^{107}Ag(^{19}F,p3nγ) 2005Ku34,2005Uu01

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

Compiled by evaluator using Eγ′s, Iγ′s, DCO ratios and linear polarization data from 2005Ku34 replacing by precise energy values in 2005Uu01, except for 316.3γ, 529.2γ, 845.5γ, 1071γ and 1131.8γ. These γ′s are inconsistent with present decay scheme, and are listed as unplaced γ′s.

See also ^{109}Ag(^{16}O,3nγ),^{94}Mo(^{31}P,2pnγ) and ^{112}Sn(^{12}C,pnγ).

2005Uu01: ^{107}Ag(^{19}F,p3nγ) E=85 MeV, Array of Compton suppressed HP Ge and LEPS detectors; Eγ, Iγ and DCO ratios, $\gamma\gamma$-coincidence; showed band structures as a chiral doublet for the band 1 and band 5 in analogy with rotational bands in ^{126,128,130}Cs. But the chiral partner conjecture was denied because the related γ′s are unambiguously placed as the γ′s from (16$^-$) and (14$^-$) levels in band 3 from $\gamma\gamma$-coin and polarization measurements (2005Ku34). Except Eγ′s, no numerical data are presented in 2005Uu01.

2005Ku34: ^{107}Ag(^{19}F,p3nγ) E=93 MeV. measured Eγ, Iγ, $\gamma\gamma$, $\gamma\gamma(\theta)$ (DCO) with an array of eight 'Clover' detectors along with a 14-element NaI(Tl) multiplicity filter.

^{122}Cs Levels

E(level)[†]	J$^\pi$[@]	Comments
0.0	1$^+$	
140[‡b] *30*	8$^{(-)}$	Additional information 1.
235.0[c] *7*	(9$^-$)	
272.4[a] *3*	(9$^+$)	
323.7[&] *4*	(10$^+$)	
365.3[b] *7*	(10$^-$)	
427.1[a] *4*	(11$^+$)	
453.1 *10*	(10$^-$)	
508.5[&] *4*	(12$^+$)	
568.4[c] *8*	(11$^-$)	
787.2[b] *7*	(12$^-$)	
814.5[a] *4*	(13$^+$)	
891.3[e] *11*	(11$^-$)	
909.2 *10*	(11$^-$)	
980.9[&] *5*	(14$^+$)	
1055.5[d] *5*	(13$^+$)	
1072.1[c] *7*	(13$^-$)	
1082.4[f] *13*	(12$^-$)	
1358.3[e] *12*	(13$^-$)	
1360.9[b] *5*	(14$^-$)	
1373.3[a] *5*	(15$^+$)	
1632.3[d] *5*	(15$^+$)	
1640.0[&] *5*	(16$^+$)	
1699.4[f] *16*	(14$^-$)	
1706.9[c] *7*	(15$^-$)	
1938.3[e] *16*	(15$^-$)	
2051.1[b] *5*	(16$^-$)	
2077.4[a] *5*	(17$^+$)	
2368.1[d] *5*	(17$^+$)	
2398.4[f] *19*	(16$^-$)	
2443.5[c] *8*	(17$^-$)	
2453.9[&] *5*	(18$^+$)	

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^{107}Ag(^{19}F,p3nγ) 2005Ku34,2005Uu01 (continued)

^{122}Cs Levels (continued)

E(level)†	Jπ@	E(level)†	Jπ@	E(level)†	Jπ@	E(level)†	Jπ@
2624.3[e] *19*	(17⁻)	3706.0[b] *10*	(20⁻)	4425.5[&] *7*	(22⁺)	5651.0[b] *17*	(24⁻)
2835.8[b] *8*	(18⁻)	3756.9[#] *11*	(20⁺)	4585.0 *12*	(22⁺)	5837[f] *3*	(24⁻)
2909.2[a] *5*	(19⁺)	3846.9[a] *6*	(21⁺)	4652.0[b] *13*	(22⁻)	5960.4[a] *12*	(25⁺)
3194.4[f] *22*	(18⁻)	4020.4[f] *24*	(20⁻)	4872.4[a] *6*	(23⁺)	6165.0[c] *17*	(25⁻)
3234.0[d] *5*	(19⁺)	4156.0[c] *12*	(21⁻)	4886[f] *3*	(22⁻)	6666.5[&] *16*	(26⁺)
3262.1[c] *10*	(19⁻)	4188.8[d] *6*	(21⁺)	5120.0[c] *14*	(23⁻)		
3391.0[&] *6*	(20⁺)	4280.3[e] *23*	(21⁻)	5252[e] *3*	(23⁻)		
3407.3[e] *21*	(19⁻)	4287.3 *23*	(21⁻)	5527.5[&] *12*	(24⁺)		

