## Adopted Levels, Gammas

History

| Type | Author | Citation | Literature Cutoff Date |
|---|---|---|---|
| Full Evaluation | J. Katakura, Z. D. Wu | NDS 109,1655 (2008) | 1-Apr-2008 |

Q($\beta^-$)=2904.3 *16*; S(n)=6467.50 *6*; S(p)=7094 *3*; Q($\alpha$)=−4.32×10$^3$ *4* 2012Wa38
Note: Current evaluation has used the following Q record 2904.3 156467.50 *6* 7088.8 *29*−4310 40 2003Au03.

### $^{124}$Sb Levels

Cross Reference (XREF) Flags

| | | | | | |
|---|---|---|---|---|---|
| A | $^{124}$Sb IT decay (93 s) | E | $^{123}$Sb(n,$\gamma$) E=50.5 eV | I | $^{123}$Sb(d,p) |
| B | $^{124}$Sb IT decay (20.2 min) | F | $^{123}$Sb(n,$\gamma$) E=76.7 eV | J | $^{124}$Sn($^3$He,t) |
| C | $^{123}$Sb(n,$\gamma$) E=th | G | $^{123}$Sb(n,$\gamma$) E=105.0 eV | | |
| D | $^{123}$Sb(n,$\gamma$) E=21.4 eV | H | $^{124}$Sn(p,n$\gamma$) | | |

| E(level)‡ | J$^\pi$ | T$_{1/2}$† | XREF | Comments |
|---|---|---|---|---|
| 0.0 | 3$^-$ | 60.20 d *3* | ABCDEFGHi | %$\beta^-$=100<br>$\mu$=1.20 *2*; Q=+1.87 *38*<br>XREF: i(15).<br>T$_{1/2}$: from calorimetry of $^{124}$Sb source using $^{123}$Sb enriched target (1966Fl01); others: 60.11 d *7* (2000Kh04), 60.4 d *2* (1957Ma50), 59.9 d *5* (1958Jo01), 60.1 d *3* (1959Ca12), 60.3 d *2* (1968Re04).<br>J$^\pi$: atomic beam (1976Fu06); $\beta^-$ to 2$^+$, 602.7-keV level in $^{124}$Te indicates 1-yes shape. Expected 3$^-$ member of multiplet with configuration=(($\pi$ g$_{7/2}$)($\nu$ h$_{11/2}$)).<br>$\mu$: From radiative detection of nuclear magnetic resonance, value is referenced to $^{122}$Sb and recalculated (1974Ca06,1989Ra17). See also 2005St24 compilation.<br>Q: from static nuclear orientation, value is referenced to $^{121}$Sb and Sternheimer correction included (1985He16,1989Ra17). See also 2005St24 compilation. |
| 10.8627 *8* | 5$^+$ | 93 s *5* | ABCD Hi | %IT=75 *5*; %$\beta^-$=25 *5*<br>XREF: i(15).<br>T$_{1/2}$: from $\gamma$(t) (1962Va18); others: 78 s (1947De06), 96 s *12* (1963Br18).<br>J$^\pi$: log *ft*=4.4 to $^{124}$Te 6$^+$; strong primary $\gamma$ from 4$^+$ resonance. Expected 5$^+$ member of multiplet with configuration=(($\pi$ g$_{7/2}$)($\nu$ d$_{3/2}$)). |
| 36.8440 *14* | (8)$^-$ | 20.2 min *2* | BC | %IT=100<br>T$_{1/2}$: from $\gamma$(t) (1967Ha27); others: 21 min (1947De06), 21 min *1* (1962Va18).<br>J$^\pi$: E3 $\gamma$ to 5$^+$, no $\gamma$ to 3$^-$; Expected 8$^-$ member of multiplet with configuration=(($\pi$ g$_{7/2}$)($\nu$ h$_{11/2}$)). |
| 40.8038 *7* | 3$^+$,4$^+$ | 3.2 $\mu$s *3* | CD H | $\mu$=+2.970 *33*<br>$\mu$: For J=3. From differential perturbed angular distribution of $\gamma$ rays following nuclear reactions (1981Io04,1989Ra17). See also 2005St24 compilation.<br>J$^\pi$: E2 $\gamma$ to 5$^+$, E1 $\gamma$ to 3$^-$; Expected 3$^+$ member of multiplet with configuration=(($\pi$ g$_{7/2}$)($\nu$ d$_{3/2}$)). |
| 80.7638 *8* | 3$^+$,4$^+$ | 4 ns *1* | C E HI | J$^\pi$: M1 $\gamma$ to 3$^+$,4$^+$; $\gamma$ to 3$^-$; L=0+2 in (d,p); Expected 3$^+$ member of multiplet with configuration=(($\pi$ g$_{7/2}$)($\nu$ s$_{1/2}$)). |
| 87.6016 *4* | (4)$^-$ | | CD H | J$^\pi$: see for comment to 125.2-keV level; Expected 4$^-$ member of multiplet with configuration=(($\pi$ g$_{7/2}$)($\nu$ h$_{11/2}$)). |
| 103.6514 *6* | 2$^-$,3$^-$,4$^-$ | | C E GH | J$^\pi$: M1 $\gamma$ to 3$^-$; Expected 2$^-$ member of multiplet with configuration=(($\pi$ g$_{7/2}$)($\nu$ h$_{11/2}$)). |
| 125.2291 *13* | (6)$^-$ | 86 ns *2* | C Hi | $\mu$=+0.384 *12*<br>XREF: i(126). |

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**Adopted Levels, Gammas (continued)**

