## Adopted Levels, Gammas

| Type | Author | History Citation | Literature Cutoff Date |
|---|---|---|---|
| Full Evaluation | Coral M. Baglin | NDS 111,275 (2010) | 1-Oct-2009 |

Q($\beta^-$)=−2.27×10$^3$ *4*; S(n)=7.48×10$^3$ *4*; S(p)=3.24×10$^3$ *6*; Q($\alpha$)=3.80×10$^3$ *4* 2012Wa38
Note: Current evaluation has used the following Q record −2280 30 *7480* 40 *3240* 60 *3802* 35 2003Au03,2009AuZZ.
Q($\alpha$): From 2009AuZZ; Q($\alpha$)=3800 *40* in 2003Au03.
Other reactions:
$^{191}$Ir(n,8n$\gamma$), 0.2 MeV<E(n)<300 MeV (2005FoZZ): observed 96.8$\gamma$.
$^{184}$W($^7$Li,X), E=70 MeV (2005Cl07); observed five transitions.
For hfs and isotope shift data see, for example, 1996Se15.

See 1988Be16 for comparison of levels populated in $\varepsilon$ decay with level structure predicted from two-quasiparticle plus rotor model calculations.

### $^{184}$Ir Levels

Cross Reference (XREF) Flags

A $^{184}$Pt $\varepsilon$ decay
B (HI,xn$\gamma$)

| E(level)[†] | J$^\pi$[‡] | T$_{1/2}$ | XREF | Comments |
|---|---|---|---|---|
| 0.0[b] | 5$^-$ | 3.09 h *3* | AB | %$\varepsilon$+%$\beta^+$=100<br>$\mu$=+0.696 *5*<br>Q=+2.41 *3*<br>$\mu$: Value from NMR (19880h02); sign from 2000Ve10 (LASER spectroscopy). Other values: 0.8 *2* from nuclear orientation (1981Sp06), +0.69 *3* (2000Ve10, LASER spectroscopy); +0.72 *3* (2006Ve10, LASER spectroscopy).<br>Q: From Q/Q($^{189}$Ir)=+2.742 *11* (1996Se15, NMR on oriented nuclei), assuming Q($^{189}$Ir)=+0.878 *10*. Others: +2.1 *4* (revision by 2005St24 of +2.2 *4* (1981Ha33); nuclear orientation); +2.0 *3* (1982Al34, nuclear orientation); +2.6 *4* (2000Ve10, LASER spectroscopy); +2.5 *4* (2006Ve10, LASER spectroscopy).<br>$\Delta$<r$^2$>($^{191}$Ir,$^{184}$Ir)≈−0.176 *3* from 2006Ve10.<br><r$^2$>$^{1/2}$(charge)=5.39 *11* (2004An14).<br>J$^\pi$: ≤5$^-$ from E1-M1-M1-M1 $\gamma$ cascade from 1$^+$ level; log *ft*=7.8 for $\varepsilon$ decay to 6$^+$ 774 level so J≥4; log *ft*=7.7 to 6$^-$ 1833 level rules out *J*$^\pi$=4$^-$. Note, however, that based on systematics, 2004Ve10 propose J one unit lower than adopted here.<br>T$_{1/2}$: weighted average of 3.14 h *2* (1982Al34), 3.08 h *3*, 3.01 h *3* (1981Ha33), and 3.02 h *6* (1972Fi12). Others: 1960Ba43 (3.1 h *3*), 1960Ma28 (2.6 h *6*), and 1961Di04 (3.2 h *2*). |
| 11.6? *3* | | | A | E(level): level's existence is uncertain; order of 488$\gamma$ and 12$\gamma$ unknown. |
| 18.4? *3* | (3$^-$,4$^-$,5$^-$) | | A | J$^\pi$,E(level): E1 481$\gamma$ from (4)$^+$ 499. Level's existence is uncertain; order of 481$\gamma$ and 18$\gamma$ unknown. |
| 41.80[b] *24* | (6)$^-$ | | B | J$^\pi$: M1 42$\gamma$ to 5$^-$ g.s.; band assignment. |
| 70.75 *9* | 4$^-$[#] | <180[a] ps | AB | J$^\pi$: E1+M2 155$\gamma$ from 3$^+$ 226; M1 71$\gamma$ to 5$^-$ g.s..<br>T$_{1/2}$: from ce-ce coin in $\varepsilon$ decay (1996Om01). Other: <300 ps (1987BrZR). |
| 111.0[b] *4* | (7)$^-$ | | B | J$^\pi$: M1 69$\gamma$ to (6)$^-$ 42; band assignment. |
| 207.8[b] *5* | (8)$^-$ | | B | J$^\pi$: M1+E2 97$\gamma$ to (7)$^-$ 111; band assignment. |
| 225.65[d] *11* | 3$^+$ | 470 $\mu$s *30* | AB | %IT=100<br>J$^\pi$: M2 226$\gamma$ to 5$^-$ g.s.; M1-M1 cascade from 1$^+$. |

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## Adopted Levels, Gammas (continued)