† From least-squares fit to Eγ's by fixing the energy of the 8(−) isomer at 140 keV *30* (2003Au02). Value of 500 keV used by 2005Ku34 is incorrect. Thus all level energies quoted by 2005Ku34 are lowered by 360 keV.
‡ From 2003Au02 evaluation: E=135 *15* from direct mass measurement (1999Am05).
# E(level)=7328 listed in table I of 2005Ku34 seems to be a misprint in connection with placement of 1303γ above the (18⁺) level in band 1.
@ From Adopted Levels.
& Band(A): band 1, $\pi h_{11/2}\otimes\nu h_{11/2}$, α=0.
a Band(a): band 2, $\pi h_{11/2}\otimes\nu h_{11/2}$, α=1.
b Band(B): band 3, $\pi h_{11/2}\otimes\nu d_{5/2}$, α=0.
c Band(b): band 4, $\pi h_{11/2}\otimes\nu d_{5/2}$, α=1.
d Band(C): band 5, Band based on (13⁺).
e Band(D): band 6, Band based on (11⁻).
f Band(E): Band 7, Band based on (12⁻), Possible configuration=$\pi h_{11/2}\otimes\nu d_{3/2}$ or $\pi h_{11/2}\otimes\nu g_{7/2}$.

γ(^{122}Cs)

R_{DCO}=(Iγ$_1$ at 250° and 285°, gated with γ_2 at 150°, 210°, and 325°)/(Iγ$_1$ at 150°, 210° and 325°, gated with γ_2 at 250° and 285°). All DCO's correspond to gates on ΔJ=2, quadrupole transitions, unless otherwise stated.

E_i(level)	J_i^π	E_γ †	I_γ #	E_f	J_f^π	Mult.@	Comments
235.0	(9⁻)	95 *1*	72 *4*	140	8(−)	D(+Q)	Mult.: DCO=2.00 *15*.
272.4	(9⁺)	132.3 *3*	100	140	8(−)	E1	Mult.: DCO=1.67 *6*; adopted gammas.
323.7	(10⁺)	51.3 *3*	7.7 *8*	272.4	(9⁺)		
365.3	(10⁻)	130 *1*	30.5 *15*	235.0	(9⁻)	D+Q	Mult.: DCO=1.98 *6*.
		226 *1*	1.6 *2*	140	8(−)		
427.1	(11⁺)	103.4 *3*	82 *4*	323.7	(10⁺)	D+Q	Mult.: DCO=1.73 *7*.
		154.7 *3*	2.7 *3*	272.4	(9⁺)		
453.1	(10⁻)	218 *1*	4.2 *4*	235.0	(9⁻)	D+Q	Mult.: DCO=2.40 *7*.
508.5	(12⁺)	81.4 *3*	51.7 *26*	427.1	(11⁺)	D+Q	Mult.: DCO=1.65 *6*.
		184.8 *3*	5.3 *5*	323.7	(10⁺)		
568.4	(11⁻)	203 *1*	24.5 *12*	365.3	(10⁻)	M1+E2	Mult.: DCO=2.30 *10*, IP_{DCO}=−0.05 *4*.
		334 *1*	3.1 *3*	235.0	(9⁻)		
787.2	(12⁻)	219 *1*	10 *1*	568.4	(11⁻)	(M1+E2)	Mult.: DCO=2.40 *5*, IP_{DCO}=−0.01 *3*.
		422 *1*	10.3 *5*	365.3	(10⁻)	Q	Mult.: DCO=0.85 *9*.
814.5	(13⁺)	306.0 *3*	57.5 *30*	508.5	(12⁺)	M1+E2	Mult.: DCO=2.33 *12*, IP_{DCO}=0.00 *3*.
		387.4 *3*	6.2 *6*	427.1	(11⁺)	Q	Mult.: DCO=1.00 *17*.
891.3	(11⁻)	526 *1*	3.8 *4*	365.3	(10⁻)	M1+E2	Mult.: DCO=2.40 *6*, IP_{DCO}=−0.06 *3*.
909.2	(11⁻)	456 *1*	4.3 *4*	453.1	(10⁻)	D+Q	Mult.: DCO=2.7 *3*.

