^{64}Zn(^{64}Zn,2pnγ) 2004Sm02

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	J. Katakura	NDS 112, 495 (2011)	1-Jan-2010

2004Sm02: E=260 MeV. Measured Eγ, Iγ, $\gamma\gamma$, $\gamma\gamma(\theta)$ angular correlation ratios, (particle)γ coin using the GAMMASPHERE detector array of 101 Compton-suppressed Ge detectors; and Microball array of 95 CsI(Tl) scintillators for particle detection. XUNDL data set compiled by J. Roedigers and B. Singh (McMaster), April 29, 2004, is consulted.

^{125}Ce Levels

Quasiparticle notations:
A: ν5/2[402], α=+1/2.
B: ν5/2[402], α=−1/2.
C: ν1/2[411], α=+1/2.
D: ν1/2[411], α=−1/2.
E: ν7/2[523], α=−1/2.
F: ν7/2[523], α=+1/2.
G: ν5/2[532], α=−1/2.
H: ν5/2[532], α=+1/2.
a: π1/2[420], α=+1/2.
b: π1/2[420], α=−1/2.
c: π5/2[413], α=−1/2.
d: π5/2[413], α=+1/2.
e: π3/2[541], α=−1/2.
f: π3/2[541], α=+1/2.
g: π1/2[550], α=−1/2.
h: π1/2[550], α=+1/2.
Level scheme is modified by evaluators based on the claim of 2007Su07. The modification affects the configuration of band(C) and band(c).

E(level)[†]	J$^\pi$[‡]	Comments
0.0[&]	(7/2$^-$)	J$^\pi$: From Adopted Levels.
93.9[b] *4*	(1/2$^+$)	
116.9[c] *3*	(3/2$^+$)	
134.73[a] *16*	(9/2$^-$)	
135.61[#] *16*	(5/2$^+$)	
267.2[b] *3*	(5/2$^+$)	
y[d]	(9/2$^+$)	Additional information 1. No definite linking transition observed, but the band is in coincidence with the lowest transitions (150 and 173 keV) of BAND(C).
282.59[@] *16*	(7/2$^+$)	
301.17[&] *16*	(11/2$^-$)	
323.14[c] *21*	(7/2$^+$)	
463.20[#] *18*	(9/2$^+$)	
512.23[a] *19*	(13/2$^-$)	
582.60[b] *24*	(9/2$^+$)	
337.80+y[d] *20*	(13/2$^+$)	
661.79[c] *19*	(11/2$^+$)	
679.27[@] *20*	(11/2$^+$)	
737.10[&] *21*	(15/2$^-$)	

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^{64}Zn(^{64}Zn,2pnγ) 2004Sm02 (continued)

^{125}Ce Levels (continued)

E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡
912.23# 21	(13/2+)	2970.3c 3	(27/2+)	5217.3a 4	(41/2−)	8732.1b 21	(53/2+)
1024.08b 23	(13/2+)	3054.5a 4	29/2−	5381.8@ 21	(39/2+)	8496+y?d 3	(57/2+)
1026.83a 23	(17/2−)	3195.8@ 11	(27/2+)	5590.9# 15	(41/2+)	8969.5c 15	(55/2+)
785.1+yd 3	(17/2+)	3317.4& 4	(31/2−)	5664.1b 12	(41/2+)	9085.6& 18	(55/2−)
1127.03c 21	(15/2+)	3362.9b 4	(29/2+)	5678.6& 4	(43/2−)	9480@ 3	(55/2+)
1182.32@ 23	(15/2+)	3379.4# 3	(29/2+)	5824.3c 5	(43/2+)	9808.9# 25	(57/2+)
1292.79& 25	(19/2−)	3261.1+yd 5	(33/2+)	5617.3+yd 23	(45/2+)	9895.8?a 18	(57/2−)
1466.32# 24	(17/2+)	3583.3c 4	(31/2+)	6197.7a 5	(45/2−)	9946.1b 23	(57/2+)
1571.06b 24	(17/2+)	3667.9a 4	(33/2−)	6269.8@ 23	(43/2+)	10210.6c 18	(59/2+)
1334.1+yd 4	(21/2+)	3673.5 11	(31/2−)	6523.9# 18	(45/2+)	10455.6?& 21	(59/2−)
1657.6a 3	(21/2−)	3881.8@ 15	(31/2+)	6598.1b 15	(45/2+)	10740@ 3	(59/2+)
1689.3c 3	(19/2+)	3985.7& 4	(35/2−)	6713.6& 11	(47/2−)	11064# 3	(61/2+)
1781.7@ 3	(19/2+)	4016.9# 4	(33/2+)	6771.5c 6	(47/2+)	11258.2b 25	(61/2+)
1947.3& 3	23/2−	4034.0b 5	(33/2+)	6505+yd 3	(49/2+)	11292.8?a 21	(61/2−)
2101.6# 3	(21/2+)	4237.5c 4	(35/2+)	7245.8@ 25	(47/2+)	11538.6c 21	(63/2+)
1884.4+yd 4	(25/2+)	4043.3+yd 6	(37/2+)	7315.7a 11	(49/2−)	12103?@ 4	(63/2+)
2191.3b 3	(21/2+)	4375.7a 4	(37/2−)	7539.9# 21	(49/2+)	12380# 3	(65/2+)
2323.0c 3	(23/2+)	4529.5 15	(35/2−)	7617.1b 18	(49/2+)	12666?b 3	(65/2+)
2369.2a 3	(25/2−)	4583.8@ 18	(35/2+)	7465+yd 3	(53/2+)	12950.6?c 23	(67/2+)
2451.8@ 3	(23/2+)	4752.9# 11	(37/2+)	7820.5c 12	(51/2+)	13708?# 3	(69/2+)
2657.5& 3	(27/2−)	4768.5& 4	(39/2−)	7858.6& 15	(51/2−)	14446?c 3	(71/2+)
2787.2# 3	(25/2+)	4806.1b 5	(37/2+)	8313@ 3	(51/2+)	15068?# 4	(73/2+)
2536.8+yd 5	(29/2+)	4980.9c 5	(39/2+)	8563.8a 15	(53/2−)		
2811.6b 4	(25/2+)	4813.3+yd 12	(41/2+)	8633.9# 23	(53/2+)		

† From least-squares fit to Eγ's (by evaluators).
‡ From Adopted Levels.
# Band(A): ν5/2[402], α=−1/2. At higher spins, first alignment due to πef, the second due to νEF.
@ Band(a): ν5/2[402], α=+1/2. At higher spins, first alignment due to πef, the second due to νEF.
& Band(B): ν7/2[523], α=−1/2. At higher spins, alignment due to πef.
a Band(b): ν7/2[523], α=+1/2. At higher spins, alignment due to πeF.
b Band(C): ν1/2[411], α=−1/2. At higher spins, first alignment due to πef, the second due to νEF.
c Band(c): ν1/2[411], α=+1/2. At higher spins, first alignment due to πef, the second due to νEF.
d Band(D): ν1/2[401] or ν1/2[411] (?). Alignments due to πef and νEF are expected; but the nature of alignment is not clear from the data.

