2^+)^{\dagger}$		A	
725.14 9	$(3/2, 5/2^-)$		A	J^π : possible β feeding from $5/2^{(-)}$; γ to $(1/2^-)$.
933.47 17			A	
1012.58 10			A	
1102.01 11	$(3/2, 5/2^-)$		A	J^π : possible β feeding from $5/2^{(-)}$; γ to $(1/2^-)$.
1144.24 8	$(7/2^-)$		A	J^π : possible allowed β transition from $5/2^{(-)}$; γ to $(9/2^+)$.
1303.90 11	$(5/2^+)^{\ddagger}$		A	
1317.8? 5			A	
1551.08 18			A	
1605.83 12	$(5/2^+, 7/2)^{\ddagger}$		A	
1787.64 16			A	
1864.30 25			A	
1915.96 14	$(5/2^+, 7/2)^{\ddagger}$		A	
2042.5 5			A	
2230.1 3	$(5/2^+, 7/2)^{\ddagger}$		A	
2239.60 23			A	
2315.91 22			A	
2339.9 3			A	
2851.26 19			A	
2871.4 3			A	
2904.66 [#] 17			A	
2906.54 [#] 15	$(7/2^-)$		A	J^π : possible allowed β feeding from $5/2^{(-)}$; γ to $(9/2^+)$.
2969.77 20			A	
3000.1 3			A	
3020.37 18			A	
3087.25 13	$(3/2^-, 5/2, 7/2)$		A	J^π : possible β feeding from $5/2^{(-)}$; γ to $(7/2^-)$.

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Adopted Levels, Gammas (continued) ^{75}Zn Levels (continued)

E(level)	J^π	XREF	Comments
3126.55 16	(3/2 ⁻ ,5/2,7/2)	A	J^π : possible β feeding from 5/2 ⁽⁻⁾ ; γ to (7/2 ⁻).
3166.9 4		A	
3235.04 13	(3/2 ⁻ ,5/2,7/2)	A	J^π : possible β feeding from 5/2 ⁽⁻⁾ ; γ to (7/2 ⁻).
3266.6 3		A	
3341.48 23	(5/2 ⁺ ,7/2) [‡]	A	
3361.99 15	(3/2 ⁻ ,5/2,7/2) [‡]	A	
3406.7 3		A	
3424.88 21		A	
3492.30 23		A	
3530.73 22	(5/2 ⁺ ,7/2) [‡]	A	
3546.4 3		A	
3574.1 4	(5/2 ⁺ ,7/2) [‡]	A	
3576.9 4		A	
3668.0 3		A	
3818.3 3		A	
3840.38 18	(5/2 ⁺ ,7/2 ⁻) [‡]	A	
3886.7 7		A	
3897.4 7		A	
3900.1 8		A	
3999.0 11		A	
4010.0 5		A	
4016.4 4		A	
4035.4 5		A	
4359.0 10		A	
4599.0 6		A	
4686.1 5		A	
4989.6 8		A	
5022.0 6		A	

† From systematics, 7/2⁺ g.s., 1/2⁻ isomer and a low-lying 9/2⁺ are expected as in N=45 isotones ^{77}Ge , ^{79}Se , ^{81}Kr and ^{83}Sr .

‡ Possible β feeding from 5/2⁽⁻⁾; γ to (9/2⁺). If γ to (1/2⁻) level at 126.94 keV, then 7/2 is not likely.

Two levels at 2904.7 and 2906.5 are proposed by the evaluators based on γ -ray fits in the level scheme.