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^{107}Ag(^{19}F,p3nγ) 2005Ku34,2005Uu01 (continued)

γ(^{122}Cs) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[#]	E_f	J_f^π	Mult.[@]	Comments
909.2	(11$^-$)	544 *1*	4.2 *4*	365.3	(10$^-$)	M1+E2	Mult.: DCO=1.70 *5*, IP$_{DCO}$=−0.06 *3*.
980.9	(14$^+$)	166.4 *3*	29.7 *15*	814.5	(13$^+$)	D+Q	Mult.: DCO=2.29 *12*.
		472.4 *3*	73 *4*	508.5	(12$^+$)	E2	Mult.: DCO=1.05 *3*, IP$_{DCO}$=+0.11 *2*.
1055.5	(13$^+$)	547.0 *3*	11.5 *6*	508.5	(12$^+$)	M1+E2	Mult.: IP$_{DCO}$=−0.05 *3*.
1072.1	(13$^-$)	285 *1*	10.6 *6*	787.2	(12$^-$)	M1+E2[&]	Mult.: DCO=1.10 *9*, IP$_{DCO}$=−0.06 *3*.
		504 *1*	6.3 *6*	568.4	(11$^-$)	E2[&]	Mult.: DCO=0.44 *3*, IP$_{DCO}$=+0.07 *3*.
1082.4	(12$^-$)	514 *1*	1.6 *2*	568.4	(11$^-$)	M1+E2	Mult.: IP$_{DCO}$=−0.10 *3*.
1358.3	(13$^-$)	449 *1*	3.6 *4*	909.2	(11$^-$)	Q	Mult.: DCO=1.10 *3*.
		467 *1*	2.1 *3*	891.3	(11$^-$)	Q	Mult.: DCO=0.98 *4*.
1360.9	(14$^-$)	289 *1*	5.9 *6*	1072.1	(13$^-$)	D+Q[&]	Mult.: DCO=1.03 8.
		546.3 *3*		814.5	(13$^+$)		
		574 *1*	10.7 *6*	787.2	(12$^-$)	E2	Mult.: DCO=1.20 *5*, IP$_{DCO}$=+0.14 *2*.
1373.3	(15$^+$)	392.4 *3*	45.5 *23*	980.9	(14$^+$)	M1+E2	Mult.: IP$_{DCO}$=−0.04 *2*.
		558.8 *3*	13.8 *7*	814.5	(13$^+$)	Q[&]	Mult.: DCO=0.54 *5*,
1632.3	(15$^+$)	576.8 *3*	5.0 *5*	1055.5	(13$^+$)		
		651.4 *3*	11.3 *6*	980.9	(14$^+$)	M1+E2[&]	Mult.: DCO=0.95 *5*, IP$_{DCO}$=−0.06 *4*.
		817.8[‡] *3*		814.5	(13$^+$)		
1640.0	(16$^+$)	266.7 *3*	5.3 *5*	1373.3	(15$^+$)	D+Q[&]	Mult.: DCO=1.10 *9*.
		659.1 *3*	57.2 *29*	980.9	(14$^+$)	E2[&]	Mult.: DCO=0.54 *3*, IP$_{DCO}$=+0.18 *2*.
1699.4	(14$^-$)	617 *1*	1.9 *3*	1082.4	(12$^-$)		
1706.9	(15$^-$)	346 *1*	4.7 *5*	1360.9	(14$^-$)	D(+Q)	Mult.: DCO=2.35 *8*, IP$_{DCO}$=+0.01 *3*.
		635 *1*	7.7 *8*	1072.1	(13$^-$)	E2[&]	Mult.: DCO=0.54 *4*, IP$_{DCO}$=+0.19 *3*.
1938.3	(15$^-$)	580 *1*	5.8 *6*	1358.3	(13$^-$)	E2[&]	Mult.: DCO=0.40 *2*, IP$_{DCO}$=+0.18 *4*.
