**Coulomb excitation** **1973Co10,1970Ro14,1958Mc02**

| Type | Author | History Citation | Literature Cutoff Date |
|---|---|---|---|
| Full Evaluation | Jean Blachot | NDS 109, 1383 (2008) | 1-Mar-2008 |

(p,p′$\gamma$): E=2.5 MeV (1955Mc51), 3.0 MeV (1958Mc02).
($\alpha$,$\alpha'\gamma$): E=9.5,10 MeV (1969Ro03), 10.0,10.7 MeV (1970Ro14), 4.8-7.2 MeV (1973Co10).
($^{14}$N,$^{14}$N′$\gamma$): E=42 MeV (1974Er05).
($^{16}$O,$^{16}$O$\gamma$): E=40 MeV (1967Bl08), 33 MeV (1970RoZS,1971RoYT), 45.5 MeV (1970Ro14).
($^{35}$Cl,$^{35}$Cl′$\gamma$): E=60-80 MeV (1971SpZT,1973MiZC), 64 MeV (1974Mi02).
Others: 1955Fa40, 1956Hu49, 1956Te26, 1966Bl13.

## $^{107}$Ag Levels

See 1973Pa10, 1974Ku09 for model properties of low-lying states (energy spectra, B(E2), B(M1), $\mu$, Q,etc.).

| E(level)[#] | J$^\pi$[‡] | $T_{1/2}$ | Comments |
|---|---|---|---|
| 0.0 | 1/2$^-$ | stable | |
| 93.124 *20* | 7/2$^+$ | 44.3 s *2* | $T_{1/2}$: from Adopted Levels. |
| 324.8 *3* | 3/2$^-$ | 5.0 ps *9* | B(E2)↑=0.212 *12*<br>$T_{1/2}$: 5.0 ps *9* (1974Mi02) recoil-distance Doppler shift. Others: 6.1 ps *7* from B(E2)=0.212 *12* and $\delta$(325$\gamma$)=−0.207 (adopted value).<br>B(E2)=0.202 *18* (1973Co10,1970Ro14), 0.219 *15* (1958Mc02).<br>g-factor=0.41 *14* (1973MiZC), 0.59 *18* (1971SpZT), 0.58 *20* (1970RoZS), recalculated for $T_{1/2}$ dependence. Core-excitation model predicts g=0.53. |
| 423.07 *22* | 5/2$^-$ | 29.8 ps *21* | B(E2)↑=0.308 *14*<br>J$^\pi$: J=5/2 established by $\gamma(\theta)$ (1958Mc02).<br>$T_{1/2}$: 30 ps *2* (1974Mi02) recoil-distance Doppler shift. Others: 38 ps *2* from B(E2)=0.308 *14* and I$\gamma$(423$\gamma$) branching=93.5% 6.<br>B(E2)=0.334 *23* (1958Mc02), 0.287 *24* (1970Ro14), 0.303 *24* (1973Co10).<br>g-factor=0.36 *13* (1973MiZC), 0.4 *1* (1971SpZT), 0.71 *31* (1970RoZS), recalculated for $T_{1/2}$ dependence. Core-excitation model predicts g=0.27. |
| 786.7 *5* | 3/2$^-$ | 0.27 ps *8* | B(E2)↑=0.0028 *5*<br>$T_{1/2}$: from DSA (1970Ro14). Others: 0.21 ps *7* (1974Er05) DSA; 0.28 ps *12* from B(E2)=0.0028 *5*, branching=0.64 *5* and $\delta$=−0.057 *10*.<br>B(E2): from 1970Ro14. Other: 0.0032 (1967Bl08). |
| 949.62 *25* | 5/2$^-$ | 1.36 ps *18* | B(E2)↑=0.0203 *22*<br>$T_{1/2}$: from B(E2)=0.0203 *22*, branching=12.6% 10. Other: 0.84 ps *27* DSA (1970Ro14).<br>B(E2): from 1970Ro14. Other: 0.025 (1967Bl08). |
| 973.4[†] *5* | (7/2)$^-$ | | |
| 1146.8[†] *6* | (9/2)$^-$ | | |
| 1464.9 *6* | (3/2)$^-$ | <0.6 ps | $T_{1/2}$: from I$\gamma$(1465$\gamma$) branching and B(E2) limits.<br>0.008≤B(E2)<0.018 (1970Ro14). |

[†] Weak excitation via ($\alpha$,$\alpha'\gamma$), strong via ($^{16}$O,$^{16}$O$\gamma$) suggest population via multiple Coul. ex. (1970Ro14).
[‡] From Adopted Levels.
[#] Level energy from least-squares adjustment.

