^{191}Ir(n,γ) E=thermal:secondary 1991Ke10

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 113, 1871 (2012)	15-Jun-2012

Others: 2007ChZX, 1989Du03, 1988Ba49, 1980SiZT, 1976Ra25.
See also the references listed with ^{191}Ir(n,γ) E=thermal: Primary.
Target J$^\pi$=3/2$^+$.
σ_n=954 *10* (2006MuZX).
All Eγ and Iγ data in this data set are from (n,γ) E=thermal; however, documentation for E=resonance (several) and E=reactor spectrum studies yielding secondary γ information, and additional data available from those sources, are also included in this data set (as indicated).
1976Ra25 (E=thermal): measured precise Eγ in 40-600-keV range (curved crystal spect); report Eγ values for a few placed transitions, plus Eγ for γ's in the 155-165-keV range.
1980SiZT (E=reactor spectrum): measured E(ce), Ice (mag spect); report multipolarities, but do not describe measurements.
1988Ba49 (E=thermal): measured Eγ, Iγ (curved crystal spect (to 640 keV)), E(ce), Ice (mag spect (to 215 keV)).
1989Du03 (E=thermal): measured Eγ, Iγ in 20-60-keV range (Si(Li), FWHM=300 eV at 17 keV, 350 eV at 30 keV).
1991Ke10 (E=thermal). Measured Eγ, Iγ: curved-crystal spectrometer (FWHM=5 arcsec), Compton-suppression spectrometer and Ge(Li) detectors (for isotopic identification and Iγ calibration), natural Ir, 86% and 88.8% ^{191}Ir targets. Conversion electron data: magnetic spectrometer (momentum resolution 0.19% at 30 keV, 0.06% at 190 keV), 94.3% ^{191}Ir target, measured E(ce) (19-280 keV), I(ce); calibration based on ten unspecified transitions. $\gamma\gamma$ coin data: HP Ge (FWHM≈500 eV at 60 keV) and Ge(Li) spectrometer (FWHM=2.5 keV at 100 keV), timing resolution FWHM=35 ns, deduced level $T_{1/2}$ from $\gamma\gamma$(t) or centroid shift. Supersedes earlier reports by some of the same authors in 1988Ba49, 1980SiZT, 1976Ra25. See also 1997BaZV for suggested placement of some transitions which were reported but not placed by 1991Ke10.
1991Ke10 (E=resonance): E(resonance)=0.655 eV (J=1), 5.36 eV (J=1), 6.13 eV (J=2); pulsed n beam, tof, natural Ir target, Ge(Li) detector, measured E(n), Eγ (secondaries), Iγ; deduced level J$^\pi$ from population ratios of secondary gammas, defined as Iγ(at J=2 resonance)/Iγ(at J=1 resonance) (expected ratios are 1.1 (J=2), 2.4 (J=3), assuming J=1 for 236 level whose ratio is 0.85).
2007ChZX (supersedes 2003ChZS): evaluation of thermal neutron capture data. includes new measurements (referred to In this evaluation As ‘Budapest Data’): ^{nat}IR target; thermal neutrons from Budapest reactor; Ge(Li); measured Eγ, Iγ for strongest primary and secondary transitions; report elemental photon cross sections.
See 2001Va11 for a proposed model-independent procedure to determine from experimental data the most probable level density and value of the sum of dipole strength functions for nuclei with arbitrary level density.
The level scheme is from 1991Ke10, with the addition of fourteen levels defined by γ placements suggested in 1997BaZV, the addition of four transitions deexciting previously established levels (1997BaZV), and relocation of the 126.958γ as suggested in 1997BaZV. Since the levels introduced by 1997BaZV seem somewhat speculative and have not yet been published, the evaluator shows all but the 441 level (supported by $\gamma\gamma$ coin) as tentative.

^{192}Ir Levels

E(γ),J(γ) Level introduced by 1997BaZV; based on Nilsson model calculations, γ decay patterns and mult.

E(level)[†]	J$^\pi$[#]	$T_{1/2}$[‡]	Comments
0.0	4$^+$		Probable Configuration=((π 3/2[402])-(ν 11/2[615]))+((π 11/2[505])-(ν 3/2[512])) (1991Ke10).
12.984? *14*	(6$^+$)		
16.050? *23*	(6$^-$)		
56.720[c] *5*	1$^-$		
66.830 *20*	(4)$^-$	15 ns *4*	
84.275 *3*	3$^-$	1.9 ns *4*	Possible bandhead for Configuration=((π 3/2[402])-(ν 9/2[505])) (1991KE10).
104.776[b] *5*	(1)$^-$	17.4 ns *26*	
115.564[c] *5*	(2)$^-$		
118.7824 *18*	3$^-$	>15 ns	Possible bandhead for Configuration=((π 3/2[402])+(ν 3/2[512])) (1991KE10).
128.744[a] *6*	(0)$^-$		

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^{191}Ir(n,γ) E=thermal:secondary 1991Ke10 (continued)

^{192}Ir Levels (continued)

E(level)[†]	Jπ[#]	$T_{1/2}$[‡]	Comments
139.942? *18*	(5⁺)		
143.556[a] *6*	(1)⁻		
144.904? *5*	(5⁺)		
192.935 *6*	(2)⁻		
193.511[&] *5*	(1)⁺	2.7 ns *6*	
212.808[a] *5*	(1,2)⁻		J=2 is implied if band assignment is correct.
216.905? *4*	(4⁺)		
223.352? *24*	(6⁺)		
225.916 *6*	(2)⁻		
226.261? *7*	(≤2⁻)		
235.760? *6*	(1⁻)		
239.770? *6*	(1)⁻		
240.902[b] *5*	(2)⁻		
265.160? *8*	(0⁻)		
267.128[a] *6*	(3)⁻		
277.993 *5*	(4)⁻		
284.215[&] *5*	(2)⁺		
288.403 *6*	(2)⁻		
292.381 *13*	(2)⁻		
310.999 *6*	2⁻		
319.883 *8*	(2)⁻		
331.077 *6*	(2)⁻		
331.761 *6*	(1)⁻		
351.690[@] *4*	(2)⁺		
365.653? *7*	(2⁻,3⁻)		
366.730 *8*	(2)⁻		
368.353 *7*	(2)⁻		
389.720[b] *9*	(2)⁻		
392.351 *7*	(1,2,3)⁻		
415.038 *10*	1⁻,2⁻,3⁻		
418.141?[@] *7*	(3⁺,4⁺)		
440.870 *6*	(3⁺)		
451.250 *13*	(1,2)⁻		
489.50? *15*	1⁻,2⁻,3⁻		
508.988 *8*	(2,3)⁻		
513.197?[@] *8*	(4⁺)		
529.167? *10*	(1⁻)		
530.266? *13*	1⁻,2⁻,3⁻		
670.640? *13*	(4⁺)		

[†] From least-squares fit to Eγ.
[‡] From γγ(t) or centroid shift (1991Ke10).
[#] From Adopted Levels. See 1991Ke10 for authors′ Jπ based on γ multipolarities and decay patterns in (n,γ) E=thermal, reduced intensities of primary gammas in average resonance capture, population ratios for secondary gammas following capture in isolated J=1 and J=2 resonances, level population in (d,p) and (d,t) reactions (i.e., all data from 1991Ke10).
[@] Band(A): γ band (1991Ke10).
[&] Band(B): possible Configuration=((π 11/2[505])-(ν 9/2[505])) (1991KE10).
[a] Band(C): possible Configuration=((π 3/2[402])-(ν 3/2[512])) (1991KE10). The levels assigned to this band by 1991Ke10 differ from those assigned in Adopted Levels on the basis of later transfer reaction data.
[b] Band(D): possible Configuration=((π 1/2[400])-(ν 3/2[512])) (1991KE10). The levels assigned to this band by 1991Ke10 differ

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^{191}Ir(n,γ) E=thermal:secondary 1991Ke10 (continued)

^{192}Ir Levels (continued)

from those assigned in Adopted Levels on the basis of later transfer reaction data.

[c] Band(E): possible Configuration=((π 3/2[402])-(ν 1/2[510])) (1991KE10).

γ(^{192}Ir)

Iγ normalization: From Iγ(58.84)=1.20 *3* per 100 neutron captures (E=thermal, 1989Du03); values have been calibrated to σ_n=954 *10* (2006MuZX). The absolute photon cross section data from 2007ChZX give 1.49 *8* per 100 n captures for this γ, but this is one of the many transitions for which data from 1991Ke10 and 2007ChZX are inconsistent. the proposed normalization gives values In satisfactory agreement with absolute values from 2007ChZX for a number of other low-energy transitions. The listed uncertainties in Iγ do not include an 11% uncertainty due to absolute calibration. This uncertainty is included in the normalization factor. With this normalization, Σ (I(γ+ce) to g.s.+13+16+57)≈71%.