### $^{184}$Ir Levels (continued)

| E(level)[†] | Jπ[‡] | $T_{1/2}$ | XREF | Comments |
|---|---|---|---|---|
| | | | | $T_{1/2}$: from 155γ(t) in $^{176}$Lu($^{12}$C,4nγ), E=68 MeV, pulsed beam (1988Kr17). |
| 232.6[d] *7* | (5⁺) | | B | Jπ: band assignment. |
| 237.16 *21* | + | | A | Jπ: M1+E2 58γ from (2,3,4)⁺ 296, so J=(1 to 5). |
| 262.72 *11* | 3⁻[#] | <300[a] ps | A | |
| 293.28 *12* | 2⁺ | 1.1 ns *3* | A | Jπ: M1+E2 68γ to 3⁺ 226; M1+E2 611γ from 1⁺ 904.<br>$T_{1/2}$: from ce-ce coin and ce-γ coin in ε decay (1996Om01). Other: ≈1 ns (1987BrZR). |
| 295.55 *20* | (2,3,4)⁺ | | A | Jπ: M1+E2 343γ from (3)⁺ 639. |
| 327.3[b] *5* | (9)⁻ | | B | Jπ: M1(+E2) 120γ to (8)⁻ 208. |
| 328.40[c] *24* | (7)⁺ | 350[@] ns *90* | B | Jπ: M2 329γ to 5⁻ g.s.; properties of band built on this level. Supported by γ population pattern in (HI,xnγ) (1988Kr17); 287γ to (6)⁻ 42. |
| 342.72 *11* | 1⁺ | | A | Jπ: M1+E2 49γ to 2⁺ 293; log *ft*=6.3 from 0⁺. |
| 355.49 *12* | 2⁻[#] | | A | Jπ: M1 93γ to 3⁻ 263; E1 548γ from 1⁺ 904. |
| 367.9[d] *7* | (7⁺) | | B | Jπ: E2 intraband 135γ to (5⁺) 233; band assignment. |
| 428.25 *13* | 1⁺ | | A | Jπ: M1+E2 476γ from 1⁺ 904; log *ft*=6.4 from 0⁺. |
| 432.49 *11* | (2)⁺ | >10[&] ns | A | Jπ: M1(+E2) 471γ from 1⁺ 904; M1(+E2) 139.1γ to 2⁺ 293; 170γ to 3⁻ 263. |
| 478.73 *21* | (1)⁺ | | A | Jπ: M1(+E2) 183γ to (2,3,4)⁺ 296; 277γ from (2)⁺ 856; log *ft*=6.8 from 0⁺ for weak ε branch favors J=1. |
| 481.4[c] *3* | (8⁺) | | B | Jπ: (M1+E2) ΔJ=1 153γ to (7)⁺ 328; band assignment. |
| 484.90 *15* | 1⁺ | | A | Jπ: M1 52γ to π=+ 432; log *ft*=6.3 from 0⁺. |
| 485.5[b] *5* | (10⁻) | | B | Jπ: (M1+E2) 158γ to (9)⁻ 327; band assignment. |
| 499.27 *14* | (4)⁺ | | A | Jπ: E1 499γ to 5⁻ g.s.; M1(+E2) 140γ from (3)⁺ 639. 1988Be16 very tentatively suggest a configuration of (π $h_{9/2}$)⊗(ν 7/2[503]) for this state. If correct, the J=5 level with this configuration may lie at slightly lower energy. |
| 499.95 *13* | 1⁻ | | A | Jπ: M1(+E2) 144γ to 2⁻ 355; log *ft*=6.5, log $f^{1u}t$=7.5 from 0⁺. |
| 504.81 *13* | 1⁻,2⁻ | | A | Jπ: M1(+E2) 149γ to 2⁻ 355; E1 399γ from 1⁺ 904. log *ft*=6.8, log $f^{1u}t$<8.5 from 0⁺ for possible weak ε branch favors 1⁻. |
| 509.46 *13* | 1⁺,2⁺ | | A | Jπ: M1(+E2) 216γ to 2⁺ 293; M1 394γ from 1⁺ 904. log *ft*=6.7 from 0⁺ for weak ε branch favors J=1. |
| 519.40 *13* | (3)⁺ | | A | Jπ: M1 336γ from π=+ 856; 449γ to 4⁻ 71; 385γ from 1⁺ 904. |
| 554.48 *13* | 2⁺ | | A | Jπ: M1(+E2) 329γ to 3⁺ 226; M1(+E2) 532γ from 1⁺ 1086. |
| 604.71 *14* | (3,4)⁺ | | A | Jπ: possible M1 106γ to (4)⁺ 499; 251γ from (2)⁺ 856; M1+E2 309γ to π=+ 296. |
| 621.03 *13* | (0,1) | | A | Jπ: 121γ to 1⁻ 500; log *ft*=6.7, log $f^{1u}t$=7.7 from 0⁺; 278γ to 1⁺ 343. |
| 633.9[d] *6* | (9⁺) | | B | Jπ: stretched Q 266γ to (7)⁺ 368; band assignment. |
| 639.02 *14* | (3)⁺ | | A | Jπ: M1(+E2) 217γ from J≤2, 856; 568γ to 4⁻ 71. |
| 648.6[b] *5* | (11⁻) | | B | Jπ: D+Q intraband 163γ to (10⁻) 486; stretched Q 321γ to (9)⁻ 327. |
| 658.8[c] *3* | (9⁺) | | B | Jπ: D+Q intraband 177γ to (8⁺) 481; band assignment. |
| 659.81 *25* | | | A | Jπ: 155γ to 1⁻,2⁻ 505. |
| 663.21 *16* | (2,3)⁺ | | A | Jπ: M1(+E2) 438γ to 3⁺ 226; 320γ to 1⁺ 343. |
| 792.61 *16* | | | A | Jπ: 288γ to 1⁻,2⁻ 505. |
| 814.82 *15* | ≤3 | | A | Jπ: E1,E2 315γ to 1⁻ 500; weak 89γ from 1⁺ 903. |
| 855.95 *13* | (2)⁺ | | A | Jπ: J=(2,3,4) from M1(+E2) 336γ to (3)⁺ 519; M1 209γ from 1⁺ 1065. |
| 858.3[c] *4* | (10⁺) | | B | Jπ: D+Q intraband 200γ to (9⁺) 659; stretched Q 377γ to (8⁺) 481. |
| 874.06 *21* | (0,1)⁺ | | A | Jπ: M1,E2 581γ to 2⁺ 293; 531γ to 1⁺ 343; log *ft*=6.4 from 0⁺ for weak ε branch makes J=2 and 3 very unlikely. |
| 877.5[b] *6* | (12⁻) | | B | Jπ: D+Q intraband 229γ to (11⁻) 649; stretched Q 391γ to (10⁻) 486. |
| 903.85 *13* | 1⁺ | | A | Jπ: log *ft*=5.1 from 0⁺ in ε decay. |
| 910.12 *16* | 1⁺,2⁺,3⁺ | | A | Jπ: M1+E2 356γ to 2⁺ 554. |
| 925.00 *21* | 1⁺ | | A | Jπ: M1+E2 497γ to 1⁺ 428; log *ft*=6.2 from 0⁺ in ε decay. |

Continued on next page (footnotes at end of table)

## Adopted Levels, Gammas (continued)

### $^{184}$Ir Levels (continued)

| E(level)[†] | $J^{\pi}$[‡] | XREF | Comments |
|---|---|---|---|
| 942.63 *14* | (0+,1+,2+) | A | $J^{\pi}$: weak M1(+E2) 123γ from 1+ 1065. |
| 1030.7[d] *6* | (11+) | B | $J^{\pi}$: 397γ to (9+) 634; band assignment. |
| 1065.27 *13* | 1+ | A | $J^{\pi}$: log *ft*=5.4 from 0+ in ε decay. |
| 1071.7[b] *6* | (13−) | B | $J^{\pi}$: intraband gammas to (11−) 648 and (12−) 877. |
| 1076.0[c] *4* | (11+) | B | $J^{\pi}$: D+Q intraband 218γ to (10+) 858; band assignment. |
| 1086.60 *13* | 1+ | A | $J^{\pi}$: log *ft*=5.1 from 0+ in ε decay. |
| 1166.1 *3* | (≤3) | A | $J^{\pi}$: 811γ to 2− 355. log *ft*=6.8 from 0+ is possibly unreliable for such a weak branch. |
| 1223.1 *3* | | A | $J^{\pi}$: 408γ to J≤3, 814. log *ft*=6.8 from 0+ is possibly unreliable for such a weak branch. |
| 1307.9[c] *4* | (12+) | B | |
| 1362.0 *3* | | A | $J^{\pi}$: 569γ to 793. log *ft*=6.7 from 0+ is possibly unreliable for such a weak branch. |
| 1377.9[b] *6* | (14−) | B | |
| 1548.4[c] *5* | (13+) | B | |
| 1550.0[d] *6* | (13+) | B | |
| 1592.2[b] *6* | (15−) | B | |
| 1792.4[c] *5* | (14+) | B | |
| 1977.3[b] *6* | (16−) | B | |
| 2039.1[c] *6* | (15+) | B | |
| 2179.7[d] *7* | (15+) | B | |
| 2205.4[b] *8* | (17−) | B | |
| 2291.3[c] *6* | (16+) | B | |
| 2556.8[c] *7* | (17+) | B | |
| 2656.2?[b] *9* | (18−) | B | |
| 2837.6[c] *7* | (18+) | B | |
| 2899.8?[b] *11* | (19−) | B | |
| 3138.2?[c] *7* | (19+) | B | |

[†] From least-squares fit to Eγ.

[‡] From band assignment except as noted.

[#] E1-M1-M1-M1 cascade connecting the 1+ 1086.6 and 5− g.s. establishes $J^{\pi}$=2−(355.5), $J^{\pi}$=3−(262.7), and $J^{\pi}$=4−(70.7).

