

**Adopted Levels, Gammas**

| Type            | Author    | History Citation   | Literature Cutoff Date |
|-----------------|-----------|--------------------|------------------------|
| Full Evaluation | T. Tamura | NDS 108,455 (2007) | 30-Sep-2006            |

$Q(\beta^-) = -1608.4$ ;  $S(n) = 8815.4$ ;  $S(p) = 1.139 \times 10^4$ ;  $Q(\alpha) = -5665$  21 [2012Wa38](#)

Note: Current evaluation has used the following Q record -1615.8 288813.2 2511394 27-5662 20 [2003Au03](#).

 $^{122}\text{Sn}$  LevelsCross Reference (XREF) Flags

|          |                                           |          |                                          |          |                                       |
|----------|-------------------------------------------|----------|------------------------------------------|----------|---------------------------------------|
| <b>A</b> | $^{122}\text{In } \beta^-$ decay (1.5 s)  | <b>G</b> | Coulomb excitation                       | <b>M</b> | $^{126}\text{Te}(d,^6\text{Li})$      |
| <b>B</b> | $^{122}\text{In } \beta^-$ decay (10.3 s) | <b>H</b> | $^{122}\text{Sn}(p,p')$                  | <b>N</b> | $^{122}\text{Sn}(\gamma,\gamma')$     |
| <b>C</b> | $^{122}\text{In } \beta^-$ decay (10.8 s) | <b>I</b> | $^{122}\text{Sn}(d,d'),(\alpha,\alpha')$ | <b>O</b> | $^{123}\text{Sb}(\mu^-, \nu n\gamma)$ |
| <b>D</b> | $^{122}\text{Sb } \varepsilon$ decay      | <b>J</b> | $^{122}\text{Sn}(n,n')$                  | <b>P</b> | $^{122}\text{Sn}$ IT decay            |
| <b>E</b> | $^{122}\text{Sn}(n,n'\gamma)$             | <b>K</b> | $^{123}\text{Sb}(t,\alpha)$              |          |                                       |
| <b>F</b> | $^{122}\text{Sn}(p,p'\gamma)$             | <b>L</b> | $^{124}\text{Sn}(p,t)$                   |          |                                       |

| E(level) <sup>†</sup> | J <sup>π</sup> <sup>‡</sup>                      | T <sub>1/2</sub> <sup>#</sup> | XREF            | Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------|--------------------------------------------------|-------------------------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0.0                   | 0 <sup>+</sup>                                   | stable                        | ABCDEFGHIJKLMNO | Nuclear rms charge radius=4.6657 fm 10 ( <a href="#">2004An14</a> ).<br>T <sub>1/2</sub> : >5.8×10 <sup>13</sup> y for neutrino-less decay mode ( <a href="#">1952Fr23</a> ).<br>μ=-0.1 2<br>B(E2)↑=0.189 4<br>μ: from transient field integral perturbed angular correlation ( <a href="#">1980Ha19,2005St24</a> ), Q from Coulomb excitation reorientation ( <a href="#">1975Gr30,2005St24</a> ), reported as Q < +0.14 > -0.28.<br>J <sup>π</sup> : L=2 in (p,p').<br>T <sub>1/2</sub> : from B(E2) in Coulomb excitation; other: 0.62 ps 12 from Γ in (γ,γ'). |
| 1140.51 3             | 2 <sup>+</sup>                                   | 0.776 ps 16                   | ABCDEFGHIJKLMNO | J <sup>π</sup> : L=0 in (p,t).<br>T <sub>1/2</sub> : other: >3.3 ps from B(E2) in Coulomb excitation.<br>XREF: i(2150)L(2146).<br>J <sup>π</sup> : L=4 in (p,p').<br>T <sub>1/2</sub> : from B(E2) in Coulomb excitation; other: >0.346 ps from (n,n'γ).                                                                                                                                                                                                                                                                                                          |
| 2087.71 5             | 0 <sup>+</sup>                                   | >0.277 ps                     | A EFGH LM       | XREF: i(2150).<br>J <sup>π</sup> : log ft=5.7 from 1 <sup>+</sup> ; E2 γ to 0 <sup>+</sup> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2142.06 3             | 4 <sup>+</sup>                                   | 1.56 ps 21                    | BC E GHi KLM    | XREF: I(2250)L(2252).<br>J <sup>π</sup> : L=5 in (p,p').<br>T <sub>1/2</sub> : from βγ(t) in $^{122}\text{In } \beta^-$ decay (10.8 s).<br>J <sup>π</sup> : L=4 in (p,p').<br>T <sub>1/2</sub> : other: >3.5 ps from B(E2) in Coulomb excitation.                                                                                                                                                                                                                                                                                                                 |
| 2153.81 3             | 2 <sup>+</sup>                                   | 0.69 ps +55-21                | AB E i          | XREF: H(2390)L(2417).<br>J <sup>π</sup> : L=7 in (p,t) E2 γ to 5 <sup>-</sup> .<br>T <sub>1/2</sub> : from γγ(t) in $^{122}\text{In } \beta^-$ decay (10.8 s).<br>XREF: H(2412).<br>J <sup>π</sup> : L=2 in (p,p').<br>T <sub>1/2</sub> : others: 0.19 ps 5 from Γ in (γ,γ'); >0.78 ps from B(E2) in Coulomb excitation.                                                                                                                                                                                                                                          |
| 2245.81 3             | 5 <sup>-</sup>                                   | 7.9 ns 9                      | BC E HI LM P    | B(E3)↑=0.092 10 ( <a href="#">2002Ki06</a> )<br>J <sup>π</sup> : L=3 in (p,p').<br>J <sup>π</sup> : 1390γ(θ) is isotropic, 1390γ(lin pol) in (n,n'γ); log ft=5.7 from 1 <sup>+</sup> , γ's to 2 <sup>+</sup> .                                                                                                                                                                                                                                                                                                                                                    |
| 2331.09 3             | 4 <sup>+</sup>                                   | 0.83 ps +69-28                | B E GHI LM      | J <sup>π</sup> : L=6 in (p,t),(p,p').<br>XREF: m(2653).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 2409.03 4             | 7 <sup>-</sup>                                   | 7.5 μs 9                      | BC E H LM P     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2415.543 25           | 2 <sup>+</sup>                                   | 0.33 ps +10-7                 | AB EFGHI MN     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2492.67 4             | 3 <sup>-</sup>                                   | 0.079 ps +5-3                 | AB EFGHI LMN    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2530.33 4             | (0) <sup>+</sup>                                 |                               | A E             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2555.42 6             | 6 <sup>+</sup>                                   |                               | B E H LM        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2651.37 4             | 4 <sup>-</sup> , 5 <sup>-</sup> , 6 <sup>-</sup> |                               | E m             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

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**Adopted Levels, Gammas (continued)**

