^{152}Gd(n,γ) E=th 1996SpZZ

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 170, 1 (2020)	16-Aug-2020

γ's measured with curved-crystal spectrometers (GAMS1 and 2/3), Ge singles detector, and Ge pair spectrometer and ce measured in magnetic spectrometer (BILL).

^{153}Gd Levels

E(level)†	Jπ‡
0.0	$3/2^-$
41.5568 *5*	$5/2^-$
93.3430 *8*	$7/2^-$
95.1737 *12*	$9/2^+$
109.7564 *9*	$5/2^-$
129.1637 *7*	$3/2^-$
171.189 *5*	$11/2^-$
183.4699 *9*	$5/2^+$
212.0081 *9*	$3/2^+$
215.9930 *13*	$7/2^-$
219.4434 *15*	$9/2^-$
249.5543 *13*	$5/2^-$
290.3599 *14*	$7/2^+$
303.5430 *10*	$5/2^+$
315.1995 *18*	$1/2^-$
316.0271 *10*	$3/2^+$
327.8535 *16*	$1/2^+$
333.169 *2*	$(7/2,9/2)^-$
336.3?	$(1/2,3/2)^+$
361.6511 *13*	$3/2^-$
363.448 *14*	$13/2^-$
368.6680 *19*	$(5/2,7/2)^-$
395.1460 *19*	$(5/2,7/2)^+$
412.8955 *14*	$3/2^+$
436.2708 *20*	$1/2^-$
442.1917 *12*	$5/2^+$
448.5200 *17*	$5/2^-$
482.9358 *18*	$1/2^+$
504.1716 *12*	$5/2^+$
508.659 *3*	$3/2^-$
530.461 *3*	$3/2^-$
548.765 *2*	$5/2^-$
551.09 *2*	$(5/2^-)$
579.127 *4*	$(5/2,7/2)^-$
607.202 *4*	$5/2^-$
636.311 *15*	$(5/2,7/2)^-$
636.449 *4*	$7/2^+$
649.021 *14*	$(7/2,9/2)^+$
664.325 *2*	$(1/2,3/2)^-$
676.724 *17*	$(1/2,3/2)^+$
683.957 *2*	$(1/2,3/2)^-$
708.964 *3*	$3/2^+$
715.810 *14*	$(9/2,11/2,13/2)^-$
720.348 *4*	$(5/2,7/2)^-$
727.805 *5*	$(5/2^-)$
729.207 *4*	$(1/2^-,3/2^-)$
731.625 *14*	$7/2^+$

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^{152}Gd(n,γ) E=th 1996SpZZ (continued)

^{153}Gd Levels (continued)

E(level)†	J^{π}‡	Comments
754.4?	$(1/2,3/2)^+$	
769.054 *6*	$(5/2,7/2)^-$	
775.158 *11*	$(5/2^-,7/2^-)$	
782.674 *3*	$3/2^+$	
790.770 *16*	$(1/2,3/2)^+$	
812.645 *9*	$(5/2^-,7/2^-)$	
821.312 *10*	$5/2^+$	
847.823 *13*	$(5/2,7/2)^-$	
857.587 *8*	$3/2^-$	
865.611 *7*	$3/2^+$	
885.911 *19*	$(1/2,3/2)^-$	
894.615 *7*	$(1/2,3/2)^+$	
903.509 *6*	$5/2^+$	
932.194 *15*	$5/2^-$	
937.373 *6*	$7/2^+$	
945.280 *7*	$3/2^+$	
955.447 *15*	$5/2^+$	
962.034 *11*	$(1/2,3/2)^-$	
990.143 *16*	$3/2^{(+)}$	
1015.24 *4*	$(1/2,3/2)^+$	
1025.503 *12*	$5/2^-$	
1035.19 *3*	$5/2^+$	
1040.47 *3*	$(1/2,3/2)^-$	
1054.726 *9*	$(1/2,3/2)^-$	
1066.640 *18*	$3/2^+$	
1101.674 *10*	$3/2^+$	
1102.771 *14*	$(5/2,7/2)^-$	
1118.35 *5*	$5/2^+$	
1124.22 *3*	$(1/2,3/2)^-$	
1131.702 *19*	$7/2^+$	
1139.0	$(1/2,3/2)^+$	
1157.43 *4*	$(1/2,3/2)^-$	
1163.69? *15*	$(1/2,3/2)^+$	
1172.635 *10*	$(1/2,3/2)^-$	
1180.95 *4*	$3/2^+$	
1199.04 *16*	$(7/2,9/2)^+$	
1220.8 *3*	$(1/2,3/2)$	
1247.554 *19*	$(1/2,3/2)^+$	
1252.144 *17*	$(1/2,3/2)^-$	E(level): This may be two levels with $J^{\pi}=(1/2,3/2)^-$ and $(1/2,3/2^+)$.
1268.201 *18*	$3/2^-$	
1272.5 *2*	$5/2^+$	
1293.8 *3*	$(1/2,3/2)$	
1314.5 *3*	$(1/2,3/2)$	
1328.369 *19*	$5/2^+$	
1330.6?	$(1/2,3/2)^+$	
1337.96 *10*	$(1/2,3/2)^-$	
1353.48 *12*	$(1/2,3/2)^-$	
1363.58 *8*	$(1/2,3/2)^-$	
1384.53 *13*	$(1/2^-,3/2^-)$	
1400.89 *10*	$3/2^+$	
1422.96 *3*	$(3/2^-,5/2^-)$	
1426.4	$(1/2,3/2)^+$	
1450.31 *16*	$(1/2,3/2)^-$	
1462.0	$(1/2,3/2)^+$	
1484.8 *5*	$(1/2,3/2)$	
1503.0 *4*	$(1/2,3/2)^-$	

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^{152}Gd(n,γ) E=th 1996SpZZ (continued)

^{153}Gd Levels (continued)

E(level)[†]	J$^{\pi}$[‡]
1721.66 *17*	(1/2,3/2)$^{+}$
6247.04 *5*	1/2^{+}

[†] From least-squares fit to γ-ray energies by authors.
[‡] From 1996SpZZ. See ^{153}Gd Adopted Levels for band assignments.

^{152}Gd(n,γ) E=th 1996SpZZ (continued)

γ(^{153}Gd)

1996SpZZ has many other γ's that are not placed in either ^{153}Gd or ^{154}Gd and, therefore, may be in ^{153}Gd.

E_γ[†]	I_γ[e]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	δ[#]	Comments
19.38 *3*	2[@]	129.1637	3/2$^-$	109.7564	5/2$^-$	M1+E2	1.4 *3*	δ: From ^{153}Tb ε decay (1976ArZU). α(M2)exp=191, α(M3)exp=269 (1996SpZZ).
35.822 *3*	0.3[@]	129.1637	3/2$^-$	93.3430	7/2$^-$			α(L2)exp=57, α(L3)exp=107 (1996SpZZ).
41.5565 *5*	48.×10^2 *3*	41.5568	5/2$^-$	0.0	3/2$^-$	M1+E2	0.246 *12*	α(L1)exp=2.81 *17*, α(L2)exp=2.09 *13*, α(L3)exp=2.28 *14* (1996SpZZ). δ: Other: 0.270 *6* from ^{153}Tb ε decay (1982Al24).
51.7842 *7*	87.×10^1 *5*	93.3430	7/2$^-$	41.5568	5/2$^-$	M1+E2	0.160 *7*	α(L1)exp=1.47 *12*, α(L2)exp=0.320 *26*, α(L3)exp=0.340 *27* (1996SpZZ). δ: Other: 0.157 *11* from ^{153}Tb ε decay (1982Al24).
54.3076 *8*	230 *14*	183.4699	5/2$^+$	129.1637	3/2$^-$	E1		α(L1)exp=0.090 *7* (1996SpZZ).
65.062 *3*	8 *3*	1131.702	7/2$^+$	1066.640	3/2$^+$	E2		α(L2)exp=0.56 *23*, α(L3)exp=3.8 *12* (1996SpZZ). Mult.: ce data imply M1,E2 but ΔJ^π requires E2.
66.789 *3*	5 *2*	715.810	(9/2,11/2,13/2)$^-$	649.021	(7/2,9/2)$^+$			
68.1995 *13*	295 *18*	109.7564	5/2$^-$	41.5568	5/2$^-$	M1+E2	0.101 *11*	α(K)exp=5.15 *41*, α(L1)exp=0.79 *6*, α(L2)exp=0.08 *6*, α(L3)exp=0.050 *9*, α(M2)exp=0.030 *4* (1996SpZZ). δ: Other: 0.190 *18* from ^{153}Tb ε decay (1982Al24).
70.6698 *18*	131 *17*	790.770	(1/2,3/2)$^+$	720.348	(5/2,7/2)$^-$			
70.9604 *17*	146 *11*	1172.635	(1/2,3/2)$^-$	1101.674	3/2$^+$			
76.015[&] *4*	46[&] *9*	171.189	11/2$^-$	95.1737	9/2$^+$			α(M1)exp=0.23 *5* (1996SpZZ). Mult.: Assigned (E1,M2) from placement and other studies, but here γ is a doublet.
80.5411 *18*	14 *4*	442.1917	5/2$^+$	361.6511	3/2$^-$			
82.8446 *12*	588 *24*	212.0081	3/2$^+$	129.1637	3/2$^-$	E1		α(K)exp=0.37 *4*, α(L1)exp=0.030 *2* (1996SpZZ).
85.0414 *9*	50 *3*	412.8955	3/2$^+$	327.8535	1/2$^+$	M1+E2	0.33 *4*	α(L1)exp=0.340 *24*, α(L2)exp=0.130 *17* (1996SpZZ).
86.827 *5*	7 *2*	215.9930	7/2$^-$	129.1637	3/2$^-$			
87.551 *2*	69 *10*	303.5430	5/2$^+$	215.9930	7/2$^-$			
87.6080 *7*	16.3×10^2 *5*	129.1637	3/2$^-$	41.5568	5/2$^-$	M1		α(K)exp=2.56 *10*, α(L1)exp=0.310 *22*, α(L2)exp=0.020 *4*, α(M1)exp=0.060 *5* (1996SpZZ).
88.2962 *6*	10.6×10^2 *3*	183.4699	5/2$^+$	95.1737	9/2$^+$	E2		α(K)exp=1.53 *6*, α(L1)exp=0.120 *23*, α(M2)exp=0.150 *14* (1996SpZZ).
90.1304 *13*	744 *22*	183.4699	5/2$^+$	93.3430	7/2$^-$	E1[d]		
91.2774 *13*	83 *4*	504.1716	5/2$^+$	412.8955	3/2$^+$	M1		
91.5361 *10*	126 *5*	303.5430	5/2$^+$	212.0081	3/2$^+$	M1+E2	0.67 *6*	α(L1)exp=0.240 *12*, α(L2)exp=0.240 *22*, α(L3)exp=0.24 *3* (1996SpZZ).
91.601 *2*	22 *3*	395.1460	(5/2,7/2)$^+$	303.5430	5/2$^+$	E2		α(M1)exp=0.52 *10* (1996SpZZ).
93.3442 *11*	220 *9*	93.3430	7/2$^-$	0.0	3/2$^-$	E2		α(K)exp=1.37 *5* (1996SpZZ).
96.878 *4*	21 *2*	412.8955	3/2$^+$	316.0271	3/2$^+$	M1		α(K)exp=2.52 *33* (1996SpZZ).
97.704 *5*	17 *2*	412.8955	3/2$^+$	315.1995	1/2$^-$			

$^{153}_{64}Gd_{89}$-4

^{152}Gd(n,γ) E=th 1996SpZZ (continued)

γ(^{153}Gd) (continued)

E_γ[†]	I_γ[e]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	δ[#]	Comments
102.2564 *13*	505 *20*	212.0081	3/2$^+$	109.7564	5/2$^-$	E1		α(K)exp=0.230 *12* (1996SpZZ).
106.2350 *17*	39 *2*	215.9930	7/2$^-$	109.7564	5/2$^-$	E2		α(K)exp=0.98 *6*, α(L1)exp=2.09 *6*, α(L3)exp=2.28 *6* (1996SpZZ).
106.890 *3*	72 *3*	290.3599	7/2$^+$	183.4699	5/2$^+$	M1,E2		α(K)exp=1.05 *4*, α(L1)exp=0.190 *11*, α(L3)exp=090 *8* (1996SpZZ).
109.7601 *14*	550×10^1 *22*	109.7564	5/2$^-$	0.0	3/2$^-$	M1+E2	0.058 *3*	α(K)exp=1.02 *4*, α(L1)exp=0.140 *6*, α(L2)exp=0.0100 *4* (1996SpZZ). δ: From ^{153}Tb ε decay (1982Al24).
111.941 *5*	80 *9*	894.615	(1/2,3/2)$^+$	782.674	3/2$^+$	M1		α(L1)exp=1.80 *2* (1996SpZZ).
112.0957[&] *16*	46[&] *2*	361.6511	3/2$^-$	249.5543	5/2$^-$	M1,E2		α(K)exp=1.03 *5* (1996SpZZ). Mult.: Assigned as M1,E2, but peak is a doublet.
113.728 *3*	9 *1*	333.169	(7/2,9/2)$^-$	219.4434	9/2$^-$	E2		α(K)exp=0.64 *11* (1996SpZZ).
114.343 *4*	7 *2*	442.1917	5/2$^+$	327.8535	1/2$^+$			
115.8522 *17*	94 *4*	1247.554	(1/2,3/2)$^+$	1131.702	7/2$^+$	E2		α(K)exp=0.77 *3* (1996SpZZ).
118.355 *9*	18 *4*	782.674	3/2$^+$	664.325	(1/2,3/2)$^-$			
119.109 *5*	12 *1*	368.6680	(5/2,7/2)$^-$	249.5543	5/2$^-$	*c*		α(K)exp=0.46 *18* (1996SpZZ). Mult.: E1 or E2 (1996SpZZ).
120.073 *3*	11 *1*	303.5430	5/2$^+$	183.4699	5/2$^+$	M1,E2		α(K)exp=0.97 *14* (1996SpZZ).
120.2433[&] *18*	8[&] *1*	436.2708	1/2$^-$	316.0271	3/2$^+$			
120.388 *5*	12 *1*	249.5543	5/2$^-$	129.1637	3/2$^-$	*c*		α(K)exp=0.37 *6* (1996SpZZ). Mult.: E1 or E2 (1996SpZZ).
121.071 *7*	7 *2*	436.2708	1/2$^-$	315.1995	1/2$^-$			
121.280 *6*	96 *4*	482.9358	1/2$^+$	361.6511	3/2$^-$	E1		α(K)exp=0.380 *15* (1996SpZZ).
122.651[&] *5*	13[&] *1*	215.9930	7/2$^-$	93.3430	7/2$^-$			
126.0999 *12*	174 *5*	219.4434	9/2$^-$	93.3430	7/2$^-$	M1		α(K)exp=0.85 *9*, α(L1)exp=0.150 *8* (1996SpZZ).
126.1626 *17*	125 *4*	442.1917	5/2$^+$	316.0271	3/2$^+$	E2		α(K)exp=0.52 *10* (1996SpZZ).
129.1638 *10*	579 *17*	129.1637	3/2$^-$	0.0	3/2$^-$	M1(+E2)	<0.18	δ: From ^{153}Tb ε decay (1982Al24).
132.5586 *8*	800 *24*	316.0271	3/2$^+$	183.4699	5/2$^+$	M1+E2	0.53 *6*	α(K)exp=0.640 *26*, α(L3)exp=0.0300 *12* (1996SpZZ).
133.320 *2*	8 *1*	448.5200	5/2$^-$	315.1995	1/2$^-$	E2		α(L1)exp=0.21 *6* (1996SpZZ).
133.868 *4*	7 *1*	664.325	(1/2,3/2)$^-$	530.461	3/2$^-$			
135.195 *4*	5 *1*	683.957	(1/2,3/2)$^-$	548.765	5/2$^-$			
135.505 *2*	10 *1*	504.1716	5/2$^+$	368.6680	(5/2,7/2)$^-$			
136.935 *6*	5 *1*	579.127	(5/2,7/2)$^-$	442.1917	5/2$^+$			
138.656 *4*	8 *1*	442.1917	5/2$^+$	303.5430	5/2$^+$			
139.8024 *18*	182 *5*	249.5543	5/2$^-$	109.7564	5/2$^-$	M1+E2	0.40 *3*	α(K)exp=0.670 *27*, α(L1)exp=0.090 *4*, α(L2)exp=0.0200 *24*, α(L3)exp=0.0100 *16* (1996SpZZ).
141.224[a] *5*	7[a] *2*	720.348	(5/2,7/2)$^-$	579.127	(5/2,7/2)$^-$			Mult.: Assigned M1,E2, but peak is a doublet.
141.914 *3*	231×10^1 *7*	183.4699	5/2$^+$	41.5568	5/2$^-$	E1		α(K)exp=0.090 *4* (1996SpZZ).
144.390 *5*	87 *3*	327.8535	1/2$^+$	183.4699	5/2$^+$	E2		α(K)exp=0.350 *14* (1996SpZZ).
145.590 *7*	28 *2*	395.1460	(5/2,7/2)$^+$	249.5543	5/2$^-$			
147.013 *5*	17 *2*	508.659	3/2$^-$	361.6511	3/2$^-$	M1		α(K)exp=0.350 *14* (1996SpZZ).
149.237 *6*	7 *1*	368.6680	(5/2,7/2)$^-$	219.4434	9/2$^-$			