$^{124}$Sb Levels (continued)

| E(level)‡ | Jπ | T1/2† | XREF | Comments |
|---|---|---|---|---|
| | | | | μ: From differential perturbed angular distribution of γ rays following nuclear reactions (1981Io04,1989Ra17). See also 2005St24 compilation. Jπ: E2-M1 cascade via 87.6-keV level (Jπ=4⁻) to g.s.(Jπ=3⁻), and E2 γ to (8)⁻; Expected 6⁻ member of multiplet with configuration=((π $g_{7/2}$)(ν $h_{11/2}$)). |
| 131.6928 *8* | 3⁻,4⁻,5⁻ | | CD F Hi | XREF: i(126). Jπ: strong γ from 4⁺ resonances; M1 γ to 4⁻; Expected 5⁻ member of multiplet with configuration=((π $g_{7/2}$)(ν $h_{11/2}$)). |
| 150 *30* | (1⁺)# | | J | |
| 180.0509 *16* | (7,8)⁻ | | C H | Jπ: M1 γ to (8)⁻, γ to 6⁻; Expected 7⁻ member of multiplet with configuration=((π $g_{7/2}$)(ν $h_{11/2}$)). |
| 195.9822 *11* | 4⁺,5⁺ | | C E Hi | XREF: i(205). Jπ: M1 γ to 3⁺,4⁺; M1+E2 γ to 5⁺; Expected 4⁺ member of multiplet with configuration=((π $g_{7/2}$)(ν $d_{3/2}$)). |
| 214.6032 *9* | 3⁺,4⁺,5⁺ | | CDEF Hi | XREF: i(205). Jπ: M1 γ to 3⁺,4⁺; γ to 5⁺; L=0+2 in (d,p); Expected 4⁺ member of multiplet with configuration=((π $g_{7/2}$)(ν $s_{1/2}$)). |
| 221.5 *20* | | | D | |
| 231.5 *20* | | | D | |
| 248.3692 *12* | + | 0.38 ns *7* | C H | Jπ: M1 γ to 2⁺,3⁺,4⁺; Expected 2⁺ member of multiplet with configuration=((π $g_{7/2}$)(ν $d_{3/2}$)). |
| 287.1286 *17* | 3⁺,4⁺ | | CDEF HI | Jπ: M1 γ to 3⁺,4⁺; γ to 5⁺; L=0+2 in (d,p); Expected 4⁺ member of multiplet with configuration=((π $g_{7/2}$)(ν $d_{3/2}$)). |
| 368.333 *8* | | | C | |
| 371.823 *3* | 6⁻,7⁻,8⁻ | | C H | Jπ: M1,E2 γ to (8)⁻; γ to 6⁻. |
| 384.5336 *25* | 4⁻,5⁻ | | C EFGHi | XREF: i(389). Jπ: M1,E2 γ to 3⁻; M1+E2 γ to (5)⁻. |
| 386.2882 *12* | 2⁺,3⁺,4⁺ | | C EF Hi | XREF: i(389). Jπ: M1 γ to +; γ to 3⁻. |
| 402.8775 *16* | 3⁺,4⁺ | | CD Hi | XREF: i(389). Jπ: M1,E2 γ to 2⁺,3⁺,4⁺; γ's to 3⁻ and 5⁺. |
| 419.0624 *18* | 2⁻,3⁻,4⁻ | | C E GH | Jπ: strong γ from 3⁺ resonances; M1,E2 γ to 4⁻. |
| 439.1717 *24* | 4⁻,5⁻ | | CD H | Jπ: strong γ from 4⁺ resonance; M1,E2 γ to 6⁻. |
| 445.672 *3* | 6⁻ | | C H | Jπ: M1+E2 γ to 7⁻,8⁻; γ to 5⁺. |
| 471.2599 *19* | + | | C H | Jπ: M1,E2 γ to 4⁺,5⁺. |
| 483.9988 *21* | 3⁺,4⁺,5⁺ | | C GH | Jπ: M1,E2 γ to 4⁺,5⁺; γ to 4⁻. |
| 522.6911 *17* | + | | C H | Jπ: M1 γ to 3⁺,4⁺. |
| 565.1? *24* | | | C | |
| 581.916 *4* | | | C H | |
| 593 *2* | | | D FG | |
| 598.658 *4* | 3⁻,4⁻ | | C H | Jπ: M1+E2 γ to 3⁻; γ to (5)⁻. |
| 612.693 *7* | | | C H | |
| 642.057 *4* | 5⁻,6,7⁻ | | C | Jπ: γ's to 4⁻,5⁻ and 7⁻,8⁻. |
| 642.652 *4* | 4⁻,5,6⁻ | | C H | Jπ: γ's to 4⁻ and 6⁻. |
| 653 *2* | | | E | |
| 744.950 *6* | | | C H | |
| 757.196 *9* | | | C | |
| 770 *30* | (1⁺)# | | J | |
| 804.266 *13* | | | C | |
| 827.064 *14* | 5⁻,6,7(−) | | C Hi | XREF: i(839). Jπ: γ's to (5)⁻ and 7⁻,8⁻. |
| 855.969 *5* | 4⁻,5 | | CD i | XREF: i(839). Jπ: γ from 4⁺ resonance; γ to 6⁻. |
| 863.003 *7* | 3,4 | | CDEFGHi | XREF: i(839). Jπ: strong γ's from 3⁺ and 4⁺ resonances. |

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## Adopted Levels, Gammas (continued)