| $^{122}\text{Sn}$ Levels (continued) |                                                   |                               |      |          |                                                                                                                                                                            |
|--------------------------------------|---------------------------------------------------|-------------------------------|------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| E(level) <sup>†</sup>                | J <sup>π</sup> <sup>‡</sup>                       | T <sub>1/2</sub> <sup>#</sup> | XREF |          | Comments                                                                                                                                                                   |
| 2653.00 5                            | 6 <sup>-</sup>                                    |                               | C    | E H m    | J <sup>π</sup> : M1+E2 $\gamma$ to 5 <sup>-</sup> .<br>XREF: m(2653).<br>J <sup>π</sup> : M1(+E2) $\gamma$ 's to 7 <sup>-</sup> and 5 <sup>-</sup> .                       |
| 2657 10                              |                                                   |                               |      | L        |                                                                                                                                                                            |
| 2675.57 6                            | 0 <sup>+</sup>                                    | >0.2 ps                       | EFG  | L        | J <sup>π</sup> : L=0 in (p,t); 1535 $\gamma$ ( $\theta$ ) is isotropic in (n,n' $\gamma$ ).<br>T <sub>1/2</sub> : from B(E2) in Coulomb excitation.                        |
| 2690.04 7                            | (8 <sup>+</sup> )                                 |                               | C    | E H LM P | J <sup>π</sup> : L=8 in (p,t).                                                                                                                                             |
| 2734.50 4                            | 2 <sup>+</sup>                                    | 0.49 ps +69-21                | AB   | E        | J <sup>π</sup> : log ft=6.5 from 1 <sup>+</sup> ; E2 $\gamma$ to 0 <sup>+</sup> .                                                                                          |
| 2751.01 5                            | 5 <sup>-</sup>                                    |                               |      | E H LM   | J <sup>π</sup> : L=5 in (p,p').                                                                                                                                            |
| 2765.6 10                            | (10 <sup>+</sup> )                                | 62 $\mu$ s 3                  |      | H L P    | J <sup>π</sup> : L=10 in (p,p').<br>T <sub>1/2</sub> : from $^{122}\text{Sn}$ IT decay (1992Br06).                                                                         |
| 2775.55 6                            | 2 <sup>+</sup>                                    | 0.62 ps +83-28                | AB   | E H      | J <sup>π</sup> : log ft=6.0 from 1 <sup>+</sup> ; E2 $\gamma$ 's to 0 <sup>+</sup> , $\gamma$ from 4 <sup>+</sup> .                                                        |
| 2837.88 7                            | 6 <sup>-</sup>                                    |                               | C    | E        | J <sup>π</sup> : M1 $\gamma$ to 7 <sup>-</sup> , M1(+E2) $\gamma$ to 5 <sup>-</sup> .                                                                                      |
| 2855.47 4                            | 4 <sup>-</sup>                                    |                               |      | E        | J <sup>π</sup> : M1(+E2) $\gamma$ to 3 <sup>-</sup> , M1+E2 $\gamma$ to 5 <sup>-</sup> .                                                                                   |
| 2867.73 7                            |                                                   | 0.13 ps +20-6                 |      | E h      | XREF: h(2870).                                                                                                                                                             |
| 2879.79 5                            | 1 <sup>+</sup> ,2 <sup>+</sup>                    | 0.111 ps +55-28               |      | E h      | XREF: h(2870).                                                                                                                                                             |
| 2944.96 6                            | 3 <sup>+</sup>                                    |                               |      | E        | J <sup>π</sup> : M1+E2 $\gamma$ to 2 <sup>+</sup> , $\gamma$ to 0 <sup>+</sup> .                                                                                           |
| 2959.12 6                            | 4 <sup>+</sup>                                    |                               |      | E        | J <sup>π</sup> : M1+E2 $\gamma$ 's to 2 <sup>+</sup> and 4 <sup>+</sup> .                                                                                                  |
| 2971.1? 4                            |                                                   |                               | A    |          | J <sup>π</sup> : stretched E2 $\gamma$ 's to 2 <sup>+</sup> , E1(+M2) $\gamma$ to 3 <sup>-</sup> .                                                                         |
| 2973.39 4                            | 4 <sup>+</sup>                                    |                               | B    | E H      | XREF: H(2976).                                                                                                                                                             |
| 3035.91 5                            | 3 <sup>-</sup>                                    |                               |      | E H      | J <sup>π</sup> : log ft=5.5 from 5 <sup>+</sup> ; stretched E2 $\gamma$ to 2 <sup>+</sup> , M1+E2 $\gamma$ to 4 <sup>+</sup> .                                             |
| 3082.15 5                            | 4 <sup>+</sup>                                    | 0.19 ps +15-6                 | B    | E H      | J <sup>π</sup> : E1(+M2) $\gamma$ 's to 2 <sup>+</sup> , M1+E2 $\gamma$ to 4 <sup>-</sup> .                                                                                |
| 3128.6 7                             | 2 <sup>+</sup>                                    | 0.043 ps +10-7                |      | E HI N   | J <sup>π</sup> : stretched E2 $\gamma$ to 2 <sup>+</sup> , M1+E2 $\gamma$ to 4 <sup>+</sup> .<br>XREF: I(3150).                                                            |
| 3130.58 15                           |                                                   |                               |      | E H      | J <sup>π</sup> : L=2 in (p,p').                                                                                                                                            |
| 3206.25 18                           | (0) <sup>+</sup>                                  |                               | AB   | E        | T <sub>1/2</sub> : other: 0.080 ps 7 from $\Gamma$ in ( $\gamma,\gamma'$ ).                                                                                                |
| 3233.74 4                            | 4 <sup>+</sup>                                    |                               | B    | E H      | J <sup>π</sup> : 2065 $\gamma$ ( $\theta$ ) is isotropic in (n,n' $\gamma$ ); log ft=5.3 from 1 <sup>+</sup> ; $\gamma$ to 2 <sup>+</sup> in (n,n' $\gamma$ ).             |
| 3281.43 9                            |                                                   | 0.10 ps +10-4                 |      | E HI     | XREF: H(3237).                                                                                                                                                             |
| 3305.69 4                            | 4 <sup>+</sup>                                    |                               | B    | E H m    | J <sup>π</sup> : L=4 in (p,p').<br>XREF: I(3260).                                                                                                                          |
| 3330 30                              |                                                   |                               |      | I m      | XREF: m(3319).                                                                                                                                                             |
| 3358.59 9                            | 1 <sup>-</sup>                                    | 0.006 ps +4-3                 |      | E N      | J <sup>π</sup> : L=4 in (p,p').<br>XREF: m(3319).                                                                                                                          |
| 3362.87 9                            | 3 <sup>-</sup>                                    |                               |      | E H      | J <sup>π</sup> : E1 $\gamma$ to 0 <sup>+</sup> in ( $\gamma,\gamma'$ ); 3359 $\gamma$ ( $\theta$ ) in (n,n' $\gamma$ ).                                                    |
| 3371.24 14                           | (2 <sup>+</sup> )                                 |                               | B    | E        | T <sub>1/2</sub> : other: 0.0048 ps 4 from $\Gamma$ in ( $\gamma,\gamma'$ ).                                                                                               |
| 3416.5 4                             | (7 <sup>-</sup> ,8 <sup>-</sup> ,9 <sup>-</sup> ) |                               | C    |          | J <sup>π</sup> : L=3 for E=3367 10 in (p,p').                                                                                                                              |
| 3454.82 13                           | (3 <sup>-</sup> )                                 |                               |      | E H      | J <sup>π</sup> : D(+Q) $\gamma$ to 2 <sup>+</sup> , Q $\gamma$ to 0 <sup>+</sup> .                                                                                         |
| 3478.60 21                           | (7 <sup>-</sup> )                                 |                               |      | E HI     | J <sup>π</sup> : log ft=6.0 from (8 <sup>-</sup> ); $\gamma$ to 7 <sup>-</sup> .                                                                                           |
| 3530.71 5                            | (7 <sup>-</sup> ,8 <sup>-</sup> )                 |                               | C    | H        | J <sup>π</sup> : L=(3) in (p,p').                                                                                                                                          |
| 3548.66 10                           | 2 <sup>+</sup>                                    | 0.06 ps +9-3                  | A    | E        | J <sup>π</sup> : L=(7) in (p,p').                                                                                                                                          |
| 3568.14 21                           |                                                   |                               |      | E HI k   | log ft=4.6 from (8 <sup>-</sup> ); $\gamma$ 's to 6 <sup>-</sup> and 7 <sup>-</sup> .                                                                                      |
| 3582.35 18                           | 2 <sup>+</sup>                                    | 0.028 ps +16-10               | A    | E H k N  | J <sup>π</sup> : log ft=5.8 from 1 <sup>+</sup> ; $\gamma$ 's to 2 <sup>+</sup> and 4 <sup>+</sup> .<br>XREF: I(3560)k(3580).                                              |
| 3627.01 14                           | 4 <sup>+</sup>                                    |                               | B    | H        | XREF: H(3584)k(3580).                                                                                                                                                      |
| 3670.28 7                            | 4 <sup>+</sup>                                    |                               | B    | H K      | J <sup>π</sup> : log ft=6.3 from 1 <sup>+</sup> ; stretched E2 $\gamma$ to 0 <sup>+</sup> .<br>T <sub>1/2</sub> : other: 0.014 ps 5 from $\Gamma$ in ( $\gamma,\gamma'$ ). |
| 3703.38 11                           | (7 <sup>-</sup> ,8 <sup>-</sup> ,9 <sup>-</sup> ) |                               | C    | hi lm    | J <sup>π</sup> : log ft=6.1 from 5 <sup>+</sup> ; $\gamma$ 's to 2 <sup>+</sup> and 6 <sup>+</sup> .                                                                       |
| 3704.9 5                             | (2 <sup>+</sup> )                                 |                               |      | E        | J <sup>π</sup> : log ft=5.8 from 5 <sup>+</sup> ; $\gamma$ to 2 <sup>+</sup> .<br>XREF: h(3708)i(3710)l(3710)m(3714).                                                      |
|                                      |                                                   |                               |      |          | J <sup>π</sup> : log ft=5.4 from (8 <sup>-</sup> ); $\gamma$ to 7 <sup>-</sup> .                                                                                           |
|                                      |                                                   |                               |      |          | J <sup>π</sup> : Q $\gamma$ to 0 <sup>+</sup> .                                                                                                                            |