 $\gamma(^{75}\text{Zn})$

$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π
152.12	(1/2 ⁺ ,3/2 ⁻)	(25.2)		126.94	(1/2 ⁻)
236.22	(3/2,5/2 ⁻)	109.21 14	100	126.94	(1/2 ⁻)
344.95	(3/2 ⁺ ,5/2 ⁻)	192.72 14	100.0 10	152.12	(1/2 ⁺ ,3/2 ⁻)
		217.90 13	22.48 22	126.94	(1/2 ⁻)
		345.00 13	34.5 3	0.0	(7/2 ⁺)
420.52	(3/2 ⁺ ,5/2 ⁻)	268.48 13	43.1 4	152.12	(1/2 ⁺ ,3/2 ⁻)
		293.64 13	3.44 6	126.94	(1/2 ⁻)
		420.51 12	100.0 10	0.0	(7/2 ⁺)
475.66	(9/2 ⁺)	475.61 12	100	0.0	(7/2 ⁺)
725.14	(3/2,5/2 ⁻)	304.60 13	14.6 6	420.52	(3/2 ⁺ ,5/2 ⁻)
		380.14 13	43.8 7	344.95	(3/2 ⁺ ,5/2 ⁻)
		488.77 12	20.0 6	236.22	(3/2,5/2 ⁻)
		573.01 12	84.6 20	152.12	(1/2 ⁺ ,3/2 ⁻)
		598.30 11	100.0 10	126.94	(1/2 ⁻)
933.47		697.21 17	100	236.22	(3/2,5/2 ⁻)

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Adopted Levels, Gammas (continued)

$E_i(\text{level})$	J_i^π	$\gamma(^{75}\text{Zn})$ (continued)				Comments
		E_γ	I_γ	E_f	J_f^π	
1012.58		592.06 11	100.0 13	420.52	(3/2 ⁺ ,5/2 ⁻)	
		667.45 23	14.0 24	344.95	(3/2 ⁺ ,5/2 ⁻)	
1102.01	(3/2,5/2 ⁻)	756.93 12	53.6 22	344.95	(3/2 ⁺ ,5/2 ⁻)	
		865.90 17	32.4 25	236.22	(3/2,5/2 ⁻)	
		975.12 11	100 3	126.94	(1/2 ⁻)	
1144.24	(7/2 ⁻)	131.25 14	2.27 7	1012.58		
		668.44 11	19.58 23	475.66	(9/2 ⁺)	
		723.76 11	100.0 10	420.52	(3/2 ⁺ ,5/2 ⁻)	
		799.32 11	34.8 4	344.95	(3/2 ⁺ ,5/2 ⁻)	
		907.99 11	6.65 11	236.22	(3/2,5/2 ⁻)	
		1144.37 [†] 16	1.44 11	0.0	(7/2 ⁺)	
1303.90	(5/2 ⁺)	828.29 14	22.3 13	475.66	(9/2 ⁺)	
		1067.76 14	24.7 17	236.22	(3/2,5/2 ⁻)	
		1176.86 [†] 11	100.0 22	126.94	(1/2 ⁻)	
1317.8?		1081.6 [†] 4	100	236.22	(3/2,5/2 ⁻)	
1551.08		1075.42 16	100	475.66	(9/2 ⁺)	
1605.83	(5/2 ⁺ ,7/2)	1130.16 12	100 4	475.66	(9/2 ⁺)	
