Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh et al. ,	NDS 175, 1 (2021)	19-May-2021

Q(β^-)=212 *7*; S(n)=4459 *3*; S(p)=6560 *12*; Q(α)=6946.2 *3* 2021Wa16
S(2n)=10972 *5*, S(2p)=11632 *7* (2021Wa16).

Additional information 1.

1931Cu01 evaluation mentions the following references for the half-life of ^{219}Rn: 1. M. Leslie, Phil. Mag. 24, 637 (1912), which reports half-life of 3.92 s from a large number of measurements; 2. P.B. Perkins, Phil. Mag. 27, 720 (1914), which reports a measured half-life of 3.92 s *4*; 3. R. Schmid, Mitt. Ra. Inst. 103, Wien. Ber. IIa, 126, 1065 (1917). The 1912 and 1914 articles refer to following earlier measurements: 1. O. Hahn and O. Sackur, Ber. Dtsch. Chem. Ges. 38, 1943 (1905) with measured $T_{1/2}$=3.9 s; 2. A. Debierne, C.R. Acad. Sci. 136, 446 (1903) with $T_{1/2}$=3.9 s. Thus the investigation and identification of ^{219}Rn goes back to 1903. More precise half-lives were measured later by 1961Ro14 and 1966Hu20.

^{219}Rn lies in a transitional region with spherical, quadrupole, and possibly octupole deformations. Its structure has been interpreted in terms of the $g_{9/2}$ and $i_{11/2}$ mixed parity shell model configurations, which give rise to even- and odd-parity states. Nuclear states in this mass region are not characterized by single Nilsson orbitals.

Theoretical calculations: 25 primary references in the NSR database (www.nndc.bnl.gov/nsr), three related to structure calculations, and 22 to radioactivity.

All data for excited states are from ^{223}Ra α decay dataset.

^{219}Rn Levels

Cross Reference (XREF) Flags

A ^{219}At β^- decay (56 s)
B ^{223}Ra α decay (11.4366 d)

E(level)	J^π	$T_{1/2}$	XREF	Comments
0.0†	$5/2^+$	3.96 s *1*	AB	%α=100 μ=−0.442 *5* (1988NeZZ,2014StZZ) Q=+1.15 *12* (1987OtZW,2016St14) Evaluated rms charge radius=5.665 fm *19* (2013An02). Evaluated $\delta<r^2>(^{219}Rn,^{212}Rn)$=0.8212 fm^2 *3* (2013An02), the same as measured by 1987OtZW. $T_{1/2}$: weighted average of 3.96 s *1* (1966Hu20), 4.00 s *5* and 4.01 s *6* (1961Ro14). Other: 3.92 s (1931Cu01 evaluation). J^π: spin from hyperfine structure using collinear fast-beam laser spectroscopy (1988NeZZ,1987Bo29). Parity from theoretical μ=−0.43 for a $5/2^+$, ν5/2[633] state. μ,Q: hyperfine structure using collinear fast-beam laser spectroscopy at ISOLDE-CERN (1988NeZZ,1987Bo29,1987OtZW). 1987OtZW list μ=−0.434 *22*, 1987Bo29 list μ=−0.43, and 1988NeZZ list Q_2=+0.93. Additional information 2.
4.413† *12*	$(9/2)^+$	15.4 ns *13*	B	J^π: 4.4γ (E2) to $5/2^+$; M1+E2 γ rays from 14.4 level to the g.s. and 4.4 level give the same parity for the g.s., 4.4 level and 14.4 level; member of $\nu g_{9/2}$ configuration. $T_{1/2}$: γ ce(t) (1974Ri05).
14.400† *10*	$(7/2)^+$	875 ps *30*	B	J^π: 14.4γ M1+E2 to $5/2^+$; 10γ M1+E2 to $(9/2)^+$. $T_{1/2}$: γ ce(t) (1974Ri05).
126.726‡ *15*	$(11/2)^+$	402 ps *20*	B	J^π: 122γ M1+E2 to $(9/2)^+$; no γ decay to $5/2^+$ (0.0); no γ decay from $3/2^+$ (269). $T_{1/2}$: (α)(ce)(t) (1970Kr01).
158.631‡ *8*	$(7/2)^+$	42.3 ps *50*	B	J^π: 158γ M1+E2 to $5/2^+$; 154γ to $(9/2)^+$. $T_{1/2}$: Doppler measurement (1976Li13). Other values: 40.2 ps *76* Doppler