### $^{124}$Sb Levels (continued)

| E(level)[‡] | Jπ | XREF | Comments |
|---|---|---|---|
| 869.415 *7* | 3⁻,4,5⁻ | C Hi | XREF: i(839).<br>Jπ: γ′s to 3⁻ and (5)⁻. |
| 881.1 *11* | | C | |
| 896.7 *9* | | C EFG | |
| 905.1 *8* | | C | |
| 917.5 *14* | | C | |
| 939 *2* | | E | |
| 968.0 *4* | | C | |
| 1020.948 *10* | 3⁻,4,5⁻ | C | Jπ: γ′s to 3⁻ and (5)⁻. |
| 1031.2 *6* | | CDE i | |
| 1053.067 *16* | | CDEFGHi | |
| 1059.645 *16* | | CDEFG i | |
| 1067.1 *5* | | C i | XREF: i(1065). |
| 1075.1 *20* | | D i | |
| 1097.3 *5* | | C i | |
| 1129.2 *3* | | CDEFG | |
| 1143.3 *5* | | CD i | |
| 1159.6 *6* | | CD i | |
| 1180.7 *6* | | CD F i | XREF: i(1176). |
| 1237.3 *5* | | CDE G | |
| 1242.5 *3* | | CDE G | |
| 1261 *8* | | C i | |
| 1267.8 *12* | | C i | |
| 1285.6 *4* | | CD i | XREF: i(1286). |
| 1301.8 *20* | | D FG i | |
| 1330 *30* | (1⁺)[#] | J | |
| 1379? *40* | | I | |
| 1446? *40* | (⁺) | I | Jπ: L=(0+2) in (d,p). |
| 1500 *30* | (1⁺)[#] | J | |
| 1566 *2* | | D i | XREF: i(1585). |
| 1586 *2* | | D i | XREF: i(1585). |
| 1596 *2* | | D F i | XREF: i(1585). |
| 1605.2 *20* | | D i | XREF: i(1585). |
| 1616.8 *20* | | DEF i | XREF: i(1585). |
| 1689 *2* | | D F i | XREF: i(1711). |
| 1716.6 *20* | | D i | XREF: i(1711). |
| 1746.0 *20* | | D i | XREF: i(1711). |
| 1832.8 *20* | | D i | XREF: i(1851). |
| 1870 *30* | (1⁺)[#] | J | |
| 1882.2 *20* | | D i | XREF: i(1851). |
| 1952.7 *20* | (⁺) | D I | Jπ: L=(0+2) in (d,p). |
| 2038.6 *20* | | D | |
| 2050 *30* | (1⁺)[#] | D J | |
| 2165.1 *20* | | D | |
| 2179.2 *20* | | D | |
| 2220.6 *20* | | D | |
| 2305 *40* | | I | |
| 2375 *40* | | I | E(level): multiple with L=(4,3) in (d,p). |
| 2410 *30* | (1⁺)[#] | J | |
| 2465 *40* | | I | |
| 2555 *40* | (⁺) | I | Jπ: L=2 in (d,p). |
| 2615 *40* | (⁻) | I | Jπ: L=3 in (d,p). |
| 2685? *40* | (⁻) | I | Jπ: L=(1) in (d,p). |
| 2735 *40* | (⁻) | I | Jπ: L=(1) in (d,p). |
| 2795 *40* | (⁻) | I | Jπ: L=3 in (d,p). |

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## Adopted Levels, Gammas (continued)

### $^{124}$Sb Levels (continued)

| E(level)‡ | Jπ | XREF | Comments |
|---|---|---|---|
| 2850 *30* | (1$^+$)# | J | |
| 2875 *40* | (−) | I | Jπ: L=3 in (d,p). |
| 2935 *40* | (−) | I | Jπ: L=3 in (d,p). |
| 3090 *30* | (1$^+$)# | J | |
| 3280 *30* | (1$^+$)# | J | |
| 3600 *30* | (1$^+$)# | J | |
| 3970 *30* | (1$^+$)# | J | |
| 4150 *30* | (1$^+$)# | J | |

† From delayed coincidence in (n,γ) E=th, unless noted otherwise.
‡ From (n,γ) E=th wherever available.
# L=0 in ($^3$He,t); L=0 allows J=0$^+$,1$^+$, J=1$^+$ is expected to be strongly populated (1995Ph01).

