Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	S. K. Basu, A. A. Sonzogni	NDS 114, 435 (2013)	1-Apr-2013

Q(β^-)=−83 *20*; S(n)=7375.6 *19*; S(p)=9929 *10*; Q(α)=−469 *16* 2017Wa10
S(2n)=12414.4 *19*; S(2p)=17859 *10* 2017Wa10
Additional information 1.
α: Additional information 2.
α: Additional information 3.
α: Additional information 4.
α: Additional information 5.
α: Additional information 6.
α: Additional information 7.
α: Additional information 8.
α: Additional information 9.

^{150}Nd Levels

Cross Reference (XREF) Flags

A	^{148}Nd(t,p)	E	^{154}Sm(d,^{6}Li)	I	^{150}Nd(γ,γ')
B	^{150}Nd(n,n'γ)	F	^{150}Pr β^- decay (6.19 s)	J	^{150}Nd(p,p'γ)
C	^{150}Nd(d,d'γ)	G	^{150}Nd(e,e')	K	^{252}Cf SF decay
D	Coulomb excitation	H	^{150}Nd(p,p'),(d,d')		

E(level)[†]	J$^\pi$[d]	T$_{1/2}$	XREF	Comments
0[&]	0$^+$	0.91×10^{19} y *7*	ABCDEFGHIJK	%2β^-=100 T$_{1/2}$: from 2010Si06, 2009Ar10. The half-life for the decay to the first 0$^+$ state in ^{150}Sm is 1.33×10^{20} y (2009Ba21).
130.21[&] *7*	2$^+$	1.48 ns *3*	ABCDEFGHIJK	Q=−2.0 *5* (1989Ra17); μ=+0.84 *4* (2001Ho02) J$^\pi$: from Coul. ex. T$_{1/2}$: from B(E2) evaluation of 2001Ra27. μ: average value obtained by 2001Ho02.
381.10[&] *8*	4$^+$[@]	60.5[f] ps *5*	BCDEFGH JK	μ=+1.8 *3* (2001Ho02) J$^\pi$: E2 to 2$^+$ level. μ; see 2$^+$ level.
675.9[a] *3*	0$^+$	5.7[f] ps *3*	ABCDEF H J	J$^\pi$: from L=0 in (t,p).
720.16[&] *11*	6$^+$[@]	12.5[f] ps *5*	BCDE GH JK	μ=+2.1 *4* (2001Ho02)
850.75[a] *8*	2$^+$	4.5[f] ps *14*	ABCDEFG J	J$^\pi$: from Coulomb excitation and decay to 0$^+$ and 4$^+$ levels.
852.88[b] *10*	1$^-$	46 fs *+7−6*	BCD FGHIJ	J$^\pi$: decay to 0$^+$,2$^+$; L=1, natural parity in inelastic scattering, member of K=0 octupole band. T$_{1/2}$: from DSAM in (n,n'γ), other: 0.36 ps *+5−9* Coul. Ex. (2004Zi02).
934.53[b] *8*	3$^-$	82 fs *+12−10*	BCDEFGH J	J$^\pi$: $\alpha\gamma(\theta)$ in ($\alpha,\alpha'\gamma$) (1963Ha20). T$_{1/2}$: from DSAM in (n,n'γ).
1062.05[c] *8*	2$^+$	1.46[f] ps *21*	BCDEFGH J	J$^\pi$: from Coul. ex. and γ decay to 0$^+$ and 2$^+$ states.
1128.90[be] *10*	5$^-$	0.07 ps *+20−4*	BCD GH J	J$^\pi$: from comparison of expected relative cross section and intensity of 747.6-keV γ ray, and also decay to 4$^+$ and 6$^+$ levels in (d,d'γ). Systematics of N=90 nuclei support interpretation as 5$^-$ member of octupole band. T$_{1/2}$: from DSAM in (n,n'γ).
1129.6[&] *5*	8$^+$[@]	4.7[f] ps *5*	B DE JK	μ=+4.5 *10* (2001Ho02) XREF: B(1126).
1137.84[ae] *12*	4$^+$	3.3[f] ps *3*	BCDE J	J$^\pi$: from Coulomb excitation and decay to 4$^+$, 6$^+$ states.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{150}Nd Levels (continued)

E(level)[†]	Jπ[d]	$T_{1/2}$	XREF	Comments
				Interpretation as member of β band supported by systematics of N=90 nuclei.
1182.27 *18*	≤2	<0.5 ns	B FG J	XREF: G(1189). Jπ: from γ(θ) in (n,n′γ). $T_{1/2}$: from 1986Fo05 in β^- decay.
1200.55[ce] *8*	3(+)		BC F J	Jπ: from γ(θ) in (n,n′γ).
1250			G	
1265 *20*			E	
1283.68 *12*	(1⁻)	<0.5 ns	B EF H J	Jπ: (1,2) from γ(θ) in (n,n′γ). (0⁺,1⁻) in (p,p′),(d,d′). $T_{1/2}$: from 1986Fo05 in β^- decay.
1307.5	(3,4)		B G	Jπ: from γ(θ) in (n,n′γ).
1318 *2*	(1⁻)		H	
1352.5[ce] *4*	4⁺	2.0[f] ps *6*	BCDE GH J	Jπ: from γ(θ) in (n,n′γ).
1426.7	(2⁺)		B H	XREF: H(1408).
1432.8[b] *8*	(7⁻)		D J	
1435.03 *9*	2⁻	0.6 ps *+4−2*	B D FGH J	Jπ: from excitation function in (n,n′γ). $T_{1/2}$: from DSAM in (n,n′γ).
1483.58 *8*	3⁻	0.35 ps *+11−7*	B E GH J	$T_{1/2}$: from DSAM in (n,n′γ).
1488.2 *7*	0 to 2		J	
1489.9 *11*	1,2		J	
1497.0 *10*	3,(2,4,5)		J	
1517.4 *7*	4,5,6		J	
1518.5	3⁻		B GH	
1540.9[a] *10*	(6⁺)		D	
1545.17[‡] *21*	3⁻		B FGH J	XREF: G(1565).
1565.66 *10*	4⁻	0.33 ps *+28−11*	B	Jπ: from excitation function in (n,n′γ). $T_{1/2}$: from DSAM in (n,n′γ).
1579.9 *7*	3⁻		B GH J	
1598.5[&] *11*	10⁺[@]	2.59[f] ps *13*	D K	μ=+1.0 *20* (2001Ho02)
1604 *2*			E H	E(level): from (p,p′).
1645.0 *7*	5,(4)		J	
1646.6 *7*	3,5,(2,4)		J	
1648 *2*	4⁺		GH	
1648.7 *10*	1,(0,2)		J	
1687 *2*	3⁻		GH	
1714.3 *3*			F	
1738.3 *4*	0⁺		FGH J	
1754 *2*	(4⁺)		H	
1764.7 *7*	0 to 3		J	
1776.9 *12*	1 to 5		J	
1781.8 *10*	(4⁺)		H J	
1799.6 *7*	(5⁻)		GH J	
1830 *2*	(5⁻)		H	
1864.3 *7*	3⁻		GH J	XREF: G(1860).
1885 *2*	4⁺		GH	
1906.6 *10*	4⁺		GH J	
1911.5 *4*	0 to 4		F J	
1921 *2*	4⁺		H	
1967.5 *4*			F	
1975.7 *10*	1 to 5		J	
1984.5 *10*	1 to 5		J	
1988 *2*	3⁻		GH	
1994.15 *18*			F	
2009.20 *11*	(1⁻,2,3⁻)		F H	Jπ: γ decay to 1⁻,3⁻ states.
2033 *2*	4⁺		H	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{150}Nd Levels (continued)