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**Adopted Levels, Gammas (continued)** $^{122}\text{Sn}$  Levels (continued)

| E(level) <sup>†</sup> | J <sup>π</sup> <sup>‡</sup>                      | T <sub>1/2</sub> <sup>#</sup> | XREF |    |       | Comments                                                                                                                                       |
|-----------------------|--------------------------------------------------|-------------------------------|------|----|-------|------------------------------------------------------------------------------------------------------------------------------------------------|
| 3710.15 14            | (7 <sup>-</sup> , 8 <sup>-</sup> )               |                               | C    | hi | lm    | XREF: h(3708)i(3710)l(3710)m(3714).<br>J <sup>π</sup> : log ft=5.6 from (8 <sup>-</sup> ); γ's to 6 <sup>-</sup> , 7 <sup>-</sup> .            |
| 3730.00 20            |                                                  |                               | E    | H  | m     | XREF: H(3731)m(3714).                                                                                                                          |
| 3751.3 6              | 2 <sup>+</sup>                                   | 0.055 ps +69-41               | E    |    | K N   | J <sup>π</sup> : stretched E2 γ to 0 <sup>+</sup> .<br>T <sub>1/2</sub> : other: 0.39 ps 4 from Γ in (γ, γ').                                  |
| 3758.51 20            | 1, 2 <sup>+</sup>                                | 0.028 ps +41-20               | E    |    | N     | J <sup>π</sup> : γ to 0 <sup>+</sup> and 1 <sup>+</sup> .                                                                                      |
| 3777.0 3              |                                                  |                               | E    | H  |       |                                                                                                                                                |
| 3782.84 18            | (4 <sup>+</sup> )                                |                               | B    | E  |       | J <sup>π</sup> : log ft=6.5 from 5 <sup>+</sup> ; Q γ to 2 <sup>+</sup> .                                                                      |
| 3810 10               | +                                                |                               |      |    | K     | J <sup>π</sup> : L=4 in (t, α).                                                                                                                |
| 3818 10               | (6 <sup>+</sup> )                                |                               |      | H  |       | J <sup>π</sup> : L=(6) in (p, p').                                                                                                             |
| 3819.79 22            | 2 <sup>+</sup>                                   | 0.049 ps +68-21               | A    | E  | N     | J <sup>π</sup> : log ft=5.8 from 1 <sup>+</sup> ; stretched E2 γ to 0 <sup>+</sup> .<br>T <sub>1/2</sub> : other: 0.14 ps 5 from Γ in (γ, γ'). |
| 3840.65 9             | (4 <sup>+</sup> )                                |                               | B    | E  | HI    | XREF: I(3850).                                                                                                                                 |
| 3871.1 9              | 1, 2 <sup>+</sup>                                |                               |      |    | N     | J <sup>π</sup> : log ft=5.8 from 5 <sup>+</sup> ; γ's to 2 <sup>+</sup> and 4 <sup>+</sup> .                                                   |
| 3876.48 16            | 5 <sup>-</sup> , 6 <sup>+</sup>                  |                               | B    |    | h k   | J <sup>π</sup> : excited in (γ, γ'), γ to 0 <sup>+</sup> .<br>XREF: h(3879)k(3880).                                                            |
| 3882.10 5             | 4 <sup>+</sup>                                   |                               | B    |    | h k   | J <sup>π</sup> : γ's to 4 <sup>+</sup> , 5 <sup>-</sup> and 7 <sup>-</sup> ; log ft=6.0 from 5 <sup>+</sup> .<br>XREF: h(3879)k(3880).         |
| 3899.68 16            | 0 <sup>+</sup> , 1 <sup>+</sup> , 2 <sup>+</sup> |                               | AB   |    | h     | J <sup>π</sup> : log ft=5.5 from 5 <sup>+</sup> ; γ's to 2 <sup>+</sup> .<br>XREF: h(3900).                                                    |
| 3900 10               |                                                  |                               |      |    | h     | J <sup>π</sup> : log ft=4.7 from 1 <sup>+</sup> .<br>XREF: h(3900).                                                                            |
| 3929.9 5              | 1, 2 <sup>+</sup>                                |                               |      | E  | I K N | J <sup>π</sup> : γ's to 0 <sup>+</sup> , 2 <sup>+</sup> and (3 <sup>-</sup> ).                                                                 |
| 3948.5 5              | 5 <sup>-</sup> , 6 <sup>+</sup>                  |                               | B    |    |       | J <sup>π</sup> : γ's to 4 <sup>+</sup> , 6 <sup>+</sup> and 7 <sup>-</sup> ; log ft=6.5 from 5 <sup>+</sup> .                                  |
| 3974 7                |                                                  |                               |      |    | H K   | E(level): weighted average of 3978 10 in (p, p') and 3970 10 in (t, α).                                                                        |
| 4004.0 10             | (2 <sup>+</sup> )                                |                               | A    | E  |       | J <sup>π</sup> : log ft=6.0 from 1 <sup>+</sup> ; Q γ to 0 <sup>+</sup> .                                                                      |
| 4040 10               | -                                                |                               |      |    | K     | J <sup>π</sup> : L=1 in (t, α).                                                                                                                |
| 4104 10               | (5 <sup>-</sup> )                                |                               |      |    | H     | J <sup>π</sup> : L=(5) in (p, p').                                                                                                             |
| 4106.6 4              | 1, 2 <sup>+</sup>                                |                               | A    | E  |       | J <sup>π</sup> : log ft=5.6 from 1 <sup>+</sup> ; γ to 0 <sup>+</sup> .                                                                        |
| 4116.3 4              | 0 <sup>+</sup> , 1 <sup>+</sup> , 2 <sup>+</sup> |                               | A    |    |       | J <sup>π</sup> : log ft=5.1 from 1 <sup>+</sup> .                                                                                              |
| 4120 10               | -                                                |                               |      |    | K     | J <sup>π</sup> : L=1 in (t, α).                                                                                                                |
| 4179.6 4              | 0, 1, 2                                          |                               | A    |    | H     | J <sup>π</sup> : log ft=5.9 from 1 <sup>+</sup> .                                                                                              |
| 4220 10               | -                                                |                               |      |    | K     | J <sup>π</sup> : L=1 in (t, α).                                                                                                                |
| 4283.8 9              | (2 <sup>+</sup> )                                |                               |      | E  |       | J <sup>π</sup> : Q γ to 0 <sup>+</sup> .                                                                                                       |
| 4360 10               | -                                                |                               |      |    | K     | J <sup>π</sup> : L=1 in (t, α).                                                                                                                |
| 4470 10               | +                                                |                               |      |    | K     | J <sup>π</sup> : L=4 in (t, α).                                                                                                                |
| 4510 10               | +                                                |                               |      |    | K     | J <sup>π</sup> : L=4 in (t, α).                                                                                                                |
| 4560 10               | +                                                |                               |      |    | K     | J <sup>π</sup> : L=4 in (t, α).                                                                                                                |
| 4680 10               | +                                                |                               |      |    | K     | J <sup>π</sup> : L=4 in (t, α).                                                                                                                |
| 4750 10               | +                                                |                               |      |    | K     | J <sup>π</sup> : L=4 in (t, α).                                                                                                                |
| 4800                  | (-)                                              |                               |      | I  |       | J <sup>π</sup> : L=(3) in (d, d'), (α, α').                                                                                                    |
| 4930 10               | +                                                |                               |      |    | K     | J <sup>π</sup> : L=4 in (t, α).                                                                                                                |
| 5000                  |                                                  |                               |      | I  |       |                                                                                                                                                |
| 5300                  | (-)                                              |                               |      | I  |       | J <sup>π</sup> : L=(3) in (d, d'), (α, α').                                                                                                    |

<sup>†</sup> From combined fit of levels, and gammas, except where noted or where cross references clearly indicate other source. The completeness of the existences of E(J<sup>π</sup>=0<sup>+</sup>)<2.9 MeV, E(J<sup>π</sup>=1-5)<3.2 MeV is discussed in  $^{122}\text{Sn}(n, n'\gamma)$  (1991De38).