E$_\gamma$[†]	I$_\gamma$[‡c]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.[#]	δ[#]	α[d]	Comments
[x]19.71[@] *3*	0.25[@] *4*					(M1)		127.6	α(M1)exp=38 *11* for (19.7γ+20.0γ) doublet (1991Ke10); authors do not state the subshell measured, but their deduced mult suggests the M1 subshell. α(M1)(M1 theory)=20.2.
[x]19.96[@] *2*	0.34[@] *4*					(M1)		122.9	α(M1)exp=38 *11* for (19.7γ+20.0γ) doublet (1991Ke10); authors do not state the subshell measured, but their deduced mult suggests the M1 subshell. α(M1)(M1 theory)=19.5.
23.970[@] *6*	2.11[@] *13*	128.744	(0)$^-$	104.776	(1)$^-$	M1		71.4	α(M1)exp=16 *3* (1991Ke10)
26.231[@] *6*	1.64[@] *8*	267.128	(3)$^-$	240.902	(2)$^-$	M1		54.7	α(M1)exp=7.2 *22* (1991Ke10)
26.960[@bf] *10*	0.240[@] *17*	239.770?	(1)$^-$	212.808	(1,2)$^-$				α(L1)exp=81 *25* (1991Ke10) α(L1)exp is much larger than expected from M1 theory.
28.010[@] *10*	0.220[@] *18*	143.556	(1)$^-$	115.564	(2)$^-$	M1		45.0	α(L1)exp=31 *13* (1991Ke10)
32.981[@] *7*	0.70[@] *4*	225.916	(2)$^-$	192.935	(2)$^-$	M1		27.8	α(L1)exp=13 *4* (1991Ke10)
34.520[@] *10*	0.300[@] *21*	118.7824	3$^-$	84.275	3$^-$	M1		24.3	α(L1)exp=16 *5* (1991Ke10)
38.80[@] *2*	0.32[@] *3*	143.556	(1)$^-$	104.776	(1)$^-$	M1		17.19	α(L1)exp=12 *6* (1991Ke10)
[x]47.443 *16*	2.70 *19*					M1		9.50	α(L1)exp=8.0 *25* (1991Ke10)
48.0568 *8*	79 *4*	104.776	(1)$^-$	56.720	1$^-$	M1+E2	0.163 *10*	12.3 *5*	α(L1)exp=6.2 *7* (1991Ke10) Mult.,δ: from L1:L2:L3:M1:M2:N1=100 *10*:29 *4*:23 *3*:24 *5*:8.9 *26*:8.1 *16* (authors′ analysis, 1991Ke10). δ=0.17 *+25−17* from α(L1)exp alone. I$_\gamma$: from 1989Du03.
49.390[@] *10*	1.51[@] *9*	192.935	(2)$^-$	143.556	(1)$^-$	M1		8.44	α(L1)exp=7 *3* (1991Ke10)
49.970[@] *10*	1.42[@] *9*	193.511	(1)$^+$	143.556	(1)$^-$	(E1)		0.513	α(L1)exp=8.3 *21* (1991Ke10) Mult.: α(L1)exp allows mult=M1 or E1+M2 (δ=0.21 *3*); the latter is required by level scheme, but δ violates RUL.
50.780[@bf] *10*	1.64[@] *10*	66.830	(4)$^-$	16.050?	(6$^-$)	E2		98.9	α(L2)exp=33 *4* (1991Ke10) Mult.: from L1:L2:L3:M2:M3:N2+N3=7 *4*:100 *10*:111 *17*:26 *8*:26 *8*:18 *9* (1991Ke10).
54.324 *4*	3.83 *23*	267.128	(3)$^-$	212.808	(1,2)$^-$	M1		6.38	α(L1)exp=3.6 *10* (1991Ke10) I$_\gamma$: from 1989Du03. Other Eγ: 54.340 *8* (1989Du03).

$^{192}_{77}$Ir$_{115}$-4

γ(^{192}Ir) (continued)

E_γ[†]	I_γ[‡c]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[#]	δ[#]	α[d]	Comments
56.71 *3*	0.69 *9*	56.720	1^-	0.0	4^+	E3		2.85×10^3	α(L2)exp=1070 *160* (1991Ke10) From subshell ratios of 1991Ke10, viz., L1:L2:L3:M2:M3:M4+M5:N2+N3=2.7 *13*:100 *8*:92 *11*:28 *4*:22.5 *23*:2.9 *5*:17 *3*. E_γ: from ce data (1991Ke10). Other Eγ: 56.67 *2* (1989Du03). I_γ: from 1989Du03.
58.8438 *10*	51.8 *16*	115.564	$(2)^-$	56.720	1^-	M1+E2	0.227 *5*	7.17 *14*	α(L1)exp=2.8 *7* (1991Ke10) I_γ: from 1989Du03. other Eγ (Iγ): 58.83 *6* (69 *4*) (2007ChZX; Budapest Data). δ: from authors′ analysis of unenumerated subshell ratios (L1, L2, L3, M1, M2, M3, N1 shells).
66.472 *14*	1.2 *6*	292.381	$(2)^-$	225.916	$(2)^-$	M1		3.53	α(L1)exp=4.2 *27* (1991Ke10) other Eγ (Iγ): 66.62 *9* (42 *3*) (2007ChZX; Budapest Data).
66.83 *2*	16.2 *13*	66.830	$(4)^-$	0.0	4^+	[E1]		0.231	
[x]68.443 *20*	0.7 *4*								
69.252 *6*	3.1 *9*	212.808	$(1,2)^-$	143.556	$(1)^-$	M1		3.14	α(L1)exp=2.6 *11* (1991Ke10)
72.025 *3*	7.6 *19*	128.744	$(0)^-$	56.720	1^-	M1		2.80	α(L1)exp=1.3 *5* (1991Ke10)
72.326[bf] *5*	3.5 *11*	513.197?	(4^+)	440.870	(3^+)	M1		2.76	α(L1)exp=2.0 *8* (1991Ke10)
72.464 *12*	1.1 *6*	392.351	$(1,2,3)^-$	319.883	$(2)^-$				other Eγ (Iγ): 73.35 *5* (555 *19*) (2007ChZX; Budapest Data). Presumably a complex line In 2007ChZX.
77.368 *4*	4.7 *14*	192.935	$(2)^-$	115.564	$(2)^-$	M1		12.62	α(L1)exp=1.4 *6* (1991Ke10)
77.9466 *8*	50 *10*	193.511	$(1)^+$	115.564	$(2)^-$	E1		0.738	α(L1)exp=0.16 *5* (1991Ke10)
[x]83.371 *11*	1.4 *7*					M1		10.30	α(L1)exp=3.5 *25* (1991Ke10)
83.956 *15*	2.2 *11*	415.038	$1^-,2^-,3^-$	331.077	$(2)^-$	M1		10.10	α(L1)exp=2.3 *16* (1991Ke10)
84.276 *3*	100 *10*	84.275	3^-	0.0	4^+	E1		0.614	α(L1)exp=0.113 *25* (1991Ke10) Mult.: from L1:L2:L3:M1=100 *20*:45 *13*:53 *13*:26 *8* (1991Ke10). Mult=E1+M2, δ=+0.055 *+10−13* from α(L1)exp alone is considered less reliable than results based on subshell ratios.
86.837 *5*	10 *2*	143.556	$(1)^-$	56.720	1^-	M1		9.17	α(L1)exp=1.2 *3* (1991Ke10)
88.7335 *8*	53 *5*	193.511	$(1)^+$	104.776	$(1)^-$	E1		0.540	α(L1)exp=0.18 *4* (1991Ke10) Mult.: from L1:L2:L3:M1=100 *20*:38 *18*:38 *18*:27 *13* (1991Ke10). Mult=E1+M2, δ=+0.091 *+13−15* from α(L1)exp alone is considered less reliable than result based on subshell ratios.
[x]90.66 *4*	0.8 *4*								
90.7035 *15*	16.4 *25*	284.215	$(2)^+$	193.511	$(1)^+$	M1		8.10	α(K)exp=5.9 *13* (1991Ke10) Mult.: from K:L1:M1=100 *16*:22 *3*:6.2 *21* (1991Ke10).
[x]90.794 *25*	1.8 *5*								
90.854[f] *5*	2.5 *5*	331.761	$(1)^-$	240.902	$(2)^-$	M1		8.06	α(L1)exp=1.4 *5* (1991Ke10)

γ(^{192}Ir) (continued)