^{152}Gd(n,γ) E=th 1996SpZZ (continued)

γ(^{153}Gd) (continued)

E_γ [†]	I_γ [e]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [‡]	δ [#]	Comments
151.8307 *17*	283 *8*	442.1917	5/2$^+$	290.3599	7/2$^+$	M1,E2		α(K)exp=0.440 *22* (1996SpZZ).
152.674 *3*	18 *1*	368.6680	(5/2,7/2)$^-$	215.9930	7/2$^-$	E2		α(K)exp=0.23 *5* (1996SpZZ).
154.698 *4*	7 *2*	937.373	7/2$^+$	782.674	3/2$^+$			
155.084 *6*	5 *1*	482.9358	1/2$^+$	327.8535	1/2$^+$			
155.668 *5*	5 *1*	664.325	(1/2,3/2)$^-$	508.659	3/2$^-$			I_γ: Author's uncertainty is 5% or 0.25, but value is only given as 5.
156.209 *3*	10 *1*	249.5543	5/2$^-$	93.3430	7/2$^-$			I_γ: Author's uncertainty is 4% or 0.4, but value is only given as 10.
156.642 *7*	5 *1*	865.611	3/2$^+$	708.964	3/2$^+$			I_γ: Author's uncertainty is 13% or 0.65, but value is only given as 10.
158.160 *2*	17 *1*	448.5200	5/2$^-$	290.3599	7/2$^+$			
165.014 *4*	7 *1*	607.202	5/2$^-$	442.1917	5/2$^+$			
166.908 *3*	833 *25*	482.9358	1/2$^+$	316.0271	3/2$^+$	M1		α(K)exp=2.81 *6* (1996SpZZ).
167.7345 *17*	78 *3*	482.9358	1/2$^+$	315.1995	1/2$^-$	E1		α(K)exp=0.040 *5* (1996SpZZ).
168.810[&] *4*	7[&] *1*	530.461	3/2$^-$	361.6511	3/2$^-$	M1,E2		α(K)exp=0.30 *6* (1996SpZZ). Mult.: Assigned as M1,E2, but peak is a doublet.
170.4511 *16*	487 *15*	212.0081	3/2$^+$	41.5568	5/2$^-$	E1		α(K)exp=0.050 *5* (1996SpZZ).
171.586 *5*	5 *1*	720.348	(5/2,7/2)$^-$	548.765	5/2$^-$			
174.385 *2*	45×10^1 *5*	303.5430	5/2$^+$	129.1637	3/2$^-$			
174.436 *4*	108×10^1 *3*	215.9930	7/2$^-$	41.5568	5/2$^-$	M1		α(K)exp=0.380 *15* (1996SpZZ).
175.704[f] *2*	37[f] *1*	395.1460	(5/2,7/2)$^+$	219.4434	9/2$^-$			
175.704[f] *2*	37[f] *1*	903.509	5/2$^+$	727.805	(5/2$^-$)			
177.893 *3*	27 *3*	219.4434	9/2$^-$	41.5568	5/2$^-$			
178.1840 *13*	641 *19*	361.6511	3/2$^-$	183.4699	5/2$^+$	E1		α(K)exp=0.050 *2* (1996SpZZ).
179.788 *3*	12 *1*	683.957	(1/2,3/2)$^-$	504.1716	5/2$^+$			
181.389 *2*	39 *2*	664.325	(1/2,3/2)$^-$	482.9358	1/2$^+$			
183.136 *2*	53 *3*	395.1460	(5/2,7/2)$^+$	212.0081	3/2$^+$	E2		α(K)exp=0.180 *13* (1996SpZZ).
183.467 *6*	176×10^1 *18*	183.4699	5/2$^+$	0.0	3/2$^-$	E1		α(K)exp=0.050 *5* (1996SpZZ).
185.193 *6*	5 *1*	368.6680	(5/2,7/2)$^-$	183.4699	5/2$^+$			
186.035 *4*	257 *18*	315.1995	1/2$^-$	129.1637	3/2$^-$	M1,E2		α(K)exp=0.250 *18* (1996SpZZ).
186.857 *5*	88×10^1 *12*	316.0271	3/2$^+$	129.1637	3/2$^-$	E1		α(K)exp=0.050 *7* (1996SpZZ).
188.1451 *17*	60 *2*	504.1716	5/2$^+$	316.0271	3/2$^+$			
192.260 *10*	4 *1*	363.448	13/2$^-$	171.189	11/2$^-$			
192.642 *4*	15 *1*	442.1917	5/2$^+$	249.5543	5/2$^-$			
193.782 *3*	175 *12*	303.5430	5/2$^+$	109.7564	5/2$^-$	E1[d]		
195.182 *4*	92×10^1 *13*	290.3599	7/2$^+$	95.1737	9/2$^+$	M1+E2	0.18 *+7−18*	α(K)exp=0.26 *4*, α(L2)exp=0.0032 *6* (1996SpZZ).
197.014 *2*	98 *2*	290.3599	7/2$^+$	93.3430	7/2$^-$	E1		α(K)exp=0.060 *19* (1996SpZZ).
197.344 *4*	31 *2*	727.805	(5/2$^-$)	530.461	3/2$^-$	M1,E2		α(K)exp=0.220 *24* (1996SpZZ).
198.688 *2*	56×10^1 *8*	327.8535	1/2$^+$	129.1637	3/2$^-$	E1		α(K)exp=0.060 *10* (1996SpZZ).
198.960 *4*	30 *7*	448.5200	5/2$^-$	249.5543	5/2$^-$	M1		α(K)exp=0.24 *6* (1996SpZZ).
200.624 *2*	25 *1*	504.1716	5/2$^+$	303.5430	5/2$^+$	M1,E2		α(K)exp=0.16 *3* (1996SpZZ).
200.886 *4*	31 *4*	412.8955	3/2$^+$	212.0081	3/2$^+$	M1,E2		α(K)exp=0.190 *23* (1996SpZZ).
201.017 *5*	23 *4*	683.957	(1/2,3/2)$^-$	482.9358	1/2$^+$			
202.605 *11*	8 *1*	530.461	3/2$^-$	327.8535	1/2$^+$			

^{152}Gd(n,γ) E=th 1996SpZZ (continued)

γ(^{153}Gd) (continued)

E_γ [†]	I_γ [e]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [‡]	δ [#]	Comments
204.790 *8*	15 *2*	708.964	3/2+	504.1716	5/2+	M1,E2		α(K)exp=0.14 *3* (1996SpZZ).
205.437 *4*	58 *8*	315.1995	1/2−	109.7564	5/2−	E2		α(K)exp=0.150 *23* (1996SpZZ).
206.2667 *14*	104×10[1] *13*	316.0271	3/2+	109.7564	5/2−	E1		α(K)exp=0.030 *4* (1996SpZZ).
207.994 *5*	60×10[1] *6*	249.5543	5/2−	41.5568	5/2−	M1		α(K)exp=0.220 *22* (1996SpZZ).
210.1945 *13*	42×10[1] *4*	303.5430	5/2+	93.3430	7/2−	E1[d]		α(K)exp=0.0300 *27* (1996SpZZ).
212.0040 *14*	212×10[1] *13*	212.0081	3/2+	0.0	3/2−	E1		α(K)exp=0.0300 *18* (1996SpZZ).
212.861 *7*	13 *2*	1025.503	5/2−	812.645	(5/2−,7/2−)			
213.8106 *17*	211 *19*	504.1716	5/2+	290.3599	7/2+	M1		α(K)exp=0.200 *18* (1996SpZZ).
214.435 *4*	16 *1*	530.461	3/2−	316.0271	3/2+			
215.267 *10*	7 *1*	530.461	3/2−	315.1995	1/2−			
215.9948 *16*	87 *3*	215.9930	7/2−	0.0	3/2−	E2		α(K)exp=0.12 *5* (1996SpZZ).
217.470 *9*	5 *1*	945.280	3/2+	727.805	(5/2−)			
223.553 *3*	31 *1*	636.449	7/2+	412.8955	3/2+			
224.263 *4*	14 *3*	436.2708	1/2−	212.0081	3/2+			
225.037 *10*	13 *1*	729.207	(1/2−,3/2−)	504.1716	5/2+			
226.028 *4*	51 *2*	708.964	3/2+	482.9358	1/2+	M1		α(K)exp=0.16 *6* (1996SpZZ).
226.196 *7*	41 *2*	442.1917	5/2+	215.9930	7/2−	E1		α(K)exp=0.040 *12* (1996SpZZ).
227.357 *16*	7 *2*	1172.635	(1/2,3/2)−	945.280	3/2+			
228.049 *5*	8 *1*	664.325	(1/2,3/2)−	436.2708	1/2−			
229.425 *3*	196 *18*	412.8955	3/2+	183.4699	5/2+	M1		α(K)exp=0.160 *14* (1996SpZZ).
230.182 *3*	26 *1*	442.1917	5/2+	212.0081	3/2+	M1,E2		α(K)exp=0.130 *10* (1996SpZZ).
232.486 *11*	37 *7*	361.6511	3/2−	129.1637	3/2−			
232.743 *6*	9 *1*	548.765	5/2−	316.0271	3/2+			
233.561 *6*	8 *1*	548.765	5/2−	315.1995	1/2−			I_γ: Author′s uncertainty is 5% or 0.4, but value is only given as 8.
233.906 *2*	61 *5*	782.674	3/2+	548.765	5/2−	E1		α(K)exp=0.020 *4* (1996SpZZ).
235.438 *3*	19 *2*	683.957	(1/2,3/2)−	448.5200	5/2−	M1,E2		α(K)exp=0.130 *21* (1996SpZZ).
238.595 *4*	35 *3*	769.054	(5/2,7/2)−	530.461	3/2−	M1,E2		α(K)exp=0.140 *14* (1996SpZZ).
239.531[a] *14*	28[a] *9*	368.6680	(5/2,7/2)−	129.1637	3/2−			Mult.: Assigned M1,E2, but peak is a doublet.
239.822 *2*	103 *8*	333.169	(7/2,9/2)−	93.3430	7/2−	M1,E2		α(K)exp=0.140 *11* (1996SpZZ).
241.750[&] *7*	22[&] *3*	683.957	(1/2,3/2)−	442.1917	5/2+			
242.80 *2*	7 *5*	1025.503	5/2−	782.674	3/2+			
246.268 *5*	28 *2*	729.207	(1/2−,3/2−)	482.9358	1/2+			Mult.: Assigned E2, but J^π′s require E1.
248.802 *5*	360 *18*	290.3599	7/2+	41.5568	5/2−	E1		α(K)exp=0.0200 *20* (1996SpZZ).
249.546 *3*	241×10[1] *12*	249.5543	5/2−	0.0	3/2−	M1+E2	0.33 *4*	α(K)exp=0.120 *6*, α(L1)exp=0.020 *10*, α(L3)exp=0.00 *15%* (1996SpZZ).
251.900 *8*	13 *1*	361.6511	3/2−	109.7564	5/2−	M1		α(K)exp=0.130 *25* (1996SpZZ).
258.399 *9*	56 *4*	548.765	5/2−	290.3599	7/2+			
258.720 *4*	113 *7*	442.1917	5/2+	183.4699	5/2+	M1		α(K)exp=0.180 *11* (1996SpZZ).
260.444 *10*	9 *1*	708.964	3/2+	448.5200	5/2−			
261.996 *6*	290 *26*	303.5430	5/2+	41.5568	5/2−	E1		α(K)exp=0.0200 *24* (1996SpZZ).
265.057 *5*	32 *2*	448.5200	5/2−	183.4699	5/2+			

$^{153}_{64}Gd_{89}$-7

^{152}Gd(n,γ) E=th 1996SpZZ (continued)

γ(^{153}Gd) (continued)

E_γ [†]	I_γ [e]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [‡]	Comments
266.767 *4*	129 *10*	708.964	3/2$^+$	442.1917	5/2$^+$	M1	α(K)exp=0.098 *8* (1996SpZZ).
267.36 *6*	7 *2*	715.810	(9/2,11/2,13/2)$^-$	448.5200	5/2$^-$		
267.78 *4*	6 *2*	636.449	7/2$^+$	368.6680	(5/2,7/2)$^-$		
268.300 *8*	59 *2*	361.6511	3/2$^-$	93.3430	7/2$^-$	E2	α(K)exp=0.0590 *5* (1996SpZZ).
270.931 *14*	10 *1*	482.9358	1/2$^+$	212.0081	3/2$^+$		
271.824 *6*	32 *1*	720.348	(5/2,7/2)$^-$	448.5200	5/2$^-$	M1	α(K)exp=0.148 *10* (1996SpZZ).
272.693 *8*	28 *4*	708.964	3/2$^+$	436.2708	1/2$^-$		
273.496 *7*	45 *6*	368.6680	(5/2,7/2)$^-$	95.1737	9/2$^+$		
273.644 *6*	123 *7*	315.1995	1/2$^-$	41.5568	5/2$^-$	E2	α(K)exp=0.056 *4* (1996SpZZ).
274.480 *8*	361 *25*	316.0271	3/2$^+$	41.5568	5/2$^-$		
275.324 *4*	316 *6*	368.6680	(5/2,7/2)$^-$	93.3430	7/2$^-$	M1	α(K)exp=0.103 *3* (1996SpZZ).
278.10 *3*	7 *2*	720.348	(5/2,7/2)$^-$	442.1917	5/2$^+$		
278.503 *3*	71 *1*	782.674	3/2$^+$	504.1716	5/2$^+$	M1,E2	α(K)exp=0.095 *4* (1996SpZZ).
280.364[&] *9*	21[&] *3*	1101.674	3/2$^+$	821.312	5/2$^+$		Mult.: Assigned M1, but peak is a doublet.
280.71 *2*	43 *3*	729.207	(1/2$^-$,3/2$^-$)	448.5200	5/2$^-$		
280.916 *12*	88 *5*	530.461	3/2$^-$	249.5543	5/2$^-$	M1	α(K)exp=0.112 *8* (1996SpZZ).
282.182 *8*	15 *2*	812.645	(5/2$^-$,7/2$^-$)	530.461	3/2$^-$		
283.739 *4*	108 *5*	412.8955	3/2$^+$	129.1637	3/2$^-$		
285.394 *3*	132 *4*	395.1460	(5/2,7/2)$^+$	109.7564	5/2$^-$	E1	α(K)exp=0.0120 *16* (1996SpZZ).
290.365[&] *6*	20[&] *1*	290.3599	7/2$^+$	0.0	3/2$^-$		
291.619 *4*	84 *3*	333.169	(7/2,9/2)$^-$	41.5568	5/2$^-$	E2	α(K)exp=0.043 *4* (1996SpZZ).
292.164 *3*	171 *3*	504.1716	5/2$^+$	212.0081	3/2$^+$	M1	α(K)exp=0.0120 *13* (1996SpZZ).
292.938 *7*	12 *1*	729.207	(1/2$^-$,3/2$^-$)	436.2708	1/2$^-$	M1,E2	α(K)exp=0.094 *5* (1996SpZZ).
299.24[&] *2*	48[&] *13*	548.765	5/2$^-$	249.5543	5/2$^-$		Mult.: Assigned M1,E2, but peak is a doublet.
299.480 *12*	386 *8*	482.9358	1/2$^+$	183.4699	5/2$^+$	E2	α(K)exp=0.0470 *14* (1996SpZZ).
299.747 *17*	68 *3*	782.674	3/2$^+$	482.9358	1/2$^+$	M1	α(K)exp=0.076 *7* (1996SpZZ).
299.968 *16*	19 *5*	395.1460	(5/2,7/2)$^+$	95.1737	9/2$^+$		
301.813 *6*	52 *3*	395.1460	(5/2,7/2)$^+$	93.3430	7/2$^-$		
302.674 *3*	246 *7*	664.325	(1/2,3/2)$^-$	361.6511	3/2$^-$	M1	α(K)exp=0.080 *3* (1996SpZZ).
303.15 *2*	403 *28*	412.8955	3/2$^+$	109.7564	5/2$^-$	E1	α(K)exp=0.0130 *13* (1996SpZZ).
303.548 *7*	382 *19*	303.5430	5/2$^+$	0.0	3/2$^-$	E1	α(K)exp=0.0120 *14* (1996SpZZ).
306.174 *15*	22 *3*	1268.201	3/2$^-$	962.034	(1/2,3/2)$^-$	M1	α(K)exp=0.078 *12* (1996SpZZ).
312.99 *5*	6 *2*	442.1917	5/2$^+$	129.1637	3/2$^-$		
315.077 *13*	92×10^1 *14*	676.724	(1/2,3/2)$^+$	361.6511	3/2$^-$		
315.199 *10*	279×10^1 *20*	315.1995	1/2$^-$	0.0	3/2$^-$	M1	α(K)exp=0.072 *5* (1996SpZZ).
316.026 *3*	233×10^1 *5*	316.0271	3/2$^+$	0.0	3/2$^-$	E1	α(L1)exp=0.00200 *14* (1996SpZZ).
319.349 *7*	85 *4*	448.5200	5/2$^-$	129.1637	3/2$^-$	M1,E2	α(K)exp=0.0520 *36* (1996SpZZ).
320.089 *4*	151×10^1 *3*	361.6511	3/2$^-$	41.5568	5/2$^-$	M1	α(K)exp=0.0690 *21* (1996SpZZ).
320.200 *19*	72 *23*	1422.96	(3/2$^-$,5/2$^-$)	1102.771	(5/2,7/2)$^-$		
320.698 *7*	121 *5*	504.1716	5/2$^+$	183.4699	5/2$^+$	M1	α(K)exp=0.097 *6* (1996SpZZ).
325.189 *4*	237 *7*	508.659	3/2$^-$	183.4699	5/2$^+$	E1	α(K)exp=0.0100 *15* (1996SpZZ).
326.523 *13*	35 *6*	436.2708	1/2$^-$	109.7564	5/2$^-$		