<sup>‡</sup> Evaluator assigned the J<sup>π</sup>'s from the followings: 1) L-values in the various reactions; 2) log ft values; 3) multiplicities and δ of the relevant transitions. 1991De38 discuss γ(θ) and linear polarization data for the determination of J<sup>π</sup>, and J-dependence of direct feeding in  $^{122}\text{Sn}(n, n'\gamma)$ .

<sup>#</sup> From Doppler-shift attenuation method in (n, n'γ) (1991Go24), except noted otherwise.

## Adopted Levels, Gammas (continued)

| $\gamma(^{122}\text{Sn})$ |                                                  |                    |                    |         |                   |         |             |                   |                                                               |
|---------------------------|--------------------------------------------------|--------------------|--------------------|---------|-------------------|---------|-------------|-------------------|---------------------------------------------------------------|
| $E_i(\text{level})$       | $J_i^\pi$                                        | $E_\gamma^\dagger$ | $I_\gamma^\dagger$ | $E_f$   | $J_f^\pi$         | Mult. # | $\delta^\#$ | $\alpha^\text{@}$ | Comments                                                      |
| 1140.51                   | 2 <sup>+</sup>                                   | 1140.52 4          | 100                | 0.0     | 0 <sup>+</sup>    | E2      |             |                   | B(E2)(W.u.)=10.69 23                                          |
| 2087.71                   | 0 <sup>+</sup>                                   | 947.19 4           | 100                | 1140.51 | 2 <sup>+</sup>    | E2      |             |                   | B(E2)(W.u.)<75                                                |
| 2142.06                   | 4 <sup>+</sup>                                   | 1001.54 2          | 100                | 1140.51 | 2 <sup>+</sup>    | E2      |             |                   | B(E2)(W.u.)=10.0 14                                           |
| 2153.81                   | 2 <sup>+</sup>                                   | 1013.27 3          | 100 5              | 1140.51 | 2 <sup>+</sup>    | M1+E2   | +3.8 4      |                   | B(M1)(W.u.)=0.0019 4; B(E2)(W.u.)=19 3                        |
|                           |                                                  | 2153.71 8          | 3.1 3              | 0.0     | 0 <sup>+</sup>    | E2      |             |                   | B(E2)(W.u.)=0.015 +5-12                                       |
| 2245.81                   | 5 <sup>-</sup>                                   | 103.74 1           | 100 4              | 2142.06 | 4 <sup>+</sup>    | E1(+M2) | +0.03 2     | 0.1639            | B(E1)(W.u.)=(2.6×10 <sup>-5</sup> 4); B(M2)(W.u.)=(10 +14-10) |
|                           |                                                  | 1105.38 11         | 1.6 4              | 1140.51 | 2 <sup>+</sup>    | [E3]    |             |                   | B(E3)(W.u.)=1.2 4                                             |
| 2331.09                   | 4 <sup>+</sup>                                   | 1190.56 2          | 100                | 1140.51 | 2 <sup>+</sup>    | E2      |             |                   | B(E2)(W.u.)=8 +3-7                                            |
| 2409.03                   | 7 <sup>-</sup>                                   | 163.22 3           | 100                | 2245.81 | 5 <sup>-</sup>    | E2      |             | 0.283             | B(E2)(W.u.)=0.0141 17                                         |
| 2415.543                  | 2 <sup>+</sup>                                   | 261.79 9           | 76 9               | 2153.81 | 2 <sup>+</sup>    | [M1+E2] |             |                   |                                                               |
|                           |                                                  | 1275.03 3          | 42.6 21            | 1140.51 | 2 <sup>+</sup>    | M1+E2   | -0.34 4     |                   | B(M1)(W.u.)=0.0056 14; B(E2)(W.u.)=0.29 6                     |
|                           |                                                  | 2415.51 3          | 100 5              | 0.0     | 0 <sup>+</sup>    | E2      |             |                   | B(E2)(W.u.)=0.27 +6-9                                         |
| 2492.67                   | 3 <sup>-</sup>                                   | 246.4 & 8          | 24 10              | 2245.81 | 5 <sup>-</sup>    | [E2]    |             |                   |                                                               |
|                           |                                                  | 1352.17 3          | 100 6              | 1140.51 | 2 <sup>+</sup>    | E1(+M2) | -0.03 2     |                   | B(E1)(W.u.)=(0.00113 14); B(M2)(W.u.)=(3 +4-3)                |
|                           |                                                  | 2492.6 4           | 0.052 5            | 0.0     | 0 <sup>+</sup>    | E3      |             |                   | branching from BE3↑=0.092 10 and T <sub>1/2</sub> .           |
| 2530.33                   | (0) <sup>+</sup>                                 | 376.6 2            | 7.9 7              | 2153.81 | 2 <sup>+</sup>    |         |             |                   |                                                               |
|                           |                                                  | 1389.81 3          | 100 4              | 1140.51 | 2 <sup>+</sup>    | E2      |             |                   |                                                               |
| 2555.42                   | 6 <sup>+</sup>                                   | 146.0 2            | 10 1               | 2409.03 | 7 <sup>-</sup>    |         |             |                   |                                                               |
|                           |                                                  | 309.63 5           | 100 5              | 2245.81 | 5 <sup>-</sup>    | E1(+M2) | +0.01 2     |                   |                                                               |
| 2651.37                   | 4 <sup>-</sup> , 5 <sup>-</sup> , 6 <sup>-</sup> | 405.56 3           | 100                | 2245.81 | 5 <sup>-</sup>    | M1+E2   | +0.10 2     |                   |                                                               |
| 2653.00                   | 6 <sup>-</sup>                                   | 243.97 3           | 69 3               | 2409.03 | 7 <sup>-</sup>    | M1(+E2) | -0.07 4     |                   |                                                               |
|                           |                                                  | 407.18 7           | 100 5              | 2245.81 | 5 <sup>-</sup>    | M1(+E2) | +0.03 2     |                   |                                                               |
| 2675.57                   | 0 <sup>+</sup>                                   | 1535.05 ‡ 5        | 100                | 1140.51 | 2 <sup>+</sup>    |         |             |                   |                                                               |
| 2690.04                   | (8 <sup>+</sup> )                                | 281.00 6           | 100                | 2409.03 | 7 <sup>-</sup>    |         |             |                   |                                                               |
| 2734.50                   | 2 <sup>+</sup>                                   | 204.16 7           | 20.5 13            | 2530.33 | (0) <sup>+</sup>  |         |             |                   | B(E2)(W.u.)=0.11 +5-11                                        |
|                           |                                                  | 1593.97 3          | 75 4               | 1140.51 | 2 <sup>+</sup>    | M1+E2   | -3.5 6      |                   | B(M1)(W.u.)=0.00032 11; B(E2)(W.u.)=1.11 3                    |
|                           |                                                  | 2734.53 15         | 100 11             | 0.0     | 0 <sup>+</sup>    | E2      |             |                   | B(E2)(W.u.)=0.11 +5-11                                        |
| 2751.01                   | 5 <sup>-</sup>                                   | 505.20 4           | 100                | 2245.81 | 5 <sup>-</sup>    | M1+E2   |             |                   | δ: +0.07 5 or +0.77 7.                                        |
| 2765.6                    | (10 <sup>+</sup> )                               | 75.2 5             | 100                | 2690.04 | (8 <sup>+</sup> ) | (E2)    |             | 4.44              | B(E2)(W.u.)=0.0194 13                                         |
|                           |                                                  |                    |                    |         |                   |         |             |                   | E <sub>γ</sub> , Mult.: from <sup>122</sup> Sn IT decay.      |
| 2775.55                   | 2 <sup>+</sup>                                   | 1634.73 11         | 100 5              | 1140.51 | 2 <sup>+</sup>    | M1+E2   | +0.14 2     |                   | B(M1)(W.u.)=0.0055 3; B(E2)(W.u.)=0.029 8                     |
|                           |                                                  | 2775.58 7          | 46 3               | 0.0     | 0 <sup>+</sup>    | E2      |             |                   | B(E2)(W.u.)=0.049 +23-5                                       |
| 2837.88                   | 6 <sup>-</sup>                                   | 428.94 13          | 30 2               | 2409.03 | 7 <sup>-</sup>    | M1      |             |                   |                                                               |
|                           |                                                  | 592.05 6           | 100 4              | 2245.81 | 5 <sup>-</sup>    | M1(+E2) | +0.01 3     |                   |                                                               |
| 2855.47                   | 4 <sup>-</sup>                                   | 362.84 4           | 14.7 8             | 2492.67 | 3 <sup>-</sup>    | M1(+E2) | -0.01 6     |                   |                                                               |
|                           |                                                  | 609.64 3           | 100 4              | 2245.81 | 5 <sup>-</sup>    | M1+E2   | -0.35 4     |                   |                                                               |
| 2867.73                   |                                                  | 1727.20 6          | 100                | 1140.51 | 2 <sup>+</sup>    |         |             |                   |                                                               |
| 2879.79                   | 1 <sup>+</sup> , 2 <sup>+</sup>                  | 1739.27 4          | 100 5              | 1140.51 | 2 <sup>+</sup>    | M1+E2   |             |                   | B(M1)(W.u.)<0.046; B(E2)(W.u.)<8                              |
|                           |                                                  |                    |                    |         |                   |         |             |                   | δ: -0.3 2 or -1.4 6.                                          |
|                           |                                                  | 2879.6 3           | 16.4 11            | 0.0     | 0 <sup>+</sup>    |         |             |                   |                                                               |
| 2944.96                   | 3 <sup>+</sup>                                   | 613.76 13          | 17.5 11            | 2331.09 | 4 <sup>+</sup>    | M1+E2   |             |                   | δ: +0.3 2 or +6 +9-3.                                         |