E(level)[†]	J$^{\pi}$[d]	$T_{1/2}$	XREF	Comments
2050 *25*	(0$^+$)[#]		E	
2069.21 *12*	2$^+$		F H	XREF: H(2055).
2077 *2*	3$^-$		H	
2090 *2*	3$^-$		H	
2109 *2*	3$^-$		H	
2118.7[&] *15*	(12$^+$)[@]	1.8 ps *+2−3*	D K	
2129 *2*	4$^+$		H	
2174 *2*	4$^+$		H	
2194 *2*	2$^+$		H	
2206 *4*	4$^+$		H	
2223 *4*	2$^+$[#]		E H	E(level): from (p,p′).
2242 *4*	2$^+$		H	
2269 *1*	1	0.006 eV *3*	I	
2271? *4*	(3$^-$)		H	
2328 *4*	3$^-$		H	
2384 *4*	2$^+$		H	
2408 *1*	1	0.0017 eV *8*	I	
2412? *4*	(3$^-$)		H	
2414 *1*	1$^-$	0.026 eV *4*	I	
2441 *4*	4$^+$		H	
2458	1	0.0056 eV *11*	I	
2460 *25*	(4$^+$)[#]		E	
2475 *4*	4$^+$		H	
2496.2 *10*	(1$^-$)	0.018 eV *4*	F HI	J$^{\pi}$: (1$^-$,4$^+$) in (p,p′), γ decay.
2528 *4*	4$^+$		H	
2539.2 *10*			F	
2563 *4*	4$^+$		H	
2571 *1*	(1)	0.008 eV *3*	I	
2588 *1*	1,2$^+$	0.0015 eV *8*	I	
2596 *4*	5$^-$		H	
2620 *25*			E	
2638 *4*	4$^+$		H	
2652 *4*	4$^+$		H	
2681? *4*	4$^+$		H	
2681 *4*	1$^+$	0.012 eV *3*	I	
2681.6[&] *18*	(14$^+$)[@]		D K	
2707 *4*	4$^+$		H	
2737 *4*	4$^+$		H	
2755 *4*	4$^+$		H	
2789 *4*	4$^+$		H	
2818 *4*	3$^-$		H	
2836 *4*	3$^-$		H	
2837.2 *10*			F	
2880 *4*	3$^-$		H	
2895? *4*	4$^+$		H	
2895 *1*	1$^+$	0.017 eV *3*	I	
2920 *1*	2$^+$,1	0.0024 eV *9*	I	
2925 *4*	4$^+$		H	
2961 *4*	2$^+$		H	
2993 *4*	(1)	0.100 eV *11*	HI	J$^{\pi}$: (1$^-$,4$^+$) in (p,p′), 1$^+$ in (γ,γ′).
3039 *4*	4$^+$		H	
3058 *1*	1$^+$	0.054 eV *6*	I	
3069 *4*	3$^-$		H	
3085 *4*	4$^+$		H	
3096 *1*	1$^+$	0.027 eV *6*	I	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{150}Nd Levels (continued)

E(level)[†]	J$^{\pi}$[d]	$T_{1/2}$	XREF	Comments
3103 *1*	1^+	0.023 eV *4*	I	
3112 *4*	2^+		H	
3157 *4*	(2^+)		H	
3160 *1*	$1,2^+$	0.0023 eV *19*	I	
3180 *4*	(2^+)		H	
3186 *1*	$1,2^+$	0.0032 eV *14*	I	
3221 *4*	(2^+)	0.0075 eV *18*	HI	
3244 *1*	$2^+,1$	0.0021 eV *9*	I	
3252 *4*	4^+		H	
3279.6[&] *21*	(16^+)		K	
3301 *4*	4^+		H	
3315 *4*	3^-		H	
3327	1	0.0101 eV *22*	I	
3340? *4*	(4^+)		H	
3342 *1*	1	0.015 eV *3*	I	
3375 *1*	$1,2^+$	0.0021 eV *17*	I	
3418 *1*	1	0.028 eV *6*	I	
3423 *1*	$1,2^+$	0.008 eV *4*	I	
3553 *1*	(2^+)	0.0083 eV *22*	I	
3582 *1*	$2^+,1$	0.0045 eV *18*	I	
3590? *1*	$1,2^+$	0.004 eV *23*	I	E(level): 3590γ may be a transition from 3720 level.
3606 *1*	1	0.008 eV *3*	I	
3642 *1*	1	0.017 eV *6*	I	
3653 *1*	1	0.059 eV *12*	I	
3672 *1*	1	0.019 eV *5*	I	
3698 *1*	$2^+,1$	0.0030 eV *13*	I	
3706 *1*	1	0.043 eV *15*	I	
3711 *1*	1	0.033 eV *8*	I	
3720 *1*	1	0.025 eV *10*	I	
3737 *1*	$2^+,1$	0.0023 eV *14*	I	
3751 *1*	1	0.042 eV *9*	I	
3768 *1*	1	0.009 eV *3*	I	
3860? *1*	1	0.007 eV *3*	I	
3888 *1*	$1,2^+$	0.0056 eV *23*	I	

[†] Deduced from Eγ if levels connected by γ, others from populating reaction.
[‡] From (n,n$'\gamma$).
[#] From $\sigma(\theta)$, relative strengths within bands, and energy spacings compared to g.s. band in ^{150}Sm(d,^{6}Li).
[@] Level is Coulomb excited and is member of g.s. rotational band.
[&] Band(A): g.s. rotational band.
[a] Band(B): K=0 β band.
[b] Band(C): K=0 octupole band.
[c] Band(D): γ-vibrational band.
[d] Unless specific arguments are given, J^{π} are from L-value in inelastic scattering. Natural parity is expected. For levels seen only in (γ,γ'), J^{π} are based upon $\gamma(\theta)$ and linear polarization measurements.
[e] From (d,d$'\gamma$) (1980Ka24).
[f] From Coulomb excitation.