## Adopted Levels, Gammas (continued)

### $\gamma(^{124}Sb)$

| $E_i$(level) | $J_i^\pi$ | $E_\gamma$[†] | $I_\gamma$[†] | $E_f$ | $J_f^\pi$ | Mult.[‡] | $\delta$[‡] | $\alpha$[#] | Comments |
|---|---|---|---|---|---|---|---|---|---|
| 10.8627 | $5^+$ | 10.8630 *11* | 100 | 0.0 | $3^-$ | [M2] | | $2.19\times10^4$ | B(M2)(W.u.)=$3.0\times10^{-6}$ *3* |
| 36.8440 | $(8)^-$ | 25.981 *3* | 100 | 10.8627 | $5^+$ | E3 | | $2.97\times10^4$ | B(E3)(W.u.)=0.00462 *15* |
| 40.8038 | $3^+,4^+$ | 29.940 *1* | 1.9 *2* | 10.8627 | $5^+$ | E2 | | 138.0 | B(E2)(W.u.)=0.64 *12* |
| | | 40.8041 *10* | 100 *15* | 0.0 | $3^-$ | E1 | | 2.281 | B(E1)(W.u.)=$2.1\times10^{-7}$ *5* |
| 80.7638 | $3^+,4^+$ | 39.9601 *5* | 100 *17* | 40.8038 | $3^+,4^+$ | M1 | | 8.95 | B(M1)(W.u.)=0.009 *3* |
| | | 80.7646 *15* | 6.7 *8* | 0.0 | $3^-$ | [E1] | | 0.346 | B(E1)(W.u.)=9.E−7 *3* |
| 87.6016 | $(4)^-$ | 87.6014 *4* | 100 | 0.0 | $3^-$ | M1 | | 0.911 | |
| 103.6514 | $2^-,3^-,4^-$ | 103.6512 *6* | 100 | 0.0 | $3^-$ | M1 | | 0.565 | |
| 125.2291 | $(6)^-$ | 37.629 *3* | 2.0 *2* | 87.6016 | $(4)^-$ | E2 | | 59.8 | B(E2)(W.u.)=9.8 *12* |
| | | 88.3852 *6* | 100 *3* | 36.8440 | $(8)^-$ | E2 | | 2.57 | B(E2)(W.u.)=6.8 *5* |
| | | 114.3679 *13* | 6.9 *3* | 10.8627 | $5^+$ | [E1] | | 0.1297 | B(E1)(W.u.)=$3.00\times10^{-8}$ *19* |
| 131.6928 | $3^-,4^-,5^-$ | 44.0905 *7* | 100 | 87.6016 | $(4)^-$ | M1 | | 6.70 | |
| 180.0509 | $(7,8)^-$ | 54.73[@] *5* | <9.7[@] | 125.2291 | $(6)^-$ | | | | |
| | | 143.2076 *10* | 100 *2* | 36.8440 | $(8)^-$ | M1 | | 0.2282 | |
| 195.9822 | $4^+,5^+$ | 155.1782 *11* | 100 *2* | 40.8038 | $3^+,4^+$ | M1 | | 0.1827 | |
| | | 185.1226 *22* | 14 *1* | 10.8627 | $5^+$ | M1+E2 | <2.6 | 0.16 *5* | |
| 214.6032 | $3^+,4^+,5^+$ | 127.0024 *23* | 2.0 *1* | 87.6016 | $(4)^-$ | | | | |
| | | 133.8396 *19* | 100 *2* | 80.7638 | $3^+,4^+$ | M1 | | 0.276 | |
| | | 173.7992 *9* | 31 *1* | 40.8038 | $3^+,4^+$ | M1 | | 0.1338 | |
| | | 203.739 *3* | 1.7 *2* | 10.8627 | $5^+$ | | | | |
| 248.3692 | $^+$ | 167.6049 *12* | 100 *1* | 80.7638 | $3^+,4^+$ | M1 | | 0.1477 | B(M1)(W.u.)=0.0107 *20* |
| 287.1286 | $3^+,4^+$ | 72.526 *3* | 6.8 *7* | 214.6032 | $3^+,4^+,5^+$ | M1 | | 1.571 | |
| | | 206.36 *3* | 0.75 *23* | 80.7638 | $3^+,4^+$ | | | | |
| | | 246.3206 *25* | 100 *3* | 40.8038 | $3^+,4^+$ | M1 | | 0.0528 | |
| | | 276.269 *6* | 20 *1* | 10.8627 | $5^+$ | | | | |
| 368.333 | | 188.282 *7* | 100 | 180.0509 | $(7,8)^-$ | | | | |
| 371.823 | $6^-,7^-,8^-$ | 246.586 *5* | 23 *2* | 125.2291 | $(6)^-$ | | | | |
| | | 334.981 *3* | 100 *4* | 36.8440 | $(8)^-$ | M1,E2 | | 0.0248 *12* | |
| 384.5336 | $4^-,5^-$ | 252.834 *4* | 56 *1* | 131.6928 | $3^-,4^-,5^-$ | M1(+E2) | <0.6 | 0.051 *3* | |
| | | 296.949 *7* | 3.0 *2* | 87.6016 | $(4)^-$ | | | | |
| | | 384.533 *8* | 100 *4* | 0.0 | $3^-$ | M1,E2 | | 0.0168 *1* | |
| 386.2882 | $2^+,3^+,4^+$ | 137.9186 *13* | 100 *2* | 248.3692 | $^+$ | M1 | | 0.253 | |
| | | 171.6855 *23* | 7.4 *3* | 214.6032 | $3^+,4^+,5^+$ | | | | |
| | | 305.518 *8* | 9.8 *10* | 80.7638 | $3^+,4^+$ | | | | |
| | | 345.48 *3* | 6.1 *17* | 40.8038 | $3^+,4^+$ | | | | |
| | | 386.288 *2* | 16.0 *13* | 0.0 | $3^-$ | | | | |
| 402.8775 | $3^+,4^+$ | 206.8958 *17* | 13 *1* | 195.9822 | $4^+,5^+$ | | | | |
| | | 299.218 *5* | 8.6 *4* | 103.6514 | $2^-,3^-,4^-$ | | | | |
| | | 322.116 *3* | 100 *4* | 80.7638 | $3^+,4^+$ | M1,E2 | | 0.0278 *17* | |
| | | 392.011 *11* | 8.7 *6* | 10.8627 | $5^+$ | | | | |
| | | 402.878 *13* | 18.9 *9* | 0.0 | $3^-$ | | | | |