^{152}Gd(n,γ) E=th 1996SpZZ (continued)

γ(^{153}Gd) (continued)

E_γ †	I_γ e	E_i(level)	J_i^π	E_f	J_f^π	Mult. ‡	Comments
327.100 *6*	271 *8*	368.6680	$(5/2,7/2)^-$	41.5568	$5/2^-$	M1,E2	α(K)exp=0.0630 *25* (1996SpZZ).
327.844 *10*	154×10[1] *3*	327.8535	$1/2^+$	0.0	$3/2^-$	E1	α(K)exp=0.0110 *3* (1996SpZZ).
332.436 *5*	196 *10*	442.1917	$5/2^+$	109.7564	$5/2^-$	E1	α(K)exp=0.0090 *21* (1996SpZZ).
332.75 f *2*	130 f *12*	548.765	$5/2^-$	215.9930	$7/2^-$		
332.75 f *2*	130 f *12*	636.311	$(5/2,7/2)^-$	303.5430	$5/2^+$		
332.891 *19*	32 *7*	636.449	$7/2^+$	303.5430	$5/2^+$		
334.21 *2*	36 *2*	782.674	$3/2^+$	448.5200	$5/2^-$		
335.18 *8*	9 *3*	551.09	$(5/2^-)$	215.9930	$7/2^-$		
338.27 *6*	21 *5*	821.312	$5/2^+$	482.9358	$1/2^+$		
338.754 *9*	31 *2*	448.5200	$5/2^-$	109.7564	$5/2^-$	M1,E2 d	
340.476 *5*	207 *10*	782.674	$3/2^+$	442.1917	$5/2^+$	M1	α(K)exp=0.073 *7* (1996SpZZ).
346.31 *2*	105 *9*	1066.640	$3/2^+$	720.348	$(5/2,7/2)^-$		
348.307 *11*	55 *3*	664.325	$(1/2,3/2)^-$	316.0271	$3/2^+$		
348.829 *9*	155 *5*	442.1917	$5/2^+$	93.3430	$7/2^-$		
349.08 *4*	37 *4*	1131.702	$7/2^+$	782.674	$3/2^+$		
351.650 & *14*	24 & *3*	720.348	$(5/2,7/2)^-$	368.6680	$(5/2,7/2)^-$		Mult.: Assigned M1,E2, but peak is a doublet.
353.59 *3*	153 *28*	395.1460	$(5/2,7/2)^+$	41.5568	$5/2^-$	c	
353.756 *19*	44×10[1] *5*	482.9358	$1/2^+$	129.1637	$3/2^-$	E1	α(K)exp=0.0080 *28* (1996SpZZ).
355.183 *5*	565 *11*	448.5200	$5/2^-$	93.3430	$7/2^-$	M1	α(K)exp=0.064 *11* (1996SpZZ).
357.649 *8*	63 *4*	607.202	$5/2^-$	249.5543	$5/2^-$	M1	α(K)exp=0.091 *8* (1996SpZZ).
360.64 *5*	27 *5*	676.724	$(1/2,3/2)^+$	316.0271	$3/2^+$	M1,E2	α(K)exp=0.038 *9* (1996SpZZ).
361.629 *9*	114×10[1] *6*	361.6511	$3/2^-$	0.0	$3/2^-$	M1	α(K)exp=0.0540 *27* (1996SpZZ).
362.80 *10*	17 *6*	731.625	$7/2^+$	368.6680	$(5/2,7/2)^-$		
365.28 *2*	19 *3*	548.765	$5/2^-$	183.4699	$5/2^+$		Mult.: Assigned M1, but J^π's require E1.
367.573 *15*	51 *10*	729.207	$(1/2^-,3/2^-)$	361.6511	$3/2^-$	M1,E2	α(K)exp=0.025 *6* (1996SpZZ).
368.695 *8*	129 *5*	368.6680	$(5/2,7/2)^-$	0.0	$3/2^-$	M1+E2	α(K)exp=0.0380 *19* (1996SpZZ).
371.330 *8*	96×10[1] *3*	412.8955	$3/2^+$	41.5568	$5/2^-$	E1	α(K)exp=0.00900 *36* (1996SpZZ).
379.46 *3*	33 *2*	508.659	$3/2^-$	129.1637	$3/2^-$	M1	α(K)exp=0.070 *21* (1996SpZZ).
381.101 *15*	24 *4*	932.194	$5/2^-$	551.09	$(5/2^-)$	M1	α(K)exp=0.050 *9* (1996SpZZ).
382.63 f *2*	13 f *2*	715.810	$(9/2,11/2,13/2)^-$	333.169	$(7/2,9/2)^-$		Mult.: Assigned M1,E2, but peak is a doublet.
382.63 f *2*	13 f *2*	865.611	$3/2^+$	482.9358	$1/2^+$		α(K)exp=0.065 *12* (1996SpZZ).
386.99 *2*	22 *6*	1102.771	$(5/2,7/2)^-$	715.810	$(9/2,11/2,13/2)^-$	(M1)	Mult.: Assigned M1, but peak is a doublet. α(K)exp=0.078 *20* (1996SpZZ).
387.72 *6*	19 *5*	607.202	$5/2^-$	219.4434	$9/2^-$		Mult.: Assigned (M1), but J^π's require E2.
392.948 *9*	99 *12*	708.964	$3/2^+$	316.0271	$3/2^+$	M1	α(K)exp=0.060 *8* (1996SpZZ).
393.788 *13*	38 *6*	708.964	$3/2^+$	315.1995	$1/2^-$		
394.419 *4*	75 *2*	504.1716	$5/2^+$	109.7564	$5/2^-$	E1	α(K)exp=0.0070 *19* (1996SpZZ).
394.733 *17*	12 *2*	436.2708	$1/2^-$	41.5568	$5/2^-$		
395.01 *3*	7 *2*	1124.22	$(1/2,3/2)^-$	729.207	$(1/2^-,3/2^-)$		
395.652 *5*	62 *2*	579.127	$(5/2,7/2)^-$	183.4699	$5/2^+$	E1	α(K)exp=0.0090 *15* (1996SpZZ).
400.627 *4*	369 *11*	442.1917	$5/2^+$	41.5568	$5/2^-$	E1	α(K)exp=0.0060 *5* (1996SpZZ).

^{152}Gd(n,γ) E=th 1996SpZZ (continued)

γ(^{153}Gd) (continued)

E_γ †	I_γ e	E_i(level)	J_i^π	E_f	J_f^π	Mult. ‡	Comments
404.320 & 9	30 & 3	1252.144	(1/2,3/2)$^-$	847.823	(5/2,7/2)$^-$		Mult.: Assigned M1 from other experiments; here peak is a doublet.
405.430 11	49 2	708.964	3/2$^+$	303.5430	5/2$^+$	c	
406.48 2	13 6	775.158	(5/2$^-$,7/2$^-$)	368.6680	(5/2,7/2)$^-$		
406.966 4	25×10^1 3	448.5200	5/2$^-$	41.5568	5/2$^-$	M1	α(K)exp=0.038 5 (1996SpZZ).
409.064 10	36 3	857.587	3/2$^-$	448.5200	5/2$^-$		
410.846 9	101 8	504.1716	5/2$^+$	93.3430	7/2$^-$		
412.57 4	13×10^1 3	727.805	(5/2$^-$)	315.1995	1/2$^-$		
413.174 9	213 6	729.207	(1/2$^-$,3/2$^-$)	316.0271	3/2$^+$		
417.06 8	28 4	636.449	7/2$^+$	219.4434	9/2$^-$	E1 d	
420.31 2	19 10	636.311	(5/2,7/2)$^-$	215.9930	7/2$^-$	E2,M1 d	
420.700 5	139 6	530.461	3/2$^-$	109.7564	5/2$^-$	M1	α(K)exp=0.0320 13 (1996SpZZ).
421.324 19	17 3	857.587	3/2$^-$	436.2708	1/2$^-$	M1	α(K)exp=0.044 9 (1996SpZZ).
422.64 7	68 12	1131.702	7/2$^+$	708.964	3/2$^+$	c	
423.424 9	25 5	865.611	3/2$^+$	442.1917	5/2$^+$	M1	α(K)exp=0.032 10 (1996SpZZ).
431.562 17	52 3	962.034	(1/2,3/2)$^-$	530.461	3/2$^-$		
433.04 4	16 5	649.021	(7/2,9/2)$^+$	215.9930	7/2$^-$		
435.28 3	23 7	530.461	3/2$^-$	95.1737	9/2$^+$		
436.266 5	194×10^1 8	436.2708	1/2$^-$	0.0	3/2$^-$	M1	α(K)exp=0.0350 14 (1996SpZZ).
439.003 11	33 6	548.765	5/2$^-$	109.7564	5/2$^-$		
442.191 5	483 15	442.1917	5/2$^+$	0.0	3/2$^-$	E1	α(K)exp=0.0070 4 (1996SpZZ).
448.514 6	489 15	448.5200	5/2$^-$	0.0	3/2$^-$	E2	α(K)exp=0.0170 7 (1996SpZZ).
453.384 16	40 4	962.034	(1/2,3/2)$^-$	508.659	3/2$^-$	M1	α(K)exp=0.040 4 (1996SpZZ).
454.82 3	28 6	782.674	3/2$^+$	327.8535	1/2$^+$		
455.415 4	625 13	548.765	5/2$^-$	93.3430	7/2$^-$	M1	α(K)exp=0.0320 9 (1996SpZZ).
459.422 18	38 2	708.964	3/2$^+$	249.5543	5/2$^-$		
466.73 3	138 15	782.674	3/2$^+$	316.0271	3/2$^+$		
467.100 10	131×10^1 3	508.659	3/2$^-$	41.5568	5/2$^-$	M1	α(K)exp=0.0290 9 (1996SpZZ).
467.497 13	138 13	782.674	3/2$^+$	315.1995	1/2$^-$		
469.403 17	17 2	579.127	(5/2,7/2)$^-$	109.7564	5/2$^-$	M1	α(K)exp=0.025 4 (1996SpZZ).
477.92 5	10 3	649.021	(7/2,9/2)$^+$	171.189	11/2$^-$		
479.159 17	34 5	847.823	(5/2,7/2)$^-$	368.6680	(5/2,7/2)$^-$		
479.664 7	107 5	729.207	(1/2$^-$,3/2$^-$)	249.5543	5/2$^-$	M1,E2	α(K)exp=0.0200 22 (1996SpZZ).
481.85 7	10 4	894.615	(1/2,3/2)$^+$	412.8955	3/2$^+$		
482.14 2	31 6	731.625	7/2$^+$	249.5543	5/2$^-$	E1 d	
482.942 7	251 13	482.9358	1/2$^+$	0.0	3/2$^-$	E1	α(K)exp=0.0050 5 (1996SpZZ).
483.956 7	308 15	579.127	(5/2,7/2)$^-$	95.1737	9/2$^+$	E1	α(K)exp=0.0060 4 (1996SpZZ).
484.81 4	26 4	1015.24	(1/2,3/2)$^+$	530.461	3/2$^-$		
485.82 12	16 5	579.127	(5/2,7/2)$^-$	93.3430	7/2$^-$		
488.687 16	67 15	1172.635	(1/2,3/2)$^-$	683.957	(1/2,3/2)$^-$		
488.915 7	447 22	530.461	3/2$^-$	41.5568	5/2$^-$	M1	α(K)exp=0.0230 12 (1996SpZZ).
494.84 9	92 27	1025.503	5/2$^-$	530.461	3/2$^-$		

^{152}Gd(n,γ) E=th 1996SpZZ (continued)

γ(^{153}Gd) (continued)