2051.1	(16$^-$)	344 *1*	3.6 *4*	1706.9	(15$^-$)		
		418.8[‡] *3*		1632.3	(15$^+$)		
		677.8 *3*	3.5 *4*	1373.3	(15$^+$)	E1	Mult.: IP$_{DCO}$=+0.21 *4*.
		690.2 *3*	7.9 *8*	1360.9	(14$^-$)	E2	Mult.: DCO=0.98 *5*, IP$_{DCO}$=+0.08 *2*.
2077.4	(17$^+$)	437.4 *3*	14.5 *7*	1640.0	(16$^+$)	M1+E2	Mult.: DCO=2.30 *10*, IP$_{DCO}$=−0.04 *3*.
		704.1 *3*	11.5 *6*	1373.3	(15$^+$)	Q[&]	Mult.: DCO=0.48 *10*.
2368.1	(17$^+$)	728.1 *3*		1640.0	(16$^+$)		E$_\gamma$: from level scheme of 2005Ku34; not listed in authors′ table I.
		735.8 *3*	4.5 *5*	1632.3	(15$^+$)		
		994.8[‡] *3*		1373.3	(15$^+$)		
2398.4	(16$^-$)	699 *1*	2.7 *3*	1699.4	(14$^-$)	E2[&]	Mult.: DCO=0.60 *9*, IP$_{DCO}$=+0.09 *5*.
2443.5	(17$^-$)	392 *1*	3.5 *4*	2051.1	(16$^-$)	M1+E2	E$_\gamma$: doublet. Mult.: DCO=1.8 *7*, IP$_{DCO}$=−0.02 *3*, probably for 392 doublet.
		737 *1*	9.8 *10*	1706.9	(15$^-$)	E2	Mult.: DCO=0.83 *8*, IP$_{DCO}$=+0.21 *4*.
2453.9	(18$^+$)	376.5[‡] *3*		2077.4	(17$^+$)		
		813.9 *3*	24.3 *12*	1640.0	(16$^+$)	E2	Mult.: DCO=0.86 *3*, IP$_{DCO}$=+0.10 *3*.
2624.3	(17$^-$)	686 *1*	5.6 *6*	1938.3	(15$^-$)	E2	Mult.: DCO=1.20 *4*, IP$_{DCO}$=+0.18 *3*.
2835.8	(18$^-$)	392 *1*		2443.5	(17$^-$)		
		758 *1*		2077.4	(17$^+$)		
		785 *1*	6.3 *7*	2051.1	(16$^-$)	E2	Mult.: DCO=0.87 *6*, IP$_{DCO}$=+0.13 *4*.
2909.2	(19$^+$)	455.3 *3*	5.0 *5*	2453.9	(18$^+$)	M1+E2	Mult.: IP$_{DCO}$=−0.22 *5*.
		831.8 *3*	6.9 *7*	2077.4	(17$^+$)	E2	Mult.: DCO=0.87 *7*, IP$_{DCO}$=+0.18 *4*.
3194.4	(18$^-$)	796 *1*	0.8 *2*	2398.4	(16$^-$)	E2[&]	Mult.: DCO=0.46 *4*, IP$_{DCO}$=+0.14 *4*.
3234.0	(19$^+$)	780.1[‡] *3*		2453.9	(18$^+$)		
		865.9 *3*	1.7 *2*	2368.1	(17$^+$)		E$_\gamma$: doublet.
3262.1	(19$^-$)	426 *1*	4.1 *4*	2835.8	(18$^-$)	D+Q	Mult.: DCO=2.07 *10*.
		819 *1*	6.0 *6*	2443.5	(17$^-$)	E2	Mult.: DCO=0.89 *6*, IP$_{DCO}$=+0.09 *5*.
3391.0	(20$^+$)	937.0 *3*	10.5 *6*	2453.9	(18$^+$)	Q	Mult.: DCO=1.33 *6*.