$^{124}_{51}Sb_{73}$-5

## Adopted Levels, Gammas (continued)

### γ($^{124}$Sb) (continued)

| $E_i$(level) | $J_i^\pi$ | $E_\gamma$[†] | $I_\gamma$[†] | $E_f$ | $J_f^\pi$ | Mult.[‡] | δ[‡] | α[#] |
|---|---|---|---|---|---|---|---|---|
| 419.0624 | 2⁻,3⁻,4⁻ | 34.528 *4* | 3.9 *10* | 384.5336 | 4⁻,5⁻ | | | |
| | | 223.079 *6* | 4.3 *5* | 195.9822 | 4⁺,5⁺ | | | |
| | | 315.36 *5* | 2.3 *9* | 103.6514 | 2⁻,3⁻,4⁻ | | | |
| | | 331.4592 *24* | 100 *3* | 87.6016 | (4)⁻ | M1,E2 | | 0.0256 *13* |
| | | 338.301 *4* | 28 *2* | 80.7638 | 3⁺,4⁺ | | | |
| | | 419.056 *12* | 14 *1* | 0.0 | 3⁻ | | | |
| 439.1717 | 4⁻,5⁻ | 54.73[@] *5* | <7.9[@] | 384.5336 | 4⁻,5⁻ | | | |
| | | 313.954[&] *5* | 44[&] | 125.2291 | (6)⁻ | M1,E2 | | 0.0300 *20* |
| | | 351.567 *3* | 100 *4* | 87.6016 | (4)⁻ | M1,E2 | | 0.0216 *7* |
| 445.672 | 6⁻ | 73.84 *8* | 3.4 *7* | 371.823 | 6⁻,7⁻,8⁻ | | | |
| | | 265.631 *4* | 100 *3* | 180.0509 | (7,8)⁻ | E2(+M1) | >0.71 | 0.045 *3* |
| | | 313.954[&] *5* | 68[&] | 131.6928 | 3⁻,4⁻,5⁻ | M1,E2 | | 0.0300 *20* |
| | | 434.82 *5* | 5.2 *10* | 10.8627 | 5⁺ | | | |
| 471.2599 | ⁺ | 84.972 *3* | 13 *2* | 386.2882 | 2⁺,3⁺,4⁺ | M1,E2 | | 2.0 *10* |
| | | 184.128 *3* | 9.3 *10* | 287.1286 | 3⁺,4⁺ | | | |
| | | 256.650 *5* | 32 *2* | 214.6032 | 3⁺,4⁺,5⁺ | | | |
| | | 275.281 *3* | 100 *4* | 195.9822 | 4⁺,5⁺ | M1,E2 | | 0.044 *5* |
| | | 390.505 *9* | 44 *2* | 80.7638 | 3⁺,4⁺ | | | |
| | | 430.482 *21* | 40 *4* | 40.8038 | 3⁺,4⁺ | | | |
| 483.9988 | 3⁺,4⁺,5⁺ | 196.870 *4* | 21 *1* | 287.1286 | 3⁺,4⁺ | | | |
| | | 269.3965 *25* | 53 *1* | 214.6032 | 3⁺,4⁺,5⁺ | M1,E2 | | 0.047 *4* |
| | | 288.013 *5* | 100 *3* | 195.9822 | 4⁺,5⁺ | M1,E2 | | 0.039 *6* |
| | | 396.40 *4* | 8.7 *13* | 87.6016 | (4)⁻ | | | |
| | | 443.214 *11* | 34 *2* | 40.8038 | 3⁺,4⁺ | | | |
| | | 473.122 *9* | 76 *5* | 10.8627 | 5⁺ | | | |
| 522.6911 | ⁺ | 119.8134 *6* | 50 *1* | 402.8775 | 3⁺,4⁺ | M1 | | 0.376 |
| | | 441.919 *8* | 100 *4* | 80.7638 | 3⁺,4⁺ | | | |
| | | 481.884 *19* | 22 *2* | 40.8038 | 3⁺,4⁺ | | | |
| 581.916 | | 195.623 *5* | 14 *1* | 386.2882 | 2⁺,3⁺,4⁺ | | | |
| | | 501.152 *8* | 100 *5* | 80.7638 | 3⁺,4⁺ | | | |
| | | 541.120 *24* | 26 *4* | 40.8038 | 3⁺,4⁺ | | | |
| | | 571.059 *9* | 61 *4* | 10.8627 | 5⁺ | | | |
| 598.658 | 3⁻,4⁻ | 159.484 *10* | 0.7 *2* | 439.1717 | 4⁻,5⁻ | | | |
| | | 179.594 *4* | 1.6 *2* | 419.0624 | 2⁻,3⁻,4⁻ | | | |
| | | 466.956 *11* | 23 *1* | 131.6928 | 3⁻,4⁻,5⁻ | | | |
| | | 598.666 *10* | 100 *6* | 0.0 | 3⁻ | M1(+E2) | <0.46 | 0.00564 *12* |
| 612.693 | | 226.44 *9* | 17 *4* | 386.2882 | 2⁺,3⁺,4⁺ | | | |
| | | 364.320 *12* | 100 *6* | 248.3692 | ⁺ | | | |
| | | 398.09 *3* | 54 *8* | 214.6032 | 3⁺,4⁺,5⁺ | | | |
| | | 531.939 *13* | 81 *6* | 80.7638 | 3⁺,4⁺ | | | |
| 642.057 | 5⁻,6,7⁻ | 202.886 *3* | 25 *3* | 439.1717 | 4⁻,5⁻ | | | |





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## Adopted Levels, Gammas (continued)