Adopted Levels, Gammas (continued)

$\gamma(^{150}Nd)$

E_i(level)	J_i^π	E_γ †	I_γ	E_f	J_f^π	Mult.	α	Comments
130.21	2^+	130.22 *9*	100	0	0^+	[E2]	0.857	α(K)=0.552 *8*; α(L)=0.238 *4*; α(M)=0.0538 *8*; α(N)=0.01166 *17*; α(O)=0.001532 *22* α(P)=2.55×10^{-5} *4*; α(N+..)=0.01322 *19* B(E2)(W.u.)=116 *3*
381.10	4^+	251.24 *9*	100	130.21	2^+	[E2]	0.0922	α(K)=0.0712 *10*; α(L)=0.01646 *24*; α(M)=0.00363 *6*; α(N)=0.000795 *12* α(O)=0.0001102 *16*; α(P)=3.79×10^{-6} *6*; α(N+..)=0.000909 *13* B(E2)(W.u.)=180.7 *16*
675.9	0^+	545.4 *4*	100	130.21	2^+	[E2]	0.00935 *14*	α(K)=0.00778 *11*; α(L)=0.001235 *18*; α(M)=0.000265 *4*; α(N)=5.89×10^{-5} *9*; α(O)=8.63×10^{-6} *13* α(P)=4.59×10^{-7} *7*; α(N+..)=6.77×10^{-5} *10* B(E2)(W.u.)=43.1 *23* B(E2)(W.u.): From B(E2) (2 to 0)=0.0428 *19* in Coul
720.16	6^+	339.1 *5*	100	381.10	4^+	[E2]	0.0359	α(K)=0.0288 *5*; α(L)=0.00557 *9*; α(M)=0.001214 *19*; α(N)=0.000268 *4*; α(O)=3.80×10^{-5} *6* α(P)=1.612×10^{-6} *24*; α(N+..)=0.000307 *5* B(E2)(W.u.)=206 *9*
850.75	2^+	174.3 *5*	1.4 *10*	675.9	0^+	[E2]	0.312 *6*	α(K)=0.223 *4*; α(L)=0.0695 *13*; α(M)=0.0155 *3*; α(N)=0.00339 *7*; α(O)=0.000455 *9* α(P)=1.102×10^{-5} *18*; α(N+..)=0.00385 *7* B(E2)(W.u.)=1.6×10^2 *13*
		469.18 *19*	23.2 *8*	381.10	4^+	[E2]	0.01400	α(K)=0.01154 *17*; α(L)=0.00193 *3*; α(M)=0.000417 *6*; α(N)=9.23×10^{-5} *13*; α(O)=1.342×10^{-5} *19* α(P)=6.73×10^{-7} *10*; α(N+..)=0.0001064 *15* B(E2)(W.u.)=19 *7* B(E2)(W.u.): From B(E2)↑ (from 381.5-keV (4^+) level)=0.052 *15*.
		720.50 *19*	100	130.21	2^+	[E2]	0.00467 *7*	α(K)=0.00394 *6*; α(L)=0.000578 *9*; α(M)=0.0001234 *18*; α(N)=2.75×10^{-5} *4*; α(O)=4.08×10^{-6} *6* α(P)=2.36×10^{-7} *4*; α(N+..)=3.18×10^{-5} *5* B(E2)(W.u.)=10 *3* B(E2)(W.u.): From B(E2)↑ (from 130-keV (2^+) level).
		850.9 *4*	16 *9*	0	0^+	[E2]	0.00319 *5*	α(K)=0.00270 *4*; α(L)=0.000383 *6*; α(M)=8.13×10^{-5} *12*; α(N)=1.81×10^{-5} *3*; α(O)=2.71×10^{-6} *4* α(P)=1.631×10^{-7} *23*; α(N+..)=2.10×10^{-5} *3* B(E2)(W.u.)=0.7 *5* B(E2)(W.u.): From B(E2)↑ and adopted branching ratio.
852.88	1^-	722.75 *15*	100 *6*	130.21	2^+	[E1]	0.001771 *25*	α=0.001771 *25*; α(K)=0.001524 *22*; α(L)=0.000195 *3*; α(M)=4.10×10^{-5} *6* α(O)=1.388×10^{-6} *20*; α(P)=8.96×10^{-8} *13*; α(N+..)=1.064×10^{-5} *1* B(E1)(W.u.)=0.0074 *+12−13*
		852.91 *15*	87 *6*	0	0^+	[E1]	0.001269 *18*	α=0.001269 *18*; α(K)=0.001093 *16*; α(L)=0.0001392 *20*; α(M)=2.92×10^{-5} *4* α(O)=9.91×10^{-7} *14*; α(P)=6.45×10^{-8} *9*; α(N+..)=7.59×10^{-6} B(E1)(W.u.)=0.0039 *+6−7*

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{150}Nd)$ (continued)

E_i(level)	J_i^π	E_γ †	I_γ	E_f	J_f^π	Mult.	δ	α	Comments
934.53	3^-	553.24 *5*	34.8 *18*	381.10	4^+	[E1]		0.00314 *5*	α(K)=0.00269 *4*; α(L)=0.000349 *5*; α(M)=7.35×10^{-5} *11*; α(N)=1.640×10^{-5} *23*; α(O)=2.47×10^{-6} *4* α(P)=1.571×10^{-7} *22*; α(N+..)=1.90×10^{-5} *3* B(E1)(W.u.)=0.0045 *+6−7*
		804.47 *5*	100 *4*	130.21	2^+	[E1]		0.001425 *20*	α=0.001425 *20*; α(K)=0.001227 *18*; α(L)=0.0001566 *22*; α(M)=3.29×10^{-5} *5* α(O)=1.114×10^{-6} *16*; α(P)=7.23×10^{-8} *11*; α(N+..)=8.53×10^{-6} B(E1)(W.u.)=0.0042 *+6−7*
1062.05	2^+	680.30 *21*	6 *4*	381.10	4^+	[E2]		0.00536 *9*	α(K)=0.00451 *8*; α(L)=0.000672 *11*; α(M)=0.0001434 *24*; α(N)=3.19×10^{-5} *6*; α(O)=4.73×10^{-6} *8* α(P)=2.70×10^{-7} *5*; α(N+..)=3.69×10^{-5} *6* B(E2)(W.u.)=1.7 *12*
		931.91 *15*	95 *16*	130.21	2^+	[M1+E2]	>1.5	0.00282 *22*	α(K)=0.00240 *19*; α(L)=0.000330 *22*; α(M)=7.0×10^{-5} *5*; α(N)=1.56×10^{-5} *11*; α(O)=2.35×10^{-6} *17* α(P)=1.47×10^{-7} *13*; α(N+..)=1.81×10^{-5} *13* B(E2)(W.u.)>2.9; B(M1)(W.u.)<0.0033 δ: from the adopted $T_{1/2}$(1062) and branching(932) and the measured B(E2)(932).
		1061.96 *15*	100 *4*	0	0^+	[E2]		0.00197 *3*	α(K)=0.001684 *24*; α(L)=0.000229 *4*; α(M)=4.86×10^{-5} *7*; α(N)=1.084×10^{-5} *16* α(O)=1.634×10^{-6} *23*; α(P)=1.020×10^{-7} *15*; α(N+..)=1.258×10^{-5} *18* B(E2)(W.u.)=3.0 *6* B(E2)(W.u.) from B(E2)↑ in Coulomb excitation.
1128.90	5^-	408.73 *6*	15.9 *20*	720.16	6^+	[E1]		0.00631 *9*	α(K)=0.00541 *8*; α(L)=0.000710 *10*; α(M)=0.0001496 *21*; α(N)=3.33×10^{-5} *5*; α(O)=5.01×10^{-6} *7* α(P)=3.11×10^{-7} *5*; α(N+..)=3.86×10^{-5} *6* B(E1)(W.u.)=0.007 *+9−5*
		747.80 *6*	100.0 *33*	381.10	4^+	[E1]		0.001652 *24*	α=0.001652 *24*; α(K)=0.001422 *20*; α(L)=0.000182 *3*; α(M)=3.82×10^{-5} *6* α(O)=1.293×10^{-6} *19*; α(P)=8.36×10^{-8} *12*; α(N+..)=9.91×10^{-6} *14* B(E1)(W.u.)=0.007 *+9−5*
1129.6	8^+	409.5 *5*	100	720.16	6^+	[E2]		0.0205	α(K)=0.01677 *25*; α(L)=0.00297 *5*;