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## $\gamma(^{107}Ag)$

Except as noted, Eγ, Iγ are from 1970Ro14 via (α,α′γ).

| $E_\gamma$ | $I_\gamma$‡ | $E_i$(level) | $J_i^\pi$ | $E_f$ | $J_f^\pi$ | Mult. | δ | Comments |
|---|---|---|---|---|---|---|---|---|
| 93.124 *20* | | 93.124 | 7/2+ | 0.0 | 1/2− | E3 | | $E_\gamma$: from $^{107}$Ag IT decay. |
| 98.2 *5* | 4.6 *4* | 423.07 | 5/2− | 324.8 | 3/2− | M1+E2 | −0.059 *18* | δ: from 98γ(θ) $A_2$=−0.259 *17* (1970Ro14). $I_\gamma$: from 1970Ro14. Other: 5.4 *13* (1973Co10). |
| 162 *2* | 2.2 *12* | 949.62 | 5/2− | 786.7 | 3/2− | | | $E_\gamma$: may be an impurity line. |
| 324.8 *4* | 100 | 324.8 | 3/2− | 0.0 | 1/2− | M1+E2 | −0.189 *14* | $E_\gamma$: other: 324.4 *2* (1973Co10). δ: from 1970Ro14. Others: −0.21 *1* (1958Mc02), −0.207 *10* (1970RoZS). |
| 330 | 0.22 *4* | 423.07 | 5/2− | 93.124 | 7/2+ | [E1] | | $I_\gamma$: from Iγ(330γ)-branching excit (1973Co10). Others: 0.26 *8* prompt γ singles (1973Co10), 0.4 *2* (1970Ro14),≈0.5 (1954Hu57). |
| 364 *1* | 12 *6* | 786.7 | 3/2− | 423.07 | 5/2− | | | |
| 423.1 *3* | 100 *4* | 423.07 | 5/2− | 0.0 | 1/2− | E2 | | |
| 461.9 *8* | 44 *8* | 786.7 | 3/2− | 324.8 | 3/2− | M1(+E2) | −0.01 *8* | δ: −0.01 *8* av: −0.05 *9* γ(θ), +0.14 *17* γγ(θ) (1970Ro14). |
| 526.5 *3* | 100 | 949.62 | 5/2− | 423.07 | 5/2− | M1+E2 | −0.24 *3* | δ: from 526γ(θ) $A_2$=+0.083 *17* (1970Ro14). Other: (526γ)(423γ)(θ) (1969Ro03). |
| 550.4† *5* | 100 | 973.4 | (7/2)− | 423.07 | 5/2− | | | |
| 624.9 *4* | 78 *4* | 949.62 | 5/2− | 324.8 | 3/2− | M1+E2 | −0.28 *3* | δ: from 625γ(θ) $A_2$=−0.440 *22* (1970Ro14). Other: (625γ)(325γ)(θ) (1969Ro03). |
| 648.6† *6* | 43 *3* | 973.4 | (7/2)− | 324.8 | 3/2− | | | |
| 678 | <2 | 1464.9 | (3/2)− | 786.7 | 3/2− | | | $E_\gamma$: not observed. Eγ from the level energy differences. |
| 723.7† *5* | 100 | 1146.8 | (9/2)− | 423.07 | 5/2− | E2 | | Mult.: from γ(θ) $A_2$ coef via ($^{14}$N,3nγ). |
| 786.4 *7* | 100 *8* | 786.7 | 3/2− | 0.0 | 1/2− | M1+E2 | −0.057 *10* | δ: from 786γ(θ) $A_2$=−0.37 *3* (1970Ro14). Other: 1967Bl08. |
| 856.5 *4* | 1.8 *8* | 949.62 | 5/2− | 93.124 | 7/2+ | | | $E_\gamma$: from 1974Pa15 ($^{107}$Cd decay). |
| 949.8 *9* | 24.5 *21* | 949.62 | 5/2− | 0.0 | 1/2− | E2 | | Mult.: consistent with 950γ(θ) $A_2$=+0.32 *8* (1970Ro14). |
| 1042 | <2 | 1464.9 | (3/2)− | 423.07 | 5/2− | | | $E_\gamma$: not observed. Eγ from the level energy differences. |
| 1139.9 *10* | 100 | 1464.9 | (3/2)− | 324.8 | 3/2− | M1+E2 | −0.12 *3* | δ: av: −0.05 *13* γ(θ), −0.11 *3* γγ(θ), −0.19 *6* γγ(θ) (1970Ro14). $E_\gamma$: existence questionable. |
| 1465 | | 1464.9 | (3/2)− | 0.0 | 1/2− | | | |

† Associated with multiple Coul. ex., not direct E2 Coul. ex.
‡ Relative photon branching from initial state.