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{219}Rn Levels (continued)

E(level)	J^π	$T_{1/2}$	XREF	Comments
				(1969BoZF); 17.7 ps *26* Doppler (1974Ri01).
269.475‡ *8*	$3/2^+$	14.2 ps *23*	B	J^π: favored (HF=4.5) α decay from ^{223}Ra ($J^\pi=3/2^+$). $T_{1/2}$: Doppler measurement (1976Li13). Other values: 27 ps *3* (1970Ko05,1970Ko34,1971Ko37); 11.5 ps *25* Doppler (1969BoZF); 4.4 ps *10* recoil-distance Doppler (1974Ri01).
338.276‡ *8*	$(5/2)^+$	6.1 ps *28*	B	J^π: 324γ M1+E2 to $(7/2)^+$; 338γ M1 to $5/2^+$; member of $\nu i_{11/2}$ configuration. $T_{1/2}$: Doppler measurement (1976Li13). Other values: 8.1 ps *28* recoil-distance Doppler; 4.5 ps *8* Doppler (1969BoZF).
342.792 *24*	$(5/2,7/2)^-$		B	J^π: 343γ E1 to $5/2^+$; 328γ (E1) to $(7/2)^+$.
376.19‡ *6*	$(9/2)^+$	6.9 ps *38*	B	J^π: 249γ M1+E2 to $(11/2)^+$; 372γ M1 to $(7/2)^+$. $T_{1/2}$: Doppler measurement (1976Li13). Other value: <170 ps (α)(ce)(t) (1970Kr01).
377.33 *6*	$(7/2,9/2)^-$		B	J^π: 373γ E1 to $(9/2)^+$; 363γ to $(7/2)^+$. No evidence was found of a previously reported level at 378.5 keV (1992Br10) deexcited by a 251.6-keV γ ray (1998Sh02).
397.0 *4*			B	
445.037‡ *12*	$(5/2)^+$	6.2 ps *31*	B	J^π: 445γ M1 to $5/2^+$; member of $\nu i_{11/2}$ configuration. $T_{1/2}$: Doppler measurement (1976Li13). Other value: <170 ps (α)(ce)(t) (1970Kr01).
446.82 *3*	$(5/2)^-$		B	J^π: 288γ E1 to $(7/2)^+$; 177γ to $(3/2)^+$.
490.88 *16*	$(5/2,7/2,9/2)^-$		B	J^π: 103γ M1+E2 from $(7/2)^-$.
514.42‡ *11*	$(9/2^+)$		B	J^π: 388γ to $(11/2)^+$; 356γ to $(7/2)^+$; member of $\nu i_{11/2}$ configuration.
517.7?			B	
542.011‡ *16*	$(7/2^+)$		B	J^π: 538γ to $(9/2)^+$; 542γ to $5/2^+$; member of $\nu i_{11/2}$ configuration.
594.08 *13*	$(7/2)^-$		B	J^π: 252γ M1+E2 to $(5/2,7/2)^-$; 580γ to $(7/2)^+$; 594γ to $5/2^+$. Configuration assignment suggests $7/2^-$.
598.721‡ *24*	$(5/2,7/2,9/2)^+$		B	J^π: 221γ E1 to $(7/2,9/2)^-$; 598γ to $5/2^+$. $J^\pi=(3/2,5/2,7/2)^+$ from 1998Sh02 is inconsistent with 221γ E1 to $(7/2,9/2)^-$.
623.70 *4*	$(5/2^+,7/2,9/2^+)$		B	J^π: 619γ to $(9/2)^+$; 623γ to $5/2^+$.
646.09 *13*	$(5/2^+,7/2)$		B	J^π: 642γ to $(9/2)^+$; 646γ to $5/2^+$; 199γ to $(5/2)^-$.
672.5 *5*			B	
711.34 *11*	$(3/2$ to $9/2^+)$		B	J^π: 711γ to $5/2^+$; 696γ to $(7/2)^+$.
732.84 *13*	$(5/2^+,7/2)$		B	J^π: 728γ to $(9/2)^+$; 732γ to $5/2^+$; 286γ to $(5/2)^-$.
≈748			B	
≈773			B	
≈800			B	
≈830			B	
≈851			B	
≈861			B	
≈873			B	

† Member of $\nu g_{9/2}$ structure.
‡ Member of $\nu i_{11/2}$ structure.