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{150}Nd)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ	E_f	J_f^π	Mult.	α	Comments
								α(M)=0.000643 *10*; α(N)=0.0001420 *21* α(O)=2.04×10^{-5} *3*; α(P)=9.63×10^{-7} *14*; α(N+..)=0.0001634 *24* B(E2)(W.u.)=216 *23*
1137.84	4$^+$	203.2		934.53	3$^-$			
		287.3	1.3 *4*	850.75	2$^+$	[E2]	0.0600	α(K)=0.0472 *7*; α(L)=0.01002 *14*; α(M)=0.00220 *3*; α(N)=0.000483 *7*; α(O)=6.77×10^{-5} *10* α(P)=2.58×10^{-6} *4*; α(N+..)=0.000553 *8* B(E2)(W.u.)=23 *8*
		417.4[#]	3.4 *6*	720.16	6$^+$	[E2]	0.0194	α(K)=0.01590 *23*; α(L)=0.00279 *4*; α(M)=0.000604 *9*; α(N)=0.0001335 *19*; α(O)=1.92×10^{-5} *3* α(P)=9.15×10^{-7} *13*; α(N+..)=0.0001537 *22* B(E2)(W.u.)=9.2 *22* I$_\gamma$: 44 *8* in (p,p′γ).
		756.3	100 *14*	381.10	4$^+$	[M1+E2]	0.0054 *13*	α(K)=0.0046 *11*; α(L)=0.00063 *12*; α(M)=0.000133 *25*; α(N)=3.0×10^{-5} *6*; α(O)=4.5×10^{-6} *9* α(P)=2.8×10^{-7} *8*; α(N+..)=3.4×10^{-5} *7*
		1007.6	0.46 *8*	130.21	2$^+$	[E2]	0.00221 *3*	α(K)=0.00188 *3*; α(L)=0.000258 *4*; α(M)=5.47×10^{-5} *8*; α(N)=1.220×10^{-5} *17*; α(O)=1.84×10^{-6} *3* α(P)=1.137×10^{-7} *16*; α(N+..)=1.415×10^{-5} *20* B(E2)(W.u.)=0.015 *4*
1182.27	≤2	248.34	100[‡] *14*	934.53	3$^-$			
		329.37 *15*	66[‡] *10*	852.88	1$^-$			
1200.55	3$^{(+)}$	819.10 *20*	21 *5*	381.10	4$^+$			
		1070.30 *20*	100 *10*	130.21	2$^+$			
1283.68	(1$^-$)	349.02 *15*	71 *5*	934.53	3$^-$			
		431.00 *15*	100 *5*	852.88	1$^-$			
		432.79 *20*	50 *5*	850.75	2$^+$			
1352.5	4$^+$	289.57	6.4[‡] *10*	1062.05	2$^+$	[E2]	0.0585	α(K)=0.0461 *7*; α(L)=0.00974 *14*; α(M)=0.00214 *3*; α(N)=0.000469 *7*; α(O)=6.58×10^{-5} *10* α(P)=2.52×10^{-6} *4*; α(N+..)=0.000537 *8* B(E2)(W.u.)=1.3×10^2 *5*
		633.0		720.16	6$^+$			
		972.0[#]	100[‡] *11*	381.10	4$^+$	[M1+E2]	0.0030 *7*	α(K)=0.0026 *6*; α(L)=0.00034 *7*; α(M)=7.2×10^{-5} *14*; α(N)=1.6×10^{-5} *3*; α(O)=2.5×10^{-6} *5* α(P)=1.6×10^{-7} *4*; α(N+..)=1.9×10^{-5} *4*
		1223.2[#]	39[‡] *5*	130.21	2$^+$	[E2]	0.001486 *21*	α=0.001486 *21*; α(K)=0.001263 *18*; α(L)=0.0001688 *24*; α(M)=3.57×10^{-5} *5* α(O)=1.205×10^{-6} *17*; α(P)=7.66×10^{-8} *11*; α(N+..)=1.80×10^{-5} B(E2)(W.u.)=0.58 *20*
1432.8	(7$^-$)	303.33	50[‡] *14*	1129.6	8$^+$			
		712.44	100[‡] *22*	720.16	6$^+$			

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{150}Nd)$ (continued)