γ(^{125}Ce)

R: Angular correlation ratios at θ≈90° and θ≈40°; R=0.7 for stretched dipole transition, R=1.3 for stretched quadrupole transition.

E_γ	E_i(level)	J_i^π	E_f	J_f^π
56	323.14	(7/2+)	267.2	(5/2+)
79	661.79	(11/2+)	582.60	(9/2+)
103	1127.03	(15/2+)	1024.08	(13/2+)

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^{64}Zn(^{64}Zn,2pnγ) 2004Sm02 (continued)

γ(^{125}Ce) (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.	Comments
118		1689.3	(19/2$^+$)	1571.06	(17/2$^+$)		
132		2323.0	(23/2$^+$)	2191.3	(21/2$^+$)		
134.7 *2*	100 *1*	134.73	(9/2$^-$)	0.0	(7/2$^-$)	D	R=0.81 *2*
135.2 *2*	100 *3*	135.61	(5/2$^+$)	0.0	(7/2$^-$)	D	R=0.74 *3*
147.1 *2*	64 *2*	282.59	(7/2$^+$)	135.61	(5/2$^+$)	D	R=0.86 *2*
150.3 *2*	14 *5*	267.2	(5/2$^+$)	116.9	(3/2$^+$)		R=1.6 *2*
166.8 *2*	68.5 *8*	301.17	(11/2$^-$)	134.73	(9/2$^-$)	D	R=0.80 *1*
173.3 *2*	6 *2*	267.2	(5/2$^+$)	93.9	(1/2$^+$)		
180.9 *2*	53 *2*	463.20	(9/2$^+$)	282.59	(7/2$^+$)	D	R=0.76 *1*
187.2 *2*	7 *1*	323.14	(7/2$^+$)	135.61	(5/2$^+$)	D	R=0.60 *1*
198.4 *2*	30 *4*	661.79	(11/2$^+$)	463.20	(9/2$^+$)	D	R=0.64 *2*
206.3 *2*	13.5 *5*	323.14	(7/2$^+$)	116.9	(3/2$^+$)	Q	R=1.45 *3*
211.5 *2*	46.6 *7*	512.23	(13/2$^-$)	301.17	(11/2$^-$)	D	R=0.77 *1*
216.1 *2*	13.2 *9*	679.27	(11/2$^+$)	463.20	(9/2$^+$)	D	R=0.72 *2*
216.3 *2*	2.2 *3*	1127.03	(15/2$^+$)	912.23	(13/2$^+$)	D	R=0.71 *2*
224.9 *2*	23.9 *5*	737.10	(15/2$^-$)	512.23	(13/2$^-$)	D	R=0.76 *2*
233.8 *2*	6.2 *6*	912.23	(13/2$^+$)	679.27	(11/2$^+$)	D	R=0.75 *4* E_γ: Poor fit. Level-energy difference=233.0.
259.2 *2*	4.4 *3*	582.60	(9/2$^+$)	323.14	(7/2$^+$)		R=1.42 *7*
263.3 *2*	2.9 *3*	3317.4	(31/2$^-$)	3054.5	29/2$^-$	D	R=0.76 *1*
265.6 *2*	20.2 *7*	1292.79	(19/2$^-$)	1026.83	(17/2$^-$)	D	R=0.76 *1*
269.4 *2*	8.3 *6*	1182.32	(15/2$^+$)	912.23	(13/2$^+$)	D	R=0.79 *5* E_γ: Level-energy difference=270.1.
282.8 *2*	4.5 *5*	1466.32	(17/2$^+$)	1182.32	(15/2$^+$)	D	R=0.79 *5* E_γ: Poor fit. Level-energy difference=284.0.
283.0 *2*	9 *1*	282.59	(7/2$^+$)	0.0	(7/2$^-$)		R=1.40 *9* Mult.: 2004Sm02 propose E2 transition from R value, but 2007Su07 point out that this R value is also compatible with E1 assignment.
288.3 *2*	3.1 *3*	2657.5	(27/2$^-$)	2369.2	(25/2$^-$)	D	R=0.73 *3*
289.7 *2*	8.9 *4*	1947.3	23/2$^-$	1657.6	(21/2$^-$)	D	R=0.74 *1* R for 289.7+289.8.
289.8 *2*	21.1 *8*	1026.83	(17/2$^-$)	737.10	(15/2$^-$)	D	R=0.74 *1* R for 289.7+289.8.
301.2 *2*	16.3 *4*	301.17	(11/2$^-$)	0.0	(7/2$^-$)	Q	R=1.35 *3*
315.0 *2*	2.1 *2*	1781.7	(19/2$^+$)	1466.32	(17/2$^+$)		
315.4 *2*	6 *2*	582.60	(9/2$^+$)	267.2	(5/2$^+$)	Q	R=1.36 *4*
318 *1*	10.0 *3*	3985.7	(35/2$^-$)	3667.9	(33/2$^-$)	D	R=0.73 *3*
320.3 *2*	8.3 *5*	2101.6	(21/2$^+$)	1781.7	(19/2$^+$)	D	R=0.70 *2*
327.4 *2*	10.7 *9*	463.20	(9/2$^+$)	135.61	(5/2$^+$)	Q	R=1.7 *1*
335.8 *2*	4.2 *4*	2787.2	(25/2$^+$)	2451.8	(23/2$^+$)		
337.8 *2*	6.5 *2*	337.80+y	(13/2$^+$)	y	(9/2$^+$)		
338.6 *2*	20.6 *7*	661.79	(11/2$^+$)	323.14	(7/2$^+$)	Q	R=1.37 *2*
350.3 *2*	2.7 *3*	2451.8	(23/2$^+$)	2101.6	(21/2$^+$)	D	R=0.66 *3*
350.6 *2*	13.0 *3*	3667.9	(33/2$^-$)	3317.4	(31/2$^-$)	D	R=0.74 *1*
362.3 *2*	2.1 *2*	1024.08	(13/2$^+$)	661.79	(11/2$^+$)		R=1.37 *6*
364.5 *2*	7.8 *2*	1657.6	(21/2$^-$)	1292.79	(19/2$^-$)	D	R=0.74 *3*
377.1 *2*	12.4 *4*	512.23	(13/2$^-$)	134.73	(9/2$^-$)	Q	R=1.40 *3*
379.5 *2*	14 *1*	661.79	(11/2$^+$)	282.59	(7/2$^+$)	Q	R=1.42 *4*
390.2 *2*	5.6 *5*	4375.7	(37/2$^-$)	3985.7	(35/2$^-$)	D	R=0.75 *3*
393.2 *2*	4.2 *6*	4768.5	(39/2$^-$)	4375.7	(37/2$^-$)	D	R=0.74 *7*
396.6 *2*	16.0 *7*	679.27	(11/2$^+$)	282.59	(7/2$^+$)	Q	R=1.43 *8*
397.1 *2*	10.8 *3*	3054.5	29/2$^-$	2657.5	(27/2$^-$)	D	R=0.75 *4*
408.7 *2*		3379.4	(29/2$^+$)	2970.3	(27/2$^+$)		
421.7 *2*	10.0 *4*	2369.2	(25/2$^-$)	1947.3	23/2$^-$	D	R=0.75 *3*
433.9 *2*		4016.9	(33/2$^+$)	3583.3	(31/2$^+$)		