### $\gamma(^{124}Sb)$ (continued)

| $E_i$(level) | $J_i^\pi$ | $E_\gamma$ † | $I_\gamma$ † | $E_f$ | $J_f^\pi$ |
|---|---|---|---|---|---|
| 642.057 | 5⁻,6,7⁻ | 270.232 *8* | 22 *1* | 371.823 | 6⁻,7⁻,8⁻ |
| | | 461.996 *9* | 100 *6* | 180.0509 | (7,8)⁻ |
| 642.652 | 4⁻,5,6⁻ | 196.977 *4* | 8.1 *5* | 445.672 | 6⁻ |
| | | 258.124 *10* | 9.8 *9* | 384.5336 | 4⁻,5⁻ |
| | | 555.058 *7* | 100 *6* | 87.6016 | (4)⁻ |
| 744.950 | | 132.258 *6* | 14 *2* | 612.693 | |
| | | 273.75 *7* | 22 *6* | 471.2599 | + |
| | | 342.068 *9* | 56 *5* | 402.8775 | 3⁺,4⁺ |
| | | 457.825 *25* | 39 *11* | 287.1286 | 3⁺,4⁺ |
| | | 530.349 *16* | 61 *5* | 214.6032 | 3⁺,4⁺,5⁺ |
| | | 548.978 *22* | 100 *5* | 195.9822 | 4⁺,5⁺ |
| | | 664.11 *4* | 23 *7* | 80.7638 | 3⁺,4⁺ |
| | | 704.13 *3* | 56 *5* | 40.8038 | 3⁺,4⁺ |
| 757.196 | | 470.052 *12* | 58 *5* | 287.1286 | 3⁺,4⁺ |
| | | 561.231 *19* | 100 *7* | 195.9822 | 4⁺,5⁺ |
| | | 716.406 *18* | 89 *9* | 40.8038 | 3⁺,4⁺ |
| 804.266 | | 589.61 *5* | 25 *3* | 214.6032 | 3⁺,4⁺,5⁺ |
| | | 723.42 *3* | 47 *7* | 80.7638 | 3⁺,4⁺ |
| | | 763.481 *14* | 100 *6* | 40.8038 | 3⁺,4⁺ |
| 827.064 | 5⁻,6,7$^{(-)}$ | 455.244 *14* | 100 *5* | 371.823 | 6⁻,7⁻,8⁻ |
| | | 646.96 *5* | 19 *5* | 180.0509 | (7,8)⁻ |
| | | 695.38 *5* | 32 *6* | 131.6928 | 3⁻,4⁻,5⁻ |
| 855.969 | 4⁻,5 | 213.913 *5* | 8.4 *7* | 642.057 | 5⁻,6,7⁻ |
| | | 410.280 *11* | 100 *5* | 445.672 | 6⁻ |
| 855.969 | 4⁻,5 | 724.27 *3* | 20 *4* | 131.6928 | 3⁻,4⁻,5⁻ |
| | | 768.404 *18* | 39 *3* | 87.6016 | (4)⁻ |
| 863.003 | 3,4 | 264.334 *10* | 25 *2* | 598.658 | 3⁻,4⁻ |
| | | 443.938 *9* | 51 *3* | 419.0624 | 2⁻,3⁻,4⁻ |
| | | 759.38 *4* | 26 *3* | 103.6514 | 2⁻,3⁻,4⁻ |
| | | 775.445 *25* | 100 *7* | 87.6016 | (4)⁻ |
| | | 863.10 *5* | 17 *3* | 0.0 | 3⁻ |
| 869.415 | 3⁻,4,5⁻ | 226.78 *3* | 17 *2* | 642.652 | 4⁻,5,6⁻ |
| | | 270.759 *13* | 22 *2* | 598.658 | 3⁻,4⁻ |
| | | 430.258 *13* | 100 *7* | 439.1717 | 4⁻,5⁻ |
| | | 450.341 *22* | 40 *4* | 419.0624 | 2⁻,3⁻,4⁻ |
| | | 484.869 *10* | 60 *5* | 384.5336 | 4⁻,5⁻ |
| | | 737.704 *21* | 73 *5* | 131.6928 | 3⁻,4⁻,5⁻ |
| | | 781.94 *6* | 39 *5* | 87.6016 | (4)⁻ |
| | | 869.52 *7* | 52 *7* | 0.0 | 3⁻ |
| 1020.948 | 3⁻,4,5⁻ | 422.287 *10* | 50 *6* | 598.658 | 3⁻,4⁻ |
| | | 636.41 *8* | 44 *6* | 384.5336 | 4⁻,5⁻ |
| | | 889.27 *4* | 88 *11* | 131.6928 | 3⁻,4⁻,5⁻ |
| | | 1020.97 *6* | 100 *28* | 0.0 | 3⁻ |
| 1053.067 | | 634.003 *15* | 100 | 419.0624 | 2⁻,3⁻,4⁻ |
| 1059.645 | | 477.688 *25* | 31 *4* | 581.916 | |
| | | 620.48 *3* | 67 *6* | 439.1717 | 4⁻,5⁻ |
| | | 675.26 *7* | 28 *4* | 384.5336 | 4⁻,5⁻ |
| | | 972.06 *3* | 100 *13* | 87.6016 | (4)⁻ |

† From (n,γ) E=th.

‡ From α(exp) and L-, M-subshell ratios in (n,γ) E=th.

# 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.

@ Multiply placed with undivided intensity.

& Multiply placed with intensity suitably divided.