Adopted Levels, Gammas (continued)

$\gamma(^{219}Rn)$

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	δ	$\alpha^\dagger$	$I_{(\gamma+ce)}$	Comments
4.413	$(9/2)^+$	4.413 *12*		0.0	$5/2^+$	(E2)		2.41×10^6 *5*	100	α(M)=1.195×10^5 *24*; α(N)=1.87×10^6 *4*; α(O)=3.74×10^5 *8*; α(P)=4.01×10^4 *8* B(E2)(W.u.)=116 *11*
14.400	$(7/2)^+$	9.987 *16*	85 *9*	4.413	$(9/2)^+$	M1+E2	0.048 *4*	9.2×10^2 *7*		α(M)=7.0×10^2 *5*; α(N)=182 *13*; α(O)=38 *3*; α(P)=5.0 *3* B(M1)(W.u.)=0.017 *3*; B(E2)(W.u.)=1.3×10^2 *3*
		14.400 *10*	100 *9*	0.0	$5/2^+$	M1+E2	0.112 *4*	511 *25*		α(M)=387 *19* α(N)=100 *5*; α(O)=20.8 *10*; α(P)=2.54 *11* B(M1)(W.u.)=0.0064 *10*; B(E2)(W.u.)=127 *21*
126.726	$(11/2)^+$	122.319 *10*	100	4.413	$(9/2)^+$	M1+E2	0.132 *14*	7.34		α(K)=5.88 *9*; α(L)=1.109 *17*; α(M)=0.265 *4* α(N)=0.0690 *11*; α(O)=0.01505 *23*; α(P)=0.00218 *4* B(M1)(W.u.)=0.00353 *19*; B(E2)(W.u.)=1.3 *3*
158.631	$(7/2)^+$	31.98 *3*	0.0018 *4*	126.726	$(11/2)^+$	(E2)		1.98×10^3		α(L)=1465 *22*; α(M)=391 *6* α(N)=101.4 *15*; α(O)=20.3 *3*; α(P)=2.21 *4* B(E2)(W.u.)=10.6 *+28−25*
		144.235 *10*	57.7 *3*	14.400	$(7/2)^+$	M1+E2	−0.121 *17*	4.59		α(K)=3.69 *6*; α(L)=0.684 *10*; α(M)=0.1630 *24* α(N)=0.0425 *7*; α(O)=0.00928 *14*; α(P)=0.001347 *19* B(M1)(W.u.)=0.0115 *14*; B(E2)(W.u.)=2.6 *8*
		154.208 *10*	100.0	4.413	$(9/2)^+$	M1		3.83		α(K)=3.09 *5*; α(L)=0.560 *8*; α(M)=0.1331 *19* α(N)=0.0347 *5*; α(O)=0.00759 *11*; α(P)=0.001108 *16* B(M1)(W.u.)=0.0165 *20*
		158.635 *10*	12.26 *6*	0.0	$5/2^+$	M1+E2	−0.20 *3*	3.45 *6*		α(K)=2.76 *5*; α(L)=0.525 *8*; α(M)=0.1255 *20* α(N)=0.0327 *5*; α(O)=0.00713 *11*; α(P)=0.001028 *15* B(M1)(W.u.)=0.00179 *22*; B(E2)(W.u.)=0.9 *3*
269.475	$3/2^+$	110.856 *10*	0.393 *10*	158.631	$(7/2)^+$	E2		5.36		α(K)=0.363 *5*; α(L)=3.69 *6*; α(M)=0.994 *14* α(N)=0.259 *4*; α(O)=0.0522 *8*; α(P)=0.00581 *9* B(E2)(W.u.)=65 *11*
		255.2 *2*	0.376 *10*	14.400	$(7/2)^+$	[E2]		0.229		α(K)=0.0979 *14*; α(L)=0.0968 *14*; α(M)=0.0256 *4* α(N)=0.00667 *10*; α(O)=0.001366 *20*; α(P)=0.0001609 *23* B(E2)(W.u.)=0.96 *16*
		269.463 *10*	100.0 *5*	0.0	$5/2^+$	M1+E2	−0.149 *10*	0.789 *12*		α(K)=0.637 *9*; α(L)=0.1157 *17*; α(M)=0.0275 *4* α(N)=0.00716 *10*; α(O)=0.001566 *22*; α(P)=0.000228 *4* B(M1)(W.u.)=0.043 *7*; B(E2)(W.u.)=4.3 *9*