E_i(level)	J_i^π	E_γ †	I_γ	E_f	J_f^π	Mult.	α	Comments
1435.03	2−	234.46 *5*	12.0 *8*	1200.55	3(+)	[E1]	0.0257	α(K)=0.0220 *3*; α(L)=0.00296 *5*; α(M)=0.000623 *9*; α(N)=0.0001384 *20*; α(O)=2.05×10^{-5} *3* α(P)=1.211×10^{-6} *17*; α(N+..)=0.0001602 *23* B(E1)(W.u.)=0.0031 *+15−12*
		373.05 *10*	100 *3*	1062.05	2+	[E1]	0.00787 *11*	α(K)=0.00674 *10*; α(L)=0.000889 *13*; α(M)=0.000187 *3*; α(N)=4.17×10^{-5} *6*; α(O)=6.25×10^{-6} *9* α(P)=3.86×10^{-7} *6*; α(N+..)=4.83×10^{-5} *7* B(E1)(W.u.)=0.006 *3*
		582	<1	852.88	1−			
		584.27 *6*	2.9 *6*	850.75	2+	[E1]	0.00278 *4*	α(K)=0.00239 *4*; α(L)=0.000309 *5*; α(M)=6.50×10^{-5} *10*; α(N)=1.451×10^{-5} *21*; α(O)=2.19×10^{-6} *3* α(P)=1.397×10^{-7} *20*; α(N+..)=1.684×10^{-5} *24* B(E1)(W.u.)=4.9×10^{-5} *+24−20*
		1305	<1	130.21	2+			
1483.58	3−	283.03 *5*	26.4 *16*	1200.55	3(+)	[E1]	0.01573	α(K)=0.01346 *19*; α(L)=0.00180 *3*; α(M)=0.000379 *6*; α(N)=8.42×10^{-5} *12*; α(O)=1.255×10^{-5} *18* α(P)=7.55×10^{-7} *11*; α(N+..)=9.75×10^{-5} *14* B(E1)(W.u.)=0.0026 *+7−6*
		345.74 *9*	6.8 *13*	1137.84	4+	[E1]	0.00949 *14*	α(K)=0.00813 *12*; α(L)=0.001075 *15*; α(M)=0.000226 *4*; α(N)=5.04×10^{-5} *7*; α(O)=7.55×10^{-6} *11* α(P)=4.62×10^{-7} *7*; α(N+..)=5.84×10^{-5} *9* B(E1)(W.u.)=3.7×10^{-4} *9*
		421.49 *5*	67 *3*	1062.05	2+	[E1]	0.00586 *9*	α(K)=0.00503 *7*; α(L)=0.000659 *10*; α(M)=0.0001388 *20*; α(N)=3.09×10^{-5} *5*; α(O)=4.65×10^{-6} *7* α(P)=2.90×10^{-7} *4*; α(N+..)=3.59×10^{-5} *5* B(E1)(W.u.)=0.0020 *5*
		632.77 *6*	9.0 *10*	850.75	2+	[E1]	0.00234 *4*	α(K)=0.00201 *3*; α(L)=0.000259 *4*; α(M)=5.45×10^{-5} *8*; α(N)=1.218×10^{-5} *17*; α(O)=1.84×10^{-6} *3* α(P)=1.179×10^{-7} *17*; α(N+..)=1.413×10^{-5} *20* B(E1)(W.u.)=8.1×10^{-5} *+20−19*
		1102.83 *5*	100 *4*	381.10	4+	[E1]	0.000782 *11*	α=0.000782 *11*; α(K)=0.000672 *10*; α(L)=8.48×10^{-5} *12*; α(M)=1.779×10^{-5} *25* α(O)=6.05×10^{-7} *9*; α(P)=3.98×10^{-8} *6*; α(N+..)=7.12×10^{-6} B(E1)(W.u.)=1.7×10^{-4} *4*
		1353.10 *5*	87 *4*	130.21	2+	[E1]	0.000650 *9*	α=0.000650 *9*; α(K)=0.000467 *7*; α(L)=5.85×10^{-5} *9*; α(M)=1.227×10^{-5} *18*; α(N)=2.74×10^{-6} *4* α(O)=4.18×10^{-7} *6*; α(P)=2.77×10^{-8} *4*; α(N+..)=0.0001116 *1* B(E1)(W.u.)=8.0×10^{-5} *+20−19*
1488.2	0 to 2	204.15	31 *7*	1283.68	(1−)			

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{150}Nd)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ	E_f	J_f^π	Mult.	α	Comments
1488.2	0 to 2	1358.31	100 *16*	130.21	2^+			
1489.9	1,2	813.92	100	675.9	0^+			
1497.0	3,(2,4,5)	359.16	100	1137.84	4^+			
1517.4	4,5,6	797.21	69 *15*	720.16	6^+			
		1136.29	100 *16*	381.10	4^+			
1540.9	(6^+)	1159.8		381.10	4^+			
1545.17	3^-	694.05	25[‡] *7*	850.75	2^+			
		1414.97 *20*	100[‡] *15*	130.21	2^+			
1565.66	4^-	214	≤9	1352.5	4^+			
		365.11 *5*	100	1200.55	$3^{(+)}$	[E1]	0.00829 *12*	α(K)=0.00711 *10*; α(L)=0.000938 *14*; α(M)=0.000198 *3*; α(N)=4.40×10^{-5} *7*; α(O)=6.59×10^{-6} *10* α(P)=4.06×10^{-7} *6*; α(N+..)=5.10×10^{-5} *8* B(E1)(W.u.)=0.013 *+7−6*
		1184	≤2	381.10	4^+			
1579.9	3^-	1198.5	100 *12*	381.10	4^+			
		1450.05	68 *9*	130.21	2^+			
1598.5	10^+	468.9	100	1129.6	8^+	[E2]	0.01402	α(K)=0.01156 *17*; α(L)=0.00194 *3*; α(M)=0.000418 *6*; α(N)=9.25×10^{-5} *13*; α(O)=1.344×10^{-5} *19* α(P)=6.74×10^{-7} *10*; α(N+..)=0.0001066 *15* B(E2)(W.u.)=201 *11* E_γ: average of 469 (Coulomb Excitation) 468.8 (^{252}Cf SF decay).
1645.0	5,(4)	924.82	57 *9*	720.16	6^+			
		1264.01	100 *14*	381.10	4^+			
1646.6	3,5,(2,4)	294.29	100 *16*	1352.5	4^+			
		508.50	35 *9*	1137.84	4^+			
1648.7	1,(0,2)	1518.45	100	130.21	2^+			
1714.3		1584.1 *3*	100 *20*	130.21	2^+			
1738.3	0^+	1608.1 *4*	100	130.21	2^+			
1764.7	0 to 3	480.75	42 *9*	1283.68	(1^-)			
		912.16	100 *14*	852.88	1^-			
1776.9	1 to 5	196.98	100	1579.9	3^-			
1781.8	(4^+)	847.25	100	934.53	3^-			
1799.6	(5^-)	864.22	100 *19*	934.53	3^-			
		1080.23	15 *7*	720.16	6^+			
1864.3	3^-	1014.08	100 *13*	850.75	2^+			
		1482.75	81 *11*	381.10	4^+			
1906.6	4^+	844.53	100	1062.05	2^+			
1911.5	0 to 4	1781.3 *4*	100 *33*	130.21	2^+			
1967.5		1837.3 *4*	100 *29*	130.21	2^+			
1975.7	1 to 5	775.13	100	1200.55	$3^{(+)}$			
1984.5	1 to 5	1049.98	100	934.53	3^-			
1994.15		1141.26 *15*	100 *5*	852.88	1^-			
2009.20	$(1^-,2,3^-)$	947.30 *15*	57 *3*	1062.05	2^+			
		1074.52 *15*	100 *6*	934.53	3^-			
		1156.1 *3*	25 *4*	852.88	1^-			
		1158.56 *20*	60 *4*	850.75	2^+			
		1878.9 *3*	9.7 *14*	130.21	2^+			
2069.21	2^+	634.1 *9*	22	1435.03	2^-			
		1007.16 *15*	84 *5*	1062.05	2^+			
		1216.27 *20*	100 *5*	852.88	1^-			
		1218.48 *20*	50 *5*	850.75	2^+			