[@] From (HI,xn), 1988Kr17.

[&] From $^{184}$Pt ε decay (1988Be16).

[a] From $^{184}$Pt ε decay (1987BrZR).

[b] Band(A): $K^{\pi}$=5− ground state band. Prolate decoupled band. Likely configuration: (π 1/2[541])+(ν 9/2[624]) (1988Kr17). The evaluator does not adopt the suggestion by 2004Ve10 that all J values in this band should Be lowered by one unit.

[c] Band(B): $K^{\pi}$=(7)+ band. Likely (π 5/2[402])⊗(ν $i_{13/2}$) band. Assignment supported by δ>0 for ΔJ=1 intraband transitions and magnitude of deduced ($g_K$-$g_R$) (1988Kr17).

[d] Band(C): $K^{\pi}$=3+? ΔJ=2 band. Doubly-decoupled (π $h_{9/2}$)⊗(ν 1/2[521]) band with both particles occupying predominantly Ω=1/2 orbitals (1988Kr17).

$\gamma(^{184}Ir)$

| $E_i$(level) | $J^{\pi}_i$ | $E_\gamma$[†] | $I_\gamma$[†] | $E_f$ | $J^{\pi}_f$ | Mult.[†] | $\delta$[‡] | $\alpha$[&] | Comments |
|---|---|---|---|---|---|---|---|---|---|
| 11.6? | | (11.6 3) | 100 | 0.0 | $5^-$ | | | | $E_\gamma$: from level energy difference. |
| 18.4? | $(3^-,4^-,5^-)$ | (18.4 3) | 100 | 0.0 | $5^-$ | | | | $E_\gamma$: from level energy difference. |
| 41.80 | $(6)^-$ | 41.7[@] 3 | 100[@] | 0.0 | $5^-$ | M1 | | 13.9 4 | Mult.: from intensity balance in (HI,xn$\gamma$). |
| 70.75 | $4^-$ | 70.7 1 | 100 | 0.0 | $5^-$ | M1 | | 2.95 | B(M1)(W.u.)>0.087 |
| 111.0 | $(7)^-$ | 69.2[@] 3 | 100[@] | 41.80 | $(6)^-$ | M1 | | 3.14 6 | Mult.: from intensity balance in (HI,xn$\gamma$). |
| 207.8 | $(8)^-$ | 96.8[@] 3 | 100[@] | 111.0 | $(7)^-$ | M1+E2 | | 6.0 8 | |
| 225.65 | $3^+$ | 154.8 1 | 100 10 | 70.75 | $4^-$ | E1+M2 | 0.09 3 | 0.22 7 | B(E1)(W.u.)=$8.0\times10^{-11}$ 14; B(M2)(W.u.)=0.00012 9 |
| | | 225.8[a] 1 | 7.0[a] 7 | 0.0 | $5^-$ | M2 | | 2.86 | B(M2)(W.u.)=0.00016 3 |
| 232.6 | $(5^+)$ | (7.0 8) | 100 | 225.65 | $3^+$ | | | | |
| 237.16 | + | (11.51 20) | 100 | 225.65 | $3^+$ | [M1,E2] | | | |
| 262.72 | $3^-$ | 192.0 1 | 100 | 70.75 | $4^-$ | M1(+E2) | <0.6 | 0.89 8 | B(M1)(W.u.)>0.0039 |
| 293.28 | $2^+$ | 67.6 1 | 100 | 225.65 | $3^+$ | M1+E2 | 0.29 3 | 5.0 4 | B(M1)(W.u.)=0.010 3; B(E2)(W.u.)=80 30 |
| 295.55 | $(2,3,4)^+$ | 58.4 1 | 100 | 237.16 | + | M1+E2 | 0.14 3 | 6.0 4 | |
| 327.3 | $(9)^-$ | 119.6[@] 3 | 100[@] 12 | 207.8 | $(8)^-$ | M1(+E2) | | 3.0 7 | Mult.: from intensity balance in (HI,xn$\gamma$). |
| | | 216.3[@] 3 | 26[@] 5 | 111.0 | $(7)^-$ | [E2] | | 0.0265 | |
| 328.40 | $(7)^+$ | 286.5[@] 3 | 100[@] 38 | 41.80 | $(6)^-$ | (E1(+M2)) | | 0.7 7 | B(E1)(W.u.)$\approx9\times10^{-9}$ |
| | | 328.5 3 | 88 14 | 0.0 | $5^-$ | M2 | | 0.814 | B(M2)(W.u.)=0.19 9<br>Mult.: from intensity balance in (HI,xn$\gamma$). |
| 342.72 | $1^+$ | 49.4 1 | 35 3 | 293.28 | $2^+$ | M1+E2 | 0.116 12 | 9.8 4 | |
| | | 117.0 1 | 100 10 | 225.65 | $3^+$ | E2 | | 2.46 | |
| 355.49 | $2^-$ | 92.7 1 | 100 | 262.72 | $3^-$ | M1 | | 7.61 | |
| 367.9 | $(7^+)$ | 135.3[@] 3 | 100[@] | 232.6 | $(5^+)$ | E2 | | 1.402 23 | Mult.: from intensity balance in (HI,xn$\gamma$). |
| 428.25 | $1^+$ | 85.5 1 | 100 12 | 342.72 | $1^+$ | M1+E2 | 0.28 5 | 9.54 | |
| | | 135.0 1 | 50 4 | 293.28 | $2^+$ | [M1,E2] | | 2.0 6 | |
| 432.49 | $(2)^+$ | 89.8 1 | 11 3 | 342.72 | $1^+$ | [M1+E2] | | 7.8 6 | B(M1)(W.u.)<$6.2\times10^{-5}$ |
| | | 139.1 1 | 97 9 | 293.28 | $2^+$ | M1(+E2) | <0.8 | 2.17 23 | B(E2)(W.u.)<1.2 |
| | | 169.8 1 | 100 11 | 262.72 | $3^-$ | [E1] | | 0.1032 | B(E1)(W.u.)<$7.7\times10^{-7}$ |
| | | 206.9 1 | 40 3 | 225.65 | $3^+$ | [M1,E2] | | 0.54 24 | |
| 478.73 | $(1)^+$ | 183.2 1 | 100 | 295.55 | $(2,3,4)^+$ | M1(+E2) | | 0.8 4 | |
| 481.4 | $(8^+)$ | 152.9[@] 3 | 100[@] | 328.40 | $(7)^+$ | (M1+E2)[#] | | 1.4 5 | |
| 484.90 | $1^+$ | 52.4 1 | 100 | 432.49 | $(2)^+$ | M1 | | 7.10 | |
| 485.5 | $(10^-)$ | 158.2[@] 3 | 100[@] 12 | 327.3 | $(9)^-$ | (M1+E2)[#] | | 1.2 5 | |
| | | 277.5[@] 3 | 25[@] 4 | 207.8 | $(8)^-$ | | | | |
| 499.27 | $(4)^+$ | (66.8 2) | 6.8 13 | 432.49 | $(2)^+$ | [E2] | | 26.2 6 | $E_\gamma$: from level energy difference. |
| | | 480.9 3 | 23.2 18 | 18.4? | $(3^-,4^-,5^-)$ | E1 | | 0.00865 | |
| | | 487.7 3 | 19.6 18 | 11.6? | | | | | |
| | | 499.4 3 | 100 11 | 0.0 | $5^-$ | E1 | | 0.00799 | |
| 499.95 | $1^-$ | 144.4 1 | 100 11 | 355.49 | $2^-$ | M1(+E2) | <0.9 | 1.91 24 | |