$^{219}_{86}Rn_{133}$-3

Adopted Levels, Gammas (continued)

γ(^{219}Rn) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	δ	α[†]	Comments
338.276	(5/2)$^+$	179.54 *6*	4.42 *3*	158.631	(7/2)$^+$	M1+E2	0.53 *8*	2.12 *10*	α(K)=1.62 *10*; α(L)=0.376 *6*; α(M)=0.0922 *19* α(N)=0.0240 *5*; α(O)=0.00516 *9*; α(P)=0.000711 *11* B(M1)(W.u.)=0.008 *4*; B(E2)(W.u.)=23 *12*
		323.871 *10*	100.0 *5*	14.400	(7/2)$^+$	M1(+E2)	−0.04 *5*	0.484 *8*	α(K)=0.392 *6*; α(L)=0.0700 *10*; α(M)=0.01661 *24* α(N)=0.00433 *7*; α(O)=0.000947 *14*; α(P)=0.0001383 *20* B(M1)(W.u.)=0.040 *19*
		334.01 *6*	2.074 *15*	4.413	(9/2)$^+$	(E2)		0.1007	α(K)=0.0546 *8*; α(L)=0.0343 *5*; α(M)=0.00895 *13* α(N)=0.00233 *4*; α(O)=0.000481 *7*; α(P)=5.85×10^{-5} *9* B(E2)(W.u.)=2.2 *11*
		338.282 *10*	71.4 *4*	0.0	5/2$^+$	M1+E2	−0.23 *5*	0.413 *10*	α(K)=0.333 *9*; α(L)=0.0607 *11*; α(M)=0.01444 *25* α(N)=0.00376 *7*; α(O)=0.000822 *15*; α(P)=0.0001195 *23* B(M1)(W.u.)=0.024 *11*; B(E2)(W.u.)=3.6 *23*
342.792	(5/2,7/2)$^-$	328.38 *3*	100.0 *5*	14.400	(7/2)$^+$	E1		0.0271	
		342.87 *4*	92 *5*	0.0	5/2$^+$	(E1)		0.0246	
376.19	(9/2)$^+$	249.3 *1*	8.62 *20*	126.726	(11/2)$^+$	(M1+E2)		0.62 *38*	α(K)=0.45 *36*; α(L)=0.125 *20*; α(M)=0.031 *4* α(N)=0.0081 *9*; α(O)=0.00173 *23*; α(P)=0.00023 *6*
		362.052 *17*	6.08 *5*	14.400	(7/2)$^+$	[M1+E2]		0.22 *14*	α(K)=0.17 *13*; α(L)=0.039 *13*; α(M)=0.0094 *28* α(N)=0.00246 *74*; α(O)=5.3×10^{-4} *17*; α(P)=7.3×10^{-5} *29*
		371.676 *15*	100.0 *7*	4.413	(9/2)$^+$	M1(+E2)	<0.15	0.330 *6*	α(K)=0.267 *5*; α(L)=0.0478 *8*; α(M)=0.01134 *17* α(N)=0.00295 *5*; α(O)=0.000646 *10*; α(P)=9.43×10^{-5} *15* B(M1)(W.u.)=0.018 *10*
		376.1 *2*	1.27 *6*	0.0	5/2$^+$	[E2]		0.0724	B(E2)(W.u.)=1.0 *6*
377.33	(7/2,9/2)$^-$	34.5 *2*		342.792	(5/2,7/2)$^-$	[M1+E2]		7.1×10^2 *66*	α(L)=5.3×10^2 *49*; α(M)=1.4×10^2 *13* α(N)=36 *34*; α(O)=7.3 *68*; α(P)=0.81 *72*
		362.9 *2*	22.4 *11*	14.400	(7/2)$^+$				
		372.9 *1*	100 *22*	4.413	(9/2)$^+$	(E1)		0.0205	
397.0		270.3 *4*	100	126.726	(11/2)$^+$				
445.037	(5/2)$^+$	102.2 *2*	0.07 *3*	342.792	(5/2,7/2)$^-$	[E1]		0.439	α(K)=0.341 *5*; α(L)=0.0744 *12*; α(M)=0.0178 *3* α(N)=0.00457 *7*; α(O)=0.000952 *15*; α(P)=0.0001216 *18* B(E1)(W.u.)=1.3×10^{-5} *9*
		106.78 *3*	1.88 *9*	338.276	(5/2)$^+$	M1(+E2)	<0.5	10.4 *5*	α(K)=7.9 *9*; α(L)=1.9 *3*; α(M)=0.46 *8* α(N)=0.120 *21*; α(O)=0.026 *4*; α(P)=0.0036 *4* B(M1)(W.u.)=0.030 *+38−11*; B(E2)(W.u.)<400