Eγ[†]	Iγ[‡c]	Ei(level)	J^{π}_i	E_f	J^{π}_f	Mult.[#]	α[d]	Comments
95.068[bf] 12	3.0 6	513.197?	(4$^+$)	418.141?	(3$^+$,4$^+$)	M1	7.08	α(K)exp=4.8 17 (1991Ke10)
95.47 4	2.2 4	288.403	(2)$^-$	192.935	(2)$^-$	M1	7.00	α(K)exp=6.6 24 (1991Ke10) other Eγ (Iγ): 95.37 6 (12 4) (2007ChZX; Budapest Data).
97.351[e] 6	3.1[e] 6	240.902	(2)$^-$	143.556	(1)$^-$			α(K)exp=5.5 18 (1991Ke10), mult=M1 for doubly-placed G.
97.351[e] 6	3.1[e] 6	389.720	(2)$^-$	292.381	(2)$^-$			α(K)exp=5.5 18 (1991Ke10), mult=M1 for doubly-placed G.
[x]98.410 25	0.9 5							
98.524[bf] 4	4.0 6	365.653?	(2$^-$,3$^-$)	267.128	(3)$^-$	M1	6.39	α(K)exp=3.5 12 (1991Ke10)
[x]99.62 3	3.0 6					M1	6.19	α(K)exp=3.3 18 (1991Ke10)
[x]100.76 8						E0		Mult.: 1991Ke10 observe ce but no γ; they estimate Iγ<2.
101.221 15	1.3 4	368.353	(2)$^-$	267.128	(3)$^-$			
[x]102.29 3	1.4 4					M1	5.74	α(K)exp=9 5 (1991Ke10)
104.020 25	1.6 5	415.038	1$^-$,2$^-$,3$^-$	310.999	2$^-$			
105.155 12	1.7 5	331.077	(2)$^-$	225.916	(2)$^-$	M1	5.30	α(K)exp=7 4 (1991Ke10)
[x]105.497 20	3.0 6							α(K)exp=1.2 6 (1991Ke10)
107.025[&f] 8	2.5[&] 8	235.760?	(1$^-$)	128.744	(0)$^-$	M1	5.04	α(K)exp=4.0 18 (1991Ke10)
107.129 10	2.8 7	225.916	(2)$^-$	118.7824	3$^-$	M1	5.03	α(K)exp=3.6 16 (1991Ke10)
108.0318 16	31.5 25	212.808	(1,2)$^-$	104.776	(1)$^-$	M1	4.91	α(K)exp=3.6 4 (1991Ke10) Mult.: from K:L1:M1=100 10:13.2 26:7 3. Mult=M1+E2, δ=+0.39 +19−27 from α(K)exp alone is considered less reliable than result based on subshell ratios.
108.668 12	1.4 4	192.935	(2)$^-$	84.275	3$^-$	M1	4.83	α(K)exp=5 3 (1991Ke10)
110.358 4	6.6 8	225.916	(2)$^-$	115.564	(2)$^-$	M1	4.62	α(K)exp=4.8 13 (1991Ke10) other Eγ (Iγ): 110.65 7 (15.3 10) (2007ChZX; Budapest Data).
111.025[bf] 3	12.2 12	239.770?	(1)$^-$	128.744	(0)$^-$	M1	4.54	α(K)exp=5.6 9 (1991Ke10)
118.270 6	1.9 4	331.077	(2)$^-$	212.808	(1,2)$^-$	M1	3.79	α(K)exp=3.7 20 (1991Ke10) other Eγ (Iγ): 118.38 8 (11.6 17) (2007ChZX; Budapest Data).
118.7817 18	6.9 8	118.7824	3$^-$	0.0	4$^+$	E1	0.257	α(K)exp<0.5 (1991Ke10) Population ratio>1.5 in (n,γ) E=resonance (1991Ke10) favors J=3,4 for parent level.
[x]120.153 5	2.0 4							
121.136 7	2.0 4	225.916	(2)$^-$	104.776	(1)$^-$	M1	3.54	α(K)exp=5.0 18 (1991Ke10)
122.599 10	2.3 7	389.720	(2)$^-$	267.128	(3)$^-$	M1	3.42	α(K)exp=3.0 13 (1991Ke10) other Eγ (Iγ): 123.09 16 (5.3 9) (2007ChZX; Budapest Data).
[x]122.748 15	1.9 6					M1	3.41	α(K)exp=4.2 16 (1991Ke10)
[x]124.771 5	10.7 11					M1	3.25	α(K)exp=1.9 5 (1991Ke10) Population ratio>1.5 in (n,γ) E=resonance (1991Ke10) favors J=3,4 or possibly 2 for parent level.
[x]126.586 9	1.8 5							
126.958[bf] 3	24.0 24	139.942?	(5$^+$)	12.984?	(6$^+$)	M1	3.09	α(K)exp=2.8 7 (1991Ke10) Population ratio>6.0 in (n,γ) E=resonance (1991Ke10); from this ratio 1997BaZV and 1991Ke10 favor J=5 and 4, respectively, for parent level. Therefore, the evaluator does not adopt the placement of the 127γ from the J=2, 320 level suggested in 1991Ke10.

$^{192}_{77}$Ir$_{115}$-6

γ(^{192}Ir) (continued)

E_γ[†]	I_γ[‡c]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[#]	α[d]	Comments
[x]128.59 *4*	1.2 *6*							
128.736[f] *25*	1.3 *7*	128.744	(0)$^-$	0.0	4$^+$			Mult=M4 (α=1082)implied by level scheme, inconsistent with absence of transition in ce spectrum. Therefore, γ is probably misplaced (1991Ke10); consequently, this placement has been omitted from Adopted Levels, Gammas.
[x]130.90 *9*	1.5 *8*							
[x]133.083 *8*	2.1 *5*					M1	2.71	α(K)exp=2.0 *11* (1991Ke10)
133.934[f] *9*	2.4 *6*	418.141?	(3$^+$,4$^+$)	284.215	(2)$^+$	M1	2.66	α(K)exp=2.3 *13* (1991Ke10)
[x]134.157 *10*	2.4 *6*					M1	2.64	α(K)exp=1.8 *10* (1991Ke10)
136.1248 *15*	80 *10*	240.902	(2)$^-$	104.776	(1)$^-$	M1	2.54	α(K)exp=1.8 *3* (1991Ke10) for (136.2γ+136.1γ) doublet in which this transition is major component implies mult=M1 for this transition.
136.210 *6*	49 *6*	192.935	(2)$^-$	56.720	1$^-$	(M1,E2)	1.9 *6*	other Eγ (Iγ): 136.2 *5* (149 *5*) (2007ChZX; Budapest Data). α(K)exp=1.8 *3*, mult=M1 (1991Ke10) for (136.2γ+136.1γ) favors mult=M1,E2 for this transition.
136.792 *2*	27.3 *22*	193.511	(1)$^+$	56.720	1$^-$	E1	0.179	α(K)exp=0.26 *9* (1991Ke10)
138.247 *4*	6.6 *8*	331.761	(1)$^-$	193.511	(1)$^+$	(E1)	0.1744	α(K)exp=0.45 *23* (1991Ke10) other Eγ (Iγ): 138.43 *10* (16.8 *13*) (2007ChZX; Budapest Data). Mult.: E1 or E2 from α(K)exp; $\Delta\pi$=yes from level scheme.
[x]138.942[&] *5*	5.7[&] *7*					M1	2.39	α(K)exp=1.9 *3* (1991Ke10)
139.736[bf] *9*	3.4 *5*	365.653?	(2$^-$,3$^-$)	225.916	(2)$^-$	M1	2.35	α(K)exp=3.2 *12* (1991Ke10)
[x]140.17 *5*	1.4 *7*							
140.237 *14*	4.0 *6*	451.250	(1,2)$^-$	310.999	2$^-$	M1	2.33	α(K)exp=2.3 *6* (1991Ke10)
140.610 *15*	1.2 *6*	508.988	(2,3)$^-$	368.353	(2)$^-$			
140.830 *15*	2.0 *6*	366.730	(2)$^-$	225.916	(2)$^-$			
[x]142.210 *25*	2.1 *5*					M1	2.24	α(K)exp=2.4 *13* (1991Ke10)
[x]144.356 *7*	3.0 *6*							
144.828 *11*	7.0 *11*	288.403	(2)$^-$	143.556	(1)$^-$			other Eγ (Iγ): 144.79 *6* (51.3 *25*) (2007ChZX; Budapest Data). α(K)exp=1.6 *3* (1991Ke10) for (144.8γ+144.9γ) doublet.
144.904[bf] *5*	38 *4*	144.904?	(5$^+$)	0.0	4$^+$	(M1)	2.12	Mult.: α(K)exp=1.6 *3* (1991Ke10) for (144.8γ+144.9γ) doublet dominated by the latter G.
[x]146.902 *6*	3.3 *5*					M1	2.04	α(K)exp=1.8 *9* (1991Ke10)
148.822[e] *3*	13.4[e] *13*	292.381	(2)$^-$	143.556	(1)$^-$			α(K)exp=1.6 *3* (1991Ke10), mult=M1 for doubly-placed G.
148.822[e] *3*	13.4[e] *13*	389.720	(2)$^-$	240.902	(2)$^-$			α(K)exp=1.6 *3* (1991Ke10), mult=M1 for doubly-placed G. other Eγ (Iγ): 148.85 *6* (30.3 *18*) (2007ChZX; Budapest Data). Population ratio=1.0 *4* in (n,γ) E=resonance (1991Ke10) favors J=1,2 for parent level.
[x]149.953 *5*	2.4 *6*							
[x]151.275 *20*	1.1 *6*							
151.444 *25*	3.2 *6*	392.351	(1,2,3)$^-$	240.902	(2)$^-$			
151.561 *3*	25.0 *25*	267.128	(3)$^-$	115.564	(2)$^-$	M1	1.87	α(K)exp=1.5 *3* (1991Ke10) Population ratio=2.3 *5* in (n,γ) E=resonance (1991Ke10) favors J=3 for parent level.
[x]151.754 *4*	4.3 *6*					M1	1.86	α(K)exp=2.5 *10* (1991Ke10)

γ(^{192}Ir) (continued)