$^{184}_{77}Ir_{107}$-4

## Adopted Levels, Gammas (continued)

### γ($^{184}$Ir) (continued)

| E$_i$(level) | J$^π_i$ | E$_γ$[†] | I$_γ$[†] | E$_f$ | J$^π_f$ | Mult.[†] | δ[‡] | α[&] | Comments |
|---|---|---|---|---|---|---|---|---|---|
| 499.95 | 1⁻ | 237.3 1 | 32 3 | 262.72 | 3⁻ | [E2] | | 0.196 | |
| 504.81 | 1⁻,2⁻ | 149.3 1 | 100 11 | 355.49 | 2⁻ | M1(+E2) | <0.5 | 1.85 11 | |
| | | 162.1 1 | 36 4 | 342.72 | 1⁺ | [E1] | | 0.1161 | |
| 509.46 | 1⁺,2⁺ | 81.2 1 | 12.0 12 | 428.25 | 1⁺ | [M1,E2] | | 11.10 17 | |
| | | 166.7 1 | 10 1 | 342.72 | 1⁺ | | | | |
| | | 216.2 1 | 100 10 | 293.28 | 2⁺ | M1(+E2) | <0.3 | 0.674 20 | |
| 519.40 | (3)⁺ | 225.8[a] 1 | 37[a] 5 | 293.28 | 2⁺ | [M1+E2] | | 0.42 20 | |
| | | 256.7 1 | 47 5 | 262.72 | 3⁻ | [E1] | | 0.0368 | |
| | | 448.8 3 | 100 11 | 70.75 | 4⁻ | | | | |
| 554.48 | 2⁺ | 211.7 1 | 100 11 | 342.72 | 1⁺ | [M1+E2] | | 0.51 23 | |
| | | 261.3 1 | 67 7 | 293.28 | 2⁺ | [M1+E2] | | 0.28 14 | |
| | | 328.7 3 | 93 9 | 225.65 | 3⁺ | M1(+E2) | <0.5 | 0.205 15 | |
| 604.71 | (3,4)⁺ | 105.5[b] 1 | 52 5 | 499.27 | (4)⁺ | M1 | | 5.25 | |
| | | 309.1 3 | 100 10 | 295.55 | (2,3,4)⁺ | M1+E2 | 2.0 +11−5 | 0.121 19 | |
| 621.03 | (0,1) | 121.1 1 | 4.9 24 | 499.95 | 1⁻ | [E1] | | 0.245 | |
| | | 278.3 1 | 100 10 | 342.72 | 1⁺ | [M1+E2] | | 0.23 12 | |
| 633.9 | (9⁺) | 266.0[@] 3 | 100[@] | 367.9 | (7⁺) | (E2)[#] | | 0.1367 | |
| 639.02 | (3)⁺ | 139.7 1 | 100 11 | 499.27 | (4)⁺ | M1(+E2) | <0.8 | 2.14 22 | |
| | | 206.9[b] 1 | 38 3 | 432.49 | (2)⁺ | [M1,E2] | | 0.54 24 | |
| | | 343.4 3 | 30 3 | 295.55 | (2,3,4)⁺ | M1+E2 | 1.5 +7−4 | 0.104 19 | |
| | | 401.8 3 | 24 3 | 237.16 | ⁺ | | | | |
| | | 568.4 3 | 22 3 | 70.75 | 4⁻ | [E1] | | 0.00608 9 | |
| 648.6 | (11⁻) | 163.1[@] 3 | 100[@] 10 | 485.5 | (10⁻) | (M1+E2)[#] | | 1.520 | |
| | | 321.4[@] 3 | 100[@] 10 | 327.3 | (9)⁻ | E2 | | 0.0775 | |
| 658.8 | (9⁺) | 177.4[@] 3 | 100[@] 10 | 481.4 | (8⁺) | (M1+E2)[#] | | 0.9 4 | |
| | | 330.5[@] 3 | 80[@] 11 | 328.40 | (7)⁺ | | | | |
| 659.81 | | 154.8 3 | 100 | 504.81 | 1⁻,2⁻ | | | | |
| 663.21 | (2,3)⁺ | 320.4 3 | 100 11 | 342.72 | 1⁺ | [M1,E2] | | 0.16 8 | |
| | | 437.5 3 | 68 5 | 225.65 | 3⁺ | M1(+E2) | | 0.07 4 | |
| 792.61 | | 287.8 1 | 100 | 504.81 | 1⁻,2⁻ | | | | |
| 814.82 | ≤3 | 154.8 1 | 61 30 | 659.81 | | | | | |
| | | 314.8 3 | 100 9 | 499.95 | 1⁻ | | | | Mult.: E1 or E2 from α(K)exp in ε decay. |
| 855.95 | (2)⁺ | 216.9 1 | 100 10 | 639.02 | (3)⁺ | M1(+E2) | <0.6 | 0.63 6 | |
| | | 251.3 1 | 41 4 | 604.71 | (3,4)⁺ | [M1,E2] | | 0.31 15 | |
| | | 336.4 3 | 41 4 | 519.40 | (3)⁺ | M1(+E2) | <0.4 | 0.197 10 | |
| | | 371.0 3 | 5.5 11 | 484.90 | 1⁺ | [M1+E2] | | 0.11 6 | |
| | | 377.4 3 | 7.7 11 | 478.73 | (1)⁺ | [M1+E2] | | 0.10 6 | |
| 858.3 | (10⁺) | 199.5[@] 3 | 51[@] 8 | 658.8 | (9⁺) | (M1+E2)[#] | | 0.6 3 | |
| | | 376.7[@] 3 | 100[@] 16 | 481.4 | (8⁺) | (E2)[#] | | 0.0494 | |

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## $\gamma$($^{184}$Ir) (continued)