		1185.30 16	65 4	420.52	(3/2 ⁺ ,5/2 ⁻)	
1787.64		854.13 [†] 18	16.8 18	933.47		
		1551.42 14	100 3	236.22	(3/2,5/2 ⁻)	
1864.30		1628.06 23	100	236.22	(3/2,5/2 ⁻)	
1915.96	(5/2 ⁺ ,7/2)	1440.23 15	100 5	475.66	(9/2 ⁺)	
		1495.52 20	92 9	420.52	(3/2 ⁺ ,5/2 ⁻)	
2042.5		1109.0 4	100	933.47		
2230.1	(5/2 ⁺ ,7/2)	1757.6 [†] 3	100 14	475.66	(9/2 ⁺)	E_γ : poor fit, level-energy difference=1754.5.
		1809.6 3	86 13	420.52	(3/2 ⁺ ,5/2 ⁻)	
2239.60		1894.62 21	100	344.95	(3/2 ⁺ ,5/2 ⁻)	
2315.91		1840.23 20	100	475.66	(9/2 ⁺)	
2339.9		1864.23 24	100	475.66	(9/2 ⁺)	
2851.26		2430.68 21	100 3	420.52	(3/2 ⁺ ,5/2 ⁻)	
		2506.3 3	33.6 20	344.95	(3/2 ⁺ ,5/2 ⁻)	
2871.4		2635.14 27	100	236.22	(3/2,5/2 ⁻)	
2904.66		1760.46 16	100 3	1144.24	(7/2 ⁻)	
		2559.3 4	20.6 17	344.95	(3/2 ⁺ ,5/2 ⁻)	
2906.54	(7/2 ⁻)	2430.88 21	70.9 12	475.66	(9/2 ⁺)	
		2485.99 22	100.0 12	420.52	(3/2 ⁺ ,5/2 ⁻)	
		2906.4 3	43.6 9	0.0	(7/2 ⁺)	
2969.77		2244.5 3	100 7	725.14	(3/2,5/2 ⁻)	
		2549.23 25	96 7	420.52	(3/2 ⁺ ,5/2 ⁻)	
		2625.0 6	21 6	344.95	(3/2 ⁺ ,5/2 ⁻)	
3000.1		2524.4 3	100	475.66	(9/2 ⁺)	
3020.37		2295.24 21	64.4 25	725.14	(3/2,5/2 ⁻)	
		2675.32 24	100 3	344.95	(3/2 ⁺ ,5/2 ⁻)	
		2784.0 9	10 4	236.22	(3/2,5/2 ⁻)	
3087.25	(3/2 ⁻ ,5/2,7/2)	1942.98 26	43 4	1144.24	(7/2 ⁻)	
		2074.75 22	40 3	1012.58		
		2362.05 21	100 3	725.14	(3/2,5/2 ⁻)	
		2666.70 24	98 3	420.52	(3/2 ⁺ ,5/2 ⁻)	
		2742.10 25	75.1 25	344.95	(3/2 ⁺ ,5/2 ⁻)	
3126.55	(3/2 ⁻ ,5/2,7/2)	1982.01 17	100.0 19	1144.24	(7/2 ⁻)	
		2024.7 4	21 3	1102.01	(3/2,5/2 ⁻)	
		2114.8 3	17.7 25	1012.58		
		2780.8 9	9 4	344.95	(3/2 ⁺ ,5/2 ⁻)	
3166.9		2821.9 4	100	344.95	(3/2 ⁺ ,5/2 ⁻)	