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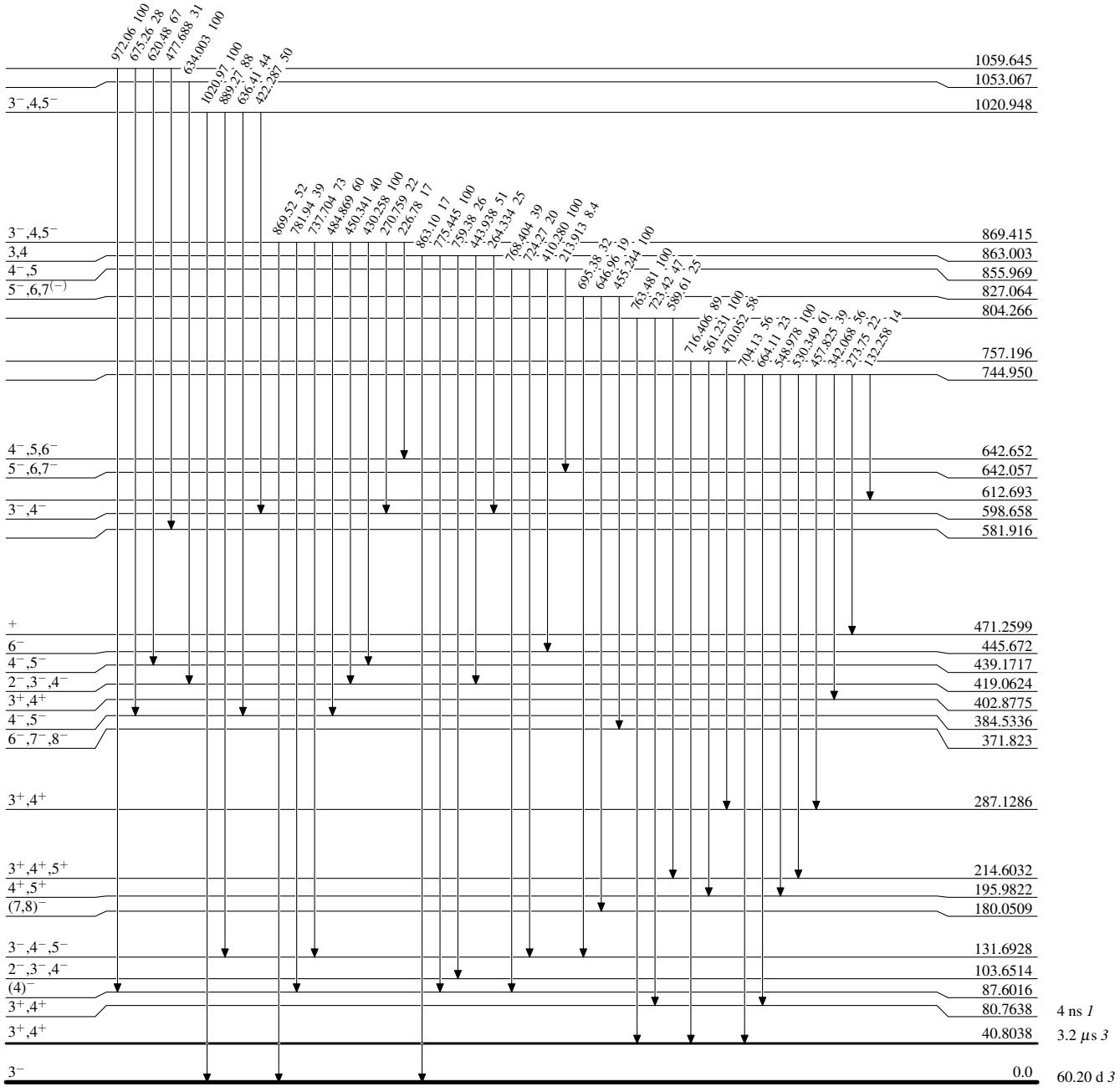
## Adopted Levels, Gammas

### Level Scheme

Intensities: Relative photon branching from each level

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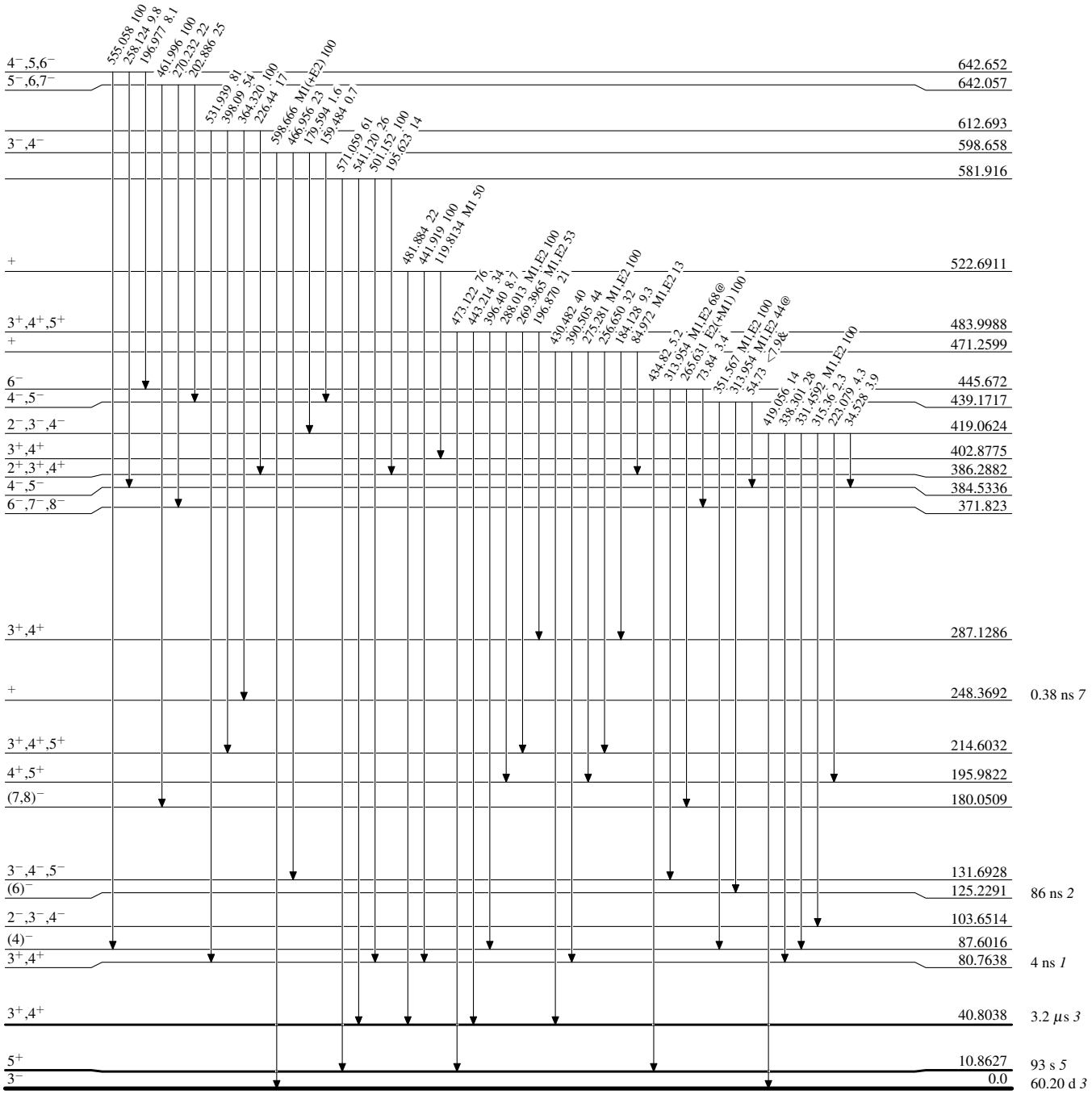
## Adopted Levels, Gammas