| $E_i$(level) | $J^\pi_i$ | $E_\gamma$[†] | $I_\gamma$[†] | $E_f$ | $J^\pi_f$ | Mult.[†] | $\delta$[‡] | $\alpha$[&] |
|---|---|---|---|---|---|---|---|---|
| 874.06 | (0,1)$^+$ | 364.5 *3* | 100 *9* | 509.46 | 1$^+$,2$^+$ | M1,E2 | | 0.11 *6* |
| | | 531.4 *3* | 73 *9* | 342.72 | 1$^+$ | | | |
| | | 580.8 *3* | 95 *9* | 293.28 | 2$^+$ | M1,E2 | | 0.033 *16* |
| 877.5 | (12$^-$) | 229.0[@] *3* | 100[@] *10* | 648.6 | (11$^-$) | (M1+E2)[#] | | 0.41 *19* |
| | | 391.1[@] *3* | 63[@] *10* | 485.5 | (10$^-$) | (E2)[#] | | 0.0444 |
| 903.85 | 1$^+$ | 89.0 *1* | 0.34 *11* | 814.82 | ≤3 | [M1,E2] | | 8.0 *6* |
| | | 384.6 *3* | 1.26 *11* | 519.40 | (3)$^+$ | [E2] | | 0.0468 |
| | | 394.3 *3* | 21.8 *23* | 509.46 | 1$^+$,2$^+$ | M1 | | 0.1347 |
| | | 398.9 *3* | 4.0 *5* | 504.81 | 1$^-$,2$^-$ | E1 | | 0.01306 |
| | | 471.3 *3* | 6.9 *7* | 432.49 | (2)$^+$ | M1(+E2) | <0.7 | 0.075 *10* |
| | | 475.6 *3* | 4.3 *5* | 428.25 | 1$^+$ | M1+E2 | 0.8 *+4−3* | 0.060 *11* |
| | | 548.3 *3* | 100 *10* | 355.49 | 2$^-$ | E1 | | 0.00655 |
| | | 610.5 *3* | 14.9 *11* | 293.28 | 2$^+$ | M1+E2 | 1.4 *+7−4* | 0.024 *5* |
| 910.12 | 1$^+$,2$^+$,3$^+$ | 355.8 *3* | 100 | 554.48 | 2$^+$ | M1+E2 | 1.6 *+8−4* | 0.091 *16* |
| 925.00 | 1$^+$ | 415.5 *3* | 100 *10* | 509.46 | 1$^+$,2$^+$ | M1(+E2) | | 0.08 *4* |
| | | 496.9 *3* | 34.1 *24* | 428.25 | 1$^+$ | M1+E2 | 1.0 *+5−4* | 0.049 *12* |
| | | 631.6 *3* | 93 *10* | 293.28 | 2$^+$ | M1,E2 | | 0.026 *13* |
| 942.63 | (0$^+$,1$^+$,2$^+$) | 279.4 *1* | 100 | 663.21 | (2,3)$^+$ | [M1,E2] | | 0.23 *12* |
| 1030.7 | (11$^+$) | 396.8[@] *3* | 100[@] | 633.9 | (9$^+$) | [E2] | | 0.0430 |
| 1065.27 | 1$^+$ | 122.7 *1* | 18.8 *25* | 942.63 | (0$^+$,1$^+$,2$^+$) | M1(+E2) | <0.7 | 3.18 *23* |
| | | 161.4 *1* | 69 *8* | 903.85 | 1$^+$ | M1(+E2) | <0.6 | 1.46 *12* |
| | | 209.3 *1* | 75 *8* | 855.95 | (2)$^+$ | M1 | | 0.756 |
| | | 632.6 *3* | 43 *4* | 432.49 | (2)$^+$ | M1,E2 | | 0.026 *13* |
| | | 636.9 *3* | 11.3 *13* | 428.25 | 1$^+$ | | | |
| | | 709.8 *3* | 100 *13* | 355.49 | 2$^-$ | E1 | | 0.00388 |
| 1071.7 | (13$^-$) | 193.2[@] *3* | 44[@] *5* | 877.5 | (12$^-$) | | | |
| | | 423.2[@] *3* | 100[@] *10* | 648.6 | (11$^-$) | | | |
| 1076.0 | (11$^+$) | 217.5[@] *1* | 45[@] *7* | 858.3 | (10$^+$) | (M1+E2)[#] | | 0.47 *21* |
| | | 417.4[@] *3* | 100[@] *15* | 658.8 | (9$^+$) | | | |
| 1086.60 | 1$^+$ | 143.9 *1* | 2.29 *21* | 942.63 | (0$^+$,1$^+$,2$^+$) | [M1+E2] | | 1.6 *6* |
| | | 176.5 *1* | 2.29 *21* | 910.12 | 1$^+$,2$^+$,3$^+$ | [M1,E2] | | 0.9 *4* |
| | | 182.7 *1* | 15.4 *15* | 903.85 | 1$^+$ | M1 | | 1.105 |
| | | 230.7 *1* | 17.3 *17* | 855.95 | (2)$^+$ | M1(+E2) | <0.2 | 0.570 *11* |
| | | 532.3 *3* | 9.2 *8* | 554.48 | 2$^+$ | M1(+E2) | | 0.041 *21* |
| | | 582.1 *3* | 1.46 *21* | 504.81 | 1$^-$,2$^-$ | [E1] | | 0.00579 *9* |
| | | 731.2 *3* | 100 *10* | 355.49 | 2$^-$ | E1 | | 0.00367 *6* |
| 1166.1 | (≤3) | 810.6 *3* | 100 | 355.49 | 2$^-$ | | | |
| 1223.1 | | 408.3 *3* | 100 | 814.82 | ≤3 | | | |
| 1307.9 | (12$^+$) | 231.7[@] *3* | 15[@] *3* | 1076.0 | (11$^+$) | | | |

From ENSDF



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$\gamma(^{184}Ir)$ (continued)

| $E_i$(level) | $J^\pi_i$ | $E_\gamma$[†] | $I_\gamma$[†] | $E_f$ | $J^\pi_f$ | Mult.[†] | $\alpha$[&] |
|---|---|---|---|---|---|---|---|
| 1307.9 | (12$^+$) | 449.8[@] 3 | 100[@] 15 | 858.3 | (10$^+$) | | |
| 1362.0 | | 569.4 3 | 100 | 792.61 | | | |
| 1377.9 | (14$^-$) | 306.0[@] 3 | 100[@] 15 | 1071.7 | (13$^-$) | (M1+E2)[#] | 0.18 9 |
| | | 500.5[@] 3 | 90[@] 14 | 877.5 | (12$^-$) | | |
| 1548.4 | (13$^+$) | 472.4[@] 3 | 100[@] 10 | 1076.0 | (11$^+$) | (E2)[#] | 0.0273 |
| | | 517.7[@] 3 | 40[@] 10 | 1030.7 | (11$^+$) | | |
| 1550.0 | (13$^+$) | 519.3[@] 3 | 100[@] | 1030.7 | (11$^+$) | | |
| 1592.2 | (15$^-$) | 214.4[@] 3 | 33[@] 6 | 1377.9 | (14$^-$) | D+Q | |
| | | 520.5[@] 3 | 100[@] 14 | 1071.7 | (13$^-$) | (E2)[#] | 0.0215 |
| 1792.4 | (14$^+$) | 484.5[@] 3 | 100[@] | 1307.9 | (12$^+$) | | |
| 1977.3 | (16$^-$) | 385.3[@] 3 | 100[@] 9 | 1592.2 | (15$^-$) | (M1+E2) | 0.09 5 |
| | | 599.2[@] 3 | 94[@] 15 | 1377.9 | (14$^-$) | | |
| 2039.1 | (15$^+$) | 490.7[@] 3 | 100[@] | 1548.4 | (13$^+$) | [E2] | 0.0249 |
| 2179.7 | (15$^+$) | 629.7[@] 3 | 100[@] | 1550.0 | (13$^+$) | | |
| 2205.4 | (17$^-$) | 226.8[@] 3 | 59[@] 6 | 1977.3 | (16$^-$) | | |
| | | 613.6[@] 3 | 100[@] 16 | 1592.2 | (15$^-$) | | |
| 2291.3 | (16$^+$) | 498.9[@] 3 | 100[@] | 1792.4 | (14$^+$) | | |
| 2556.8 | (17$^+$) | 517.7[@] 3 | 100[@] | 2039.1 | (15$^+$) | | |
| 2656.2? | (18$^-$) | 450[@b] | | 2205.4 | (17$^-$) | | |
| | | 679[@b] | | 1977.3 | (16$^-$) | | |
| 2837.6 | (18$^+$) | 546.3[@] 3 | 100[@] | 2291.3 | (16$^+$) | | |
| 2899.8? | (19$^-$) | 243[@b] | | 2656.2? | (18$^-$) | | |
| | | 695[@b] | | 2205.4 | (17$^-$) | | |
| 3138.2? | (19$^+$) | 581.4[@b] 3 | 100[@] | 2556.8 | (17$^+$) | | |

[†] From $\varepsilon$ decay, except as noted.
[‡] From ce data in $\varepsilon$ decay.
[#] From $\gamma(\theta)$ in (HI,xn$\gamma$), assigning $\Delta\pi$=(no) for intraband transitions.
[@] From (HI,xn$\gamma$).
[&] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on $\gamma$-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.
[a] Multiply placed with intensity suitably divided.
[b] Placement of transition in the level scheme is uncertain.