E_γ[†]	I_γ[‡c]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[#]	δ[#]	α[d]	Comments
[x]155.354 *17*	1.8 *5*								
156.081 *3*	12.6 *13*	212.808	(1,2)$^-$	56.720	1$^-$	M1		1.721	α(K)exp=1.1 *3* (1991Ke10)
156.653[b] *3*	22.2 *18*	440.870	(3$^+$)	284.215	(2)$^+$	(M1)		1.704	other Eγ (Iγ): 156.38 *6* (35.8 *16*) (2007ChZX; Budapest Data). α(K)exp=0.9 *19* (1991Ke10) obviously includes a typographical error, presumably in the uncertainty (authors assign M1(+E2)). Placement supported by γγ coin data.
158.179 *10*	1.8 *5*	351.690	(2)$^+$	193.511	(1)$^+$				
[x]159.495 *3*	7.6 *8*					E2		0.763	α(K)exp=0.5 *3* (1991Ke10)
[x]161.966 *11*	1.4 *4*								
[x]162.370 *8*	2.2 *5*					M1		1.540	α(K)exp=1.4 *7* (1991Ke10)
162.826[f] *15*	1.7 *4*	451.250	(1,2)$^-$	288.403	(2)$^-$	M1		1.528	α(K)exp=2.4 *13* (1991Ke10)
[x]165.084 *18*	2.9 *4*					M1		1.469	α(K)exp=1.3 *7* (1991Ke10)
[x]165.417 *11*	2.3 *5*					M1		1.461	α(K)exp=1.3 *6* (1991Ke10)
[x]165.568 *4*	9.3 *11*					M1		1.457	α(K)exp=1.3 *4* (1991Ke10)
166.086[bf] *6*	11.0 *11*	392.351	(1,2,3)$^-$	226.261?	(≤2$^-$)	M1		1.445	α(K)exp=1.2 *2* (1991Ke10)
166.439 *6*	3.0 *5*	392.351	(1,2,3)$^-$	225.916	(2)$^-$				
169.202 *7*	23.0 *23*	225.916	(2)$^-$	56.720	1$^-$	E2		0.617	α(K)exp=0.43 *12* (1991Ke10) Mult.: from 1991Ke10, presumably based on K:L2:L3. mult=E2+M1, δ=2.1 *+21−6* based on α(K)exp alone. other Eγ (Iγ): 169.25 *5* (39.6 *17*) (2007ChZX; Budapest Data).
169.541[ebf] *5*	6.5[e] *8*	226.261?	(≤2$^-$)	56.720	1$^-$				other Eγ (Iγ): 169.25 *5* (39.6 *17*) (2007ChZX; Budapest Data). α(K)exp=1.7 *7*, mult=M1 (1991Ke10) for doubly-placed G.
169.541[ef] *5*	6.5[e] *8*	489.50?	1$^-$,2$^-$,3$^-$	319.883	(2)$^-$				α(K)exp=1.7 *7*, mult=M1 (1991Ke10) for doubly-placed G.
[x]172.18 *5*	1.0 *5*								
172.841 *4*	5.9 *6*	288.403	(2)$^-$	115.564	(2)$^-$	M1		1.291	α(K)exp=1.1 *3* (1991Ke10)
[x]173.707 *13*	1.3 *7*					M1		1.273	α(K)exp=1.2 *7* (1991Ke10)
174.144 *10*	2.6 *5*	415.038	1$^-$,2$^-$,3$^-$	240.902	(2)$^-$	M1		1.264	α(K)exp=2.1 *11* (1991Ke10)
[x]175.11 *7*	0.50 *25*								
[x]175.376 *25*	1.6 *4*								
176.826 *25*	2.5 *5*	292.381	(2)$^-$	115.564	(2)$^-$	M1		1.211	α(K)exp=1.4 *7* (1991Ke10)
[x]177.052 *25*	1.3 *7*								
[x]177.395 *20*	1.4 *7*								
177.926 *12*	3.5 *7*	508.988	(2,3)$^-$	331.077	(2)$^-$	M1		1.190	α(K)exp=1.0 *5* (1991Ke10)
[x]178.21 *5*	0.50 *25*								
179.038[f] *2*	25.0 *20*	235.760?	(1$^-$)	56.720	1$^-$	M1+E2	1.0 *+4−2*	0.81 *11*	α(K)exp=0.58 *10* (1991Ke10) Population ratio=0.85 *9* in (n,γ) E=resonance (1991Ke10); J=1 assumed for parent level in order to normalize measured ratios.

γ(^{192}Ir) (continued)

E_γ[†]	I_γ[‡c]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	α[d]	Comments
[x]180.724 *4*	10.8 *11*					M1	1.139	α(K)exp=1.1 *2* (1991Ke10) Population ratio=0.91 *20* in (n,γ) E=resonance (1991Ke10) favors J=1 or possibly 2 for parent level.
[x]181.32 *3*	1.0 *3*							
[x]181.80[&] *4*	0.7[&] *4*							
[x]182.74 *4*	1.0 *3*							
[x]183.310 *15*	0.8 *4*							
183.624 *6*	9.3 *11*	288.403	(2)$^-$	104.776	(1)$^-$	M1	1.090	α(K)exp=1.1 *3* (1991Ke10) Population ratio=1.5 *4* in (n,γ) E=resonance (1991Ke10) favors J=2 or possibly 3 for parent level.
[x]185.051 *18*	1.6 *5*							
[x]185.50 *4*	0.8 *4*							
187.521 *6*	5.3 *6*	331.077	(2)$^-$	143.556	(1)$^-$	M1	1.027	α(K)exp=0.8 *2* (1991Ke10) Population ratio=1.1 *4* in (n,γ) E=resonance (1991Ke10) favors J<3 for parent level.
188.19 *4*	1.6 *5*	331.761	(1)$^-$	143.556	(1)$^-$			other Eγ (Iγ): 187.87 *18* (7 *3*) (2007ChZX; Budapest Data).
[x]188.60 *7*	0.6 *3*							
189.099 *10*	2.4 *5*	508.988	(2,3)$^-$	319.883	(2)$^-$			other Eγ (Iγ): 189.89 *19* (6.1 *23*) (2007ChZX; Budapest Data).
[x]190.216 *5*	5.2 *6*					M1	0.987	α(K)exp=0.9 *3* (1991Ke10) Population ratio>2.0 in (n,γ) E=resonance (1991Ke10) favors J=3,4 for parent level.
191.16[f] *4*	0.8 *4*	319.883	(2)$^-$	128.744	(0)$^-$			
[x]192.676 *25*	1.8 *5*							
193.718 *4*	10.3 *12*	277.993	(4)$^-$	84.275	3$^-$	M1	0.938	α(K)exp=0.78 *25* (1991Ke10) Population ratio>2.5 in (n,γ) E=resonance (1991Ke10) favors J=3,4 for parent level.
[x]193.93 *4*	1.5 *8*							
[x]195.09 *4*	1.5 *5*							
195.426 *14*	3.3 *8*	310.999	2$^-$	115.564	(2)$^-$			
[x]195.656 *25*	2.3 *6*							
[x]195.94 *3*	2.2 *7*							
[x]196.725 *25*	1.5 *5*							
197.072[f] *8*	4.5 *9*	489.50?	1$^-$,2$^-$,3$^-$	292.381	(2)$^-$	M1	0.894	α(K)exp=0.8 *3* (1991Ke10) other Eγ (Iγ): 197.12 *21* (9.5 *25*) (2007ChZX; Budapest Data).
[x]197.95 *3*	1.3 *4*							
199.190[f] *12*	4.9 *10*	530.266?	1$^-$,2$^-$,3$^-$	331.077	(2)$^-$	M1	0.868	α(K)exp=0.65 *18* (1991Ke10) other Eγ (Iγ): 199.02 *10* (13.9 *23*) (2007ChZX; Budapest Data).
199.41 *4*	1.7 *5*	392.351	(1,2,3)$^-$	192.935	(2)$^-$	M1	0.865	α(K)exp=1.1 *5* (1991Ke10)
201.108 *20*	2.6 *7*	319.883	(2)$^-$	118.7824	3$^-$	M1	0.845	α(K)exp=1.3 *6* (1991Ke10) other Eγ (Iγ): 201.48 *9* (17.7 *22*) (2007ChZX; Budapest Data).
[x]201.246 *12*	8.5 *9*					M1	0.844	α(K)exp=0.94 *18* (1991Ke10)
[x]202.255 *9*	4.6 *6*					M1	0.832	α(K)exp=0.80 *26* (1991Ke10)

$^{192}_{77}$Ir$_{115}$-9

γ(^{192}Ir) (continued)

E_γ[†]	I_γ[‡c]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	α[d]	Comments
203.018 *8*	3.3 *5*	331.761	(1)$^-$	128.744	(0)$^-$	M1	0.823	α(K)exp=0.70 *20* (1991Ke10) other Eγ (Iγ): 203.83 *8* (21.7 *16*) (2007ChZX; Budapest Data).
^{x}203.676 *14*	2.7 *4*							
^{x}204.078 *11*	4.8 *6*					M1	0.811	α(K)exp=0.63 *20* (1991Ke10)
^{x}204.469 *25*	4.5 *7*					M1	0.807	α(K)exp=0.44 *23* (1991Ke10)
206.219 *4*	29.4 *24*	310.999	2$^-$	104.776	(1)$^-$	M1	0.788	α(K)exp=0.63 *11* (1991Ke10) Population ratio=1.08 *20* in (n,γ) E=resonance (1991Ke10) favors J=2 or possibly 1 for parent level. other Eγ (Iγ): 206.19 *6* (48.1 *23*) (2007ChZX; Budapest Data).
207.302[bf] *6*	6.2 *7*	223.352?	(6$^+$)	16.050?	(6$^-$)	E1	0.0624	α(K)exp<0.16 (1991Ke10)
208.437[bf] *7*	3.8 *6*	265.160?	(0$^-$)	56.720	1$^-$	M1	0.765	α(K)exp=0.92 *24* (1991Ke10) other Eγ (Iγ): 208.07 *16* (9.1 *12*) (2007ChZX; Budapest Data).
210.353[ebf] *5*	9.3[e] *9*	223.352?	(6$^+$)	12.984?	(6$^+$)			α(K)exp=0.45 *16* (1991Ke10), mult=M1(+E2) for multiply-placed G.
210.353[e] *5*	9.3[e] *9*	451.250	(1,2)$^-$	240.902	(2)$^-$			α(K)exp=0.45 *16* (1991Ke10), mult=M1(+E2) for multiply-placed G.
210.353[ef] *5*	9.3[e] *9*	530.266?	1$^-$,2$^-$,3$^-$	319.883	(2)$^-$			α(K)exp=0.45 *16* (1991Ke10), mult=M1(+E2) for multiply-placed G. other Eγ (Iγ): 210.74 *10* (27 *5*) (2007ChZX; Budapest Data).
^{x}211.194 *6*	15.1 *12*					M1	0.738	α(K)exp=0.47 *16* (1991Ke10)
212.31 *5*	0.9 *5*	331.077	(2)$^-$	118.7824	3$^-$			other Eγ (Iγ): 211.49 *5* (8 *4*) (2007ChZX; Budapest Data).
215.091 *12*	2.9 *4*	319.883	(2)$^-$	104.776	(1)$^-$	M1	0.701	α(K)exp=0.7 *4* (1991Ke10)
215.519 *8*	3.0 *5*	331.077	(2)$^-$	115.564	(2)$^-$	M1	0.697	α(K)exp=0.7 *3* (1991Ke10) other Eγ (Iγ): 215.37 *15* (9.6 *12*) (2007ChZX; Budapest Data).
216.196 *4*	8.0 *10*	331.761	(1)$^-$	115.564	(2)$^-$	M1	0.691	α(K)exp=0.61 *17* (1991Ke10) other Eγ (Iγ): 216.75 *5* (72 *3*) (2007ChZX; Budapest Data); presumably for doublet (216.9γ +216.2γ).
216.905[bf] *4*	46 *4*	216.905?	(4$^+$)	0.0	4$^+$	M1	0.685	α(K)exp=0.61 *11* (1991Ke10) other Eγ (Iγ): 216.75 *5* (72 *3*) (2007ChZX; Budapest Data); presumably for doublet (216.9γ +216.2γ). Population ratio=3.0 *10* in (n,γ) E=resonance (1991Ke10); from this ratio 1997BaZV and 1991Ke10 favor J=4 and 3, respectively, for parent level.
^{x}219.160[&] *4*	20.3[&] *20*					E1	0.0543	α(K)exp=0.044 *10* (1991Ke10)
^{x}219.72 *8*	0.8 *4*							
220.57 *4*	1.0 *3*	508.988	(2,3)$^-$	288.403	(2)$^-$			
^{x}222.180 *10*	5.6 *7*					M1	0.641	α(K)exp=0.68 *14* (1991Ke10) Population ratio=0.87 *17* in (n,γ) E=resonance (1991Ke10) favors J=1 or possibly 2 for parent level.
^{x}222.42 *10*	0.8 *4*							
223.18 *3*	2.2 *4*	366.730	(2)$^-$	143.556	(1)$^-$			other Eγ (Iγ): 222.36 *10* (10.8 *21*) (2007ChZX; Budapest Data).
^{x}225.21 *8*	1.1 *3*							
226.297 *3*	30.0 *24*	331.077	(2)$^-$	104.776	(1)$^-$	M1	0.609	α(K)exp=0.56 *12* (1991Ke10) other Eγ (Iγ): 226.23 *14* (52 *5*) (2007ChZX; Budapest Data). Population ratio=1.08 *12* in (n,γ) E=resonance (1991Ke10) favors J=2 for parent level.