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^{107}Ag(^{19}F,p3nγ) 2005Ku34,2005Uu01 (continued)

γ(^{122}Cs) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[#]	E_f	J_f^π	Mult.[@]	Comments
3407.3	(19$^-$)	783 *1*	4.9 *5*	2624.3	(17$^-$)	E2	Mult.: DCO=0.99 *5*, IP_{DCO}=+0.12 *6*.
3706.0	(20$^-$)	444 *1*	2.5 *3*	3262.1	(19$^-$)		
		870 *1*	4.8 *5*	2835.8	(18$^-$)	E2	Mult.: DCO=0.99 *6*, IP_{DCO}=+0.10 *4*.
3756.9	(20$^+$)	1303 *1*	0.8 *2*	2453.9	(18$^+$)	Q	Mult.: DCO=1.29 *10*.
3846.9	(21$^+$)	456.0 *3*	1.3 *2*	3391.0	(20$^+$)		
		937.7 *3*	5.8 *6*	2909.2	(19$^+$)	Q	Mult.: DCO=1.12 *10*.
4020.4	(20$^-$)	826 *1*	1.5 *2*	3194.4	(18$^-$)	Q[&]	Mult.: DCO=0.47 *8*.
4156.0	(21$^-$)	450 *1*	0.9 *2*	3706.0	(20$^-$)		
		894 *1*	2.5 *3*	3262.1	(19$^-$)	Q	Mult.: DCO=1.10 *10*.
4188.8	(21$^+$)	954.8[‡] *3*		3234.0	(19$^+$)		
4280.3	(21$^-$)	873 *1*	0.8 *2*	3407.3	(19$^-$)	Q	Mult.: DCO=1.26 *9*.
4287.3	(21$^-$)	880 *1*	1.0 *2*	3407.3	(19$^-$)	Q	Mult.: DCO=1.02 *7*.
4425.5	(22$^+$)	1033.9 *10*	2.3 *3*	3391.0	(20$^+$)	Q	Mult.: DCO=0.92 *4*.
4585.0	(22$^+$)	1194 *1*	1.1 *2*	3391.0	(20$^+$)	Q	Mult.: DCO=1.20 *7*.
4652.0	(22$^-$)	946 *1*	1.6 *2*	3706.0	(20$^-$)	Q	Mult.: DCO=0.89 *10*.
4872.4	(23$^+$)	446.8 *3*	1.2 *2*	4425.5	(22$^+$)		
		1025.5 *3*	0.6 *2*	3846.9	(21$^+$)	Q	Mult.: DCO=0.98 *5*.
4886	(22$^-$)	866 *1*	1.3 *2*	4020.4	(20$^-$)	E2	Mult.: IP_{DCO}=+0.07 *4*.
5120.0	(23$^-$)	468 *1*	0.5 *1*	4652.0	(22$^-$)		
		964 *1*	1.2 *2*	4156.0	(21$^-$)	Q	Mult.: DCO=1.10 *10*.
5252	(23$^-$)	972 *1*	1.0 *2*	4280.3	(21$^-$)		
5527.5	(24$^+$)	1102 *1*	1.2 *2*	4425.5	(22$^+$)	Q	Mult.: DCO=1.01 *7*.
5651.0	(24$^-$)	999 *1*	1.1 *2*	4652.0	(22$^-$)		
5837	(24$^-$)	951 *1*		4886	(22$^-$)		
5960.4	(25$^+$)	1088 *1*	0.5 *1*	4872.4	(23$^+$)		
6165.0	(25$^-$)	1045 *1*	0.9 *2*	5120.0	(23$^-$)	Q	Mult.: DCO=1.30 *9*.
6666.5	(26$^+$)	1139 *1*	1.3 *2*	5527.5	(24$^+$)	Q	Mult.: DCO=1.03 *6*.

[†] From 2005Uu01 for $\Delta E\gamma<0.5$ keV. Other $E\gamma'$s from 2005Ku34. Uncertainties of $E\gamma'$s were not given explicitly in 2005Uu01 and 2005Ku34. Evaluator assume $\Delta E\gamma=0.3$ for $E\gamma'$s from 2005Uu01 and $\Delta E\gamma=1$ for $E\gamma'$s from 2005Ku34.

[‡] From 2005Uu01.

[#] From 2005Ku34; uncertainties are: <5% for $I\gamma\geq10$, <20% for $I\gamma<10$. Evaluator assigned $\Delta I\gamma=5\%$ ($I\gamma>10$), and 10% ($I\gamma<10$) and 20% ($I\gamma<2$). No $I\gamma$ data are presented in 2005Uu01.