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{150}Nd)$ (continued)

E_i(level)	J_i^π	E_γ †	I_γ	E_f	J_f^π	Mult.	α	Comments
2069.21	2^+	1939.0 *3*	27 *3*	130.21	2^+			
2118.7	(12^+)	520.2		1598.5	10^+	[E2]	0.01059	α(K)=0.00879 *13*; α(L)=0.001418 *20*; α(M)=0.000305 *5*; α(N)=6.76×10^{-5} *10* α(O)=9.89×10^{-6} *14*; α(P)=5.17×10^{-7} *8*; α(N+..)=7.80×10^{-5} *11* B(E2)(W.u.)=173 *+29−20* E_γ: average of 520.3 (Coulomb Excitation) 520.1 (^{252}Cf SF decay).
2496.2	(1^-)	2366.0 *10*	100	130.21	2^+			
2539.2		2409.0 *10*	100	130.21	2^+			
2681.6	(14^+)	562.9		2118.7	(12^+)			E_γ: average of 563.5 (Coulomb Excitation) 562.2 (^{252}Cf SF decay).
2837.2		2707.0 *10*	100	130.21	2^+			
3279.6	(16^+)	598.0	100	2681.6	(14^+)			

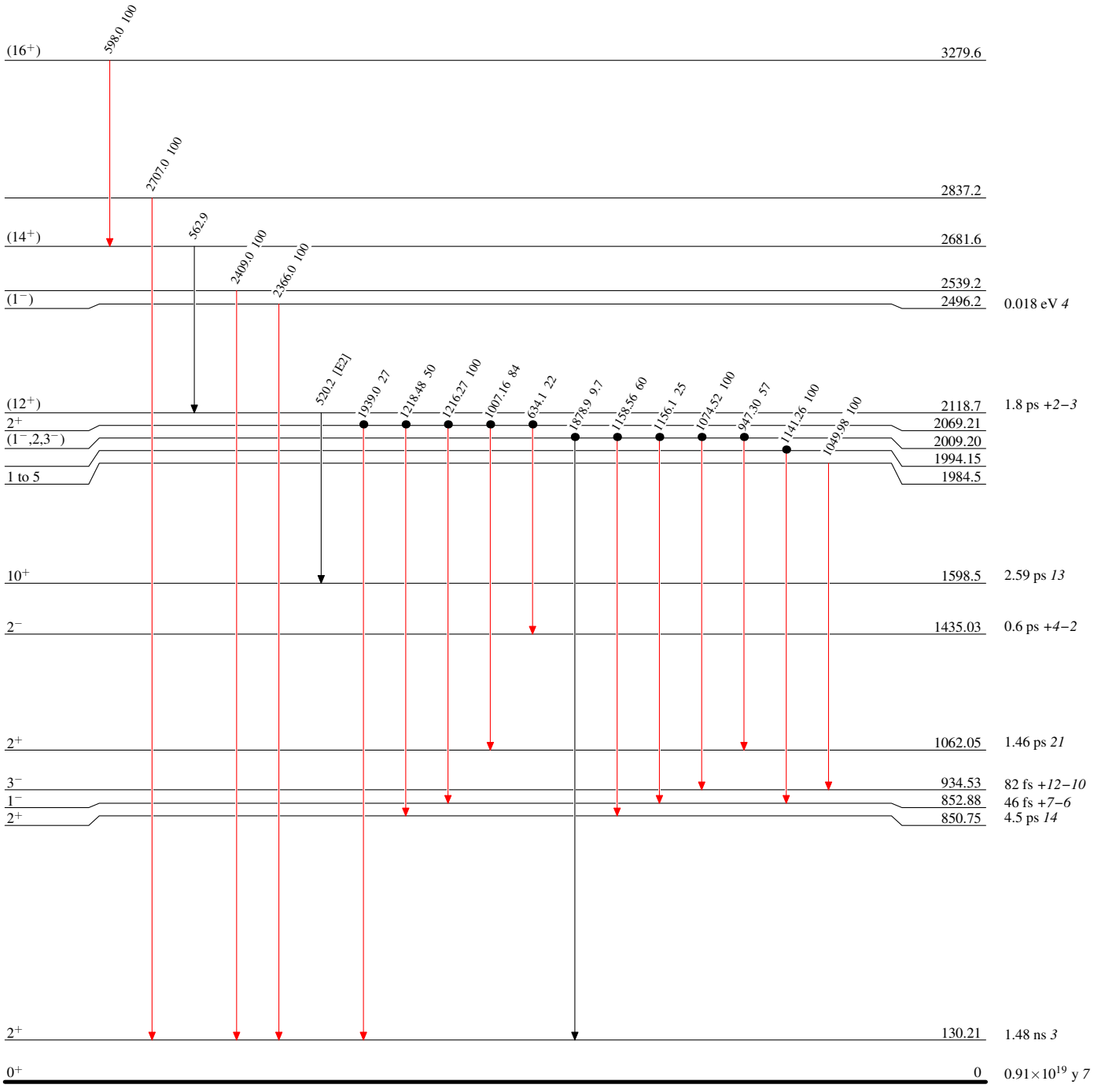
† From (d,d′γ) below 1061 level and ^{150}Pr β^- decay (6.19 s) above, or from Coulomb excitation.
‡ From (p,p′γ).
# Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