$^{192}_{77}$Ir$_{115}$-10

γ(^{192}Ir) (continued)

Eγ[†]	Iγ[‡c]	Ei(level)	J^{π}_i	E_f	J^{π}_f	Mult.[#]	α[d]	Comments
226.74 *4*	2.3 *5*	310.999	2⁻	84.275	3⁻	M1	0.606	α(K)exp=0.9 *5* (1991Ke10)
[x]228.228 *25*	1.6 *3*							
229.769[bf] *11*	4.0 *6*	670.640?	(4⁺)	440.870	(3⁺)	M1	0.584	α(K)exp=0.40 *20* (1991Ke10)
[x]230.235 *20*	1.6 *5*							
[x]231.40 *5*	3.7 *6*							
231.67 *3*	5.6 *7*	288.403	(2)⁻	56.720	1⁻	M1	0.571	α(K)exp=0.36 *15* (1991Ke10) other Eγ (Iγ): 231.64 *8* (12.3 *17*) (2007ChZX; Budapest Data).
232.891 *16*	2.5 *5*	351.690	(2)⁺	118.7824	3⁻			
[x]234.602[&] *20*	1.2[&] *4*							
[x]238.561 *20*	1.4 *4*							
241.872 *15*	2.6 *5*	508.988	(2,3)⁻	267.128	(3)⁻	M1	0.507	α(K)exp=0.9 *5* (1991Ke10) other Eγ (Iγ): 241.70 *15* (8.4 *17*) (2007ChZX; Budapest Data).
[x]245.162 *20*	1.5 *4*							
[x]245.671 *10*	4.7 *6*					M1	0.485	α(K)exp=0.43 *17* (1991Ke10)
[x]245.83 *4*	1.6 *5*							
246.152 *12*	1.8 *5*	389.720	(2)⁻	143.556	(1)⁻			
246.801 *14*	1.8 *5*	331.077	(2)⁻	84.275	3⁻			other Eγ (Iγ): 246.9 *20* (4.2 *12*) (2007ChZX; Budapest Data).
[x]247.81 *4*	1.6 *5*							
[x]248.56 *12*	0.4 *2*							
[x]250.750 *6*	11.5 *12*					M1	0.459	α(K)exp=0.37 *10* (1991Ke10) Population ratio=1.35 *26* in (n,γ) E=resonance (1991Ke10) favors J=2 for parent level.
252.54[bf] *6*	4.1 *6*	670.640?	(4⁺)	418.141?	(3⁺,4⁺)	M1,E2	0.31 *15*	α(K)exp=0.24 *12* (1991Ke10)
254.277 *15*	13.9 *14*	310.999	2⁻	56.720	1⁻	M1	0.442	α(K)exp=0.28 *13* (1991Ke10) Population ratio=0.97 *16* in (n,γ) E=resonance (1991Ke10) favors J=2 or possibly 1 for parent level.
[x]255.375 *20*	1.8 *5*							
[x]255.74 *3*	4.4 *7*					E1,E2		α(K)exp<0.23 (1991Ke10)
258.338 *25*	3.0 *6*	451.250	(1,2)⁻	192.935	(2)⁻	M1	0.423	α(K)exp=0.65 *26* (1991Ke10) other Eγ (Iγ): 259.11 *8* (16.8 *23*) (2007ChZX; Budapest Data).
[x]259.336 *8*	9.8 *12*					M1	0.418	α(K)exp=0.38 *7* (1991Ke10) Population ratio=1.6 *5* in (n,γ) E=resonance (1991Ke10) favors J=2,3 for parent level.
[x]261.743 *25*	2.7 *7*							
261.951 *6*	25.0 *25*	366.730	(2)⁻	104.776	(1)⁻	M1	0.407	α(K)exp=0.30 *5* (1991Ke10) other Eγ (Iγ): 262.01 *6* (39.6 *23*) (2007ChZX; Budapest Data). Population ratio=1.35 *21* in (n,γ) E=resonance (1991Ke10) favors J=2 for parent level.
[x]262.48 *4*	2.2 *6*							
263.571 *8*	10.7 *11*	368.353	(2)⁻	104.776	(1)⁻	M1	0.400	α(K)exp=0.33 *10* (1991Ke10)
264.003[bf] *9*	7.0 *8*	529.167?	(1⁻)	265.160?	(0⁻)	M1,E2	0.27 *13*	α(K)exp=0.21 *11* (1991Ke10) other Eγ (Iγ): 263.90 *11* (18.1 *17*) (2007ChZX; Budapest Data).
267.416 *10*	7.8 *9*	351.690	(2)⁺	84.275	3⁻	E1,E2		α(K)exp<0.13 (1991Ke10)

$^{192}_{77}$Ir$_{115}$-11

γ(^{192}Ir) (continued)

Eγ[†]	Iγ[‡c]	Ei(level)	J^π_i	E_f	J^π_f	Mult.[#]	δ[#]	α[d]	Comments
									Population ratio=1.25 *35* in (n,γ) E=resonance (1991Ke10) favors J=2 or possibly 1 for parent level.
[x]267.99 *6*	0.50 *25*								
[x]269.56 *10*	2.0 *4*								
[x]270.363 *17*	6.2 *9*					M1		0.373	α(K)exp=0.32 *14* (1991Ke10)
[x]271.30 *6*	3.2 *6*								
273.25[ebf] *3*	6.1[e] *9*	418.141?	(3⁺,4⁺)	144.904?	(5⁺)				α(K)exp=0.16 *9*, mult=E2 (1991Ke10) for doubly-placed G.
273.25[ef] *3*	6.1[e] *9*	508.988	(2,3)⁻	235.760?	(1⁻)				other Eγ (Iγ): 273.23 *17* (9.4 *22*) (2007ChZX; Budapest Data). α(K)exp=0.16 *9*, mult=E2 (1991Ke10) for doubly-placed G.
273.57 *4*	2.2 *7*	392.351	(1,2,3)⁻	118.7824	3⁻				
[x]274.57 *4*	1.6 *5*								
275.042 *20*	4.0 *8*	331.761	(1)⁻	56.720	1⁻				other Eγ (Iγ): 274.88 *16* (9.6 *21*) (2007ChZX; Budapest Data).
276.762 *16*	6.6 *10*	392.351	(1,2,3)⁻	115.564	(2)⁻	E2		0.1209	α(K)exp=0.15 *7* (1991Ke10)
[x]276.93 *4*	1.7 *5*								
278.199[bf] *16*	5.2 *6*	418.141?	(3⁺,4⁺)	139.942?	(5⁺)	E1,E2			α(K)exp<0.19 (1991Ke10) other Eγ (Iγ): 278.33 *7* (25.3 *21*) (2007ChZX; Budapest Data).
[x]278.50 *4*	1.9 *5*								
[x]280.56[&] *8*	2.8[&] *6*								
284.072 *12*	13.9 *11*	368.353	(2)⁻	84.275	3⁻	M1		0.326	α(K)exp=0.26 *4* (1991Ke10) other Eγ (Iγ): 284.29 *7* (25.3 *19*) (2007ChZX; Budapest Data).
284.939 *14*	6.4 *8*	389.720	(2)⁻	104.776	(1)⁻	M1+E2	1.1 *+30−7*	0.21 *9*	α(K)exp=0.16 *8* (1991Ke10)
[x]289.838 *16*	4.4 *7*					M1		0.309	α(K)exp=0.23 *12* (1991Ke10)
292.35[f] *6*	1.7 *5*	292.381	(2)⁻	0.0	4⁺				other Eγ (Iγ): 292.6 *3* (5.5 *16*) (2007ChZX; Budapest Data).
[x]296.622 *20*	4.5 *14*					M1		0.290	α(K)exp=0.33 *16* (1991Ke10)
[x]297.78 *10*	1.1 *3*								
[x]298.849[&] *18*	3.7[&] *7*								
299.50 *5*	1.6 *5*	415.038	1⁻,2⁻,3⁻	115.564	(2)⁻				other Eγ (Iγ): 297.51 *23* (8.4 *22*) (2007ChZX; Budapest Data).
[x]300.279 *15*	6.2 *9*					E2		0.0946	α(K)exp=0.11 *5* (1991Ke10)
[x]302.57 *6*	1.8 *5*								
302.911[bf] *10*	7.2 *11*	529.167?	(1⁻)	226.261?	(≤2⁻)	M1		0.274	α(K)exp=0.28 *9* (1991Ke10) other Eγ (Iγ): 302.91 *7* (15.6 *14*) (2007ChZX; Budapest Data).
[x]303.73 *4*	2.3 *5*								
305.45 *5*	2.7 *5*	389.720	(2)⁻	84.275	3⁻				other Eγ (Iγ): 305.49 *18* (5.8 *13*) (2007ChZX; Budapest Data).
310.01 *4*	3.2 *10*	366.730	(2)⁻	56.720	1⁻				other Eγ (Iγ): 310.04 *19* (7.9 *13*) (2007ChZX; Budapest Data).