# Adopted Levels, Gammas (continued)

| $\gamma(^{122}\text{Sn})$ (continued) |                   |                    |                    |         |                                                  |         |             |                                                                                                                      |
|---------------------------------------|-------------------|--------------------|--------------------|---------|--------------------------------------------------|---------|-------------|----------------------------------------------------------------------------------------------------------------------|
| $E_i(\text{level})$                   | $J_i^\pi$         | $E_\gamma^\dagger$ | $I_\gamma^\dagger$ | $E_f$   | $J_f^\pi$                                        | Mult. # | $\delta^\#$ | Comments                                                                                                             |
| 2944.96                               | 3 <sup>+</sup>    | 791.14 5           | 100 5              | 2153.81 | 2 <sup>+</sup>                                   | M1+E2   | +1.4 +10-4  |                                                                                                                      |
|                                       |                   | 1804.53 11         | 32.2 17            | 1140.51 | 2 <sup>+</sup>                                   | M1+E2   | +5.1 17     |                                                                                                                      |
| 2959.12                               | 4 <sup>+</sup>    | 224.5 2            | 6.4 7              | 2734.50 | 2 <sup>+</sup>                                   |         |             |                                                                                                                      |
|                                       |                   | 466.42 11          | 14.6 11            | 2492.67 | 3 <sup>-</sup>                                   | E1(+M2) | +0.08 8     |                                                                                                                      |
|                                       |                   | 1818.60 5          | 100 6              | 1140.51 | 2 <sup>+</sup>                                   | E2      |             |                                                                                                                      |
| 2971.1?                               |                   | 1830.6 4           | 100                | 1140.51 | 2 <sup>+</sup>                                   |         |             |                                                                                                                      |
| 2973.39                               | 4 <sup>+</sup>    | 642.59 21          | 6.3 20             | 2331.09 | 4 <sup>+</sup>                                   |         |             |                                                                                                                      |
|                                       |                   | 819.54 3           | 100 5              | 2153.81 | 2 <sup>+</sup>                                   | E2      |             |                                                                                                                      |
|                                       |                   | 831.35 3           | 74 3               | 2142.06 | 4 <sup>+</sup>                                   | M1+E2   | -0.61 10    |                                                                                                                      |
| 3035.91                               | 3 <sup>-</sup>    | 180.42 10          | 26.7 19            | 2855.47 | 4 <sup>-</sup>                                   |         |             |                                                                                                                      |
|                                       |                   | 384.54 5           | 70 5               | 2651.37 | 4 <sup>-</sup> , 5 <sup>-</sup> , 6 <sup>-</sup> | M1+E2   | +0.26 8     |                                                                                                                      |
|                                       |                   | 543.4 2            | 23.3 16            | 2492.67 | 3 <sup>-</sup>                                   |         |             |                                                                                                                      |
|                                       |                   | 882.00 13          | 100 5              | 2153.81 | 2 <sup>+</sup>                                   | E1(+M2) | -0.01 4     |                                                                                                                      |
|                                       |                   | 1895.41 9          | 53 3               | 1140.51 | 2 <sup>+</sup>                                   | E1(+M2) | -0.03 3     |                                                                                                                      |
| 3082.15                               | 4 <sup>+</sup>    | 750.80 10          | 18 3               | 2331.09 | 4 <sup>+</sup>                                   | M1+E2   |             | B(M1)(W.u.)<0.08; B(E2)(W.u.)<40<br>$\delta$ : +1.6 8 or -0.2 2.<br>B(E2)(W.u.)=2.5 +9-21<br>B(E2)(W.u.)=1.22 +20-29 |
| 3128.6                                | 2 <sup>+</sup>    | 1941.67 4          | 100 4              | 1140.51 | 2 <sup>+</sup>                                   | E2      |             |                                                                                                                      |
|                                       |                   | 3128.6 7           | 100                | 0.0     | 0 <sup>+</sup>                                   | E2      |             |                                                                                                                      |
| 3130.58                               |                   | 440.54 13          | 100                | 2690.04 | (8 <sup>+</sup> )                                |         |             |                                                                                                                      |
| 3206.25                               | (0) <sup>+</sup>  | 2065.72 17         | 100                | 1140.51 | 2 <sup>+</sup>                                   |         |             |                                                                                                                      |
| 3233.74                               | 4 <sup>+</sup>    | 457.81 19          | 4.7 13             | 2775.55 | 2 <sup>+</sup>                                   |         |             |                                                                                                                      |
|                                       |                   | 678.10 25          | 4.9 18             | 2555.42 | 6 <sup>+</sup>                                   |         |             |                                                                                                                      |
|                                       |                   | 902.62 4           | 45 3               | 2331.09 | 4 <sup>+</sup>                                   | M1(+E2) | +0.5 6      |                                                                                                                      |
|                                       |                   | 987.60 16          | 10.5 22            | 2245.81 | 5 <sup>-</sup>                                   |         |             |                                                                                                                      |
|                                       |                   | 1080.00 9          | 10.8 11            | 2153.81 | 2 <sup>+</sup>                                   |         |             |                                                                                                                      |
|                                       |                   | 1091.67 3          | 100 2              | 2142.06 | 4 <sup>+</sup>                                   | M1(+E2) |             |                                                                                                                      |
|                                       |                   | 2093.23 3          | 41 2               | 1140.51 | 2 <sup>+</sup>                                   | E2      |             |                                                                                                                      |
| 3281.43                               |                   | 2140.90 8          | 100                | 1140.51 | 2 <sup>+</sup>                                   |         |             |                                                                                                                      |
| 3305.69                               | 4 <sup>+</sup>    | 332.27 5           | 11.3 8             | 2973.39 | 4 <sup>+</sup>                                   |         |             |                                                                                                                      |
|                                       |                   | 530.10 17          | 3.3 6              | 2775.55 | 2 <sup>+</sup>                                   |         |             |                                                                                                                      |
|                                       |                   | 812.99 10          | 8.8 10             | 2492.67 | 3 <sup>-</sup>                                   |         |             |                                                                                                                      |
|                                       |                   | 974.61 3           | 78 8               | 2331.09 | 4 <sup>+</sup>                                   | M1+E2   |             |                                                                                                                      |
|                                       |                   | 1059.92 4          | 17.6 9             | 2245.81 | 5 <sup>-</sup>                                   |         |             |                                                                                                                      |
|                                       |                   | 1163.61 3          | 100 4              | 2142.06 | 4 <sup>+</sup>                                   | M1+E2   |             |                                                                                                                      |
|                                       |                   | 2165.05 15         | 2.8 4              | 1140.51 | 2 <sup>+</sup>                                   |         |             |                                                                                                                      |
| 3358.59                               | 1 <sup>-</sup>    | 3358.54 9          | 100                | 0.0     | 0 <sup>+</sup>                                   | E1      |             | B(E1)(W.u.)=0.0012 +6-8                                                                                              |
| 3362.87                               | 3 <sup>-</sup>    | 1209.06 8          | 100                | 2153.81 | 2 <sup>+</sup>                                   | D(+Q)   | +0.03 3     |                                                                                                                      |
| 3371.24                               | (2 <sup>+</sup> ) | 596.5 10           | 41 14              | 2775.55 | 2 <sup>+</sup>                                   |         |             |                                                                                                                      |
|                                       |                   | 1217.5 2           | 41 3               | 2153.81 | 2 <sup>+</sup>                                   |         |             |                                                                                                                      |
|                                       |                   | 2230.6 4           | 67 4               | 1140.51 | 2 <sup>+</sup>                                   | D(+Q)   |             | $\delta$ : -0.09 8 or +3.1 8.                                                                                        |
|                                       |                   | 3371.1 2           | 100 6              | 0.0     | 0 <sup>+</sup>                                   | Q       |             |                                                                                                                      |