[@] From DCO ratios and integral polarization-DCO′s. All DCO′s correspond to gates on $\Delta J=2$, Q transitions, unless noted otherwise. Integral polarization-DCO (denoted as IP_{DCO}), negative value indicates magnetic character, and positive value electric multipole transition. IP_{DCO}′s are read from figure 5 of 2005Ku34 by XUNDL compilers.

[&] DCO value corresponds to gate on 95γ ($\Delta J=1$, dipole).

[x] γ ray not placed in level scheme.

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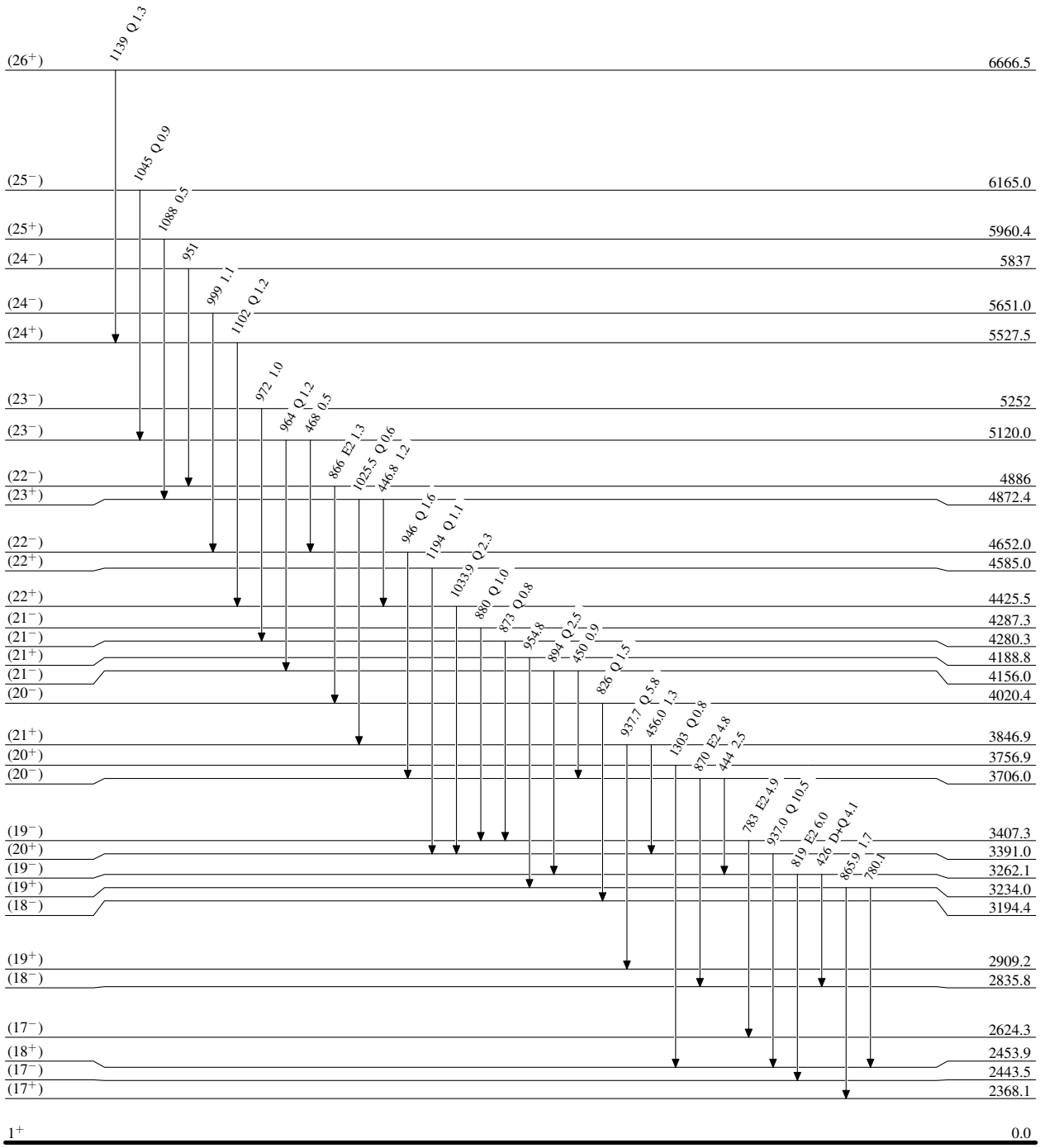
Level Scheme