E_γ †	I_γ e	E_i(level)	J_i^π	E_f	J_f^π	Mult. ‡	Comments
495.86 *3*	50 *4*	932.194	5/2$^-$	436.2708	1/2$^-$	E2	α(K)exp=0.0170 *19* (1996SpZZ). Mult.: ce data imply M1+E2 but ΔJ^π requires E2.
496.66 f *7*	60 f *23*	812.645	(5/2$^-$,7/2$^-$)	316.0271	3/2$^+$		Mult.: Assigned M2, but peak is a doublet.
496.66 f *7*	60 f *23*	945.280	3/2$^+$	448.5200	5/2$^-$		Mult.: Assigned E1, but peak is a doublet.
500.483 *6*	855 *18*	683.957	(1/2,3/2)$^-$	183.4699	5/2$^+$	E1	α(K)exp=0.00400 *16* (1996SpZZ).
503.116 *13*	68 *6*	945.280	3/2$^+$	442.1917	5/2$^+$	E2	α(K)exp=0.0120 *13* (1996SpZZ).
504.174 a *17*	115 a *15*	504.1716	5/2$^+$	0.0	3/2$^-$		α(K)exp=0.0050 *7* (1996SpZZ). Mult.: Assigned E1, but peak is a doublet.
504.39 a *2*	79 a *14*	720.348	(5/2,7/2)$^-$	215.9930	7/2$^-$		α(K)exp=0.021 *4* (1996SpZZ). Mult.: Assigned M1,E2, but peak is a doublet.
505.930 *19*	80 *9*	1054.726	(1/2,3/2)$^-$	548.765	5/2$^-$	M1	α(K)exp=0.026 *3* (1996SpZZ).
507.216 *7*	210 *10*	548.765	5/2$^-$	41.5568	5/2$^-$	E0,E2,M1	α(K)exp=0.0450 *23* (1996SpZZ).
508.663 *8*	469 *28*	508.659	3/2$^-$	0.0	3/2$^-$	E0,E2,M1	α(K)exp=0.0360 *25* (1996SpZZ).
513.856 *11*	333 *10*	607.202	5/2$^-$	93.3430	7/2$^-$	M1	α(K)exp=0.0220 *9* (1996SpZZ).
517.24 *3*	31 *3*	729.207	(1/2$^-$,3/2$^-$)	212.0081	3/2$^+$		Mult.: Assigned M1,E2, but J^π's require E1.
521.16 *3*	22 *4*	1157.43	(1/2,3/2)$^-$	636.311	(5/2,7/2)$^-$		
524.44 *8*	19 *8*	1054.726	(1/2,3/2)$^-$	530.461	3/2$^-$		
525.595 *12*	210 *13*	775.158	(5/2$^-$,7/2$^-$)	249.5543	5/2$^-$	M1,E2	α(K)exp=0.0130 *10* (1996SpZZ).
526.62 f *10*	23 f *9*	636.311	(5/2,7/2)$^-$	109.7564	5/2$^-$		
526.62 f *10*	23 f *9*	636.449	7/2$^+$	109.7564	5/2$^-$		
530.453 *8*	920 *28*	530.461	3/2$^-$	0.0	3/2$^-$	M1	α(K)exp=0.0360 *14* (1996SpZZ).
533.13 b *3*	84 *3*	782.674	3/2$^+$	249.5543	5/2$^-$	E1 d	α(K)exp=0.167 *22* (1996SpZZ).
536.85 a *2*	18 a *2*	720.348	(5/2,7/2)$^-$	183.4699	5/2$^+$		
537.582 *16*	25 *3*	579.127	(5/2,7/2)$^-$	41.5568	5/2$^-$	M1	α(K)exp=0.027 *4* (1996SpZZ).
541.297 *16*	43 *4*	636.449	7/2$^+$	95.1737	9/2$^+$	M1	α(K)exp=0.0170 *24* (1996SpZZ).
541.610 *16*	42 *4*	990.143	3/2$^{(+)}$	448.5200	5/2$^-$		
546.082 & *14*	36 & *3*	1054.726	(1/2,3/2)$^-$	508.659	3/2$^-$		Mult.: Assigned M1, but peak is a doublet.
547.84 *2*	45 *5*	1268.201	3/2$^-$	720.348	(5/2,7/2)$^-$		
548.116 *15*	74 *6*	731.625	7/2$^+$	183.4699	5/2$^+$	M1	α(K)exp=0.016 *4* (1996SpZZ).
548.770 *15*	41 *3*	548.765	5/2$^-$	0.0	3/2$^-$	M1,E2	α(K)exp=0.0110 *23* (1996SpZZ).
549.58 *2*	25 *3*	769.054	(5/2,7/2)$^-$	219.4434	9/2$^-$	M1	α(K)exp=0.033 *5* (1996SpZZ).
550.52 *4*	19 *4*	1054.726	(1/2,3/2)$^-$	504.1716	5/2$^+$		
552.83 *4*	15 *4*	1101.674	3/2$^+$	548.765	5/2$^-$	E1 d	
553.82 *4*	15 *4*	649.021	(7/2,9/2)$^+$	95.1737	9/2$^+$	M1	α(K)exp=0.021 *6* (1996SpZZ).
555.684 & *17*	27 & *3*	649.021	(7/2,9/2)$^+$	93.3430	7/2$^-$		
557.43 *3*	35×10^1 *12*	847.823	(5/2,7/2)$^-$	290.3599	7/2$^+$	E1 d	α(K)exp=0.0090 *12* (1996SpZZ).
565.33 *6*	34 *8*	1422.96	(3/2$^-$,5/2$^-$)	857.587	3/2$^-$		
565.637 *6*	258 *8*	607.202	5/2$^-$	41.5568	5/2$^-$	M1	α(K)exp=0.0310 *12* (1996SpZZ).
570.560 *14*	66 *3*	932.194	5/2$^-$	361.6511	3/2$^-$		
571.757 *14*	38 *3*	821.312	5/2$^+$	249.5543	5/2$^-$	d	Mult.: Assigned M1, but J^π's require E1.

$^{153}_{64}Gd_{89}$-11

^{152}Gd(n,γ) E=th 1996SpZZ (continued)

γ(^{153}Gd) (continued)

E_γ †	I_γ e	E_i(level)	J_i^π	E_f	J_f^π	Mult. ‡	Comments
574.212 *11*	37 *2*	683.957	$(1/2,3/2)^-$	109.7564	$5/2^-$	M1	α(K)exp=0.0300 *24* (1996SpZZ).
579.79 *2*	341 *10*	708.964	$3/2^+$	129.1637	$3/2^-$	E1	α(K)exp=0.0030 *3* (1996SpZZ).
591.21 *3*	53 *5*	720.348	$(5/2,7/2)^-$	129.1637	$3/2^-$		
593.230 *18*	44 *4*	812.645	$(5/2^-,7/2^-)$	219.4434	$9/2^-$		
598.27 a *2*	94 a *4*	847.823	$(5/2,7/2)^-$	249.5543	$5/2^-$		Mult.: Assigned M1,E2, but peak is a doublet.
598.96 & *4*	99 & *6*	932.194	$5/2^-$	333.169	$(7/2,9/2)^-$		
599.25 f *3*	123 f *5*	708.964	$3/2^+$	109.7564	$5/2^-$		
599.25 f *3*	123 f *5*	782.674	$3/2^+$	183.4699	$5/2^+$		
600.037 *7*	138 *4*	729.207	$(1/2^-,3/2^-)$	129.1637	$3/2^-$		
605.34 *4*	27 *8*	821.312	$5/2^+$	215.9930	$7/2^-$		
607.27 *11*	123 *9*	607.202	$5/2^-$	0.0	$3/2^-$	(M1)	α(K)exp=0.0200 *16* (1996SpZZ).
609.44 *8*	29 *6*	821.312	$5/2^+$	212.0081	$3/2^+$		
610.616 *16*	57 *3*	720.348	$(5/2,7/2)^-$	109.7564	$5/2^-$		
617.46 *3*	36 *3*	945.280	$3/2^+$	327.8535	$1/2^+$	M1,E2 d	
618.50 *3*	29 *3*	1054.726	$(1/2,3/2)^-$	436.2708	$1/2^-$	M1	α(K)exp=0.0210 295 (1996SpZZ).
619.405 *14*	51 *4*	1328.369	$5/2^+$	708.964	$3/2^+$	M1	α(K)exp=0.0130 *16* (1996SpZZ).
621.48 *4*	22 *4*	990.143	$3/2^{(+)}$	368.6680	$(5/2,7/2)^-$		
622.751 *18*	32 *3*	664.325	$(1/2,3/2)^-$	41.5568	$5/2^-$		
629.248 *16*	37 *3*	945.280	$3/2^+$	316.0271	$3/2^+$	M1,E2	α(K)exp=0.0093 *24* (1996SpZZ).
630.057 *13*	51 *3*	945.280	$3/2^+$	315.1995	$1/2^-$		
634.37 *6*	44 *6*	727.805	$(5/2^-)$	93.3430	$7/2^-$	M1,E2	α(K)exp=0.0069 *21* (1996SpZZ).
636.36 *2*	52 *5*	636.311	$(5/2,7/2)^-$	0.0	$3/2^-$	M1,E2	α(K)exp=0.0084 *11* (1996SpZZ).
638.36 *9*	23 *3*	731.625	$7/2^+$	93.3430	$7/2^-$	E1 d	
641.61 *14*	20 *7*	1054.726	$(1/2,3/2)^-$	412.8955	$3/2^+$		
646.022 *15*	52 *4*	962.034	$(1/2,3/2)^-$	316.0271	$3/2^+$		Mult.: ce data imply (M1) but ΔJ^π requires E1.
646.85 *3*	54 *5*	962.034	$(1/2,3/2)^-$	315.1995	$1/2^-$		Mult.: Assigned M1, but J^π's require E1.
648.51 *14*	23 *5*	1157.43	$(1/2,3/2)^-$	508.659	$3/2^-$		
649.07 *6*	41 *7*	649.021	$(7/2,9/2)^+$	0.0	$3/2^-$		
660.566 *12*	152 *6*	1102.771	$(5/2,7/2)^-$	442.1917	$5/2^+$	E1	α(K)exp=0.0018 *4* (1996SpZZ).
664.339 *9*	686 *14*	664.325	$(1/2,3/2)^-$	0.0	$3/2^-$	M1,E2	α(K)exp=0.00860 *26* (1996SpZZ).
665.36 *3*	99 *6*	1101.674	$3/2^+$	436.2708	$1/2^-$	c	
673.02 *9*	23 *8*	1400.89	$3/2^+$	727.805	$(5/2^-)$		
678.790 *10*	161 *8*	720.348	$(5/2,7/2)^-$	41.5568	$5/2^-$	M1,E2	α(K)exp=0.0069 *12* (1996SpZZ).
682.65 *5*	32 *5*	932.194	$5/2^-$	249.5543	$5/2^-$		
683.95 *5*	53 *4*	683.957	$(1/2,3/2)^-$	0.0	$3/2^-$	M1	α(K)exp=0.0089 *14* (1996SpZZ).
690.07 *3*	109 *12*	731.625	$7/2^+$	41.5568	$5/2^-$	E1	α(K)exp=0.0026 *4* (1996SpZZ).
711.543 *13*	96 *5*	821.312	$5/2^+$	109.7564	$5/2^-$	E1 d	
712.46 *7*	18 *4*	962.034	$(1/2,3/2)^-$	249.5543	$5/2^-$		
718.68 *2*	58 *10*	847.823	$(5/2,7/2)^-$	129.1637	$3/2^-$	E2 d	
720.29 f *17*	24 f *12*	720.348	$(5/2,7/2)^-$	0.0	$3/2^-$		
720.29 f *17*	24 f *12*	932.194	$5/2^-$	212.0081	$3/2^+$		

$^{153}_{64}Gd_{89}$-12

^{152}Gd(n,γ) E=th 1996SpZZ (continued)

γ(^{153}Gd) (continued)

E_γ [†]	I_γ [e]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	Comments
721.36 *9*	41 *11*	937.373	$7/2^+$	215.9930	$7/2^-$	E1[d]	
724.46 *4*	43 *6*	1040.47	$(1/2,3/2)^-$	316.0271	$3/2^+$		
727.07 *9*	20 *4*	1054.726	$(1/2,3/2)^-$	327.8535	$1/2^+$		
727.819[&] *16*	93[&] *5*	727.805	$(5/2^-)$	0.0	$3/2^-$		Mult.: Assigned (E1) in ^{153}Tb ε decay, but peak is a doublet.
728.10 *7*	51 *17*	821.312	$5/2^+$	93.3430	$7/2^-$	(E1)[d]	
729.182 *12*	153 *6*	729.207	$(1/2^-,3/2^-)$	0.0	$3/2^-$		Mult.: Assigned (M2), but J^π's require M1,E2.
733.62 *2*	137 *7*	775.158	$(5/2^-,7/2^-)$	41.5568	$5/2^-$	M1,E2	α(K)exp=0.0075 *14* (1996SpZZ).
735.81 *11*	17 *5*	955.447	$5/2^+$	219.4434	$9/2^-$		
736.44 *2*	161 *10*	865.611	$3/2^+$	129.1637	$3/2^-$	E1	α(K)exp=0.0024 *5* (1996SpZZ).
738.09 *14*	22 *5*	847.823	$(5/2,7/2)^-$	109.7564	$5/2^-$		
738.679 *11*	149 *7*	1054.726	$(1/2,3/2)^-$	316.0271	$3/2^+$		
739.456 *12*	126 *6*	955.447	$5/2^+$	215.9930	$7/2^-$	E1[d]	
740.59 *4*	66 *13*	990.143	$3/2^{(+)}$	249.5543	$5/2^-$		
746.18 *14*	33 *7*	1353.48	$(1/2,3/2)^-$	607.202	$5/2^-$	M1	α(K)exp=0.0125 *31* (1996SpZZ).
749.41 *2*	78 *4*	790.770	$(1/2,3/2)^+$	41.5568	$5/2^-$		
755.88 *2*	229 *16*	865.611	$3/2^+$	109.7564	$5/2^-$	E1[d]	
761.86[&] *3*	322[&] *16*	945.280	$3/2^+$	183.4699	$5/2^+$		Mult.: Assigned M1 from another experiment, but peak is a doublet.
762.58 *5*	70 *6*	1124.22	$(1/2,3/2)^-$	361.6511	$3/2^-$	M1,E2	α(K)exp=0.0067 *27* (1996SpZZ).
771.97 *4*	96 *5*	955.447	$5/2^+$	183.4699	$5/2^+$	M1[d]	
775.169 *19*	106 *5*	775.158	$(5/2^-,7/2^-)$	0.0	$3/2^-$	E2[d]	
778.16 *7*	47 *4*	990.143	$3/2^{(+)}$	212.0081	$3/2^+$		
779.86 *5*	62 *4*	821.312	$5/2^+$	41.5568	$5/2^-$	E1[d]	
785.64[f] *2*	72[f] *5*	1035.19	$5/2^+$	249.5543	$5/2^-$		Mult.: Assigned E1, but peak is a doublet.
785.64[f] *2*	72[f] *5*	1101.674	$3/2^+$	316.0271	$3/2^+$		α(K)exp=0.0036 *6* (1996SpZZ). Mult.: Assigned M1, but peak is a doublet.
795.15 *13*	51 *20*	1163.69?	$(1/2,3/2)^+$	368.6680	$(5/2,7/2)^-$		
795.60 *7*	98 *24*	1157.43	$(1/2,3/2)^-$	361.6511	$3/2^-$		
799.27 *5*	90 *11*	1102.771	$(5/2,7/2)^-$	303.5430	$5/2^+$	E1[d]	
802.27 *7*	59 *9*	1118.35	$5/2^+$	316.0271	$3/2^+$		
803.17 *4*	53 *6*	1015.24	$(1/2,3/2)^+$	212.0081	$3/2^+$		
810.22 *17*	30 *10*	903.509	$5/2^+$	93.3430	$7/2^-$		
816.063 *17*	304 *21*	857.587	$3/2^-$	41.5568	$5/2^-$	M1	α(K)exp=0.0057 *5* (1996SpZZ).
817.05 *7*	42 *10*	1066.640	$3/2^+$	249.5543	$5/2^-$		
820.47 *18*	70 *8*	1124.22	$(1/2,3/2)^-$	303.5430	$5/2^+$	*c*	
826.26 *8*	43 *9*	955.447	$5/2^+$	129.1637	$3/2^-$		
827.62 *7*	51 *9*	937.373	$7/2^+$	109.7564	$5/2^-$	E1[d]	
832.82 *3*	95 *24*	962.034	$(1/2,3/2)^-$	129.1637	$3/2^-$		
835.54[&] *3*	260[&] *16*	945.280	$3/2^+$	109.7564	$5/2^-$		Mult.: Assigned E1, but peak is a doublet.
844.30 *8*	66 *10*	885.911	$(1/2,3/2)^-$	41.5568	$5/2^-$	M1	α(K)exp=0.0069 *19* (1996SpZZ).