Adopted Levels, Gammas (continued)

$\gamma(^{122}\text{Sn})$  (continued)

6

| $E_i(\text{level})$ | $J_i^\pi$                                         | $E_\gamma^\dagger$ | $I_\gamma^\dagger$ | $E_f$    | $J_f^\pi$                      | Mult.# | $\delta^\#$ | Comments                 |
|---------------------|---------------------------------------------------|--------------------|--------------------|----------|--------------------------------|--------|-------------|--------------------------|
| 3416.5              | (7 <sup>-</sup> ,8 <sup>-</sup> ,9 <sup>-</sup> ) | 1007.5 4           | 100                | 2409.03  | 7 <sup>-</sup>                 |        |             |                          |
| 3454.82             | (3 <sup>-</sup> )                                 | 1300.8 2           | 100 5              | 2153.81  | 2 <sup>+</sup>                 |        |             |                          |
|                     |                                                   | 2314.40 15         | 43 3               | 1140.51  | 2 <sup>+</sup>                 | D(+Q)  | -0.03 5     |                          |
| 3478.60             | (7 <sup>-</sup> )                                 | 825.6 2            | 100                | 2653.00  | 6 <sup>-</sup>                 |        |             |                          |
| 3530.71             | (7 <sup>-</sup> ,8 <sup>-</sup> )                 | 692.4 4            | 4.7 13             | 2837.88  | 6 <sup>-</sup>                 |        |             |                          |
|                     |                                                   | 840.4 3            | 2.0 11             | 2690.04  | (8 <sup>+</sup> )              |        |             |                          |
|                     |                                                   | 877.70 8           | 18.3 18            | 2653.00  | 6 <sup>-</sup>                 |        |             |                          |
|                     |                                                   | 1121.68 3          | 100 4              | 2409.03  | 7 <sup>-</sup>                 |        |             |                          |
| 3548.66             | 2 <sup>+</sup>                                    | 1406.4 2           | 44 4               | 2142.06  | 4 <sup>+</sup>                 |        |             |                          |
|                     |                                                   | 2408.17 10         | 100 6              | 1140.51  | 2 <sup>+</sup>                 |        |             |                          |
| 3568.14             |                                                   | 2427.6 2           | 100                | 1140.51  | 2 <sup>+</sup>                 |        |             |                          |
| 3582.35             | 2 <sup>+</sup>                                    | 2441.8 4           | 100 10             | 1140.51  | 2 <sup>+</sup>                 |        |             |                          |
|                     |                                                   | 3582.3 2           | 43 3               | 0.0      | 0 <sup>+</sup>                 | E2     |             | B(E2)(W.u.)=0.29 +11-17  |
| 3627.01             | 4 <sup>+</sup>                                    | 544.8 4            | 63 29              | 3082.15  | 4 <sup>+</sup>                 |        |             |                          |
|                     |                                                   | 1071.4 3           | 68 20              | 2555.42  | 6 <sup>+</sup>                 |        |             |                          |
|                     |                                                   | 1296.4 3           | 100 24             | 2331.09  | 4 <sup>+</sup>                 |        |             |                          |
|                     |                                                   | 1485.0 3           | 56 22              | 2142.06  | 4 <sup>+</sup>                 |        |             |                          |
|                     |                                                   | 2486.20 27         | 61 20              | 1140.51  | 2 <sup>+</sup>                 |        |             |                          |
| 3670.28             | 4 <sup>+</sup>                                    | 1254.80 11         | 54 6               | 2415.543 | 2 <sup>+</sup>                 |        |             |                          |
|                     |                                                   | 1340.0 5           | 25 9               | 2331.09  | 4 <sup>+</sup>                 |        |             |                          |
|                     |                                                   | 1516.49 8          | 100 7              | 2153.81  | 2 <sup>+</sup>                 |        |             |                          |
|                     |                                                   | 1527.84 22         | 28 7               | 2142.06  | 4 <sup>+</sup>                 |        |             |                          |
|                     |                                                   | 2529.63 15         | 42 7               | 1140.51  | 2 <sup>+</sup>                 |        |             |                          |
| 3703.38             | (7 <sup>-</sup> ,8 <sup>-</sup> ,9 <sup>-</sup> ) | 1013.4 3           | 18 4               | 2690.04  | (8 <sup>+</sup> )              |        |             |                          |
|                     |                                                   | 1294.34 10         | 100 14             | 2409.03  | 7 <sup>-</sup>                 |        |             |                          |
| 3704.9              | (2 <sup>+</sup> )                                 | 2563.9 6           | 73 7               | 1140.51  | 2 <sup>+</sup>                 |        |             |                          |
|                     |                                                   | 3705.7 8           | 100 7              | 0.0      | 0 <sup>+</sup>                 | Q      |             |                          |
| 3710.15             | (7 <sup>-</sup> ,8 <sup>-</sup> )                 | 1057.2 4           | 53 17              | 2653.00  | 6 <sup>-</sup>                 |        |             |                          |
|                     |                                                   | 1301.11 14         | 100 14             | 2409.03  | 7 <sup>-</sup>                 |        |             |                          |
| 3730.00             |                                                   | 1398.5 6           | 57 6               | 2331.09  | 4 <sup>+</sup>                 |        |             |                          |
|                     |                                                   | 2589.5 2           | 100 7              | 1140.51  | 2 <sup>+</sup>                 |        |             |                          |
| 3751.3              | 2 <sup>+</sup>                                    | 3751.2 6           | 100                | 0.0      | 0 <sup>+</sup>                 | E2     |             | B(E2)(W.u.)=0.054 +12-20 |
| 3758.51             | 1,2 <sup>+</sup>                                  | 878.7 2            | 100 8              | 2879.79  | 1 <sup>+</sup> ,2 <sup>+</sup> |        |             |                          |
|                     |                                                   | 3758.6 7           | 52 4               | 0.0      | 0 <sup>+</sup>                 |        |             |                          |
| 3777.0              |                                                   | 2636.5 3           | 100                | 1140.51  | 2 <sup>+</sup>                 |        |             |                          |
| 3782.84             | (4 <sup>+</sup> )                                 | 1367.9 10          | 16 5               | 2415.543 | 2 <sup>+</sup>                 |        |             |                          |
|                     |                                                   | 2642.28 18         | 100 19             | 1140.51  | 2 <sup>+</sup>                 | Q      |             |                          |
| 3819.79             | 2 <sup>+</sup>                                    | 1404.3 3           | 100 9              | 2415.543 | 2 <sup>+</sup>                 |        |             |                          |
|                     |                                                   | 3819.66 30         | 91 6               | 0.0      | 0 <sup>+</sup>                 | E2     |             | B(E2)(W.u.)=0.19 +9-19   |
| 3840.65             | (4 <sup>+</sup> )                                 | 1698.51 9          | 100 8              | 2142.06  | 4 <sup>+</sup>                 |        |             |                          |
|                     |                                                   | 2700.43 20         | 33 4               | 1140.51  | 2 <sup>+</sup>                 |        |             |                          |
| 3871.1              | 1,2 <sup>+</sup>                                  | 3871.0 9           | 100                | 0.0      | 0 <sup>+</sup>                 |        |             |                          |