$^{192}_{77}$Ir$_{115}$-12

γ(^{192}Ir) (continued)

Eγ[†]	Iγ[‡c]	Ei(level)	J_i^π	E_f	J_f^π	Mult.[#]	α[d]	Comments
311.70 *5*	2.8 *7*	368.353	(2)⁻	56.720	1⁻			
[x]313.671 *25*	4.3 *9*							α(K)exp=0.24 *9*, mult=M1 (1991Ke10) for 313.7γ+314.4γ doublet.
[x]314.402 *16*	6.0 *9*							α(K)exp=0.24 *9*, mult=M1 (1991Ke10) for 313.7γ+314.4γ doublet.
316.02 *10*	21 *11*	508.988	(2,3)⁻	192.935	(2)⁻			α(K)exp=0.12 *7* (1991Ke10) other Eγ (Iγ): 315.94 *9* (31 *5*) (2007ChZX; Budapest Data).
[x]318.46 *4*	4.5 *9*							
[x]319.68 *10*	0.9 *5*							
322.55 *4*	4.7 *9*	451.250	(1,2)⁻	128.744	(0)⁻			
[x]323.75 *4*	4.4 *9*							
[x]330.876 *17*	10.4 *16*					M1	0.216	α(K)exp=0.19 *6* (1991Ke10)
333.866[f] *9*	16.7 *25*	418.141?	(3⁺,4⁺)	84.275	3⁻	E1	0.0196	α(K)exp=0.024 *12* (1991Ke10)
[x]337.408 *25*	5.8 *12*							
[x]339.93 *4*	3.5 *9*							
[x]341.22 *8*	1.2 *4*							
[x]345.272 *25*	4.7 *12*							
[x]347.32 *4*	9.2 *18*					M1	0.189	α(K)exp=0.16 *5* (1991Ke10)
351.691 *5*	135 *16*	351.690	(2)⁺	0.0	4⁺	E2	0.0599	α(K)exp=0.037 *13* (1991Ke10)
[x]352.80 *5*	3.2 *10*							
[x]355.70 *15*	0.6 *3*							
[x]357.82[&] *6*	6.0[&] *12*							
358.34 *8*	2.7 *8*	415.038	1⁻,2⁻,3⁻	56.720	1⁻			
[x]359.42 *15*	2.5 *8*							
[x]361.85[&] *6*	2.8[&] *8*							
[x]364.54 *6*	5.5 *11*							
365.44 *4*	6.4 *13*	508.988	(2,3)⁻	143.556	(1)⁻			other Eγ (Iγ): 365.02 *13* (14.9 *13*) (2007ChZX; Budapest Data).
[x]366.47 *4*	7.0 *14*							
[x]367.454 *25*	9.8 *15*							
[x]371.34 *3*	6.3 *9*							
[x]374.60 *7*	4.5 *14*							
[x]380.67 *6*	3.8 *11*							
[x]381.86 *6*	4.9 *15*							
[x]382.914[&] *25*	10.0[&] *15*							
384.64[f] *8*	3.4 *10*	489.50?	1⁻,2⁻,3⁻	104.776	(1)⁻			other Eγ (Iγ): 383.70 *25* (6.5 *16*) (2007ChZX; Budapest Data).
[x]389.06 *4*	5.8 *15*							
[x]392.78 *11*	4.0 *10*							
[x]398.59 *6*	4.9 *10*							
[x]401.24 *14*	8.5 *12*							
[x]405.30 *13*	7.7 *19*							
[x]406.18 *15*	7.5 *19*							
[x]409.24 *8*	5.1 *15*							
[x]414.48 *8*	7.1 *21*							
418.114[f] *25*	29 *4*	418.141?	(3⁺,4⁺)	0.0	4⁺			other Eγ (Iγ): 417.99 *5* (44.8 *19*) (2007ChZX; Budapest Data).

γ(^{192}Ir) (continued)

E_γ [†]	I_γ [‡c]	E_i(level)	J^π_i	E_f	J^π_f	Comments
[x]425.36 *8*	8.5 *21*					
432.64[f] *4*	16.1 *24*	489.50?	$1^-,2^-,3^-$	56.720	1^-	other Eγ (Iγ): 432.55 *5* (24.0 *9*) (2007ChZX; Budapest Data).
[x]440.98[&] *8*	6.7[&] *20*					
[x]449.73 *7*	16.0 *24*					
[x]452.42 *12*	6.6 *20*					
[x]466.5[a] *15*						
[x]482.93 *15*	7.7 *23*					
[x]490.44 *6*	17.6 *26*					
[x]504.6 *3*	3.7 *19*					
[x]509.64 *15*	8.1 *24*					
[x]521.60 *17*	5.3 *27*					
[x]525.54 *14*	5.1 *26*					
[x]534.81 *13*	8.0 *24*					
[x]557.5[a] *15*						
[x]574.78 *18*	13 *6*					
[x]599.51 *14*	19 *8*					
[x]618.60 *20*	18 *9*					
[x]622.6[a] *15*						
[x]632.9 *3*	20 *10*					
[x]692.5[a] *15*						

[†] From 1991Ke10, except as noted.

[‡] Photon intensity (for E=thermal) relative to Iγ(84.3)=100 *10* (1991Ke10), except as noted. Approximately half the data from 2007ChZX fail to agree within one standard deviation with those from 1991Ke10; those data are given In comments on the relevant transitions.

[#] From ce data of 1991Ke10, except As noted. Note that, in most cases, some E2 admixture is possible for multipolarities designated as M1.

[@] From 1989Du03 (E=thermal).

[&] May be a γ in ^{193}Ir arising from double neutron capture (1991Ke10).

[a] From 1971Kr09; unconfirmed by 1991Ke10, so probably does not belong in ^{192}Ir.

[b] Placement from 1997BaZV.

[c] For intensity per 100 neutron captures, multiply by 0.023 *3*.

[d] 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.

[e] Multiply placed with undivided intensity.

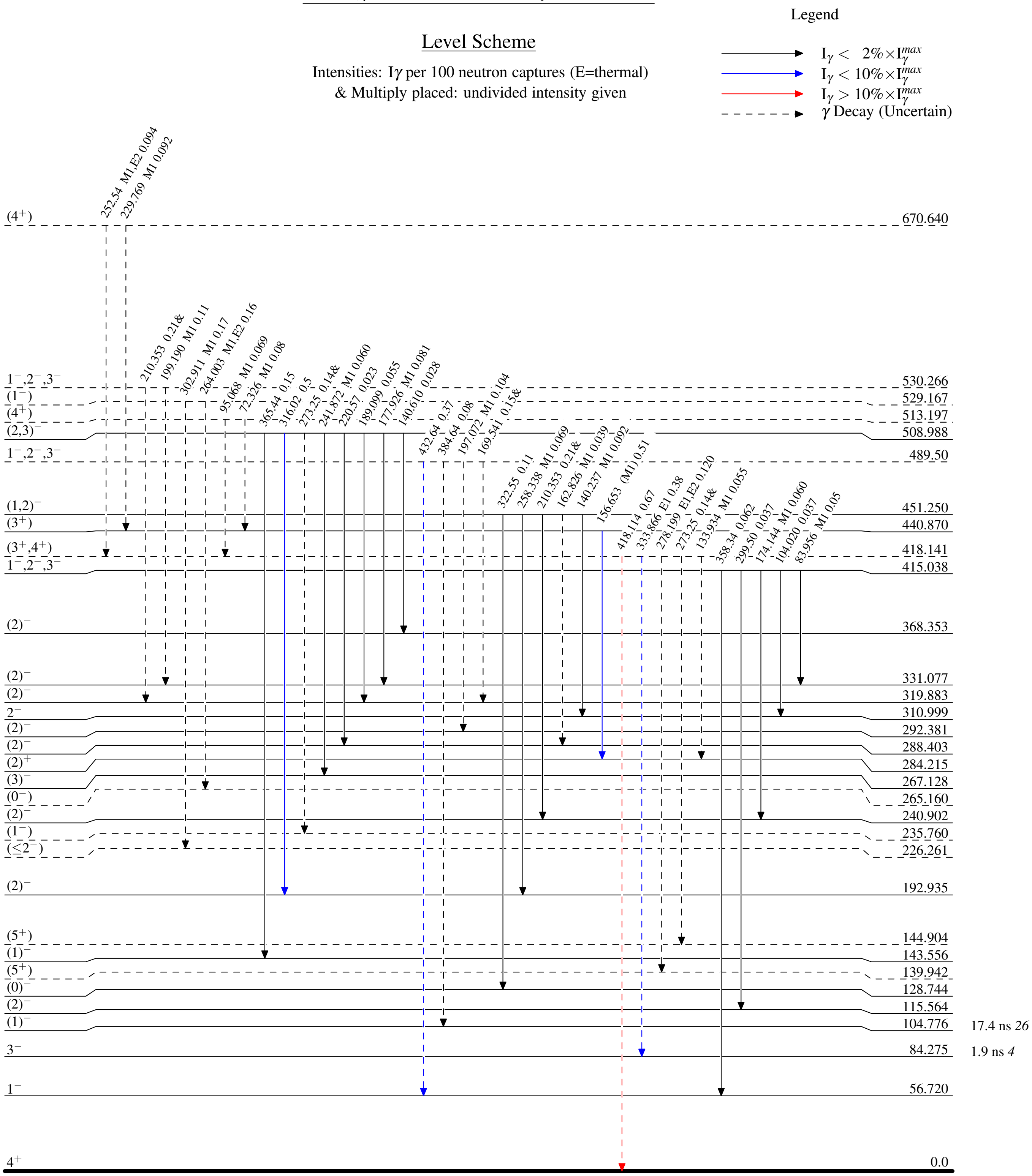
[f] Placement of transition in the level scheme is uncertain.