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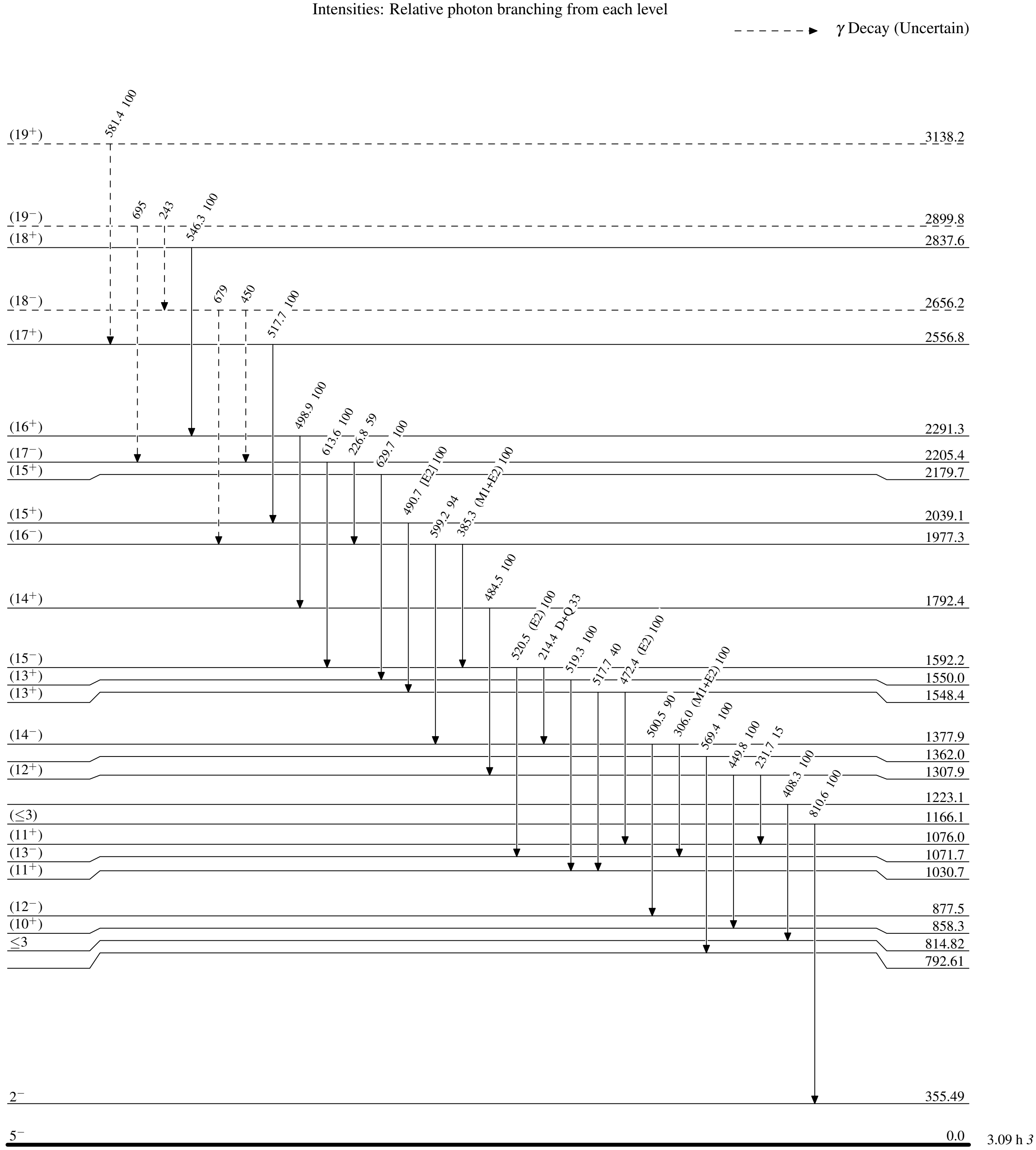
**Adopted Levels, Gammas**

Level Scheme

Intensities: Relative photon branching from each level

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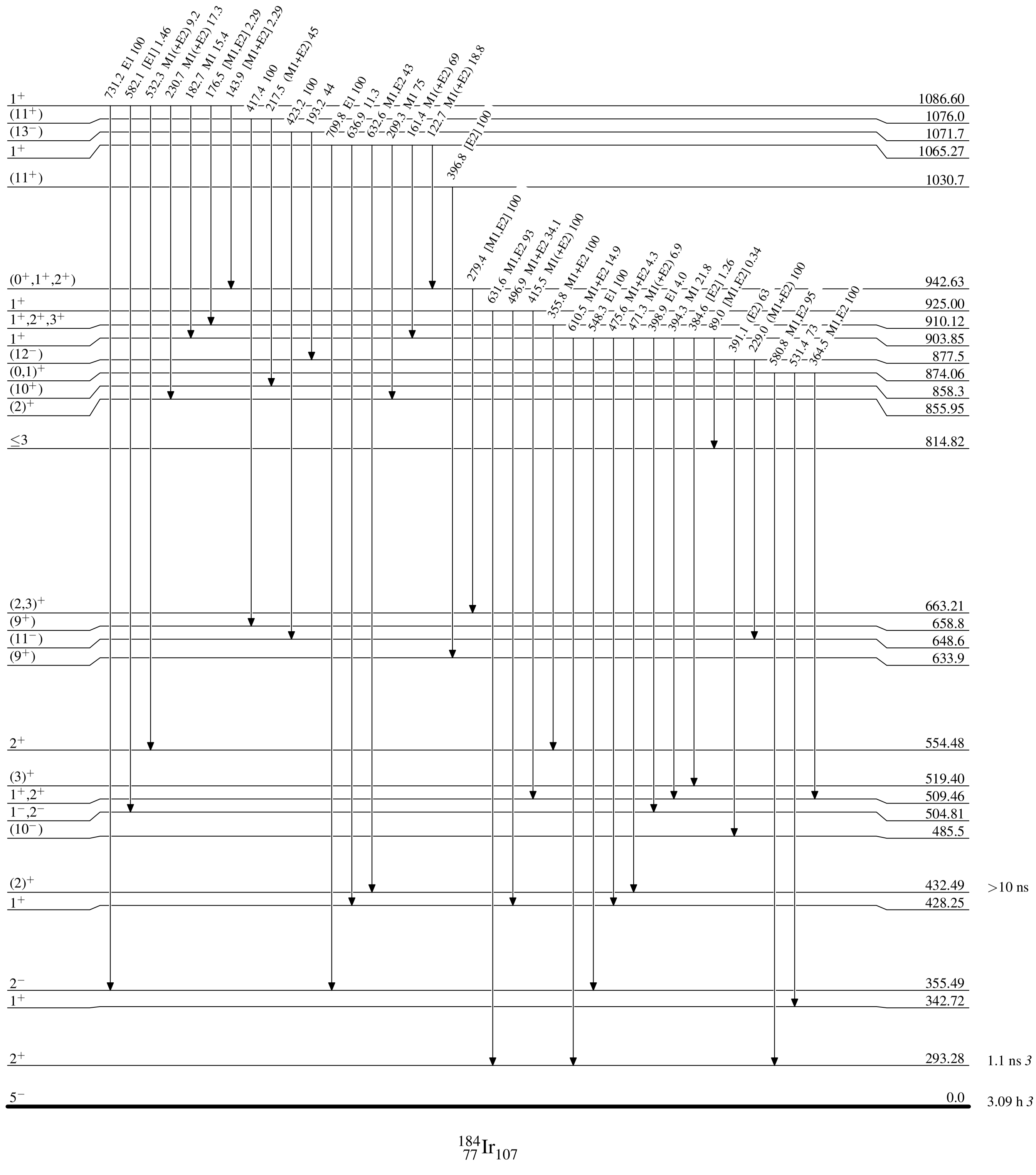
## Adopted Levels, Gammas