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Adopted Levels, Gammas (continued) $\gamma(^{75}\text{Zn})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π
3235.04	(3/2 ⁻ , 5/2, 7/2)	2090.84 20	100 3	1144.24	(7/2 ⁻)
		2222.47 24	45 3	1012.58	
		2509.83 24	65 3	725.14	(3/2, 5/2 ⁻)
		2814.2 3	7 4	420.52	(3/2 ⁺ , 5/2 ⁻)
		2890.1 3	70 4	344.95	(3/2 ⁺ , 5/2 ⁻)
3266.6		2921.4 3	100 7	344.95	(3/2 ⁺ , 5/2 ⁻)
		3115.1 [†] 5	31 7	152.12	(1/2 ⁺ , 3/2 ⁻)
3341.48	(5/2 ⁺ , 7/2)	2865.9 3	100 5	475.66	(9/2 ⁺)
		2996.1 5	34 6	344.95	(3/2 ⁺ , 5/2 ⁻)
		3341.4 4	64 4	0.0	(7/2 ⁺)
3361.99	(3/2 ⁻ , 5/2, 7/2)	2217.32 19	100.0 21	1144.24	(7/2 ⁻)
		2349.60 [†] 23	4.5 3	1012.58	
		3017.6 3	54.3 17	344.95	(3/2 ⁺ , 5/2 ⁻)
3406.7		2262.0 [†] 6	66 9	1144.24	(7/2 ⁻)
		2931.1 3	100 8	475.66	(9/2 ⁺)
3424.88		2699.5 3	100 9	725.14	(3/2, 5/2 ⁻)
		3004.2 4	85 11	420.52	(3/2 ⁺ , 5/2 ⁻)
		3080.14 33	90 8	344.95	(3/2 ⁺ , 5/2 ⁻)
3492.30		3071.7 3	40 7	420.52	(3/2 ⁺ , 5/2 ⁻)
		3147.3 3	100 6	344.95	(3/2 ⁺ , 5/2 ⁻)
3530.73	(5/2 ⁺ , 7/2)	3055.2 4	22 3	475.66	(9/2 ⁺)
		3110.4 3	100 5	420.52	(3/2 ⁺ , 5/2 ⁻)
		3530.0 4	53 5	0.0	(7/2 ⁺)
3546.4		3070.7 3	100	475.66	(9/2 ⁺)
3574.1	(5/2 ⁺ , 7/2)	2848.8 8	65 19	725.14	(3/2, 5/2 ⁻)
		3098.4 4	100 11	475.66	(9/2 ⁺)
3576.9		2565.0 9	49 14	1012.58	
		3231.7 4	100 9	344.95	(3/2 ⁺ , 5/2 ⁻)
3668.0		2942.5 3	100 5	725.14	(3/2, 5/2 ⁻)
		3248.2 5	23 3	420.52	(3/2 ⁺ , 5/2 ⁻)
3818.3		3397.7 3	100 4	420.52	(3/2 ⁺ , 5/2 ⁻)
		3581.8 7	23 5	236.22	(3/2, 5/2 ⁻)
3840.38	(5/2 ⁺ , 7/2 ⁻)	2695.9 3	59 5	1144.24	(7/2 ⁻)
		3365.3 4	53 3	475.66	(9/2 ⁺)
		3419.7 4	55 4	420.52	(3/2 ⁺ , 5/2 ⁻)
		3495.2 4	45 3	344.95	(3/2 ⁺ , 5/2 ⁻)
		3688.1 4	100 3	152.12	(1/2 ⁺ , 3/2 ⁻)
3886.7		3411.0 7	100	475.66	(9/2 ⁺)
3897.4		3661.1 7	100	236.22	(3/2, 5/2 ⁻)
3900.1		3555.1 8	100	344.95	(3/2 ⁺ , 5/2 ⁻)
3999.0		3578.4 11	100	420.52	(3/2 ⁺ , 5/2 ⁻)
4010.0		3533.8 6	100 19	475.66	(9/2 ⁺)
		3665.5 6	54 11	344.95	(3/2 ⁺ , 5/2 ⁻)
4016.4		3540.7 4	100	475.66	(9/2 ⁺)
4035.4		3560.1 8	54 25	475.66	(9/2 ⁺)
		3798.7 7	100 25	236.22	(3/2, 5/2 ⁻)
		4035.2 [†] 10	61 21	0.0	(7/2 ⁺)
4359.0		3883.2 10	100	475.66	(9/2 ⁺)
4599.0		4123.2 6	100	475.66	(9/2 ⁺)
4686.1		4341.0 5	100	344.95	(3/2 ⁺ , 5/2 ⁻)
4989.6		3845.3 8	100	1144.24	(7/2 ⁻)
5022.0		4785.0 10	50 17	236.22	(3/2, 5/2 ⁻)
		4895.1 6	100 33	126.94	(1/2 ⁻)