$^{219}_{86}Rn_{133}$-4

Adopted Levels, Gammas (continued)

γ(^{219}Rn) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	α[†]	Comments
445.037	$(5/2)^+$	175.6 *2*	1.30 *1*	269.475	$3/2^+$	[M1+E2]	1.75 *91*	α(K)=1.18 *97*; α(L)=0.43 *4*; α(M)=0.108 *17* α(N)=0.028 *5*; α(O)=0.0059 *7*; α(P)=0.000758 *14*
		430.6 *3*	1.92 *4*	14.400	$(7/2)^+$	[M1+E2]	0.137 *87*	α(K)=0.107 *75*; α(L)=0.0231 *91*; α(M)=0.0056 *21* α(N)=0.00146 *53*; α(O)=3.2×10^{-4} *12*; α(P)=4.4×10^{-5} *20*
		445.033 *12*	100.0 *5*	0.0	$5/2^+$	M1	0.205	α(K)=0.1661 *24*; α(L)=0.0295 *5*; α(M)=0.00698 *10* α(N)=0.00182 *3*; α(O)=0.000398 *6*; α(P)=5.82×10^{-5} *9* B(M1)(W.u.)=0.027 *14*
446.82	$(5/2)^-$	69.5 *1*	4.8 *20*	377.33	$(7/2,9/2)^-$	(M1)	7.36	α(L)=5.60 *9*; α(M)=1.330 *20* α(N)=0.347 *5*; α(O)=0.0759 *11*; α(P)=0.01108 *17*
		104.23 *8*	11.2 *28*	342.792	$(5/2,7/2)^-$	(M1+E2)	9.3 *24*	α(K)=4.9 *46*; α(L)=3.3 *16*; α(M)=0.87 *46* α(N)=0.23 *12*; α(O)=0.046 *23*; α(P)=0.0056 *22*
		108.5 *2*	4.0 *20*	338.276	$(5/2)^+$	[E1]	0.382	α(K)=0.298 *5*; α(L)=0.0635 *10*; α(M)=0.01519 *23* α(N)=0.00390 *6*; α(O)=0.000814 *12*; α(P)=0.0001045 *16*
		177.3 *1*	28.4 *7*	269.475	$3/2^+$	[E1]	0.1152	α(K)=0.0921 *13*; α(L)=0.01761 *25*; α(M)=0.00419 *6* α(N)=0.001080 *16*; α(O)=0.000229 *4*; α(P)=3.05×10^{-5} *5*
		288.18 *3*	100.0 *16*	158.631	$(7/2)^+$	E1	0.0364	
		432.12 *10*	20.8 *9*	14.400	$(7/2)^+$			
490.88	$(5/2,7/2,9/2)^-$	114.7 *2*	100	376.19	$(9/2)^+$	[E1]	0.334	α(K)=0.262 *4*; α(L)=0.0548 *8*; α(M)=0.01310 *20* α(N)=0.00336 *5*; α(O)=0.000704 *11*; α(P)=9.08×10^{-5} *14*
514.42	$(9/2^+)$	138.3 *3*	49 *20*	376.19	$(9/2)^+$			
		355.7 *2*	54 *27*	158.631	$(7/2)^+$			
		387.7 *2*	100 *20*	126.726	$(11/2)^+$			
		500.0 *4*	24 *9*	14.400	$(7/2)^+$			
		510.0 *4*	8 *5*	4.413	$(9/2)^+$			
517.7?		70.9[‡]	100	446.82	$(5/2)^-$			
542.011	$(7/2^+)$	165.8 *2*	6.3 *22*	376.19	$(9/2)^+$			
		382.8 *5*	3.7 *14*	158.631	$(7/2)^+$			
		527.611 *13*	100.0 *12*	14.400	$(7/2)^+$			
		537.6 *1*	4.5 *7*	4.413	$(9/2)^+$			
		542.0 *4*	2.6 *6*	0.0	$5/2^+$			
594.08	$(7/2)^-$	103.2 *2*	19 *6*	490.88	$(5/2,7/2,9/2)^-$	(M1+E2)	9.6 *24*	α(K)=5.0 *47*; α(L)=3.5 *17*; α(M)=0.90 *49* α(N)=0.24 *13*; α(O)=0.048 *25*; α(P)=0.0058 *23*
		147.2 *3*	9 *5*	446.82	$(5/2)^-$	[M1+E2]	3.0 *14*	α(K)=1.9 *17*; α(L)=0.83 *19*; α(M)=0.212 *61* α(N)=0.055 *16*; α(O)=0.012 *3*; α(P)=0.00144 *18*
		251.6 *3*	100.0 *19*	342.792	$(5/2,7/2)^-$	(M1+E2)	0.60 *37*	α(K)=0.44 *35*; α(L)=0.122 *20*; α(M)=0.030 *4* α(N)=0.0079 *9*; α(O)=0.00168 *24*; α(P)=0.00022 *6*
		255.7 *3*	9 *5*	338.276	$(5/2)^+$			
		579.6 *3*	2.3 *10*	14.400	$(7/2)^+$			
		594.0 *3*	2.3 *10*	0.0	$5/2^+$			
598.721	$(5/2,7/2,9/2)^+$	221.32 *24*	34.4 *11*	377.33	$(7/2,9/2)^-$	(E1)	0.0675	α(K)=0.0543 *8*; α(L)=0.01005 *15*; α(M)=0.00239 *4* α(N)=0.000616 *9*; α(O)=0.0001311 *19*; α(P)=1.78×10^{-5} *3*
		260.4 *3*	7.6 *35*	338.276	$(5/2)^+$	[M1+E2]	0.55 *34*	α(K)=0.40 *31*; α(L)=0.109 *20*; α(M)=0.027 *4* α(N)=0.0070 *9*; α(O)=0.00150 *24*; α(P)=2.01×10^{-4} *53*