**Adopted Levels, Gammas (continued)** $\gamma(^{122}\text{Sn})$  (continued)

| $E_i(\text{level})$ | $J_i^\pi$                                      | $E_\gamma^\dagger$ | $I_\gamma^\dagger$ | $E_f$                  | $J_f^\pi$ | $E_i(\text{level})$ | $J_i^\pi$                                      | $E_\gamma^\dagger$ | $I_\gamma^\dagger$ | $E_f$   | $J_f^\pi$      | Mult. <sup>#</sup> |
|---------------------|------------------------------------------------|--------------------|--------------------|------------------------|-----------|---------------------|------------------------------------------------|--------------------|--------------------|---------|----------------|--------------------|
| 3876.48             | 5 <sup>-</sup> ,6 <sup>+</sup>                 | 794.46 22          | 100 26             | 3082.15 4 <sup>+</sup> |           | 3929.9              | 1,2 <sup>+</sup>                               | 3929.5 7           | 100 8              | 0.0     | 0 <sup>+</sup> |                    |
|                     |                                                | 1467.7 7           | 19 9               | 2409.03 7 <sup>-</sup> |           | 3948.5              | 5 <sup>-</sup> ,6 <sup>+</sup>                 | 1393.1 6           | 100 5              | 2555.42 | 6 <sup>+</sup> |                    |
|                     |                                                | 1546.2 8           | 14 7               | 2331.09 4 <sup>+</sup> |           |                     |                                                | 1539.4 10          | 100 5              | 2409.03 | 7 <sup>-</sup> |                    |
|                     |                                                | 1630.44 22         | 55 14              | 2245.81 5 <sup>-</sup> |           |                     |                                                | 1806.3 7           | 82 5               | 2142.06 | 4 <sup>+</sup> |                    |
| 3882.10             | 4 <sup>+</sup>                                 | 1389.22 18         | 30 7               | 2492.67 3 <sup>-</sup> |           | 4004.0              | (2 <sup>+</sup> )                              | 4003.9 10          | 100                | 0.0     | 0 <sup>+</sup> | Q                  |
|                     |                                                | 1550.82 17         | 31 5               | 2331.09 4 <sup>+</sup> |           | 4106.6              | 1,2 <sup>+</sup>                               | 2966.0 4           | 90 22              | 1140.51 | 2 <sup>+</sup> |                    |
|                     |                                                | 1740.17 7          | 93 5               | 2142.06 4 <sup>+</sup> |           |                     |                                                | 4106.7 5           | 100 20             | 0.0     | 0 <sup>+</sup> |                    |
|                     |                                                | 2741.50 6          | 100 5              | 1140.51 2 <sup>+</sup> |           | 4116.3              | 0 <sup>+</sup> ,1 <sup>+</sup> ,2 <sup>+</sup> | 2975.7 4           | 100                | 1140.51 | 2 <sup>+</sup> |                    |
| 3899.68             | 0 <sup>+</sup> ,1 <sup>+</sup> ,2 <sup>+</sup> | 2759.13 15         | 100                | 1140.51 2 <sup>+</sup> |           | 4179.6              | 0,1,2                                          | 3039.0 4           | 100                | 1140.51 | 2 <sup>+</sup> |                    |
| 3929.9              | 1,2 <sup>+</sup>                               | 2789.7 7           | 23 6               | 1140.51 2 <sup>+</sup> |           | 4283.8              | (2 <sup>+</sup> )                              | 4283.7 9           | 100                | 0.0     | 0 <sup>+</sup> | Q                  |

<sup>†</sup> Weighted average of data from  $^{122}\text{In}$   $\beta^-$  decay (1.5 s, 10.3 s, 10.8 s),  $^{122}\text{Sb}$   $\varepsilon$  decay and  $^{122}\text{Sn}(n,n'\gamma)$  wherever data are available.

<sup>‡</sup> Weighted average of  $^{122}\text{Sn}(n,n'\gamma)$  and  $^{122}\text{Sn}(p,p'\gamma)$ .

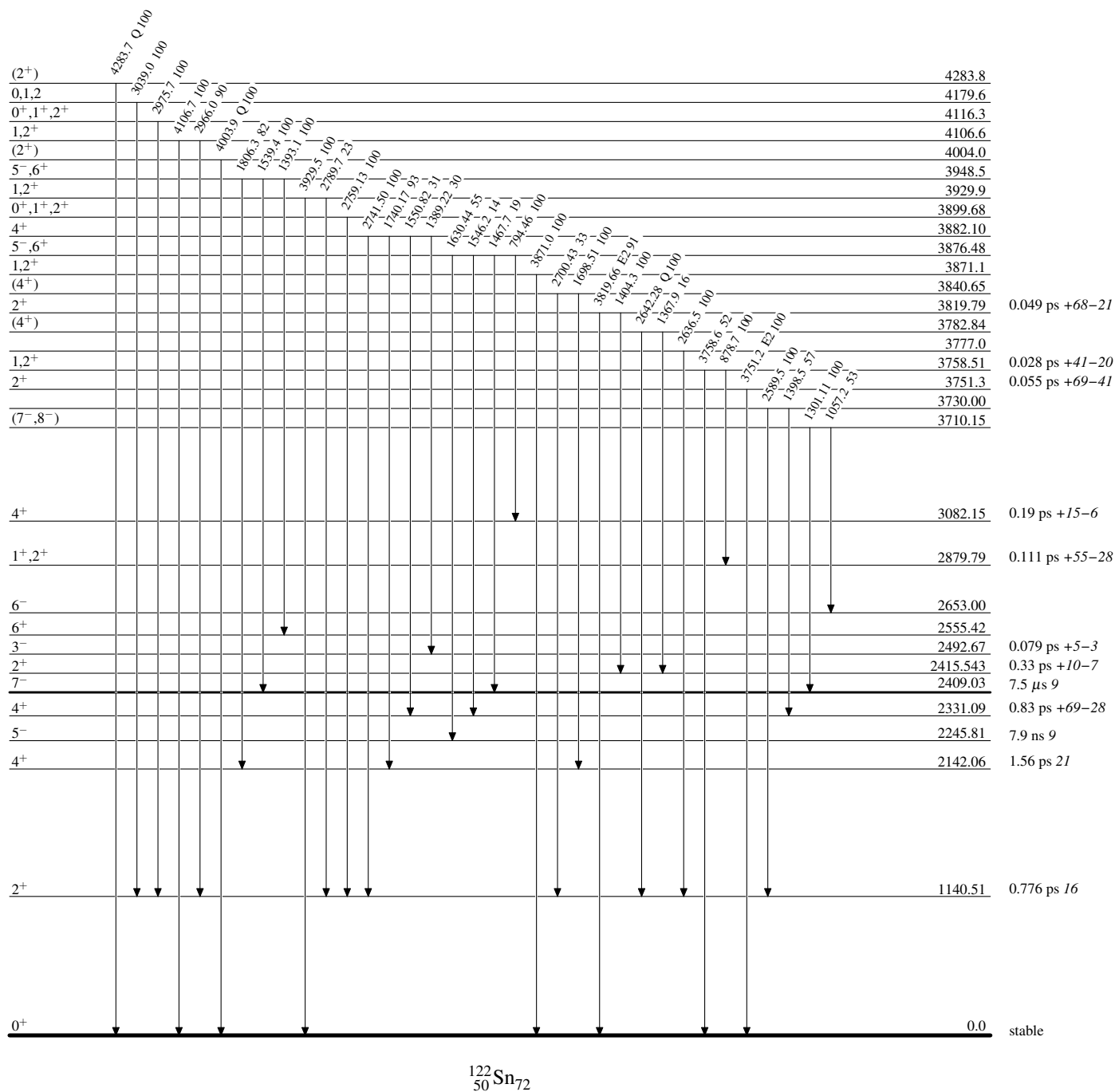
<sup>#</sup> From Coulomb excitation,  $\alpha(\text{exp})$  in  $^{122}\text{In}$   $\beta^-$  decay (10.3 s, 10.8 s),  $\gamma(\theta)$  and linear polarization in  $^{122}\text{Sn}(n,n'\gamma)$ .

<sup>@</sup> 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.

<sup>&</sup> Placement of transition in the level scheme is uncertain.