$^{153}_{64}Gd_{89}$-13

^{152}Gd(n,γ) E=th 1996SpZZ (continued)

γ(^{153}Gd) (continued)

E_γ †	I_γ e	E_i(level)	J_i^π	E_f	J_f^π	Mult. ‡	Comments
852.21 *9*	60 *12*	1101.674	$3/2^+$	249.5543	$5/2^-$	E1 d	
853.52 *13*	46 *16*	1102.771	$(5/2,7/2)^-$	249.5543	$5/2^-$		
857.566 *12*	337 *17*	857.587	$3/2^-$	0.0	$3/2^-$	(M1)	α(K)exp=0.0096 *6* (1996SpZZ).
861.00 *3*	225 *12*	990.143	$3/2^{(+)}$	129.1637	$3/2^-$	E1	α(K)exp=0.0013 *3* (1996SpZZ).
861.90 *5*	66 *13*	903.509	$5/2^+$	41.5568	$5/2^-$		
865.62 *3*	298 *18*	865.611	$3/2^+$	0.0	$3/2^-$	E1	α(K)exp=0.0015 *2* (1996SpZZ).
868.63 *9*	72 *15*	1118.35	$5/2^+$	249.5543	$5/2^-$		Mult.: Assigned M1,E2, but J^π's require E1.
871.28 *3*	328 *23*	1054.726	$(1/2,3/2)^-$	183.4699	$5/2^+$	E1 d	
883.18 & *11*	76 & *16*	1066.640	$3/2^+$	183.4699	$5/2^+$		Mult.: Assigned E1 or E2, but peak is a doublet.
885.910 *15*	346 *17*	885.911	$(1/2,3/2)^-$	0.0	$3/2^-$		
902.43 *5*	120 *8*	1118.35	$5/2^+$	215.9930	$7/2^-$		
903.70 *15*	146 *29*	903.509	$5/2^+$	0.0	$3/2^-$		Mult.: Assigned E1, but peak is a doublet.
905.99 & *6*	160 & *18*	1035.19	$5/2^+$	129.1637	$3/2^-$		Mult.: Assigned E1 from other experiment, but peak is a doublet.
911.31 *5*	63 *8*	1040.47	$(1/2,3/2)^-$	129.1637	$3/2^-$	M1	α(K)exp=0.0059 *15* (1996SpZZ).
918.36 *8*	57 *9*	1101.674	$3/2^+$	183.4699	$5/2^+$	M1	α(K)exp=0.0057 *12* (1996SpZZ).
932.15 *4*	145 *9*	932.194	$5/2^-$	0.0	$3/2^-$	(M1)	α(K)exp=0.0058 8 (1996SpZZ).
937.43 f *3*	280 f *11*	937.373	$7/2^+$	0.0	$3/2^-$		Mult.: Assigned M2, but peak is a doublet.
937.43 f *3*	280 f *11*	1066.640	$3/2^+$	129.1637	$3/2^-$		Mult.: Assigned E1, but peak is a doublet.
945.20 *4*	194 *10*	945.280	$3/2^+$	0.0	$3/2^-$	E1	α(K)exp=0.0013 *4* (1996SpZZ).
956.83 *10*	70 *12*	1066.640	$3/2^+$	109.7564	$5/2^-$		Mult.: Assigned M1,E2, but J^π's require E1.
964.69 *6*	129 *13*	1268.201	$3/2^-$	303.5430	$5/2^+$	E1	α(K)exp=0.0012 *4* (1996SpZZ).
976.64 *17*	62 *12*	1337.96	$(1/2,3/2)^-$	361.6511	$3/2^-$	M1,E2	α(K)exp=0.0038 *12* (1996SpZZ).
979.1 *3*	58 *20*	1199.04	$(7/2,9/2)^+$	219.4434	$9/2^-$	E1 d	
980.1 *3*	42 *14*	1163.69?	$(1/2,3/2)^+$	183.4699	$5/2^+$		
980.76 *12*	256 *15*	1422.96	$(3/2^-,5/2^-)$	442.1917	$5/2^+$	E1	α(K)exp=0.0010 *2* (1996SpZZ).
983.3 *6*	93 *34*	1199.04	$(7/2,9/2)^+$	215.9930	$7/2^-$		
983.7 *3*	121 *42*	1025.503	$5/2^-$	41.5568	$5/2^-$		
991.88 f & *6*	169 f & *35*	1101.674	$3/2^+$	109.7564	$5/2^-$		Mult.: Assigned E1 from another experiment, but peak is a doublet.
991.88 f & *6*	169 f & *35*	1353.48	$(1/2,3/2)^-$	361.6511	$3/2^-$		Mult.: Assigned M1,E2, but peak is a doublet.
998.5 *4*	267 *45*	1314.5	$(1/2,3/2)$	316.0271	$3/2^+$		
1011.8 *5*	78 *14*	1328.369	$5/2^+$	316.0271	$3/2^+$	M1 d	
1015.37 *10*	159 *46*	1015.24	$(1/2,3/2)^+$	0.0	$3/2^-$	E1	α(K)exp=0.0016 *6* (1996SpZZ).
1022.05 *7*	167 *25*	1131.702	$7/2^+$	109.7564	$5/2^-$	E1 d	
1027.9 *3*	130 *16*	1157.43	$(1/2,3/2)^-$	129.1637	$3/2^-$		
1030.2 *4*	79 *14*	1124.22	$(1/2,3/2)^-$	93.3430	$7/2^-$		
1036.2 *3*	147 *21*	1131.702	$7/2^+$	95.1737	$9/2^+$	M1	α(K)exp=0.0062 *10* (1996SpZZ).
1038.3 *6*	45 *15*	1220.8	$(1/2,3/2)$	183.4699	$5/2^+$		
1040.45 *5*	245 *27*	1040.47	$(1/2,3/2)^-$	0.0	$3/2^-$	M1,E2	α(K)exp=0.0027 *4* (1996SpZZ).
1051.0 *3*	168 *20*	1180.95	$3/2^+$	129.1637	$3/2^-$		
1053.0 *6*	163 *44*	1163.69?	$(1/2,3/2)^+$	109.7564	$5/2^-$		

$^{153}_{64}Gd_{89}$-14

^{152}Gd(n,γ) E=th 1996SpZZ (continued)

γ(^{153}Gd) (continued)

E_γ [†]	I_γ [e]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [‡]	Comments
1054.65 *4*	172 *38*	1054.726	$(1/2,3/2)^-$	0.0	$3/2^-$	M1	α(K)exp=0.0049 *12* (1996SpZZ).
1060.1[a] *2*	318[a] *64*	1101.674	$3/2^+$	41.5568	$5/2^-$		Mult.: Assigned E1 from another experiment, but peak is a doublet.
1071.22 *4*	176 *48*	1180.95	$3/2^+$	109.7564	$5/2^-$	E1[d]	
1076.4 *3*	83 *12*	1118.35	$5/2^+$	41.5568	$5/2^-$		
1085.6 *2*	87 *17*	1400.89	$3/2^+$	315.1995	$1/2^-$		
1101.65[a] *15*	42[a] *6*	1101.674	$3/2^+$	0.0	$3/2^-$		Mult.: Assigned E1 from another experiment, but peak is a doublet.
1105.78 *14*	144 *37*	1199.04	$(7/2,9/2)^+$	93.3430	$7/2^-$	E1[d]	
1110.8 *3*	105 *9*	1220.8	$(1/2,3/2)$	109.7564	$5/2^-$		
1124.25 *5*	262 *24*	1124.22	$(1/2,3/2)^-$	0.0	$3/2^-$	M1	α(K)exp=0.0029 *4* (1996SpZZ).
1130.8 *2*	122 *39*	1172.635	$(1/2,3/2)^-$	41.5568	$5/2^-$	M1,E2	α(K)exp=0.0015 *6* (1996SpZZ).
1139.30 *9*	111 *11*	1180.95	$3/2^+$	41.5568	$5/2^-$	E1[d]	
1151.59 *6*	377 *23*	1363.58	$(1/2,3/2)^-$	212.0081	$3/2^+$		
1157.43 *18*	165 *25*	1157.43	$(1/2,3/2)^-$	0.0	$3/2^-$	M1,E2	α(K)exp=0.0017 *4* (1996SpZZ).
1169.98 *13*	163 *20*	1353.48	$(1/2,3/2)^-$	183.4699	$5/2^+$		
1199.13 *14*	109 *16*	1328.369	$5/2^+$	129.1637	$3/2^-$	E1[d]	
1205.97 *19*	128 *15*	1247.554	$(1/2,3/2)^+$	41.5568	$5/2^-$		
1210.58 *4*	518 *52*	1252.144	$(1/2,3/2)^-$	41.5568	$5/2^-$		
1218.57[&] *11*	252[&] *18*	1328.369	$5/2^+$	109.7564	$5/2^-$		Mult.: Assigned E1 from other experiment, but peak is a doublet.
1226.43 *14*	277 *72*	1268.201	$3/2^-$	41.5568	$5/2^-$	M1,E2	α(K)exp=0.0017 *5* (1996SpZZ).
1272.41 *16*	375 *53*	1272.5	$5/2^+$	0.0	$3/2^-$	E1	α(K)exp=0.0010 *2* (1996SpZZ). Mult.: From 1983Pr07. E1 or E2 from 1996SpZZ.
1308.6 *2*	121 *45*	1721.66	$(1/2,3/2)^+$	412.8955	$3/2^+$		
1327.9[&] *2*	178[&] *9*	1422.96	$(3/2^-,5/2^-)$	95.1737	$9/2^+$		
1337.87 *10*	298 *27*	1337.96	$(1/2,3/2)^-$	0.0	$3/2^-$	M1,E2	α(K)exp=0.00120 *23* (1996SpZZ).
1340.9 *2*	212 *42*	1450.31	$(1/2,3/2)^-$	109.7564	$5/2^-$	E2	α(K)exp=0.0010 *3* (1996SpZZ).
1342.5 *4*	159 *19*	1384.53	$(1/2^-,3/2^-)$	41.5568	$5/2^-$	[c]	
1359.9[&] *2*	98[&] *11*	1400.89	$3/2^+$	41.5568	$5/2^-$		Mult.: Assigned E1 from other experiment, but peak is a doublet.
1381.1 *2*	169 *10*	1422.96	$(3/2^-,5/2^-)$	41.5568	$5/2^-$		
1384.54 *11*	42 *16*	1384.53	$(1/2^-,3/2^-)$	0.0	$3/2^-$		
1423.2 *3*	92 *28*	1422.96	$(3/2^-,5/2^-)$	0.0	$3/2^-$		
1450.06 *16*	180 *63*	1450.31	$(1/2,3/2)^-$	0.0	$3/2^-$		
1721.7 *2*	397 *48*	1721.66	$(1/2,3/2)^+$	0.0	$3/2^-$		
4525.1 *2*	259 *10*	6247.04	$1/2^+$	1721.66	$(1/2,3/2)^+$		
4744.0 *3*	43 *3*	6247.04	$1/2^+$	1503.0	$(1/2,3/2)^-$		
4762.1 *4*	93 *4*	6247.04	$1/2^+$	1484.8	$(1/2,3/2)$		
4796.2 *5*	22 *4*	6247.04	$1/2^+$	1450.31	$(1/2,3/2)^-$		
4861.9 *5*	68 *7*	6247.04	$1/2^+$	1384.53	$(1/2^-,3/2^-)$		
4883.9 *3*	66 *6*	6247.04	$1/2^+$	1363.58	$(1/2,3/2)^-$		
4892.8 *3*	51 *5*	6247.04	$1/2^+$	1353.48	$(1/2,3/2)^-$		
4909.1 *2*	246 *5*	6247.04	$1/2^+$	1337.96	$(1/2,3/2)^-$		
4932.4 *3*	61 *5*	6247.04	$1/2^+$	1314.5	$(1/2,3/2)$		

$^{153}_{64}Gd_{89}$-15

^{152}Gd(n,γ) E=th 1996SpZZ (continued)

$\gamma(^{153}Gd)$ (continued)

E_γ †	I_γ e	E_i(level)	J_i^π	E_f	J_f^π
4953.1 *2*	370 *4*	6247.04	$1/2^+$	1293.8	(1/2,3/2)
4972.1 *11*	13 *4*	6247.04	$1/2^+$	1272.5	$5/2^+$
4978.6 *5*	31 *6*	6247.04	$1/2^+$	1268.201	$3/2^-$
4995.7 *6*	48 *7*	6247.04	$1/2^+$	1252.144	$(1/2,3/2)^-$
4998.9 *6*	25 *5*	6247.04	$1/2^+$	1247.554	$(1/2,3/2)^+$
5026.2 *6*	22 *3*	6247.04	$1/2^+$	1220.8	(1/2,3/2)
5074.42 *19*	66 *3*	6247.04	$1/2^+$	1172.635	$(1/2,3/2)^-$
5084.2 *6*	42 *7*	6247.04	$1/2^+$	1163.69?	$(1/2,3/2)^+$
5089.0 *5*	50 *7*	6247.04	$1/2^+$	1157.43	$(1/2,3/2)^-$
5122.55 *17*	82 *4*	6247.04	$1/2^+$	1124.22	$(1/2,3/2)^-$
5128.0 *3*	29 *3*	6247.04	$1/2^+$	1118.35	$5/2^+$
5144.6 *4*	35 *4*	6247.04	$1/2^+$	1102.771	$(5/2,7/2)^-$
5192.2 *2*	709 *7*	6247.04	$1/2^+$	1054.726	$(1/2,3/2)^-$
5207.3 *3*	78 *5*	6247.04	$1/2^+$	1040.47	$(1/2,3/2)^-$
5231.3 *8*	34 *9*	6247.04	$1/2^+$	1015.24	$(1/2,3/2)^+$
5256.3 *9*	20 *6*	6247.04	$1/2^+$	990.143	$3/2^{(+)}$
5285.0 *6*	23 *3*	6247.04	$1/2^+$	962.034	$(1/2,3/2)^-$
5301.9 *2*	109 *4*	6247.04	$1/2^+$	945.280	$3/2^+$
5352.6 *6*	25 *4*	6247.04	$1/2^+$	894.615	$(1/2,3/2)^+$
5361.6 *5*	51 *7*	6247.04	$1/2^+$	885.911	$(1/2,3/2)^-$
5389.7 *3*	132 *7*	6247.04	$1/2^+$	857.587	$3/2^-$
5426.4 *4*	56 *6*	6247.04	$1/2^+$	821.312	$5/2^+$
5434.4 *4*	28 *3*	6247.04	$1/2^+$	812.645	$(5/2^-,7/2^-)$
5457.0 *5*	17 *2*	6247.04	$1/2^+$	790.770	$(1/2,3/2)^+$
5464.1 *4*	29 *3*	6247.04	$1/2^+$	782.674	$3/2^+$
5517.2 *5*	22 *3*	6247.04	$1/2^+$	729.207	$(1/2^-,3/2^-)$
5537.6 *4*	65 *5*	6247.04	$1/2^+$	708.964	$3/2^+$
5562.5 *5*	38 *3*	6247.04	$1/2^+$	683.957	$(1/2,3/2)^-$
5569.7 *8*	13 *3*	6247.04	$1/2^+$	676.724	$(1/2,3/2)^+$
5582.8 *4*	43 *4*	6247.04	$1/2^+$	664.325	$(1/2,3/2)^-$
5639.2 *5*	19 *3*	6247.04	$1/2^+$	607.202	$5/2^-$
5669.0 *9*	24 *4*	6247.04	$1/2^+$	579.127	$(5/2,7/2)^-$
5696.1 *6*	16 *2*	6247.04	$1/2^+$	551.09	$(5/2^-)$
5716.0 *5*	36 *4*	6247.04	$1/2^+$	530.461	$3/2^-$
5738.6 *2*	260 *5*	6247.04	$1/2^+$	508.659	$3/2^-$
5763.9 *3*	103 *5*	6247.04	$1/2^+$	482.9358	$1/2^+$
5810.9 *3*	145 *9*	6247.04	$1/2^+$	436.2708	$1/2^-$
5833.3 *4*	36 *3*	6247.04	$1/2^+$	412.8955	$3/2^+$
5885.5 *2*	233 *5*	6247.04	$1/2^+$	361.6511	$3/2^-$
5919.1 *2*	181 *9*	6247.04	$1/2^+$	327.8535	$1/2^+$
5931.8 *2*	357 *7*	6247.04	$1/2^+$	315.1995	$1/2^-$
5943.6 *4*	36 *3*	6247.04	$1/2^+$	303.5430	$5/2^+$
6034.5 *4*	44 *3*	6247.04	$1/2^+$	212.0081	$3/2^+$
6138.0 *5*	18 *2*	6247.04	$1/2^+$	109.7564	$5/2^-$
6246.89 *7*	875 *9*	6247.04	$1/2^+$	0.0	$3/2^-$

† Energy scale of curved-crystal spectrometers based on energies of Gd $X_{K\alpha}$. Authors′ values include the nuclear recoil energy which has been removed by the evaluator.
‡ From α(K)exp and K/L and L subshell ratios (1996SpZZ).
# From 1996SpZZ, unless otherwise noted.
@ Author indicated γ only seen in ce spectrum and Iγ is computed from I(ce) and α.
& Includes contribution from ^{153}Gd(n,γ).
a Includes contribution from an unplaced component.
b Includes contribution from ^{153}Gd(n,γ).
c Assigned E1 or E2.
d Assignment is given in 1996SpZZ, but is taken from 1974Tu01, 1975Vy01, or A. Peghaire, thesis University Paris-Sud (1977).
e For intensity per 100 neutron captures, multiply by 0.001.
f Multiply placed with undivided intensity.