$^{219}_{86}Rn_{133}$-5

Adopted Levels, Gammas (continued)

$\gamma(^{219}Rn)$ (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Comments
598.721	(5/2,7/2,9/2)$^+$	584.3 *3*	1.7 *7*	14.400	(7/2)$^+$	
		598.721 *24*	100.0 *16*	0.0	5/2$^+$	
623.70	(5/2$^+$,7/2,9/2$^+$)	246.2 *5*	17 *5*	377.33	(7/2,9/2)$^-$	
		609.31 *4*	100 *10*	14.400	(7/2)$^+$	
		619.1 *4*	8.5 *11*	4.413	(9/2)$^+$	
		623.5 *3*	13.5 *14*	0.0	5/2$^+$	
646.09	(5/2$^+$,7/2)	131.6 *2*	83 *46*	514.42	(9/2$^+$)	
		199.3 *3*	44 *22*	446.82	(5/2)$^-$	
		487.5 *2*	100 *10*	158.631	(7/2)$^+$	
		631.7‡ *7*	64 *46*	14.400	(7/2)$^+$	
		641.7 *4*	27 *11*	4.413	(9/2)$^+$	
		646.1 *5*	64 *64*	0.0	5/2$^+$	
672.5		545.8 *5*	100	126.726	(11/2)$^+$	
711.34	(3/2 to 9/2$^+$)	112.6‡		598.721	(5/2,7/2,9/2)$^+$	
		368.56 *12*	100 *3*	342.792	(5/2,7/2)$^-$	
		696.9 *7*	5.4 *23*	14.400	(7/2)$^+$	
		711.3 *2*	25.1 *23*	0.0	5/2$^+$	
732.84	(5/2$^+$,7/2)	286.0 *4*	23 *11*	446.82	(5/2)$^-$	
		355.5 *2*	84 *28*	377.33	(7/2,9/2)$^-$	
		390.1 *2*	100 *11*	342.792	(5/2,7/2)$^-$	
		574.1 *7*	39 *16*	158.631	(7/2)$^+$	
		718.4 *4*	28 *11*	14.400	(7/2)$^+$	
		728.4 *8*	48 *13*	4.413	(9/2)$^+$	
		732.8 *6*	11 *6*	0.0	5/2$^+$	

† Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

‡ Placement of transition in the level scheme is uncertain.