† Placement of transition in the level scheme is uncertain.

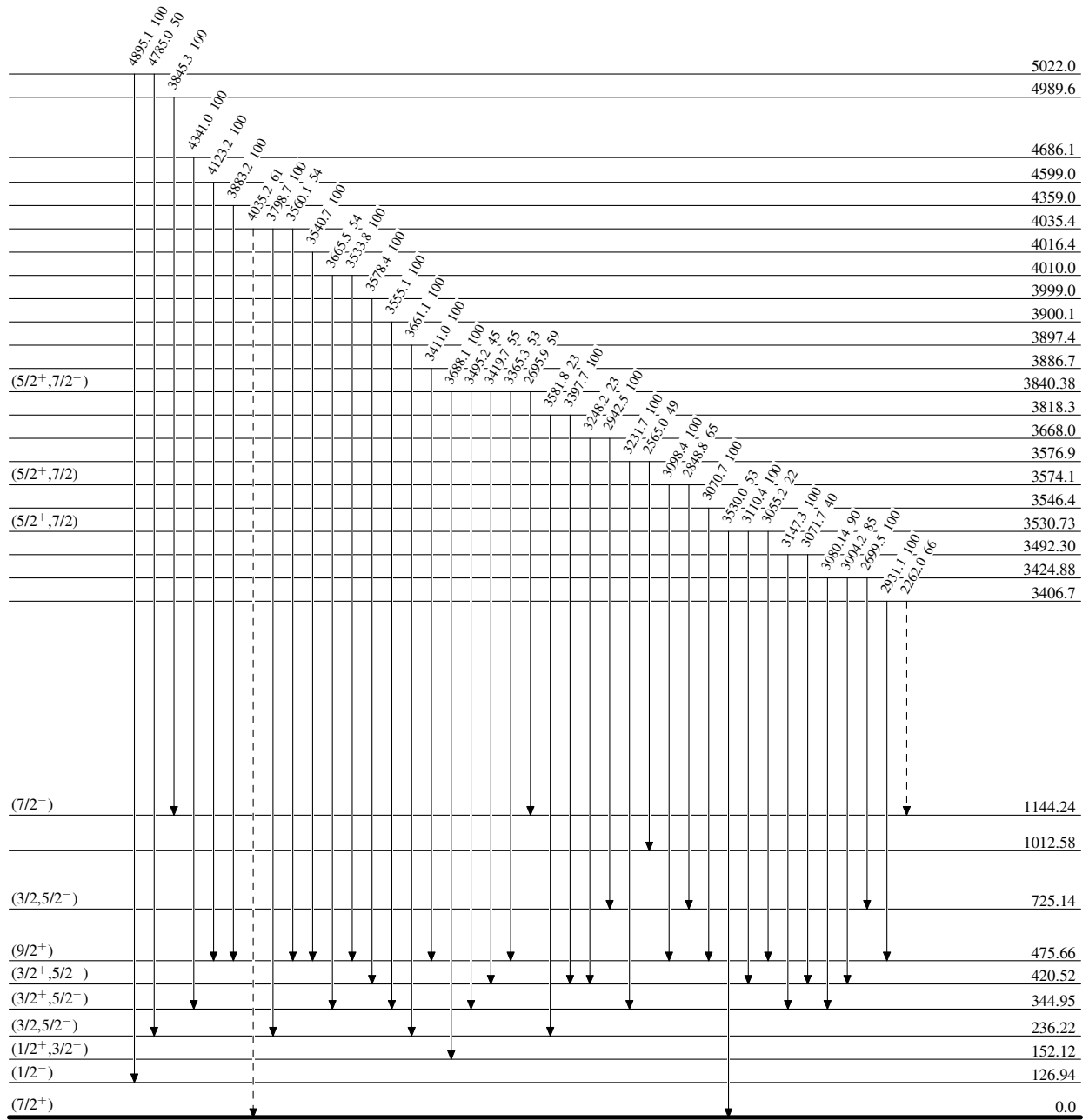
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

-----▶ γ Decay (Uncertain)