### Level Scheme (continued)

Intensities: Relative photon branching from each level

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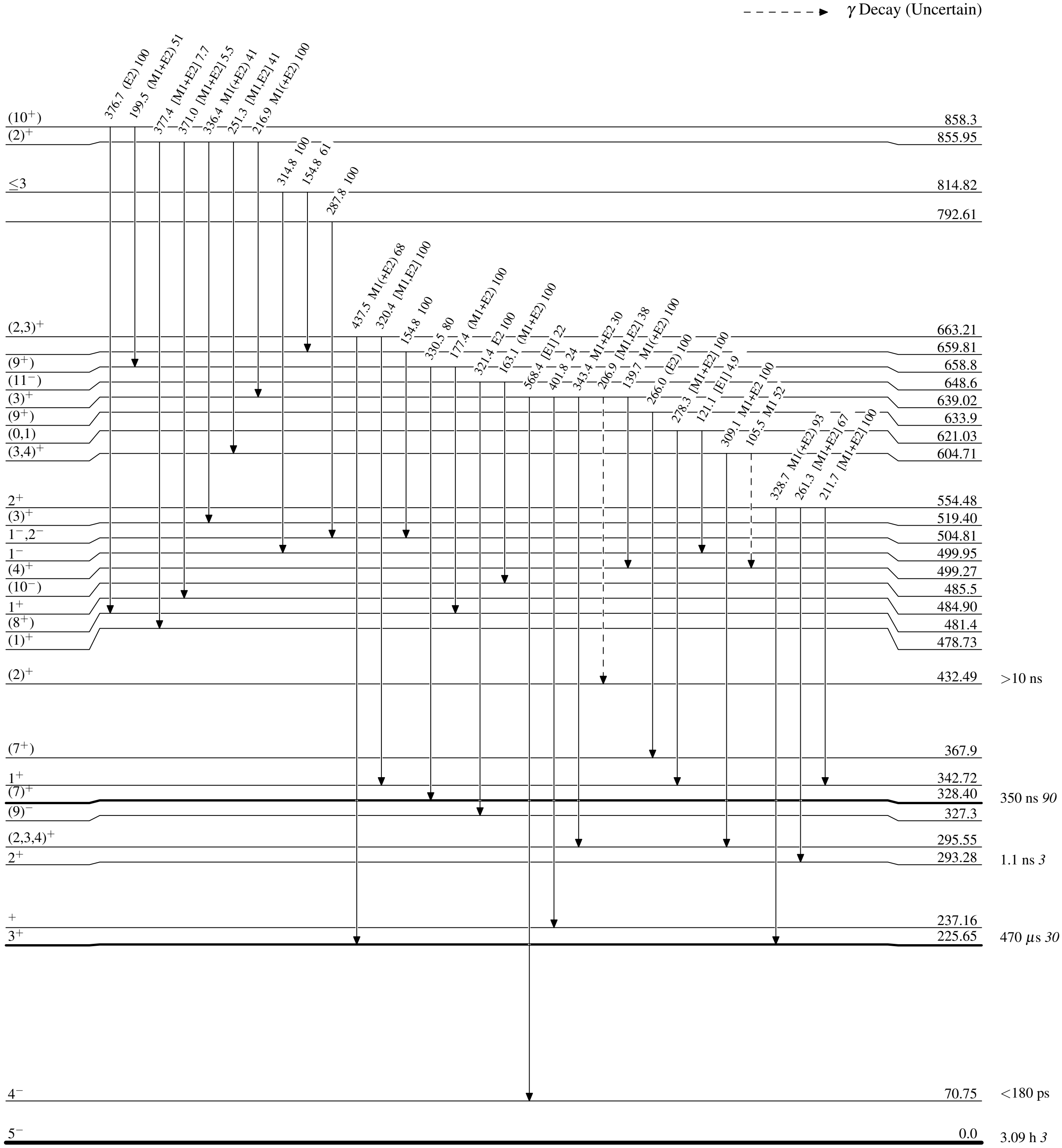
**Adopted Levels, Gammas**

Level Scheme (continued)