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^{64}Zn(^{64}Zn,2pnγ) 2004Sm02 (continued)

γ(^{125}Ce) (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.	Comments
435.9 *2*	39.1 *6*	737.10	(15/2$^-$)	301.17	(11/2$^-$)	Q	R=1.26 *2*
441.2 *2*	9 *4*	1024.08	(13/2$^+$)	582.60	(9/2$^+$)	Q	R=1.49 *3*
444.4 *2*	2.1 *2*	1571.06	(17/2$^+$)	1127.03	(15/2$^+$)		R=1.30 *3*
446.5 *2*	6.4 *8*	1127.03	(15/2$^+$)	679.27	(11/2$^+$)	Q	R=1.30 *3*
447.3 *2*	4.7 *4*	785.1+y	(17/2$^+$)	337.80+y	(13/2$^+$)		
449.1 *2*	2.8 *4*	5217.3	(41/2$^-$)	4768.5	(39/2$^-$)		
449.3 *2*	16.9 *8*	912.23	(13/2$^+$)	463.20	(9/2$^+$)	Q	R=1.23 *4*
460.9 *2*	3.6 *4*	5678.6	(43/2$^-$)	5217.3	(41/2$^-$)		
465.3 *2*	27.4 *8*	1127.03	(15/2$^+$)	661.79	(11/2$^+$)	Q	R=1.29 *3*
501 *1*		2191.3	(21/2$^+$)	1689.3	(19/2$^+$)		
503.4 *2*	14.2 *8*	1182.32	(15/2$^+$)	679.27	(11/2$^+$)	Q	R=1.49 *7*
514.6 *2*	21.8 *4*	1026.83	(17/2$^-$)	512.23	(13/2$^-$)	Q	R=1.23 *3*
519.2 *9*		6197.7	(45/2$^-$)	5678.6	(43/2$^-$)		
546.7 *2*	7 *3*	1571.06	(17/2$^+$)	1024.08	(13/2$^+$)	Q	R=1.58 *4*
549.0 *2*	4.2 *5*	1334.1+y	(21/2$^+$)	785.1+y	(17/2$^+$)	Q	R=1.23 *5*
550.3 *2*	4.2 *5*	1884.4+y	(25/2$^+$)	1334.1+y	(21/2$^+$)	Q	R=1.23 *5*
551.3 *2*	3.2 *3*	3362.9	(29/2$^+$)	2811.6	(25/2$^+$)	Q	R=1.43 *5*
554.4 *2*	22 *1*	1466.32	(17/2$^+$)	912.23	(13/2$^+$)	Q	R=1.27 *4*
555.6 *2*	40.9 *6*	1292.79	(19/2$^-$)	737.10	(15/2$^-$)	Q	R=1.47 *2*
562.2 *2*	26 *2*	1689.3	(19/2$^+$)	1127.03	(15/2$^+$)	Q	R=1.38 *2*
569 *1*	7 *2*	3379.4	(29/2$^+$)	2811.6	(25/2$^+$)	Q	R=1.56 *4*
592.1 *2*	4 *1*	3379.4	(29/2$^+$)	2787.2	(25/2$^+$)		
600.2 *2*	6.0 *5*	1781.7	(19/2$^+$)	1182.32	(15/2$^+$)	Q	R=1.46 *9* E_γ: Poor fit. Level-energy difference=599.3.
612.9 *2*	12 *2*	3667.9	(33/2$^-$)	3054.5	29/2$^-$	Q	R=1.26 *3*
613.3 *2*	16 *1*	3583.3	(31/2$^+$)	2970.3	(27/2$^+$)	Q	R=1.38 *3*
620.3 *2*	6 *2*	2191.3	(21/2$^+$)	1571.06	(17/2$^+$)	Q	R=1.31 *5*
620.4 *2*	4 *2*	2811.6	(25/2$^+$)	2191.3	(21/2$^+$)	Q	R=1.31 *5*
631.2 *2*	21.7 *4*	1657.6	(21/2$^-$)	1026.83	(17/2$^-$)	Q	R=1.51 *3*
633.7 *2*	24 *2*	2323.0	(23/2$^+$)	1689.3	(19/2$^+$)	Q	R=1.41 *2*
634.7 *2*	9 *3*	2101.6	(21/2$^+$)	1466.32	(17/2$^+$)	Q	R=1.41 *3*
637.2 *2*	6 *2*	4016.9	(33/2$^+$)	3379.4	(29/2$^+$)		
647.3 *2*	21 *2*	2970.3	(27/2$^+$)	2323.0	(23/2$^+$)	Q	R=1.48 *3*
652.4 *2*	4.1 *2*	2536.8+y	(29/2$^+$)	1884.4+y	(25/2$^+$)		
654.2 *2*	16 *1*	4237.5	(35/2$^+$)	3583.3	(31/2$^+$)	Q	R=1.34 *3*
654.4 *2*	38 *1*	1947.3	23/2$^-$	1292.79	(19/2$^-$)	Q	R=1.54 *2*
659.8 *2*	27.9 *9*	3317.4	(31/2$^-$)	2657.5	(27/2$^-$)	Q	R=1.54 *2*
668.7 *2*	18.3 *4*	3985.7	(35/2$^-$)	3317.4	(31/2$^-$)	Q	R=1.34 *4*
670.3 *2*	14.4 *8*	2451.8	(23/2$^+$)	1781.7	(19/2$^+$)	Q	R=1.24 *5*
671.1 *2*	2.0 *4*	4034.0	(33/2$^+$)	3362.9	(29/2$^+$)	Q	R=1.70 *5*
685.2 *2*	14.2 *3*	3054.5	29/2$^-$	2369.2	(25/2$^-$)	E2	R=1.70 *4*
685.3 *2*	10.1 *8*	2787.2	(25/2$^+$)	2101.6	(21/2$^+$)	Q	R=1.39 *5*
686 *1*	14.2 *3*	3881.8	(31/2$^+$)	3195.8	(27/2$^+$)	Q	R=1.39 *5*
702 *1*	9.3 *6*	4583.8	(35/2$^+$)	3881.8	(31/2$^+$)		
707.4 *2*	11 *1*	4375.7	(37/2$^-$)	3667.9	(33/2$^-$)	Q	R=1.34 *1*
710.3 *2*	34 *3*	2657.5	(27/2$^-$)	1947.3	23/2$^-$	Q	R=1.34 *1*
711.8 *2*	18 *1*	2369.2	(25/2$^-$)	1657.6	(21/2$^-$)	Q	R=1.34 *1*
724.3 *2*	3.2 *5*	3261.1+y	(33/2$^+$)	2536.8+y	(29/2$^+$)		
736 *1*	2.7 *5*	4752.9	(37/2$^+$)	4016.9	(33/2$^+$)	Q	R=1.69 *9*
743.4 *2*	13 *1*	4980.9	(39/2$^+$)	4237.5	(35/2$^+$)	Q	R=1.23 *3*
744 *1*	16 *2*	3195.8	(27/2$^+$)	2451.8	(23/2$^+$)		
770 *1*	1.4 *5*	4813.3+y	(41/2$^+$)	4043.3+y	(37/2$^+$)		
772.1 *2*	1.2 *3*	4806.1	(37/2$^+$)	4034.0	(33/2$^+$)		
782.2 *2*	2.3 *5*	4043.3+y	(37/2$^+$)	3261.1+y	(33/2$^+$)		
783.1 *2*	12 *2*	4768.5	(39/2$^-$)	3985.7	(35/2$^-$)	Q	R=1.56 *5*
798 *1*	7.2 *5*	5381.8	(39/2$^+$)	4583.8	(35/2$^+$)		