### Level Scheme (continued)

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

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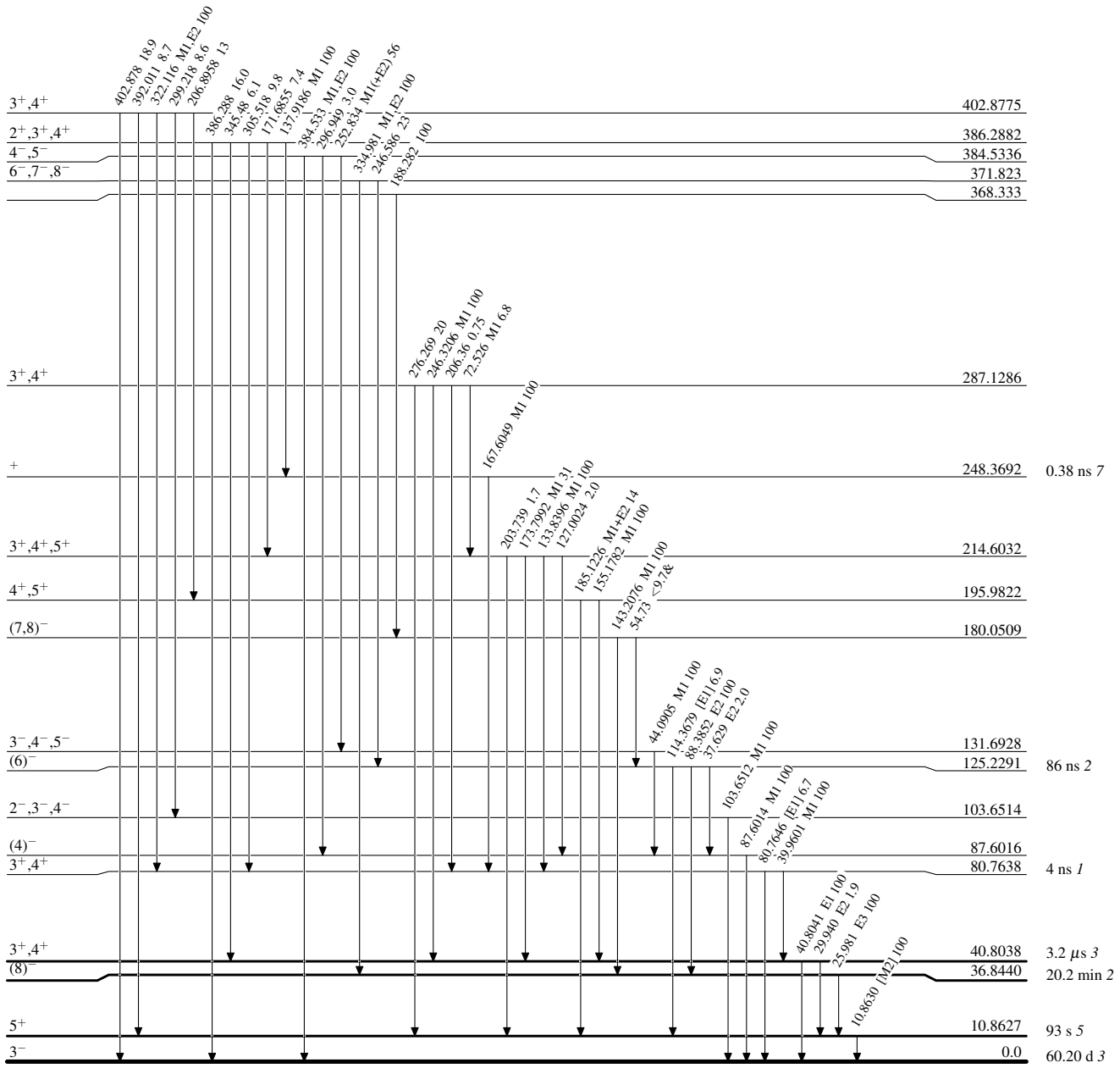
## Adopted Levels, Gammas

### Level Scheme (continued)

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

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