$^{153}_{64}Gd_{89}$-16

^{152}Gd(n,γ) E=th 1996SpZZ

Level Scheme

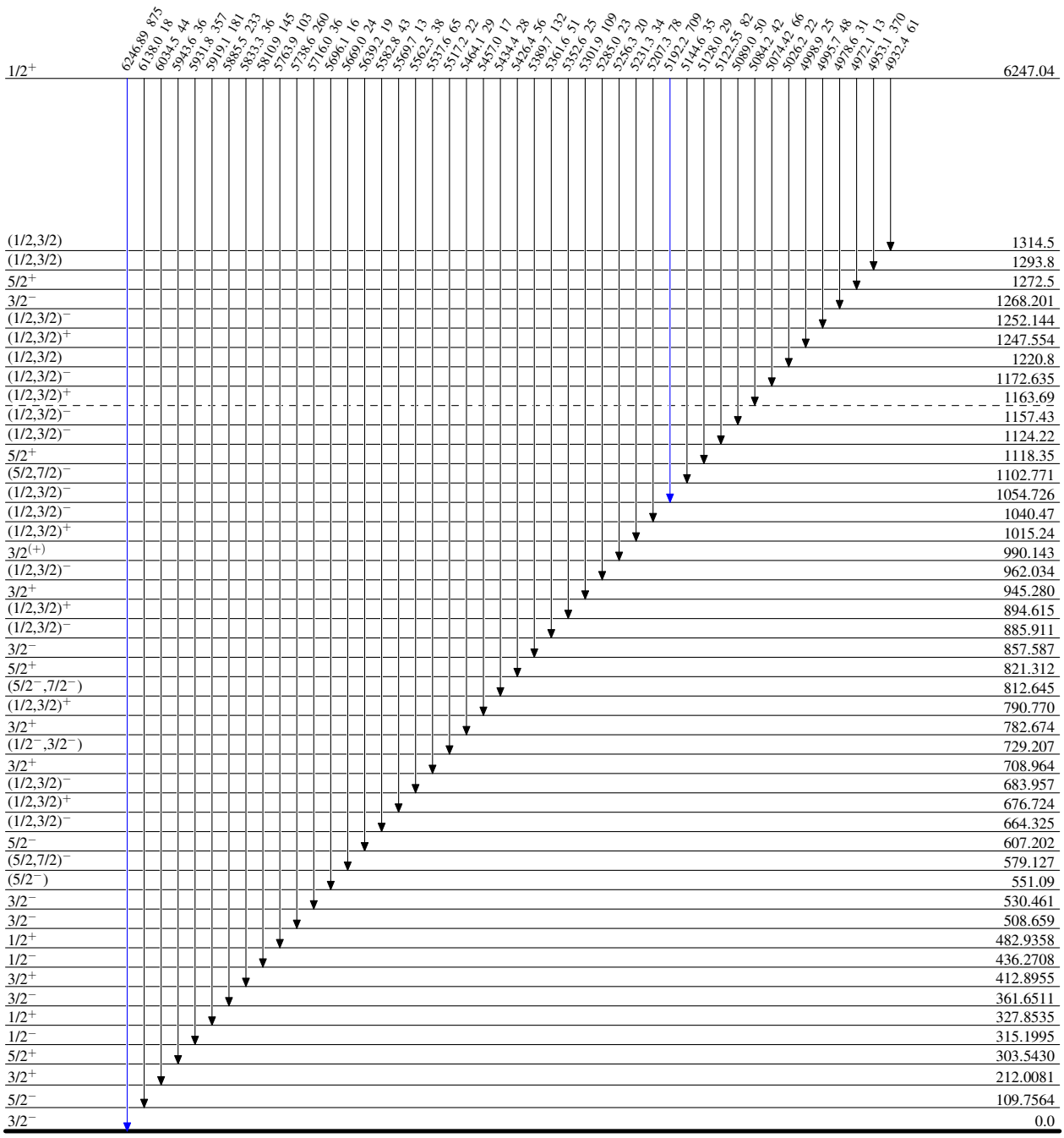
Intensities: Relative I_γ

Legend

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

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

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



$^{153}_{64}Gd_{89}$

^{152}Gd(n,γ) E=th 1996SpZZ

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given

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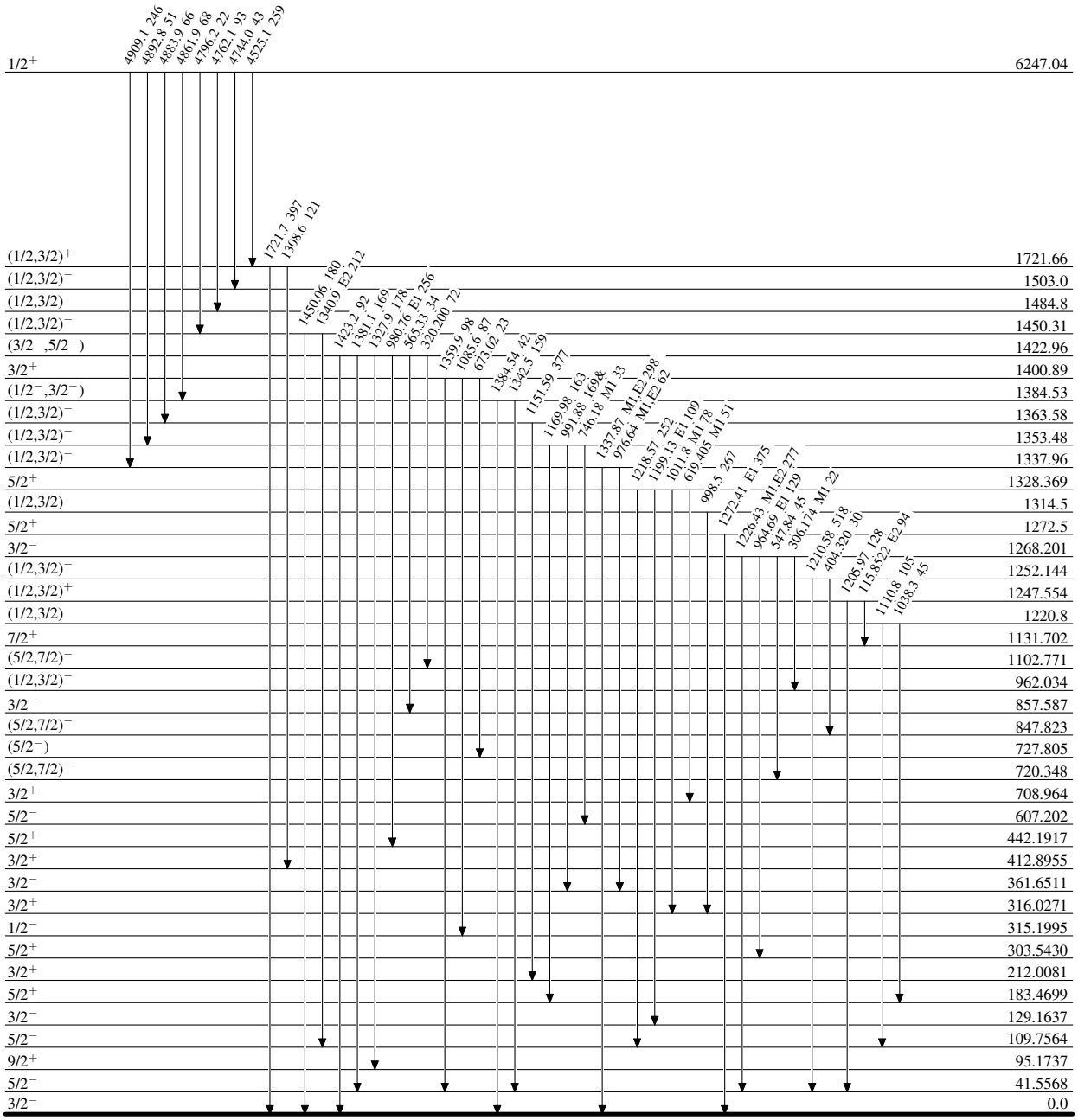