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^{64}Zn(^{64}Zn,2pnγ) 2004Sm02 (continued)

γ(^{125}Ce) (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.	Comments
804 *2*	0.8 *3*	5617.3+y	(45/2$^+$)	4813.3+y	(41/2$^+$)		
838 *1*	3.1 *5*	5590.9	(41/2$^+$)	4752.9	(37/2$^+$)	Q	R=1.5 *1*
841.0 *2*	8.0 *3*	5217.3	(41/2$^-$)	4375.7	(37/2$^-$)	Q	R=1.53 *7* E_γ: Level-energy difference=841.6.
843.4 *2*	9.1 *9*	5824.3	(43/2$^+$)	4980.9	(39/2$^+$)	Q	R=1.54 *4*
856 *1*	3.3 *5*	4529.5	(35/2$^-$)	3673.5	(31/2$^-$)		
858 *1*	1.2 *8*	5664.1	(41/2$^+$)	4806.1	(37/2$^+$)		
888 *1*	0.5 *1*	6505+y	(49/2$^+$)	5617.3+y	(45/2$^+$)		
888 *1*	4 *1*	6269.8	(43/2$^+$)	5381.8	(39/2$^+$)		
910.4 *2*	9.0 *3*	5678.6	(43/2$^-$)	4768.5	(39/2$^-$)	Q	R=1.51 *5*
933 *1*	3.5 *5*	6523.9	(45/2$^+$)	5590.9	(41/2$^+$)	Q	R=1.4 *1*
934 *1*	1.0 *4*	6598.1	(45/2$^+$)	5664.1	(41/2$^+$)		
947.2 *2*	4.5 *6*	6771.5	(47/2$^+$)	5824.3	(43/2$^+$)	Q	R=1.34 *4*
960 *1*	0.3 *1*	7465+y	(53/2$^+$)	6505+y	(49/2$^+$)		
976 *1*	2.8 *4*	7245.8	(47/2$^+$)	6269.8	(43/2$^+$)		
980.4 *2*	7.8 *4*	6197.7	(45/2$^-$)	5217.3	(41/2$^-$)	Q	R=1.43 *7*
1016 *1*	6.4 *4*	3673.5	(31/2$^-$)	2657.5	(27/2$^-$)		
1016 *1*	3.2 *4*	7539.9	(49/2$^+$)	6523.9	(45/2$^+$)	Q	R=1.7 *3*
1019 *1*	0.8 *2*	7617.1	(49/2$^+$)	6598.1	(45/2$^+$)		
1031† *1*	0.20 *5*	8496+y?	(57/2$^+$)	7465+y	(53/2$^+$)		
1035 *1*	8 *1*	6713.6	(47/2$^-$)	5678.6	(43/2$^-$)	Q	R=1.39 *7*
1049 *1*	3.9 *5*	7820.5	(51/2$^+$)	6771.5	(47/2$^+$)	Q	R=1.39 *7*
1067 *1*	2.5 *5*	8313	(51/2$^+$)	7245.8	(47/2$^+$)		
1094 *1*	2.3 *4*	8633.9	(53/2$^+$)	7539.9	(49/2$^+$)		
1115 *1*	0.6 *2*	8732.1	(53/2$^+$)	7617.1	(49/2$^+$)		
1118 *1*	6.5 *5*	7315.7	(49/2$^-$)	6197.7	(45/2$^-$)		
1145 *1*	7.1 *5*	7858.6	(51/2$^-$)	6713.6	(47/2$^-$)		
1149 *1*	2.3 *4*	8969.5	(55/2$^+$)	7820.5	(51/2$^+$)		
1167 *1*	2.2 *5*	9480	(55/2$^+$)	8313	(51/2$^+$)		
1175 *1*	0.6 *2*	9808.9	(57/2$^+$)	8633.9	(53/2$^+$)		
1214 *1*	0.5 *1*	9946.1	(57/2$^+$)	8732.1	(53/2$^+$)		
1227 *1*	5 *1*	9085.6	(55/2$^-$)	7858.6	(51/2$^-$)		
1241 *1*	1.8 *6*	10210.6	(59/2$^+$)	8969.5	(55/2$^+$)		
1248 *1*	5 *1*	8563.8	(53/2$^-$)	7315.7	(49/2$^-$)		
1255 *1*	2.0 *5*	11064	(61/2$^+$)	9808.9	(57/2$^+$)		
1260 *1*	2.0 *5*	10740	(59/2$^+$)	9480	(55/2$^+$)		
1312 *1*	0.3 *1*	11258.2	(61/2$^+$)	9946.1	(57/2$^+$)		
1316 *1*	1.4 *4*	12380	(65/2$^+$)	11064	(61/2$^+$)		
1328 *1*	1.3 *5*	11538.6	(63/2$^+$)	10210.6	(59/2$^+$)		
1328† *1*	0.9 *5*	13708?	(69/2$^+$)	12380	(65/2$^+$)		
1332† *1*	3.0 *5*	9895.8?	(57/2$^-$)	8563.8	(53/2$^-$)		
1360† *1*	0.6 *2*	15068?	(73/2$^+$)	13708?	(69/2$^+$)		
1363† *1*	2.0 *5*	12103?	(63/2$^+$)	10740	(59/2$^+$)		
1370† *1*	0.9 *5*	10455.6?	(59/2$^-$)	9085.6	(55/2$^-$)		
1397† *1*	1.5 *5*	11292.8?	(61/2$^-$)	9895.8?	(57/2$^-$)		
1408† *1*	0.2 *1*	12666?	(65/2$^+$)	11258.2	(61/2$^+$)		
1412† *1*	1.2 *4*	12950.6?	(67/2$^+$)	11538.6	(63/2$^+$)		
1495† *1*	0.8 *4*	14446?	(71/2$^+$)	12950.6?	(67/2$^+$)		