Intensities: relative I(γ)

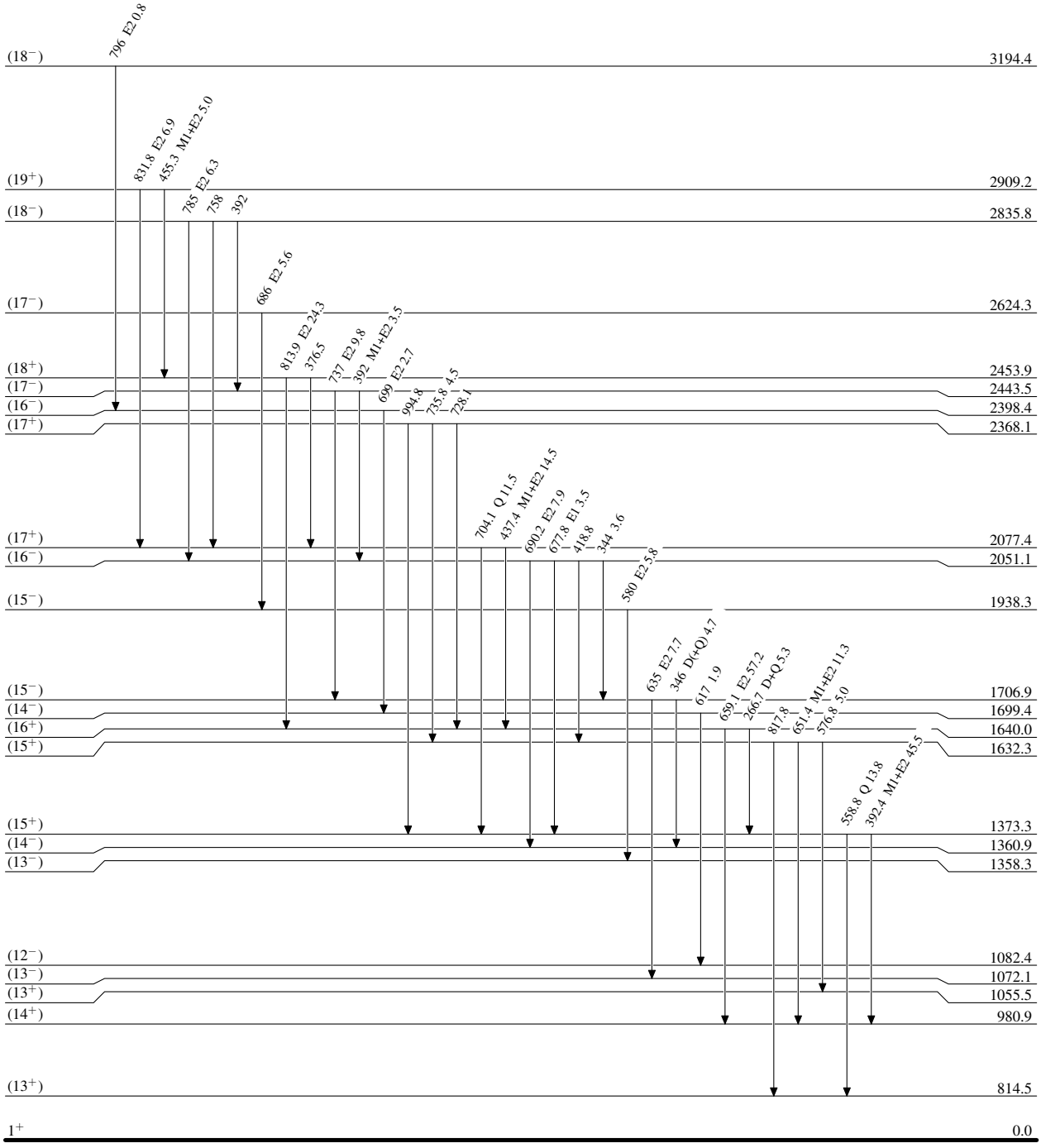


$^{122}_{55}Cs_{67}$

^{107}Ag(^{19}F,p3nγ) 2005Ku34,2005Uu01

Level Scheme (continued)