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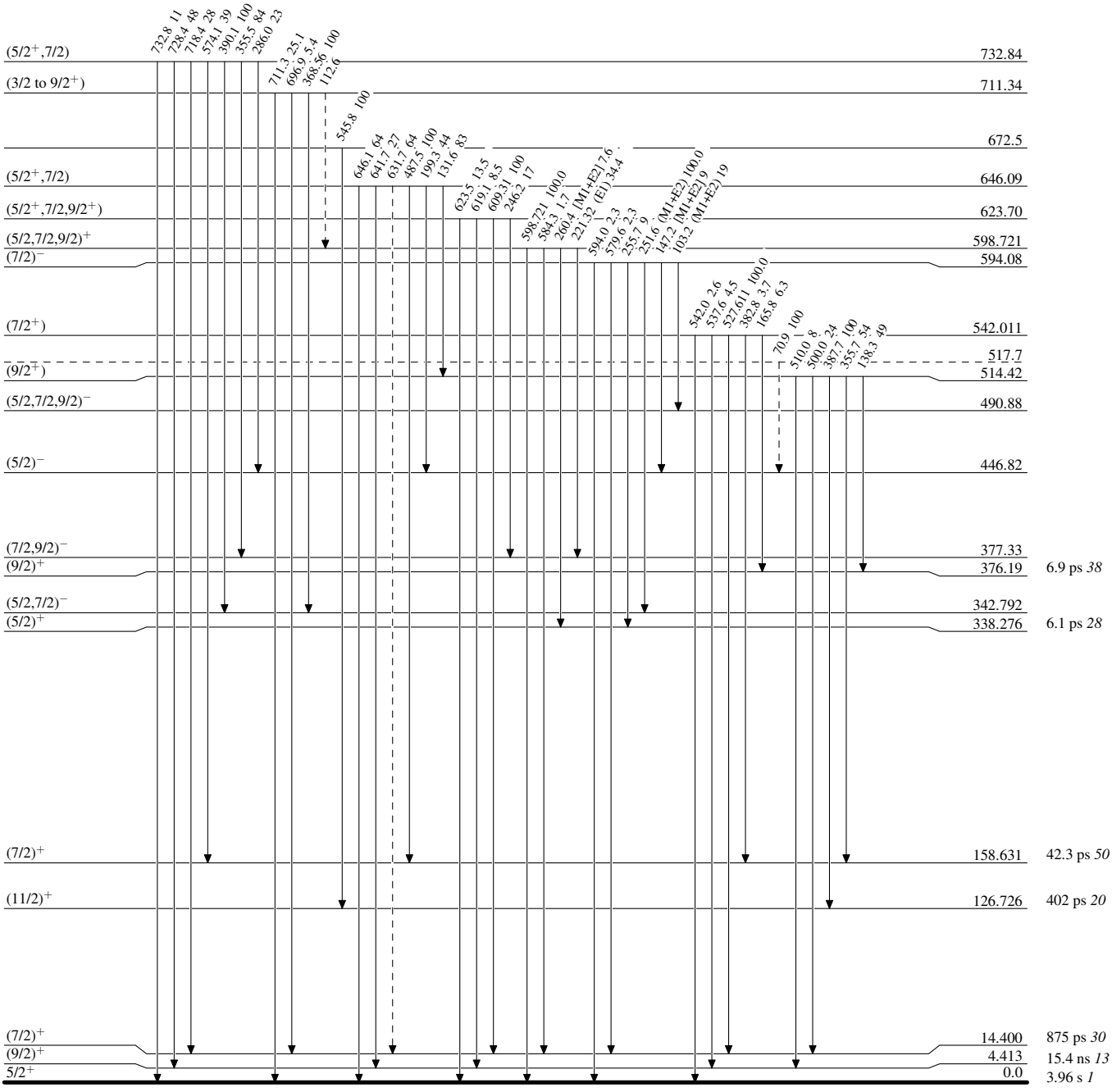
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