Intensities: Relative photon branching from each level

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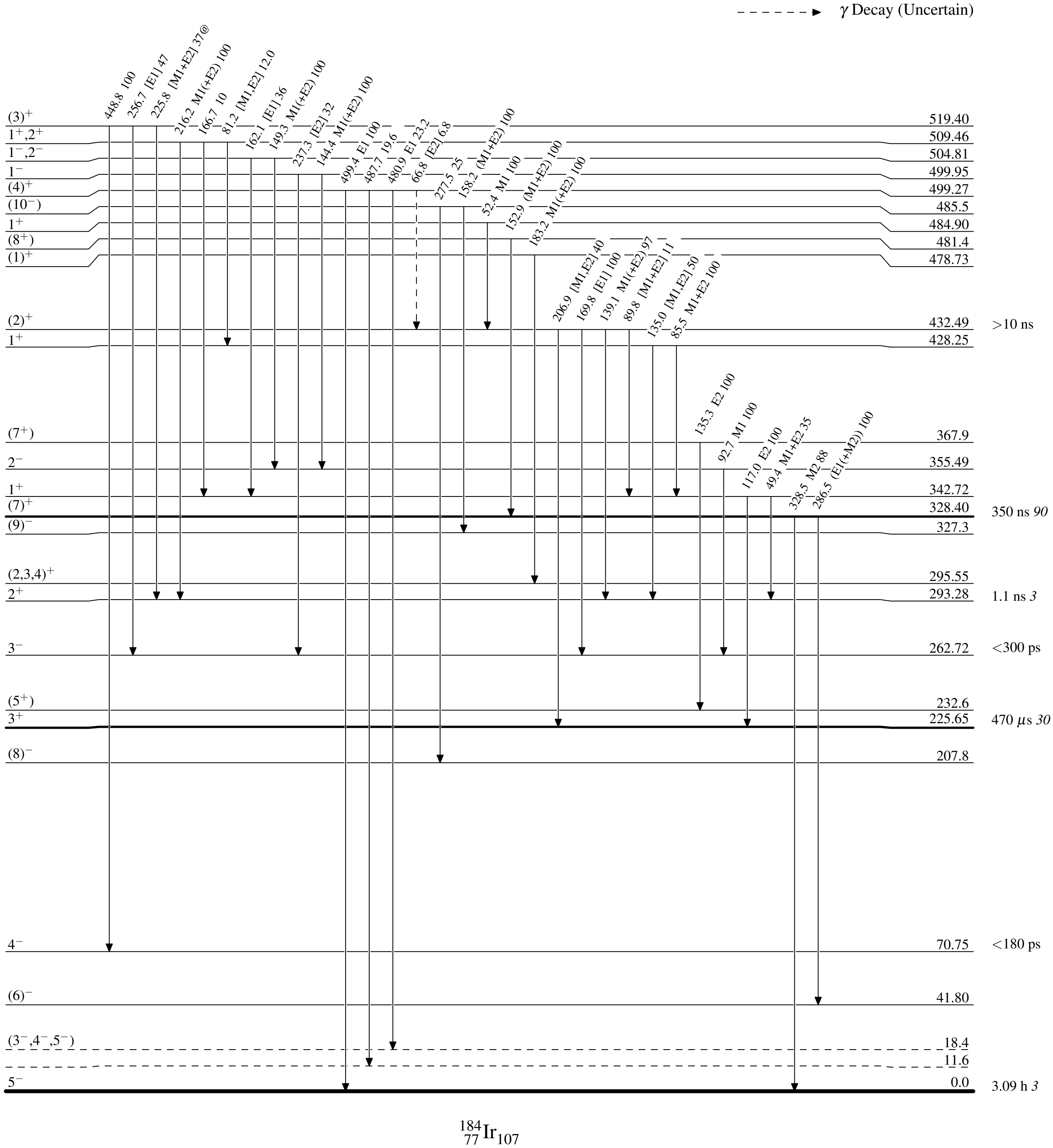
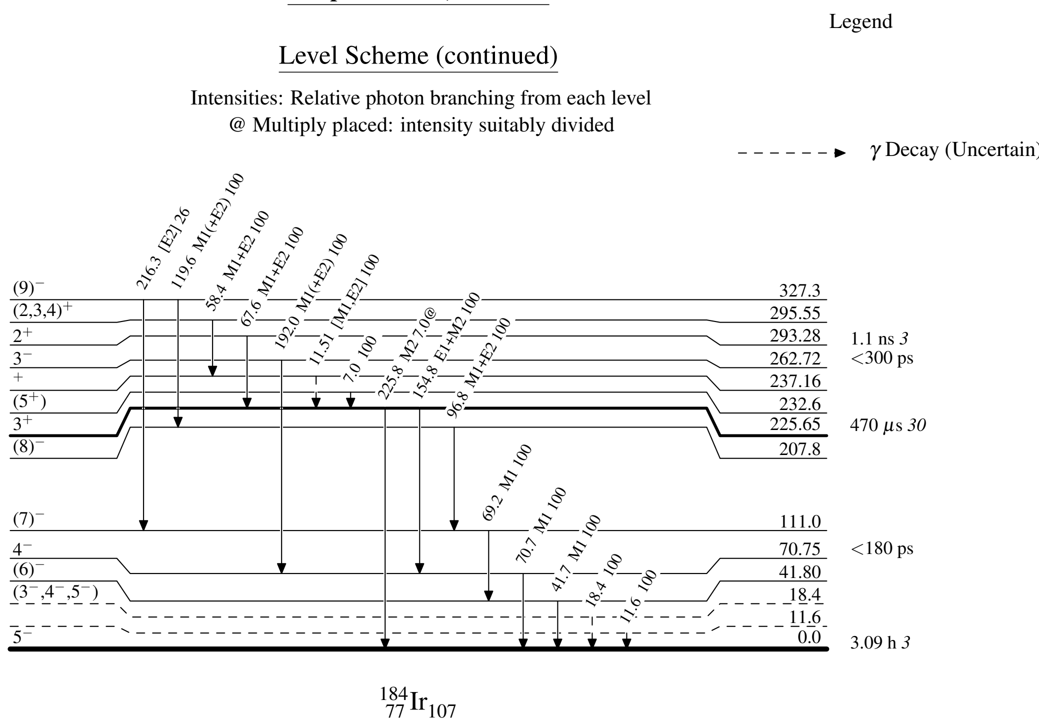
**Adopted Levels, Gammas**

Level Scheme (continued)

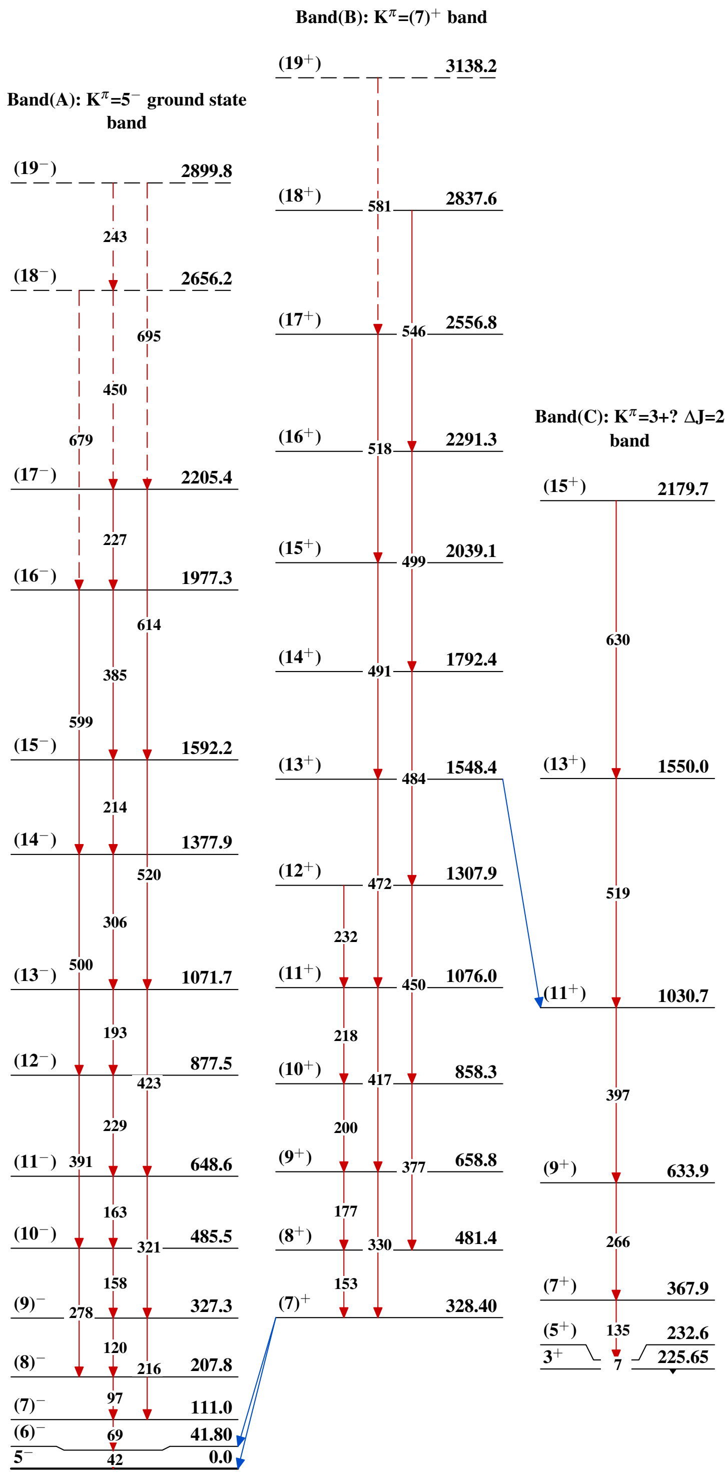
Intensities: Relative photon branching from each level
@ Multiply placed: intensity suitably divided



## Adopted Levels, Gammas



## Adopted Levels, Gammas

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