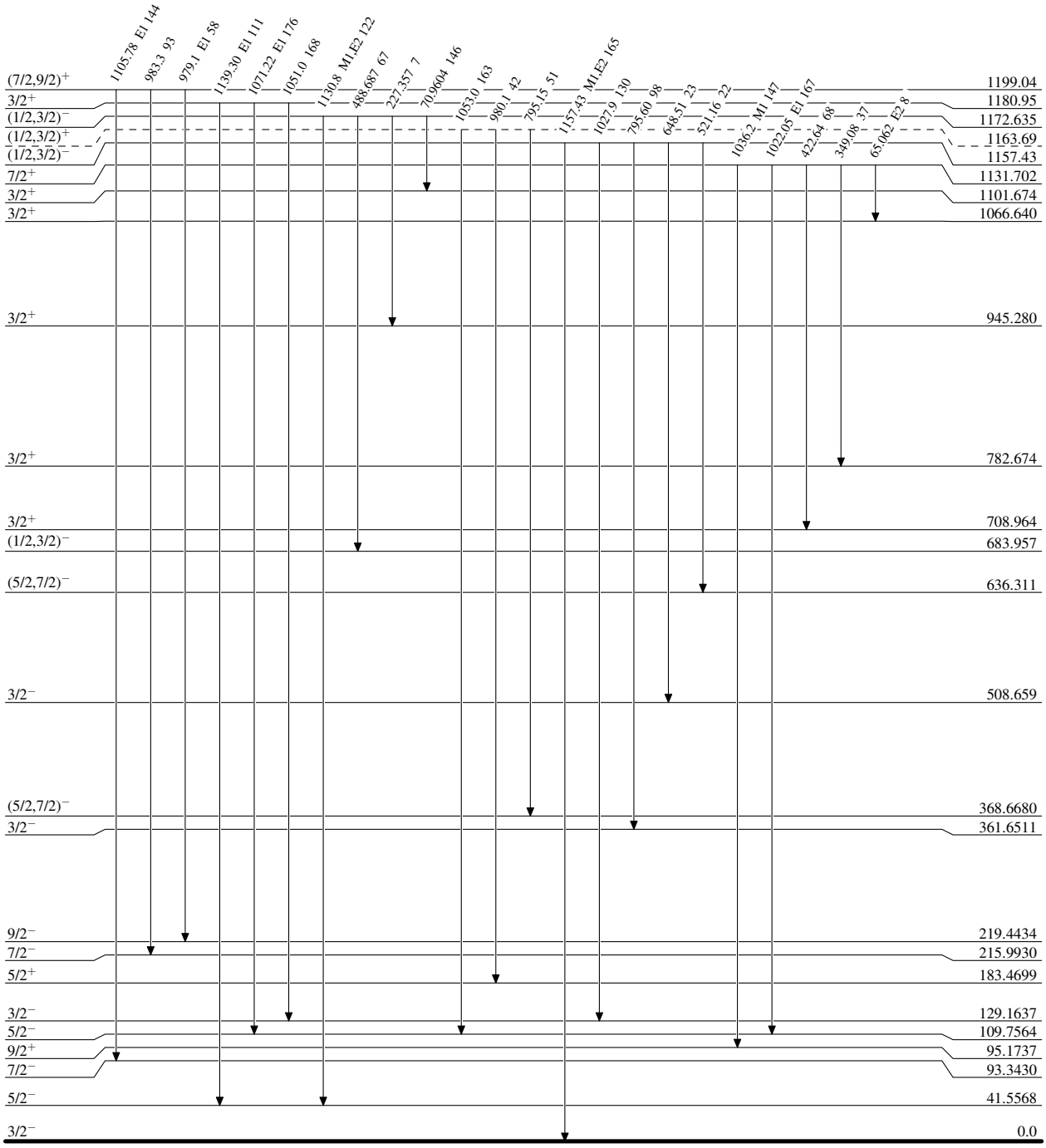
$^{153}_{64}Gd_{89}$

^{152}Gd(n,γ) E=th 1996SpZZ

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given

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



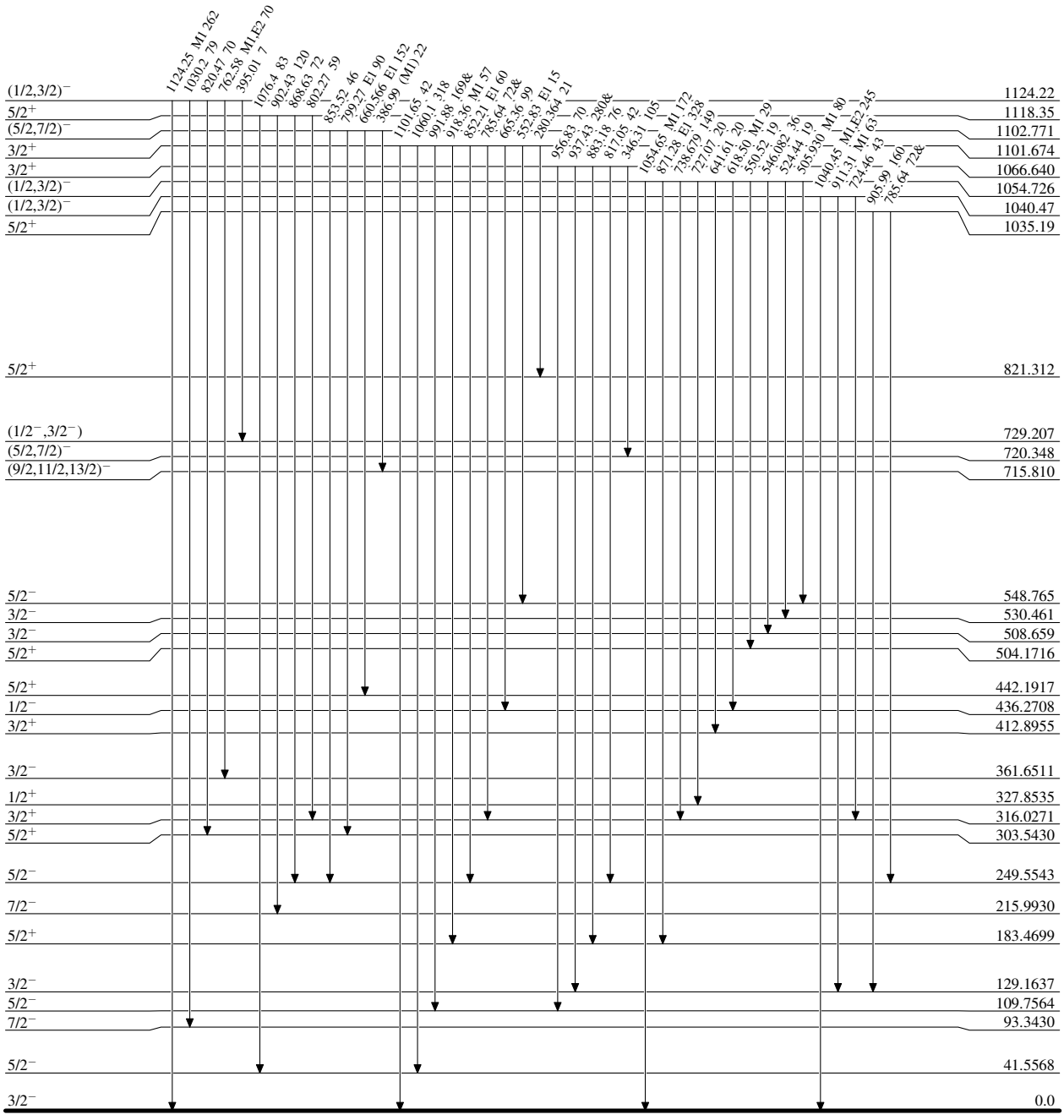
$^{153}_{64}Gd_{89}$

^{152}Gd(n,γ) E=th 1996SpZZ

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given

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



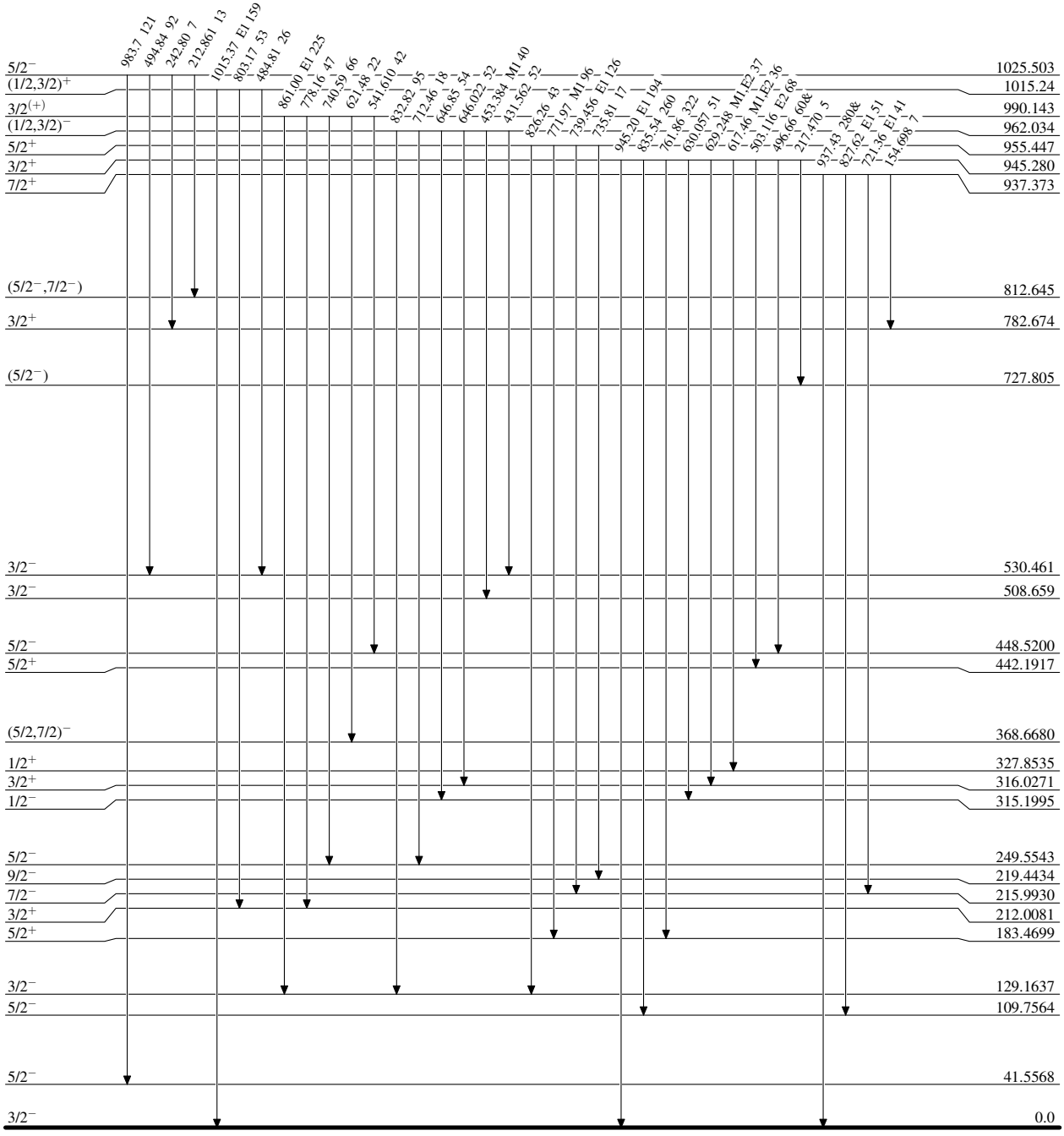
$^{153}_{64}Gd_{89}$

^{152}Gd(n,γ) E=th 1996SpZZ

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given

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



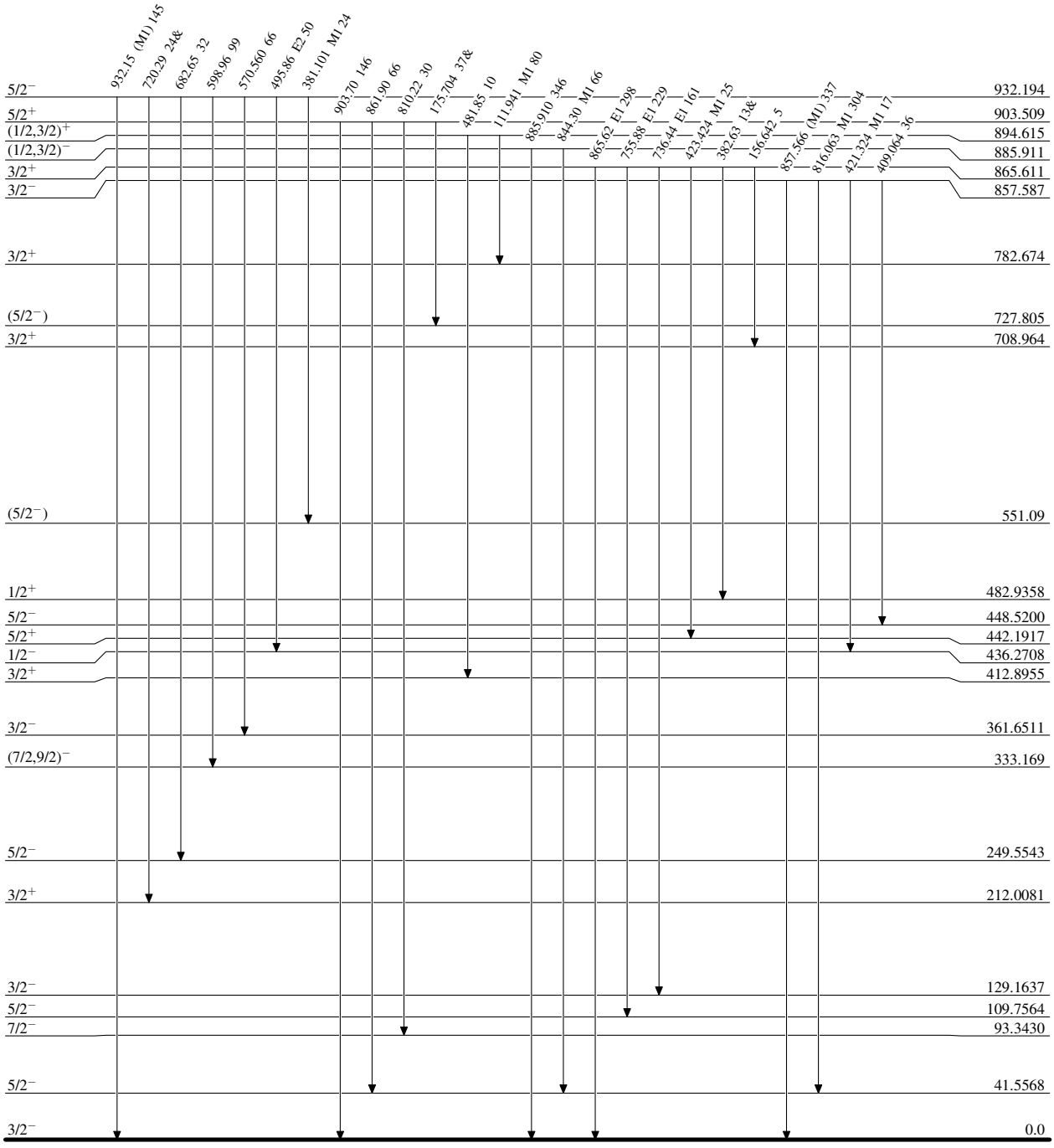
$^{153}_{64}Gd_{89}$

^{152}Gd(n,γ) E=th 1996SpZZ

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given

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



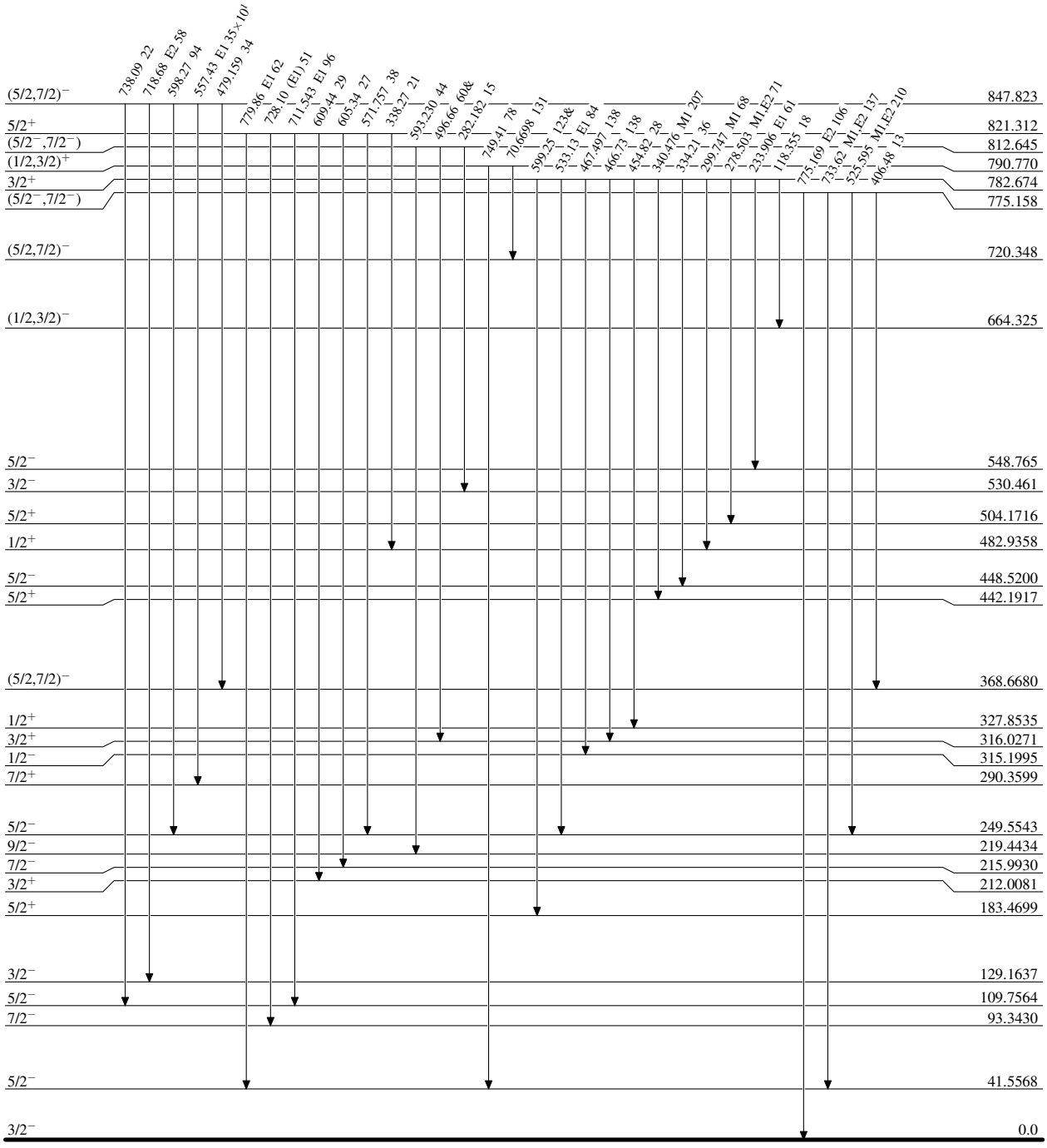
$^{153}_{64}Gd_{89}$

^{152}Gd(n,γ) E=th 1996SpZZ

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given

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



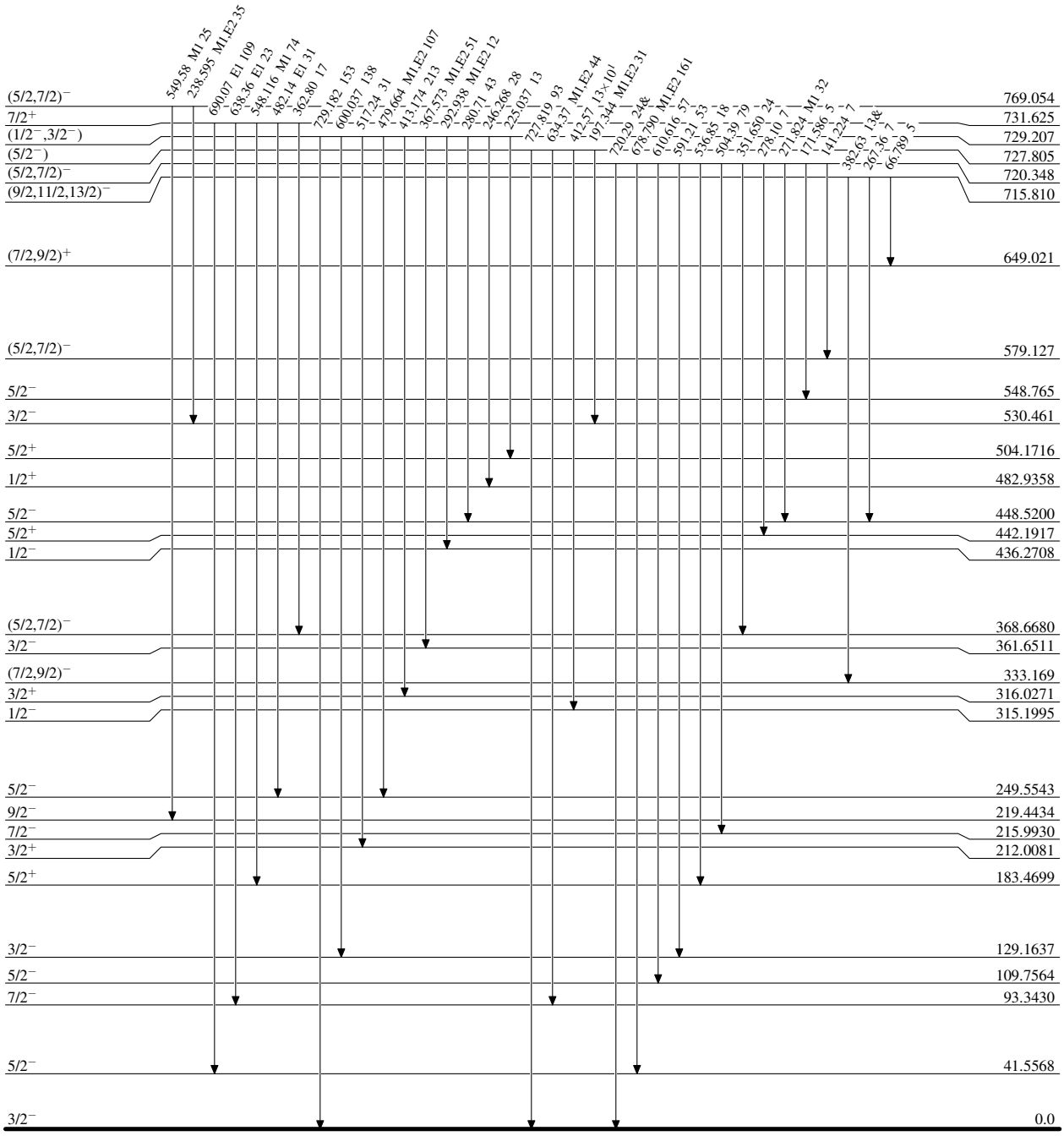
$^{153}_{64}Gd_{89}$

^{152}Gd(n,γ) E=th 1996SpZZ

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given