† Placement of transition in the level scheme is uncertain.

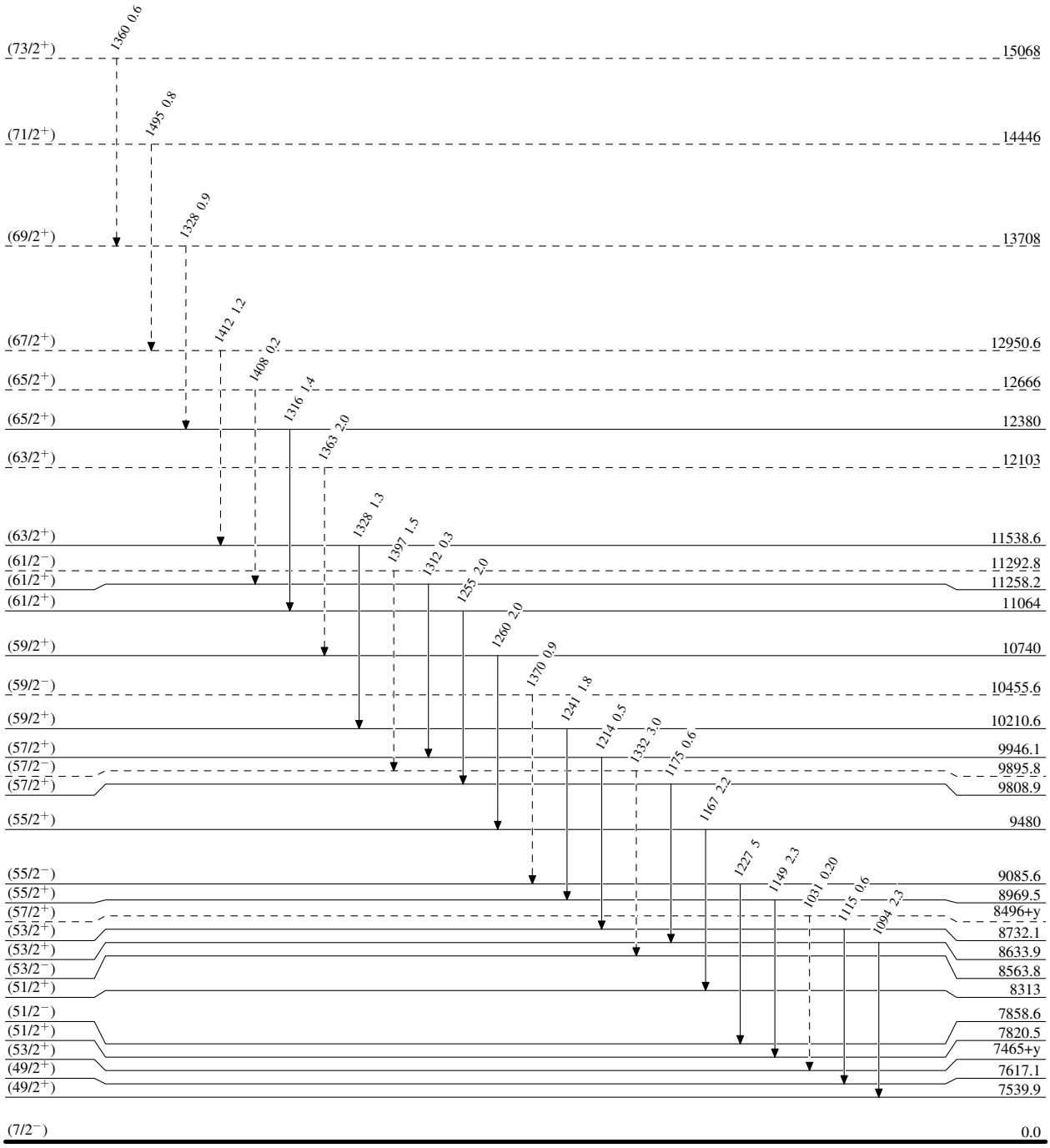
^{64}Zn(^{64}Zn,2pnγ) 2004Sm02

Level Scheme

Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)