Level Scheme

Intensities: Type not specified

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

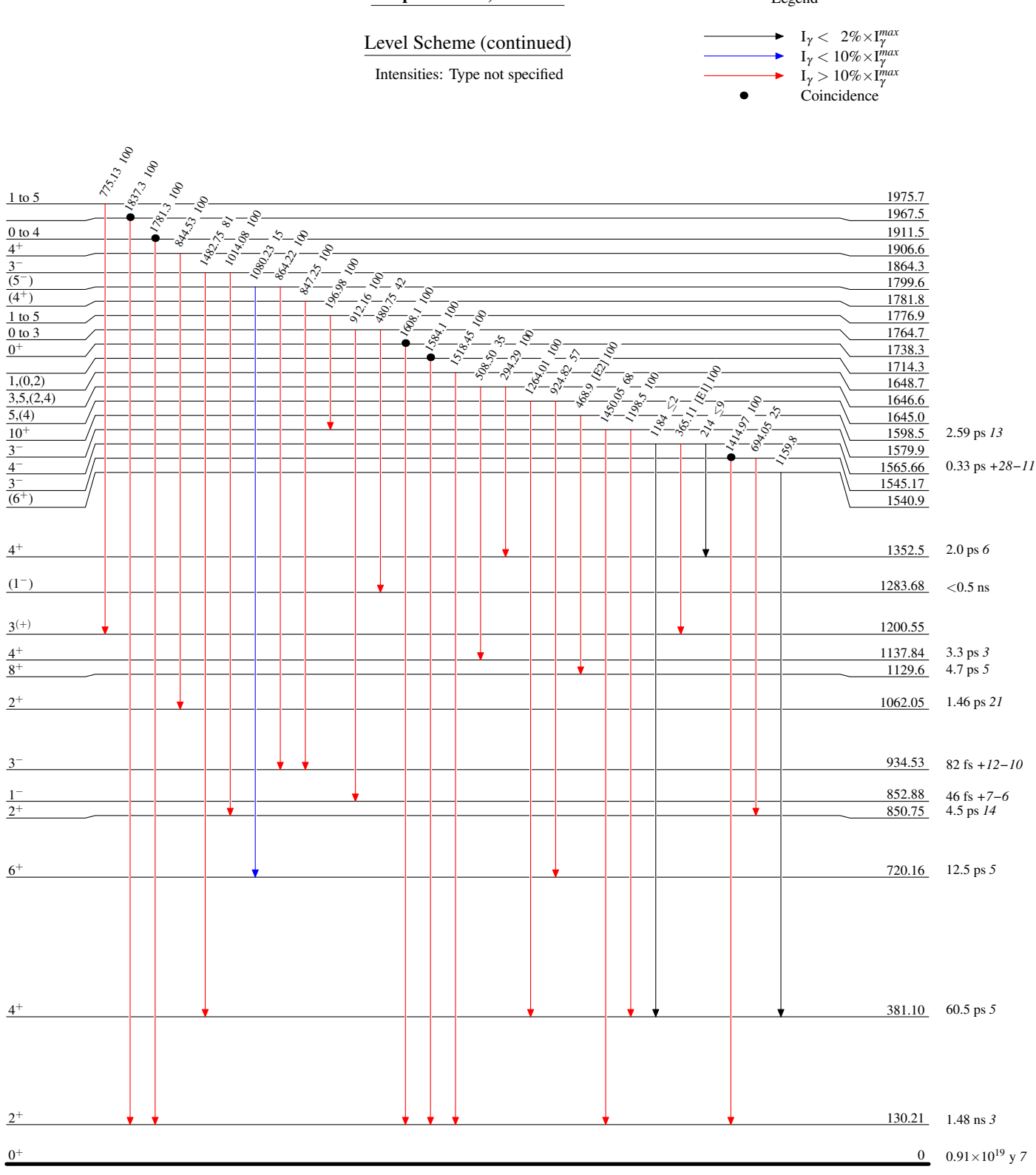


$^{150}_{60}Nd_{90}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

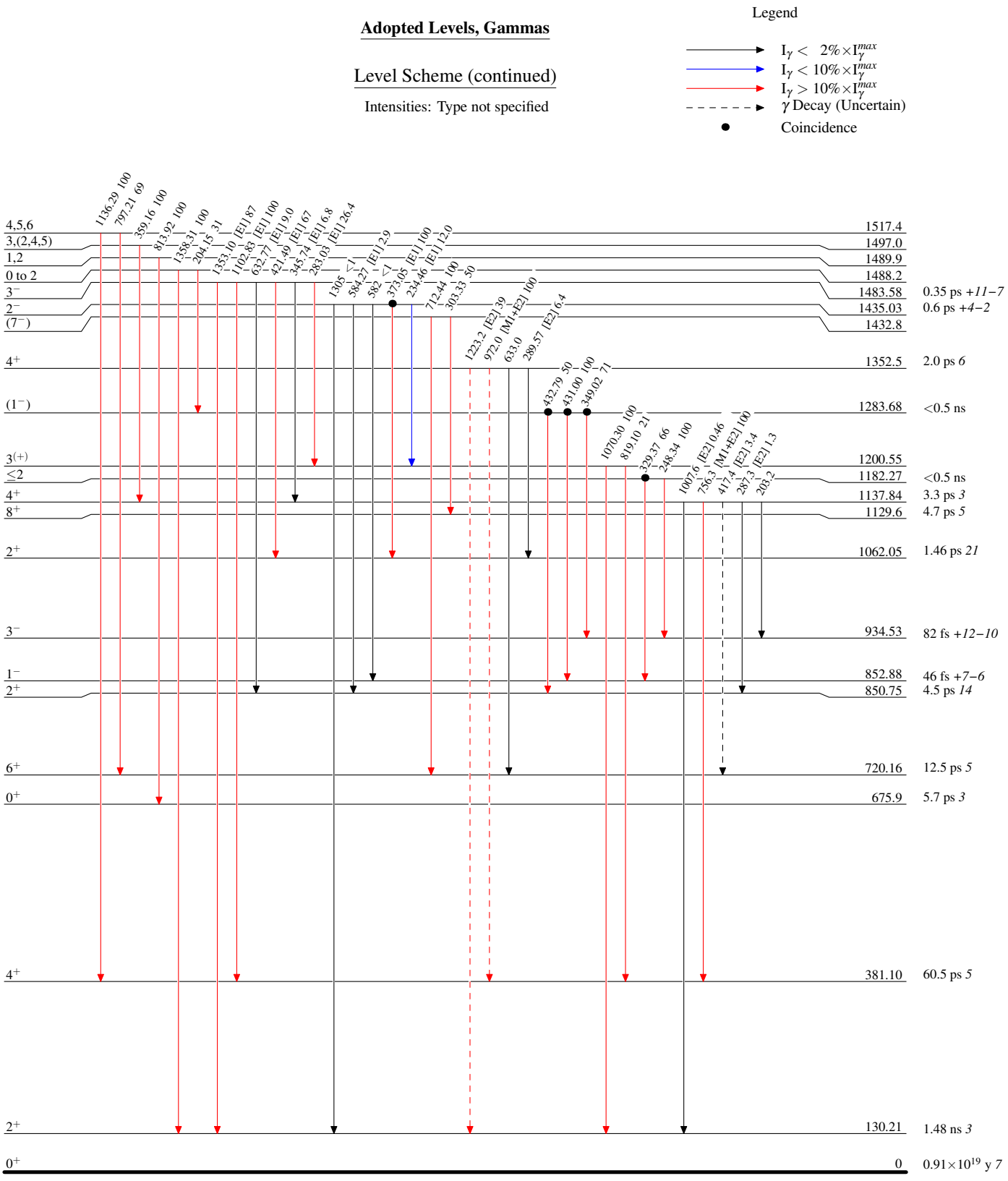