[x] γ ray not placed in level scheme.

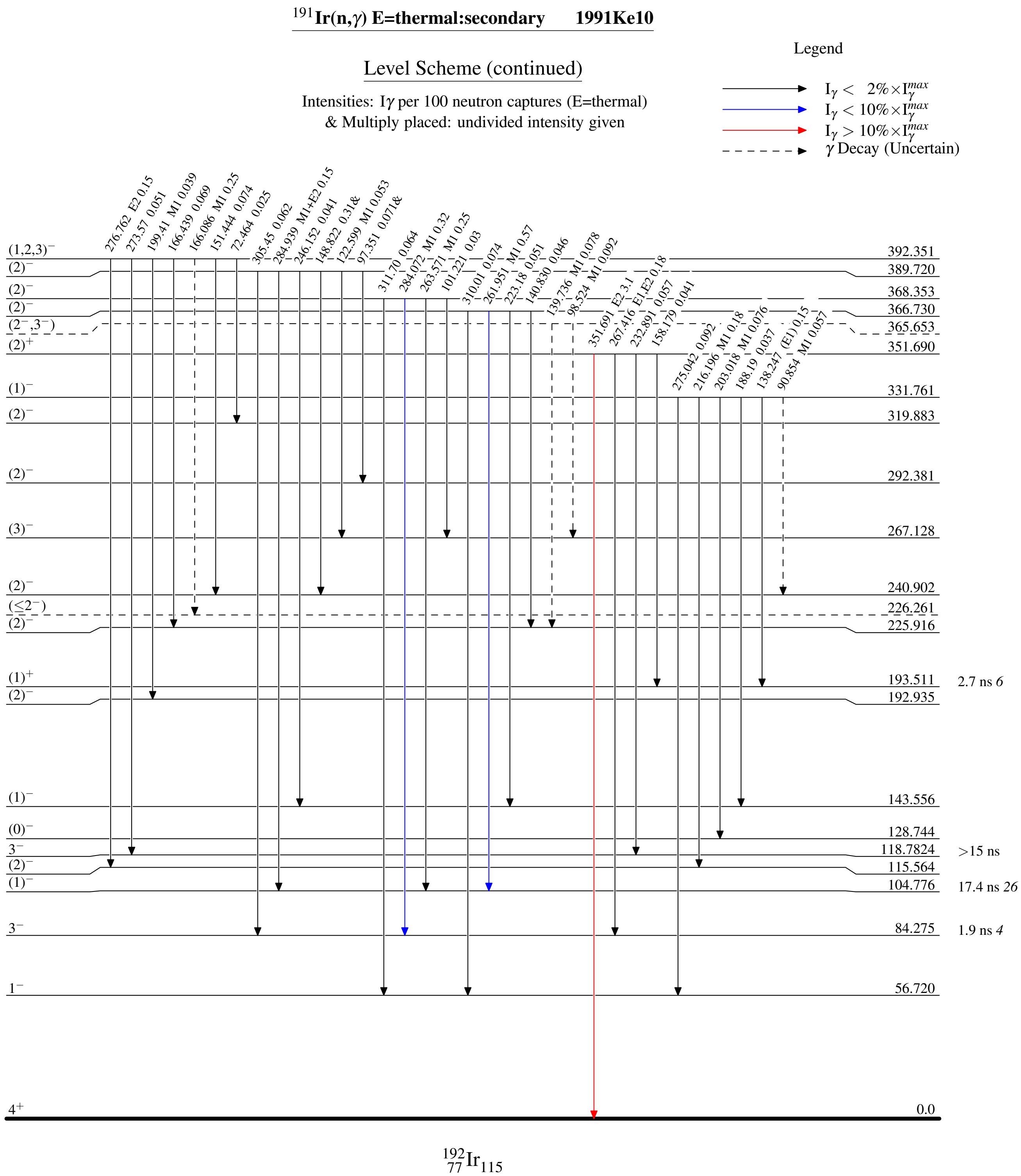
^{191}Ir(n,γ) E=thermal:secondary 1991Ke10

Level Scheme

Intensities: Iγ per 100 neutron captures (E=thermal)
& Multiply placed: undivided intensity given