$^{125}_{58}Ce_{67}$

^{64}Zn(^{64}Zn,2pnγ) 2004Sm02

Level Scheme (continued)

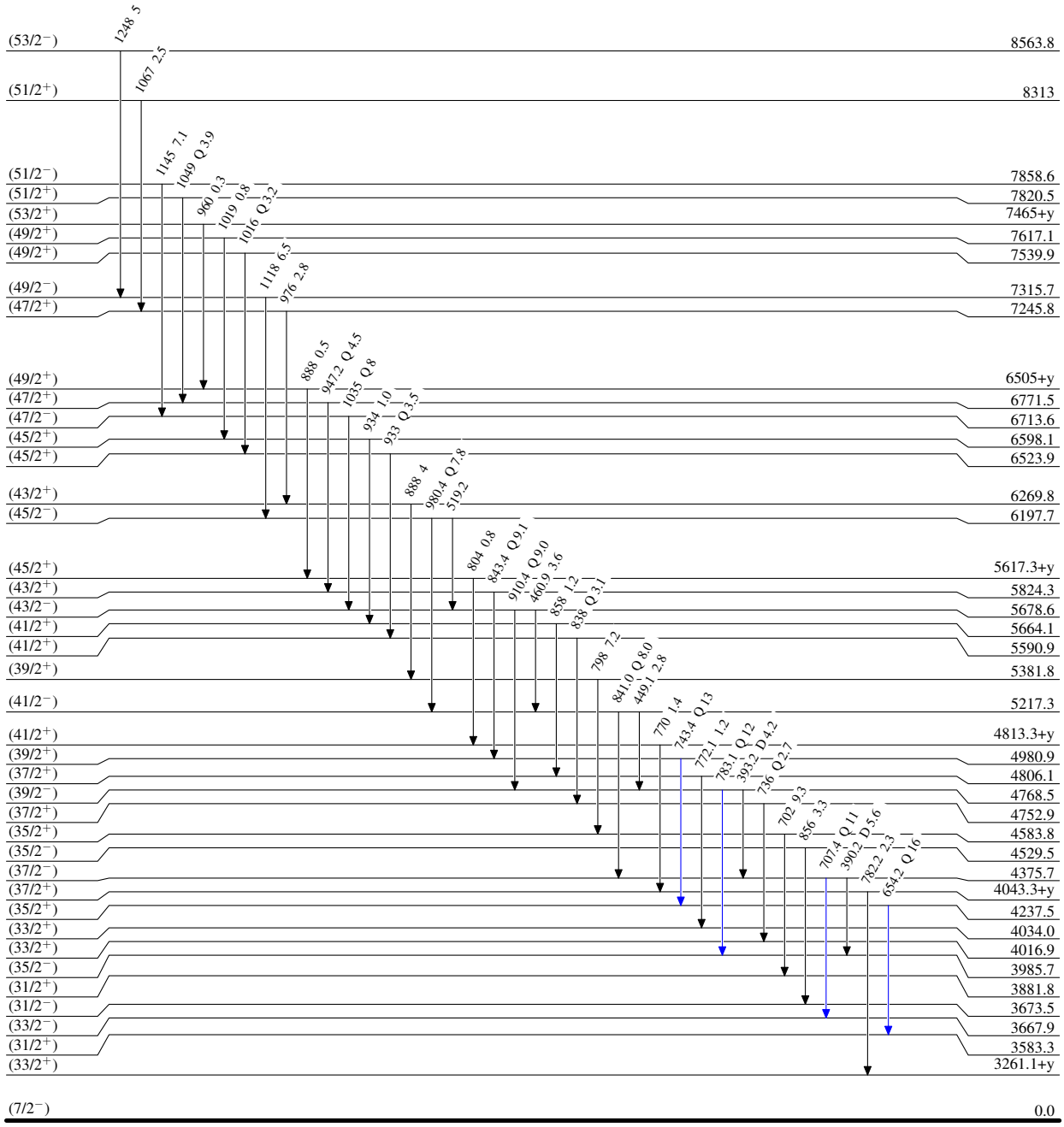
Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$