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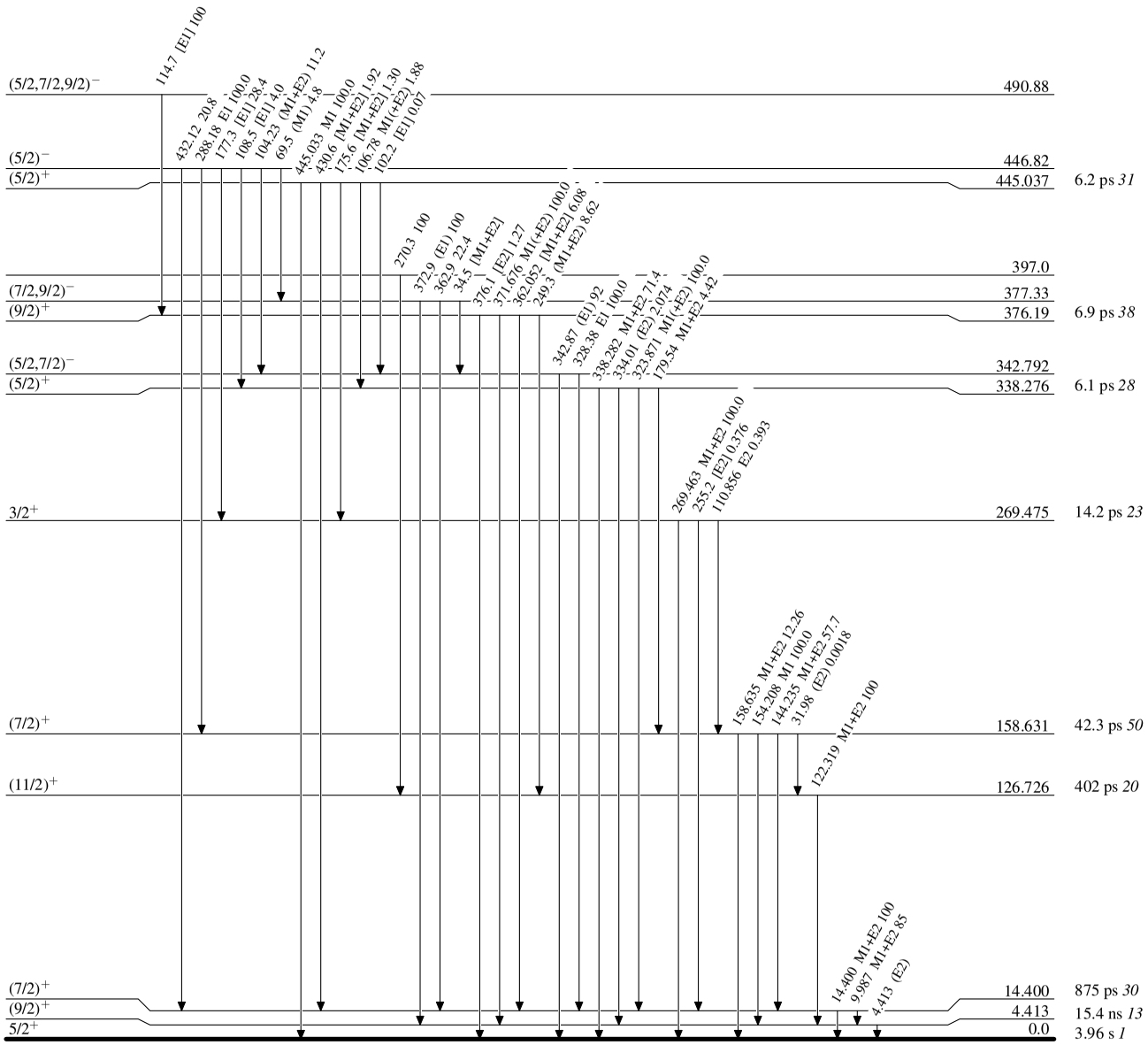
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



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