10.2 s 2

⁷⁵Zn₃₀⁴⁵⁻

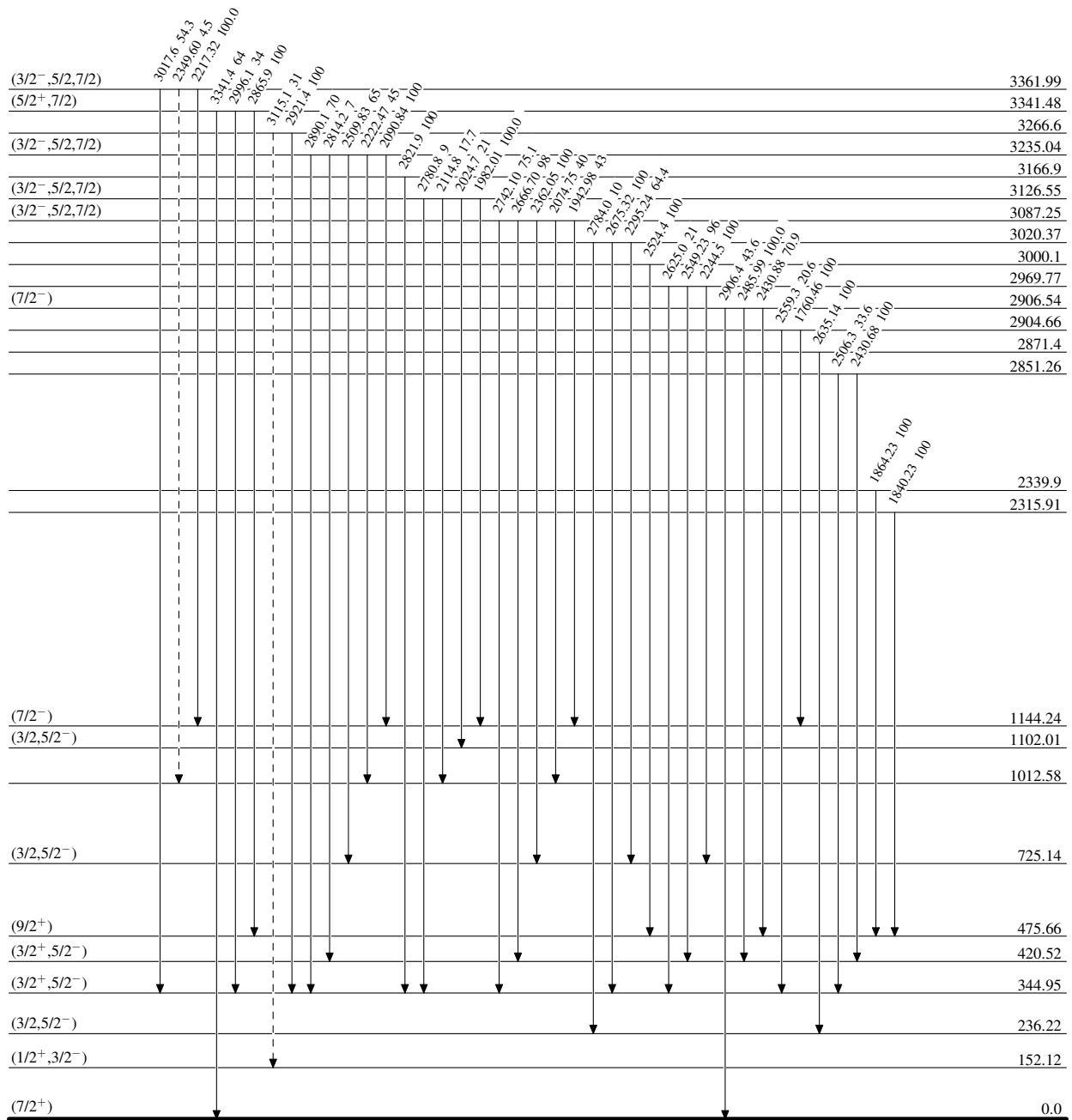
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

-----▶ γ Decay (Uncertain)