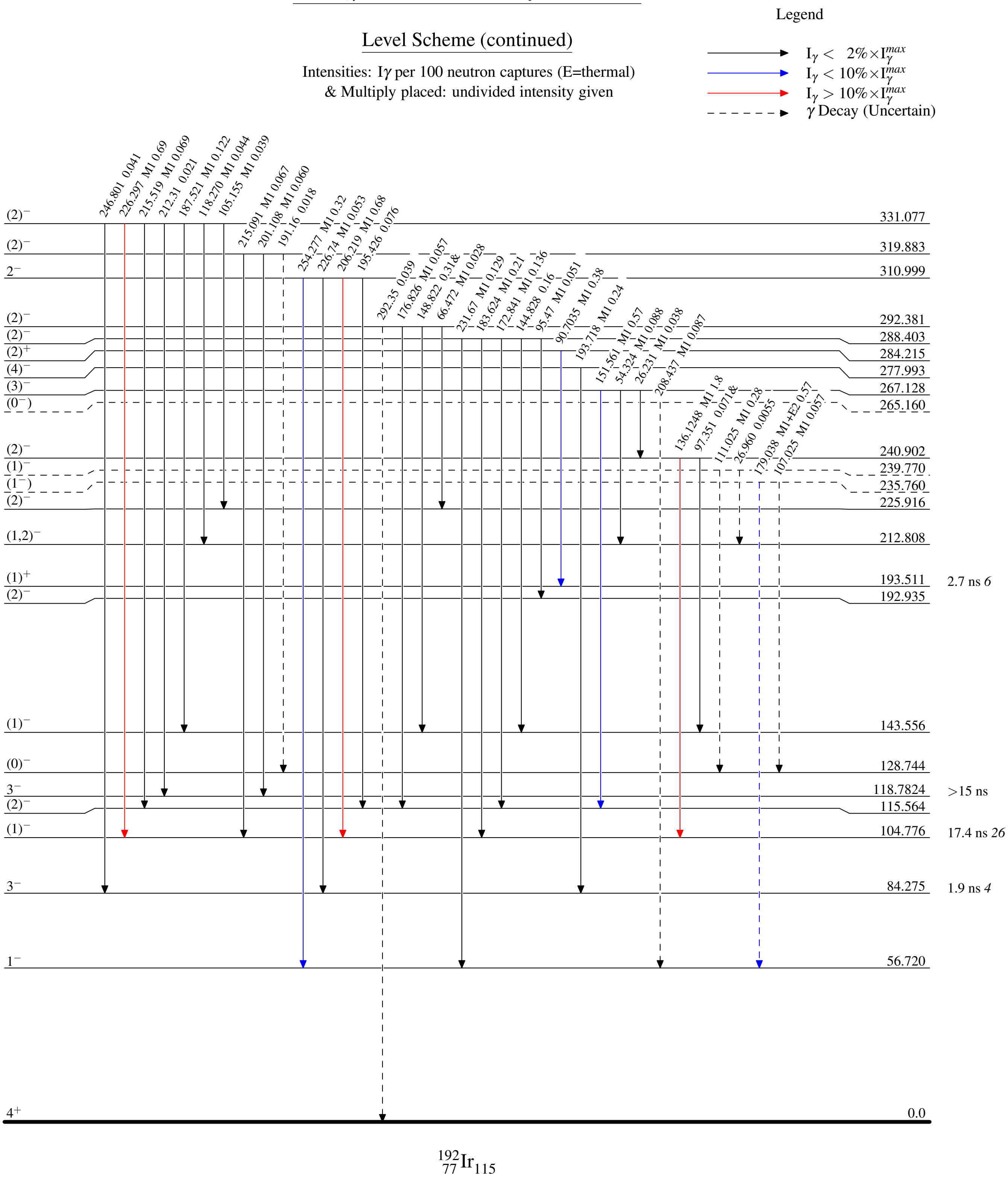
$^{192}_{77}Ir_{115}$


^{191}Ir(n,γ) E=thermal:secondary 1991Ke10
Level Scheme (continued)
Intensities: Iγ per 100 neutron captures (E=thermal)
& Multiply placed: undivided intensity given
Legend
Iγ < 2%×Iγ max
Iγ < 10%×Iγ max
Iγ > 10%×Iγ max
γ Decay (Uncertain)
(1,2,3)⁻ 392.351
(2)⁻ 389.720
(2)⁻ 368.353
(2)⁻ 366.730
(2⁻,3⁻) 365.653
(2)⁺ 351.690
(1)⁻ 331.761
(2)⁻ 319.883
(2)⁻ 292.381
(3)⁻ 267.128
(2)⁻ 240.902
(≤2⁻) 226.261
(2)⁻ 225.916
(1)⁺ 193.511 2.7 ns 6
(2)⁻ 192.935
(1)⁻ 143.556
(0)⁻ 128.744
3⁻ 118.7824 >15 ns
(2)⁻ 115.564
(1)⁻ 104.776 17.4 ns 26
3⁻ 84.275 1.9 ns 4
1⁻ 56.720
4⁺ 0.0
276.762 E2 0.15
273.57 0.051
199.41 M1 0.039
166.439 0.069
166.086 M1 0.25
151.444 0.074
72.464 0.025
305.45 0.062
284.939 M1+E2 0.15
246.152 0.041
148.822 0.31&
122.599 M1 0.053
97.351 0.071&
311.70 0.064
284.072 M1 0.32
263.571 M1 0.25
101.221 0.03
310.01 0.074
261.951 M1 0.57
223.18 0.051
140.830 0.046
139.736 M1 0.078
98.524 M1 0.092
351.691 E2 3.1
267.416 E1,E2 0.18
232.891 0.057
158.179 0.041
275.042 0.092
216.196 M1 0.18
203.018 M1 0.076
188.19 0.037
138.247 (E1) 0.15
90.854 M1 0.057
$^{192}_{77}Ir_{115}$

^{191}Ir(n,γ) E=thermal:secondary 1991Ke10

Level Scheme (continued)

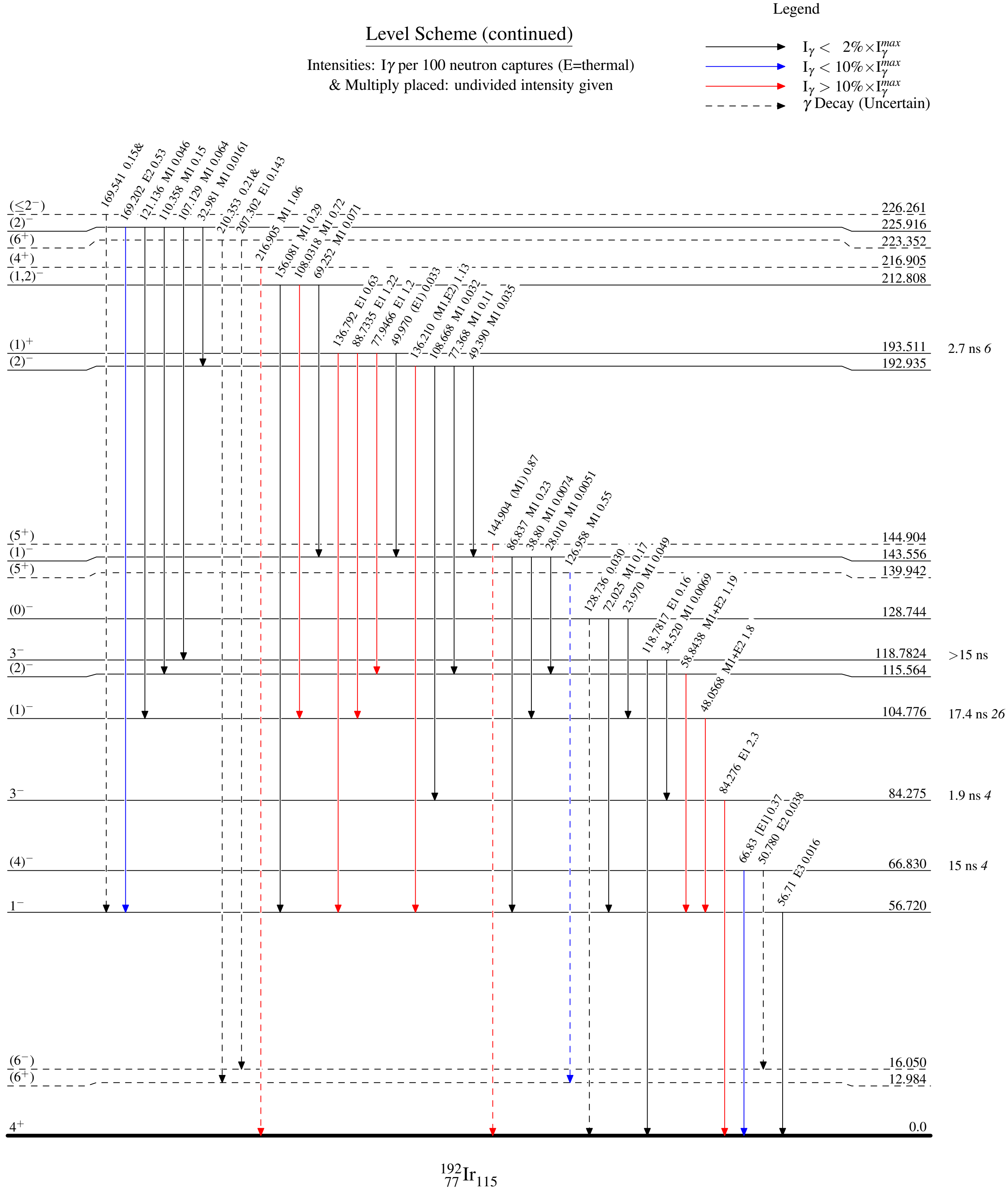
Intensities: Iγ per 100 neutron captures (E=thermal)
& Multiply placed: undivided intensity given



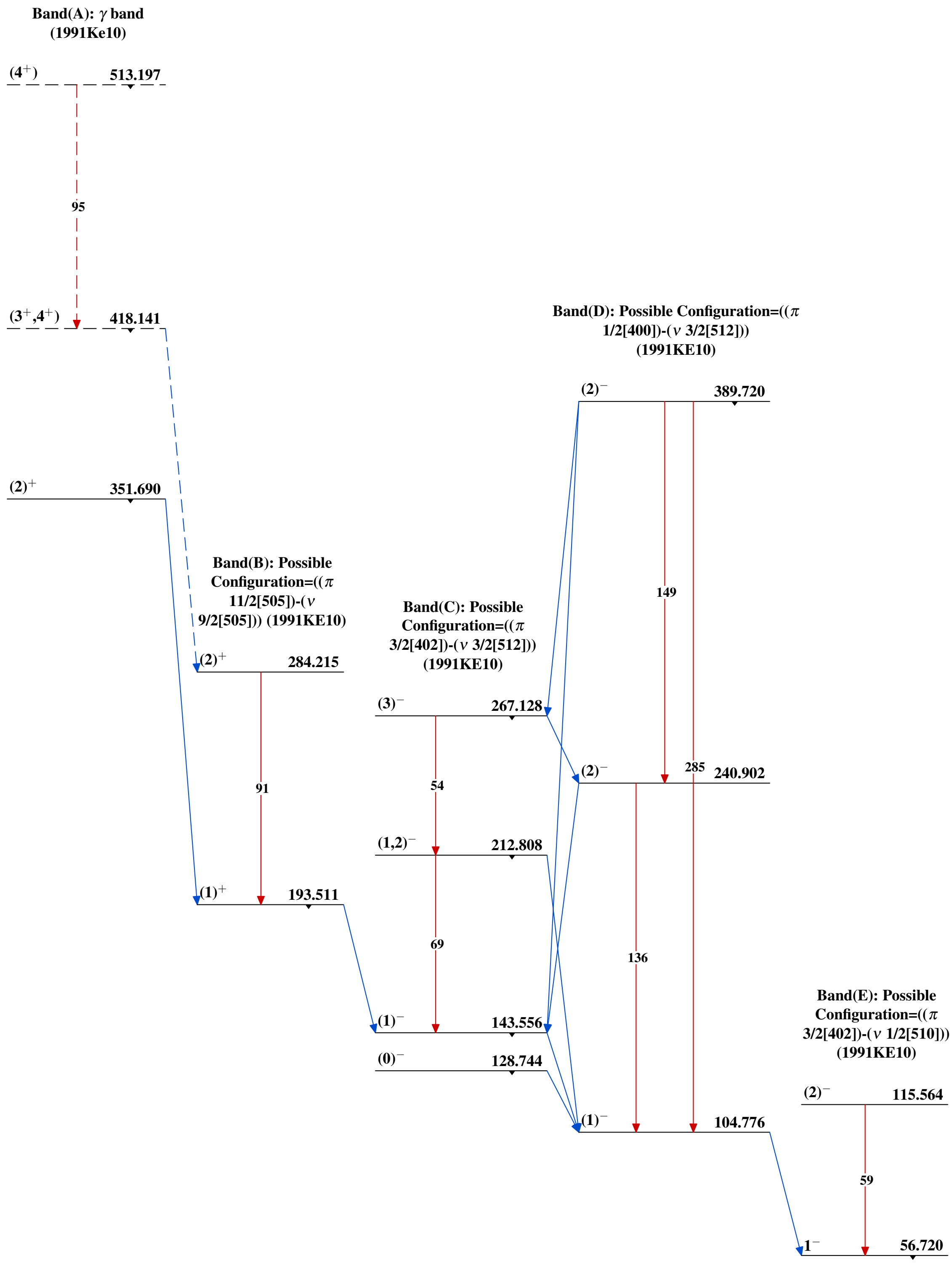
^{191}Ir(n,γ) E=thermal:secondary 1991Ke10

Level Scheme (continued)

Intensities: Iγ per 100 neutron captures (E=thermal)
& Multiply placed: undivided intensity given



^{191}Ir(n,γ) E=thermal:secondary 1991Ke10



$^{192}_{77}Ir_{115}$