$^{150}_{60}Nd_{90}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

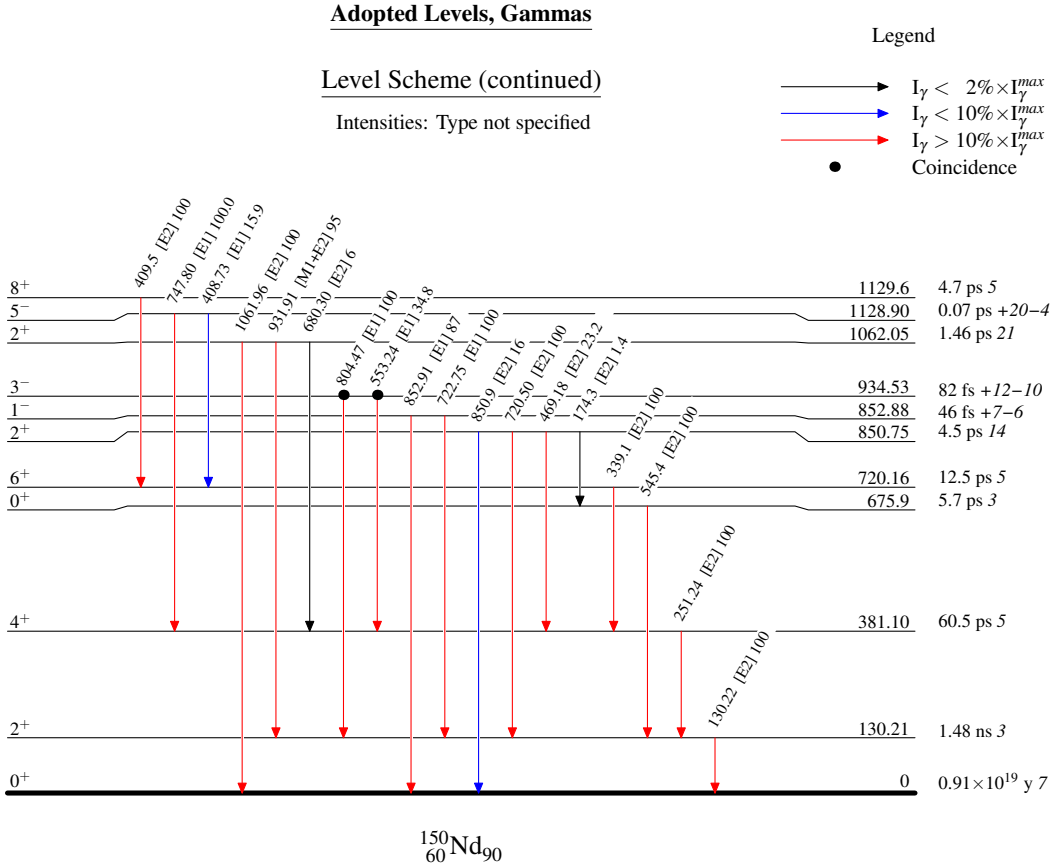


$^{150}_{60}Nd_{90}$

Adopted Levels, Gammas

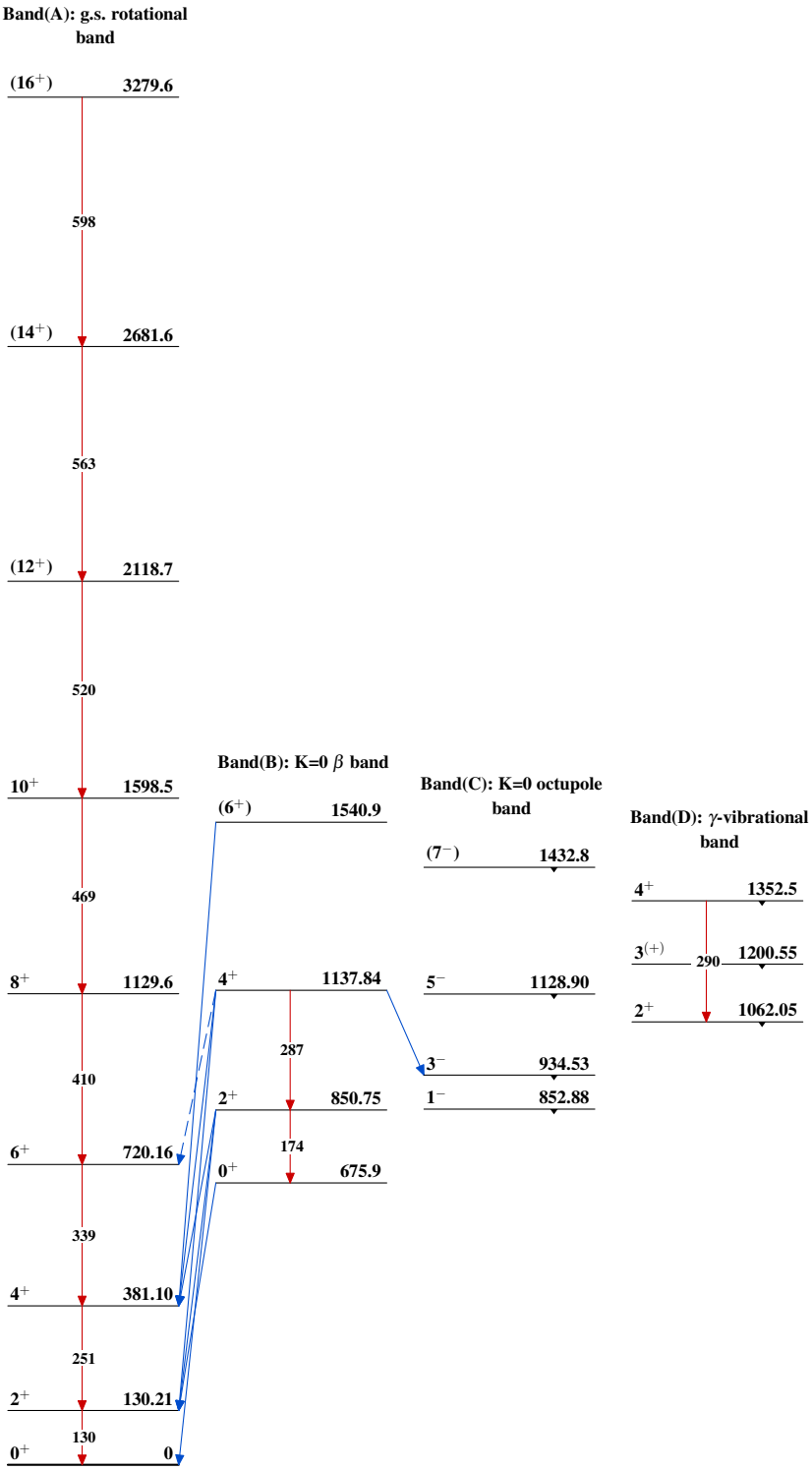
Level Scheme (continued)

Intensities: Type not specified



$^{150}_{60}Nd_{90}$

Adopted Levels, Gammas



$^{150}_{60}Nd_{90}$