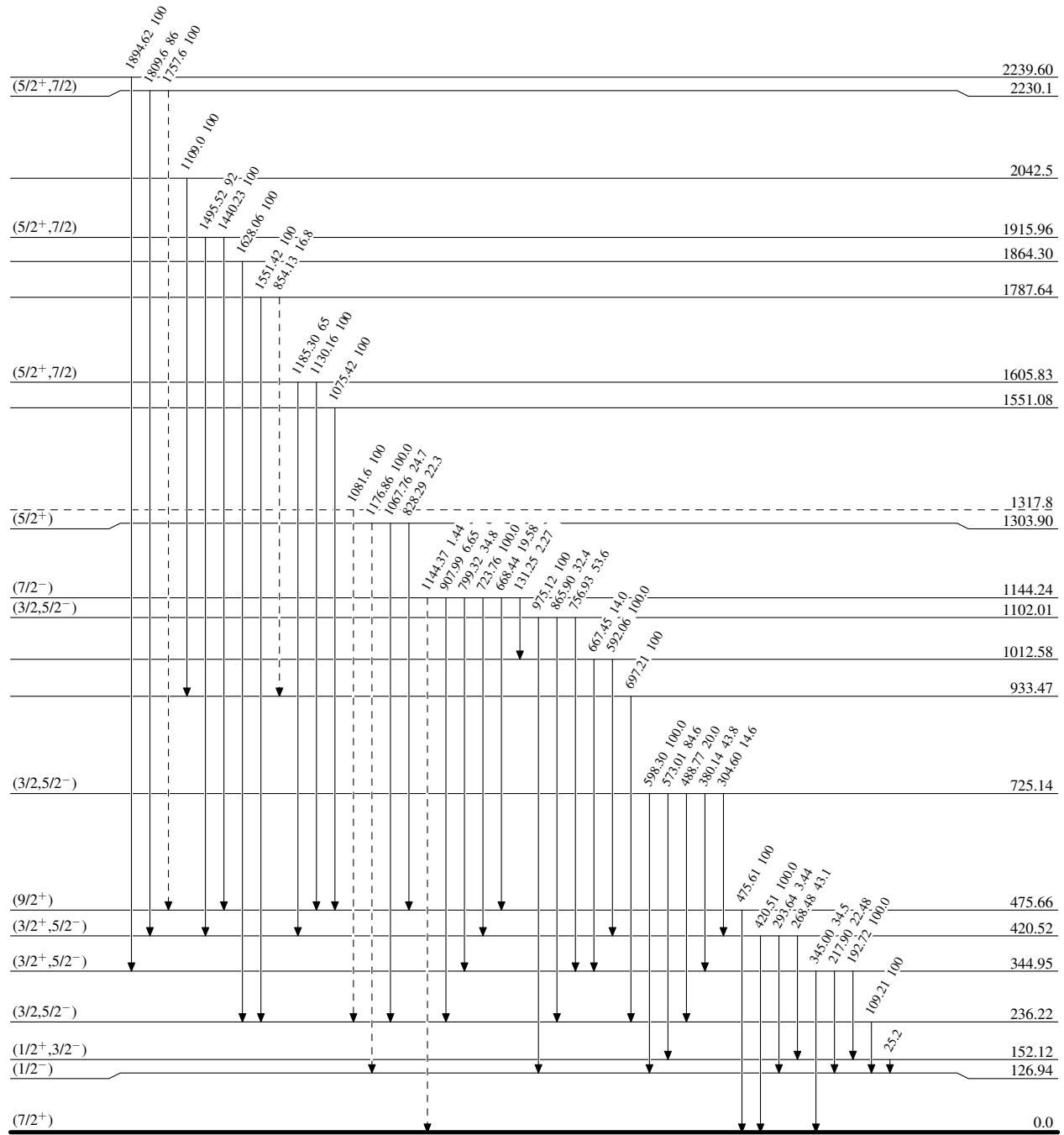


Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

-----▶ γ Decay (Uncertain) $^{75}\text{Zn}_{45}$

10.2 s 2