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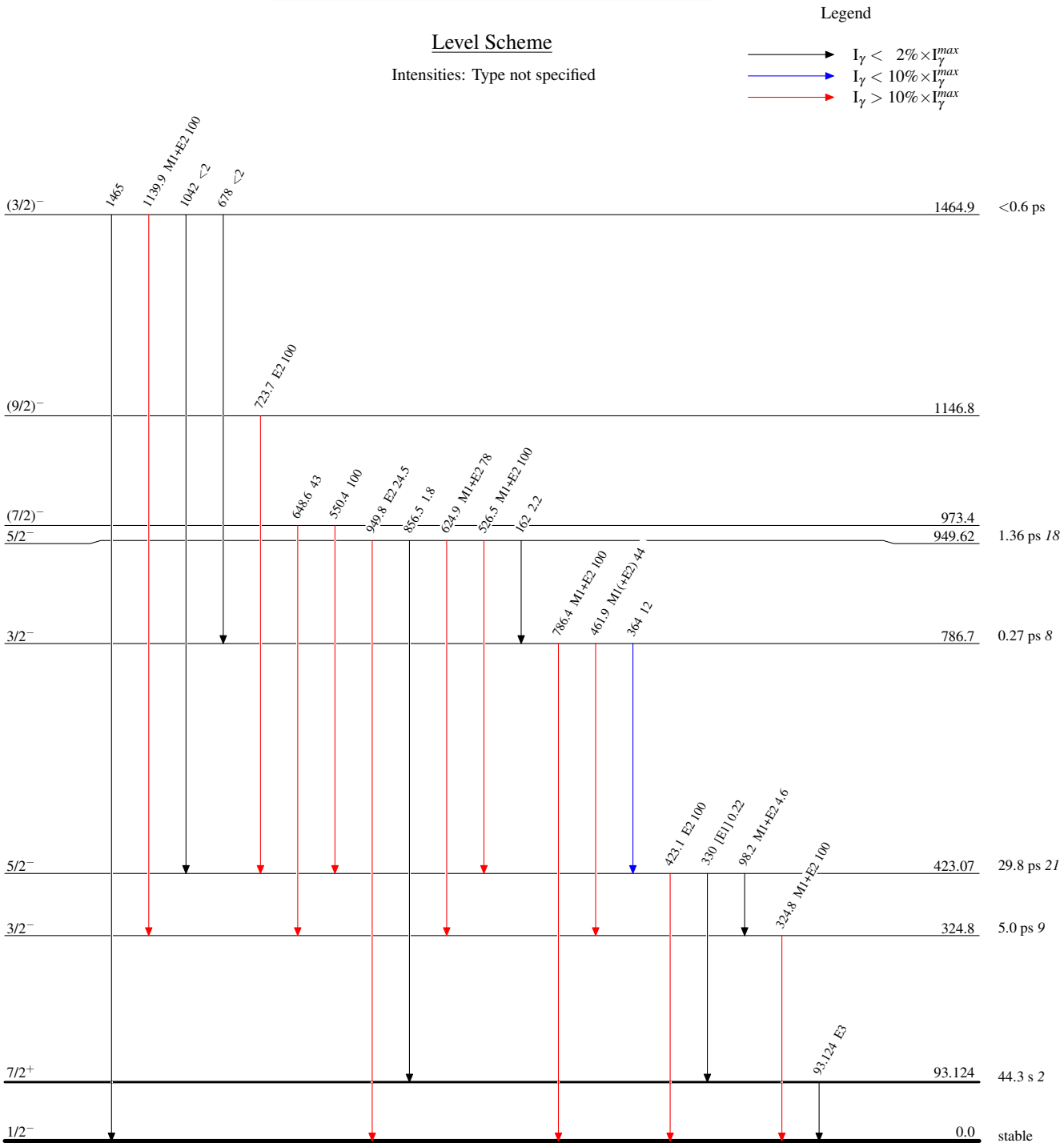


$^{107}_{47}Ag_{60}$