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



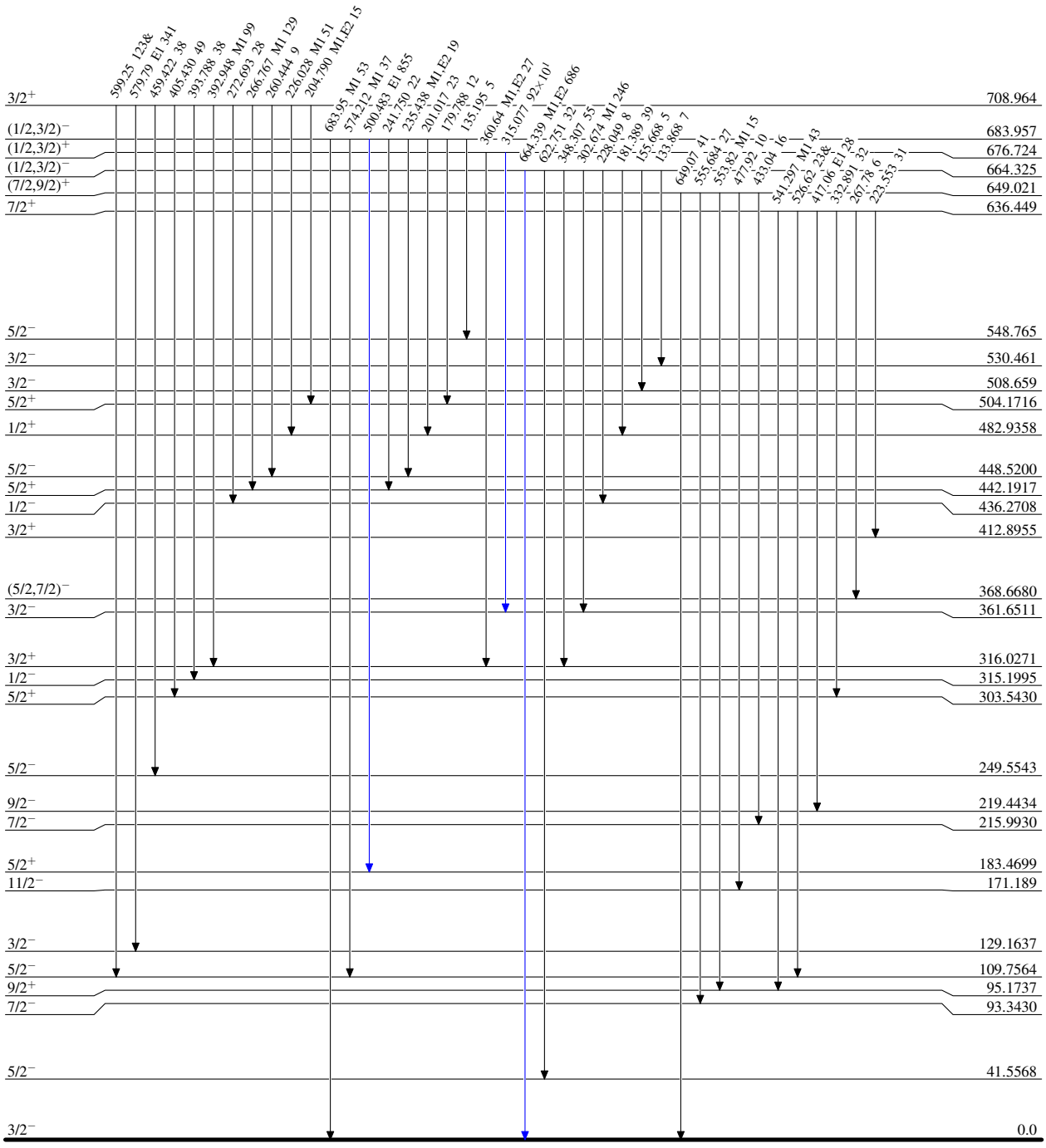
$^{153}_{64}Gd_{89}$

^{152}Gd(n,γ) E=th 1996SpZZ

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given

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



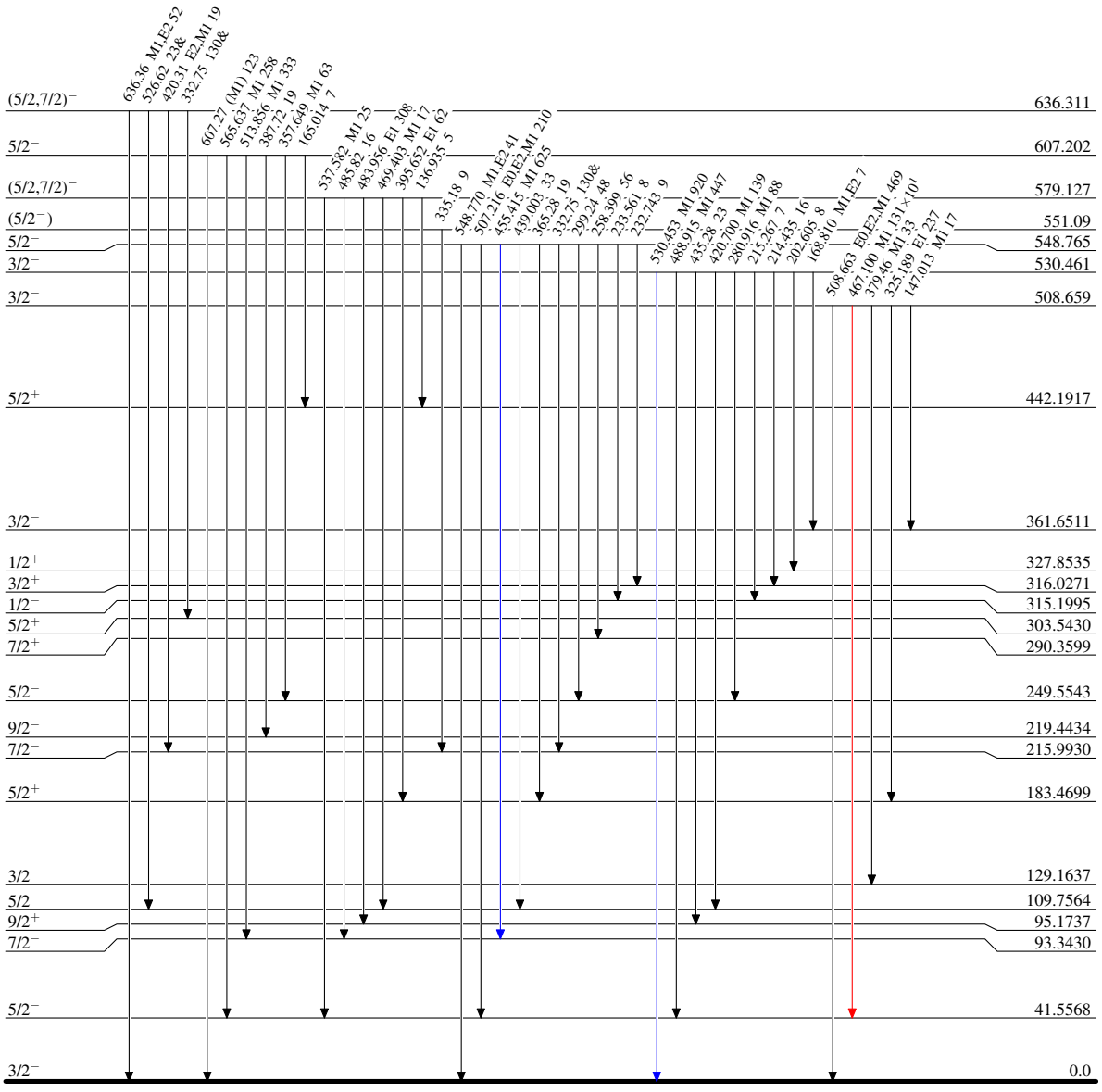
$^{153}_{64}Gd_{89}$

^{152}Gd(n,γ) E=th 1996SpZZ

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given

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



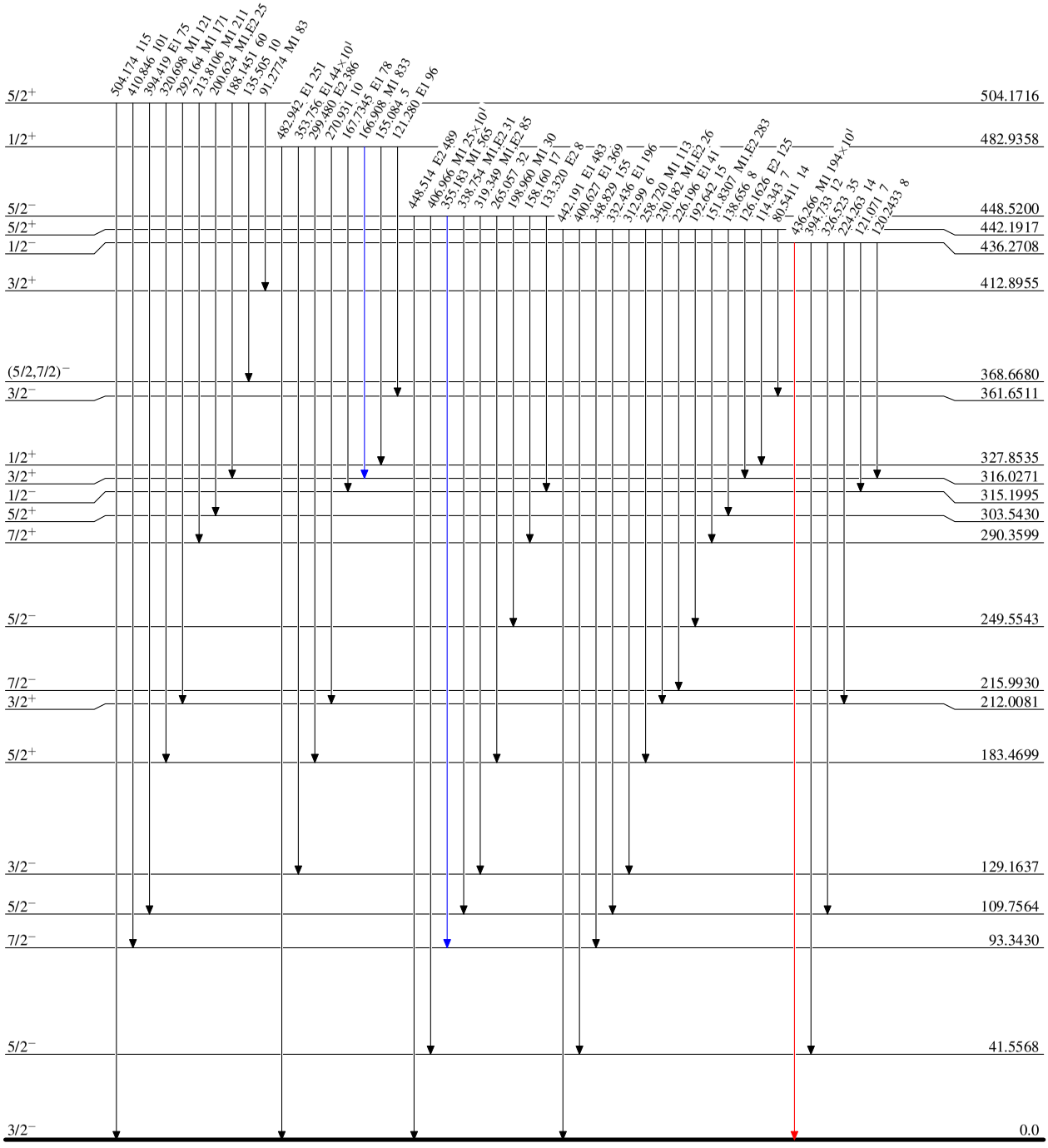
$^{153}_{64}Gd_{89}$

^{152}Gd(n,γ) E=th 1996SpZZ

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given

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



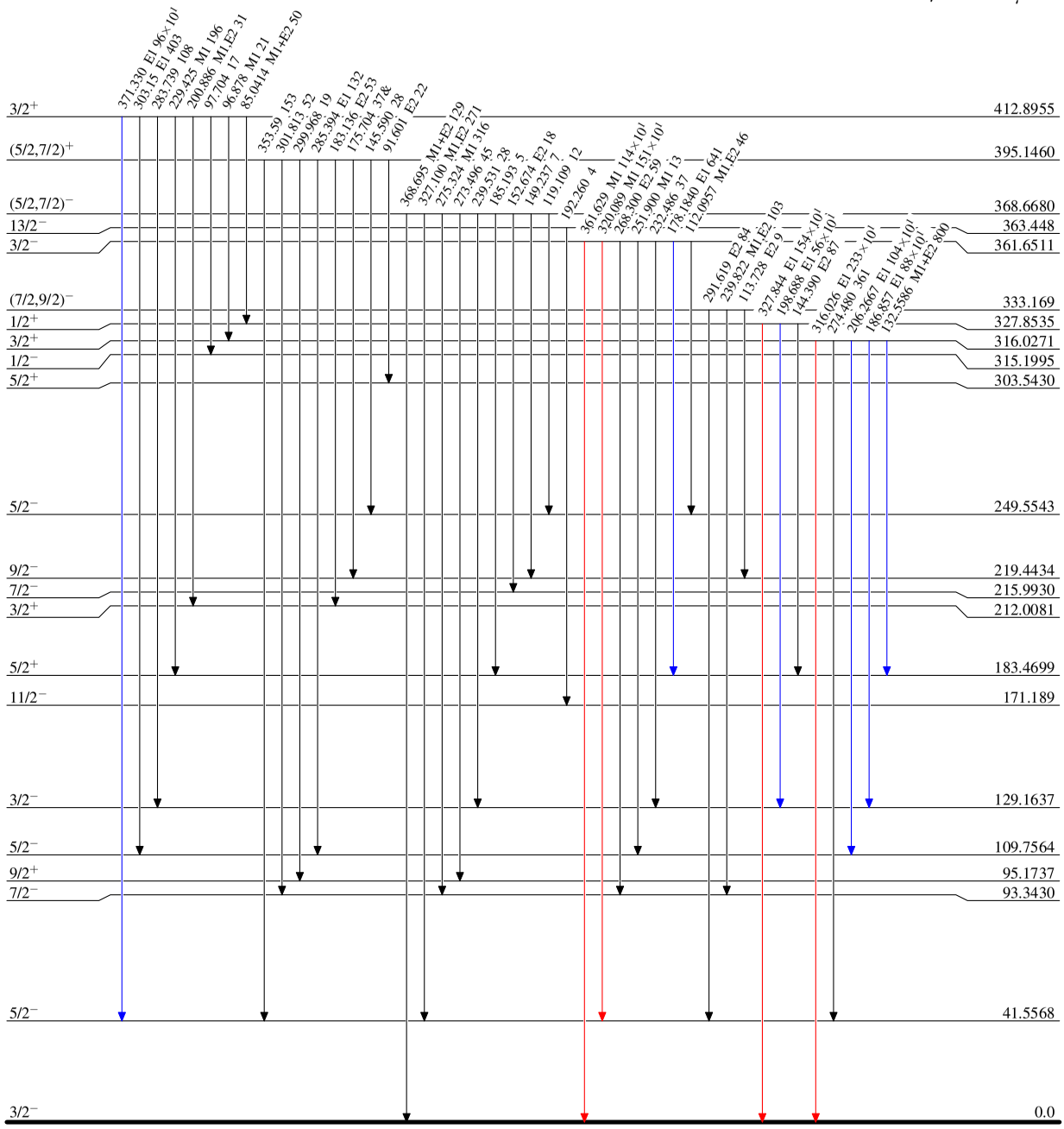
$^{153}_{64}Gd_{89}$

^{152}Gd(n,γ) E=th 1996SpZZ

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given

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



$^{153}_{64}Gd_{89}$

^{152}Gd(n,γ) E=th 1996SpZZ

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given

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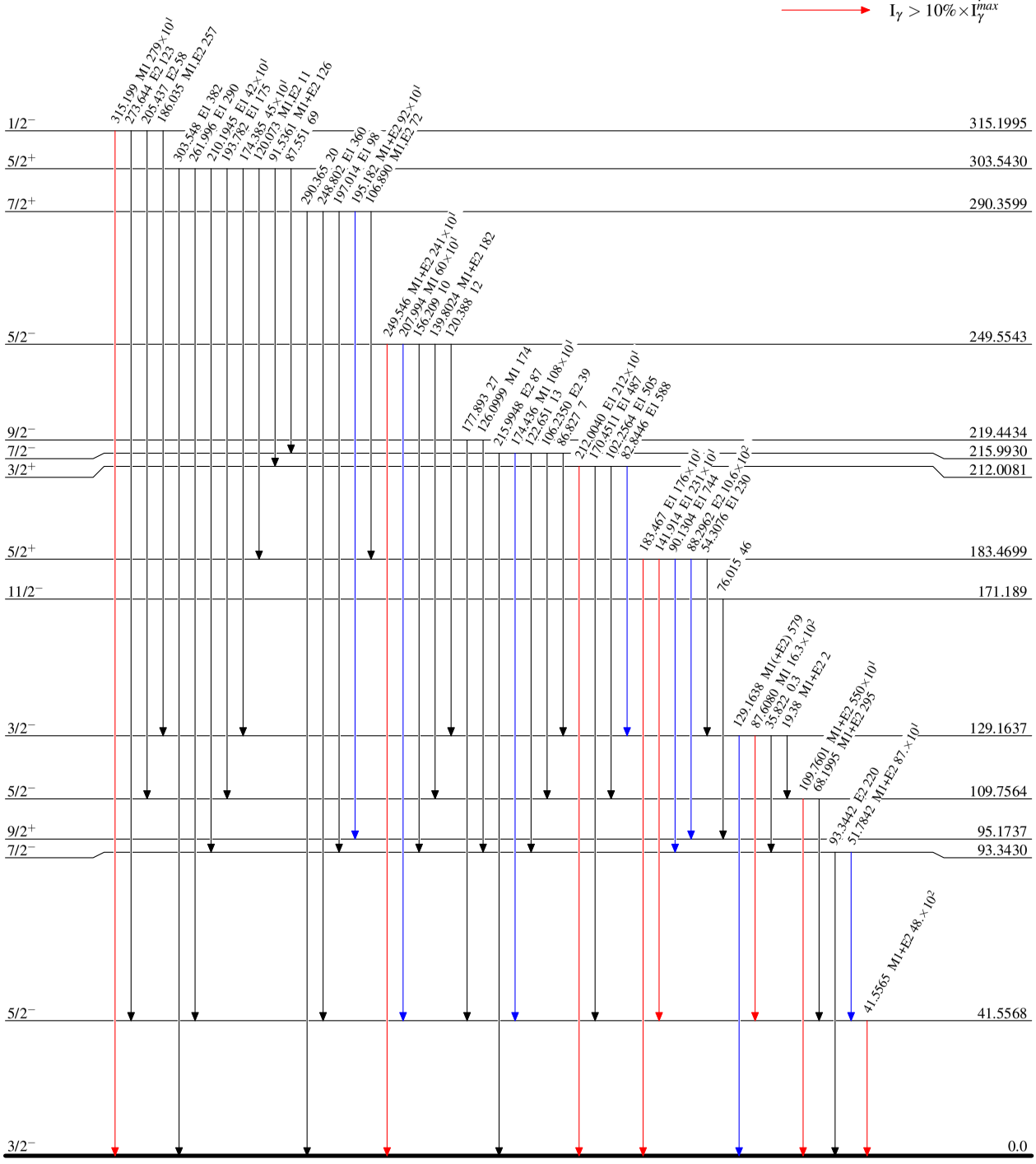
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



$^{153}_{64}Gd_{89}$