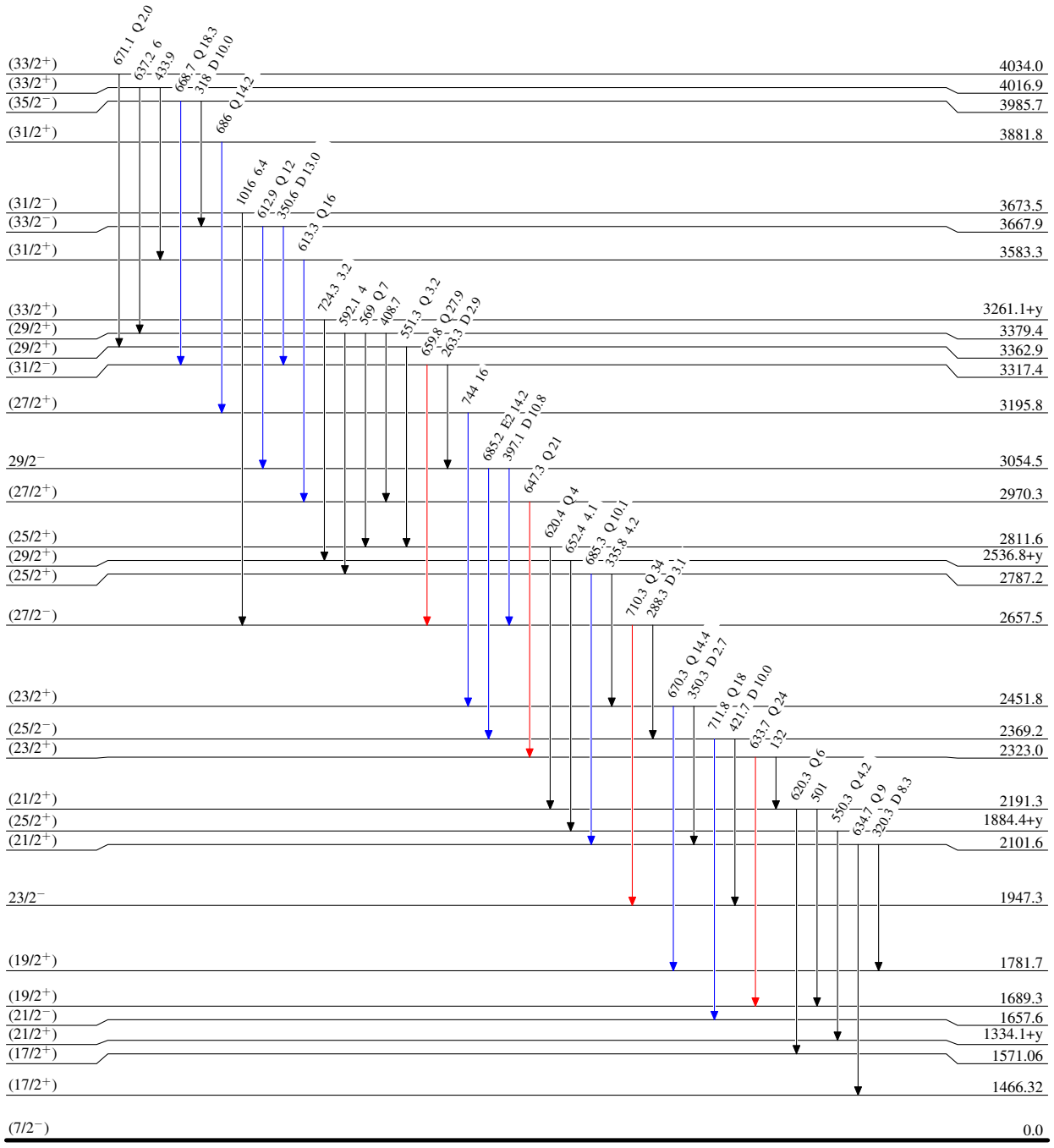
$^{125}_{58}Ce_{67}$

^{64}Zn(^{64}Zn,2pnγ) 2004Sm02

Level Scheme (continued)

Intensities: Relative I_γ

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



$^{125}_{58}Ce_{67}$

^{64}Zn(^{64}Zn,2pnγ) 2004Sm02

Level Scheme (continued)

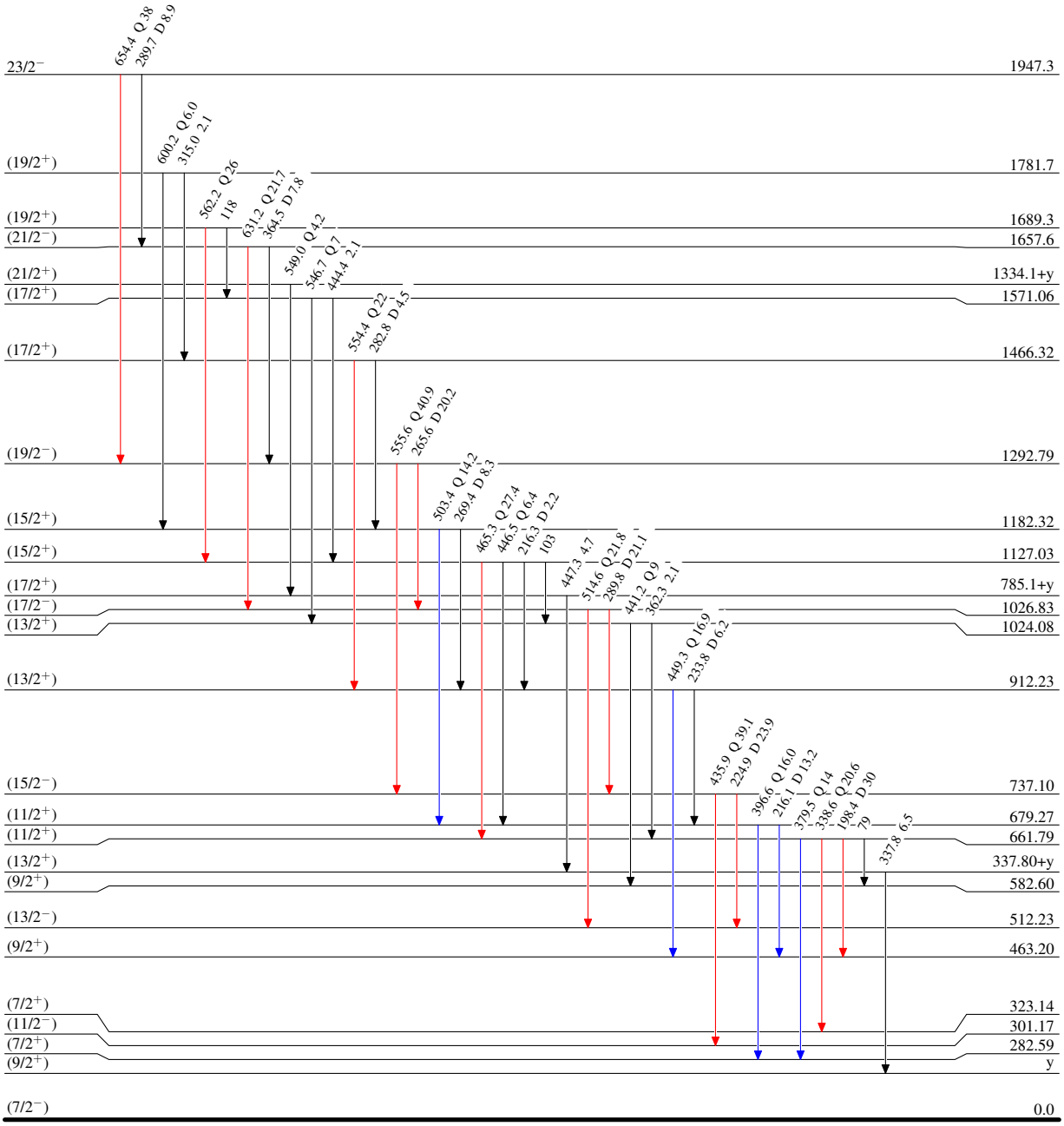
Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$