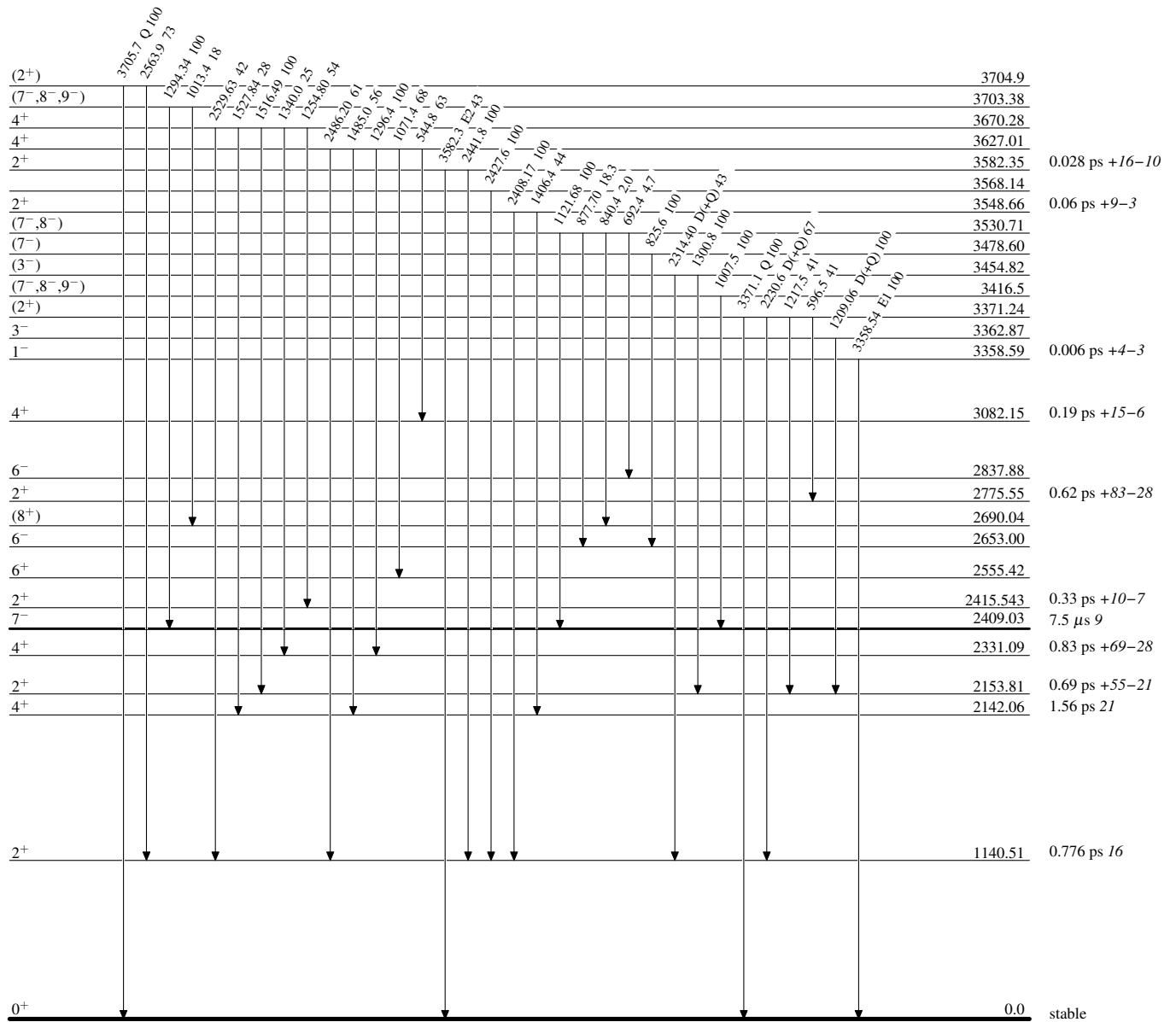
**Adopted Levels, Gammas****Level Scheme**

Intensities: Relative photon branching from each level



**Adopted Levels, Gammas****Level Scheme (continued)**

Intensities: Relative photon branching from each level

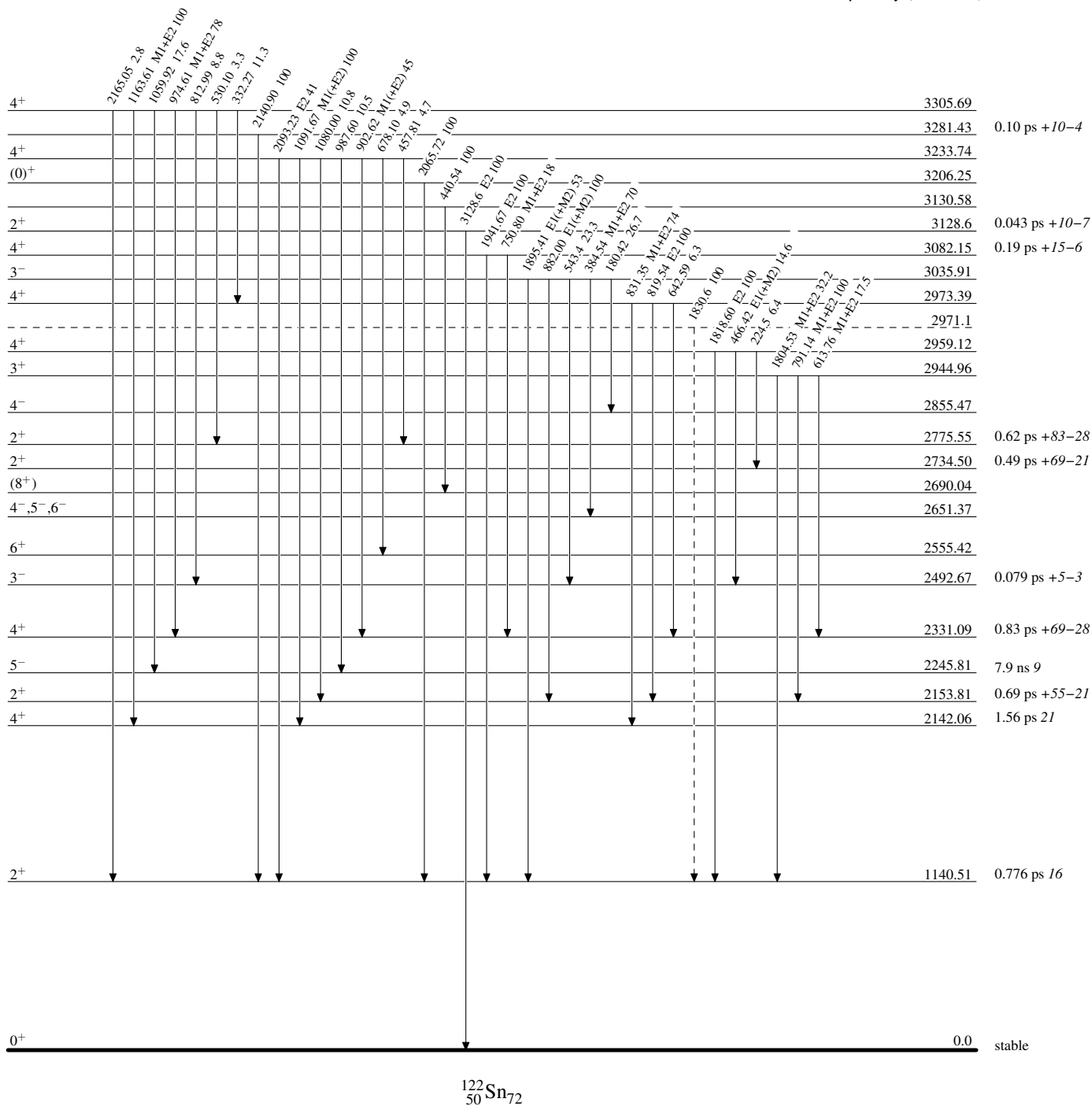


## Adopted Levels, Gammas

Legend

## Level Scheme (continued)

Intensities: Relative photon branching from each level

-----►  $\gamma$  Decay (Uncertain)

**Adopted Levels, Gammas**

Legend

**Level Scheme (continued)**

Intensities: Relative photon branching from each level

-----►  $\gamma$  Decay (Uncertain)