$^{125}_{58}Ce_{67}$

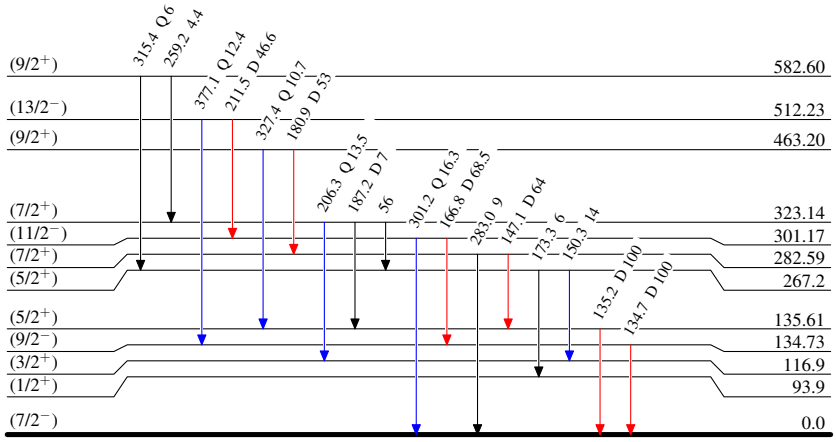
^{64}Zn(^{64}Zn,2pnγ) 2004Sm02

Level Scheme (continued)

Intensities: Relative I_γ

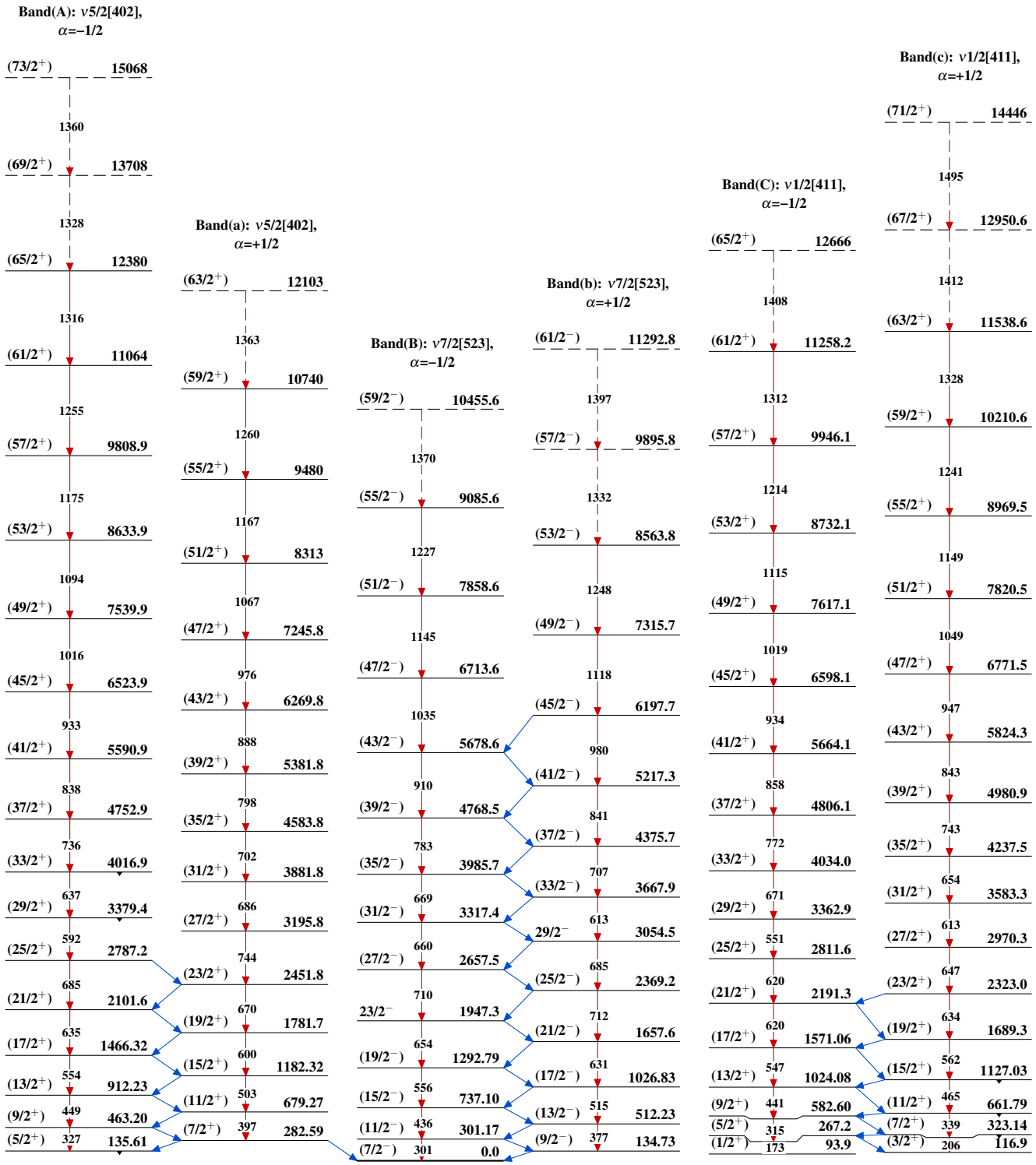
Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



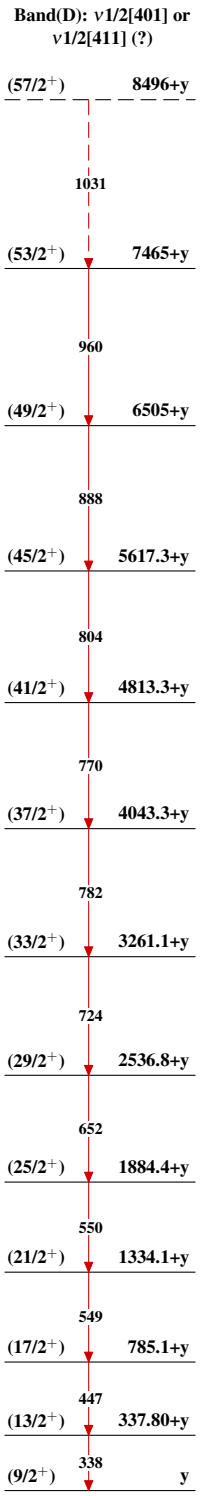
$^{125}_{58}Ce_{67}$

^{64}Zn(^{64}Zn,2pnγ) 2004Sm02



$^{125}_{58}Ce_{67}$

^{64}Zn(^{64}Zn,2pnγ) 2004Sm02 (continued)



$^{125}_{58}Ce_{67}$