Intensities: relative I(γ)

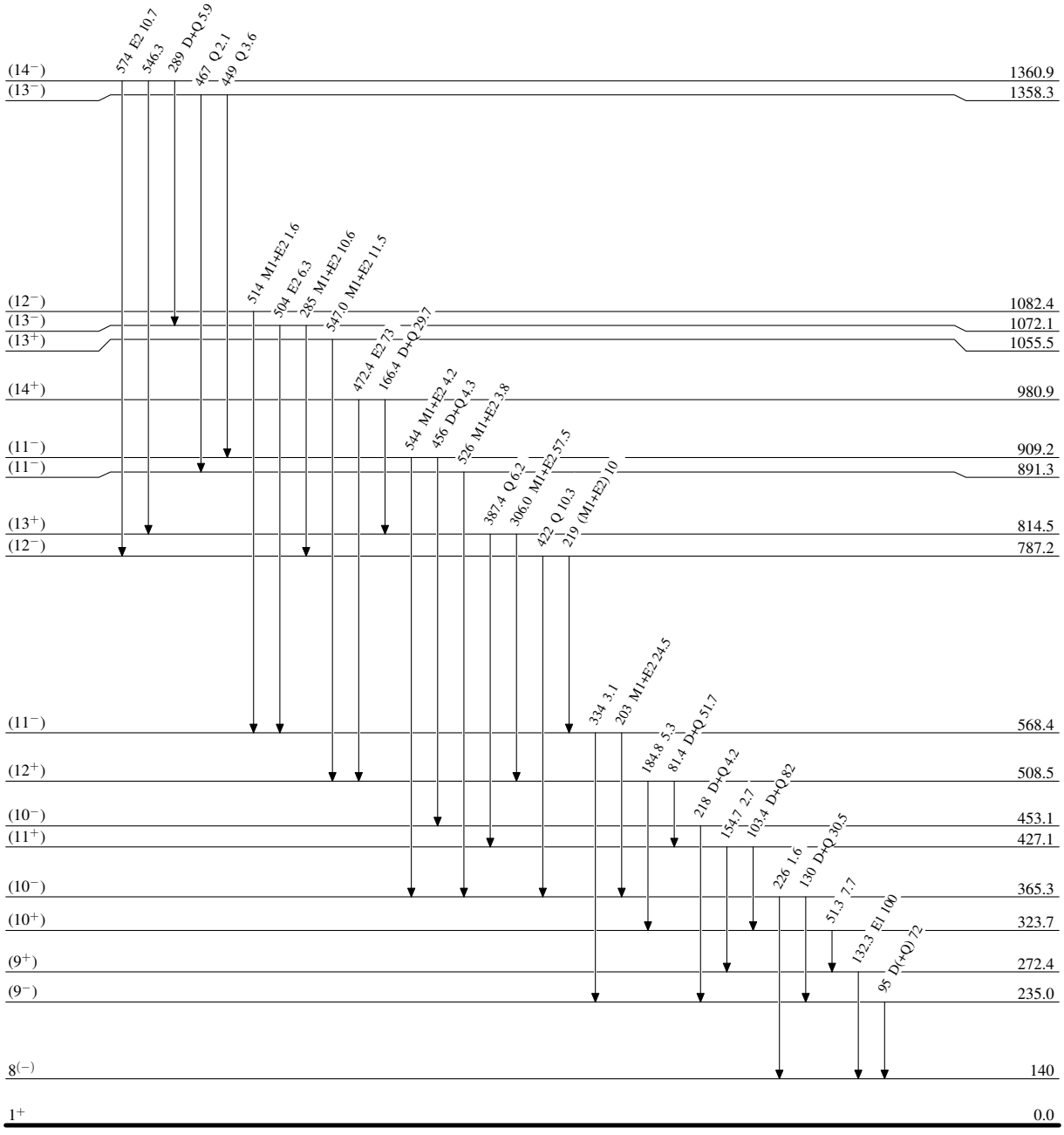


$^{122}_{55}Cs_{67}$

^{107}Ag(^{19}F,p3nγ) 2005Ku34,2005Uu01

Level Scheme (continued)

Intensities: relative I(γ)



$^{122}_{55}Cs_{67}$

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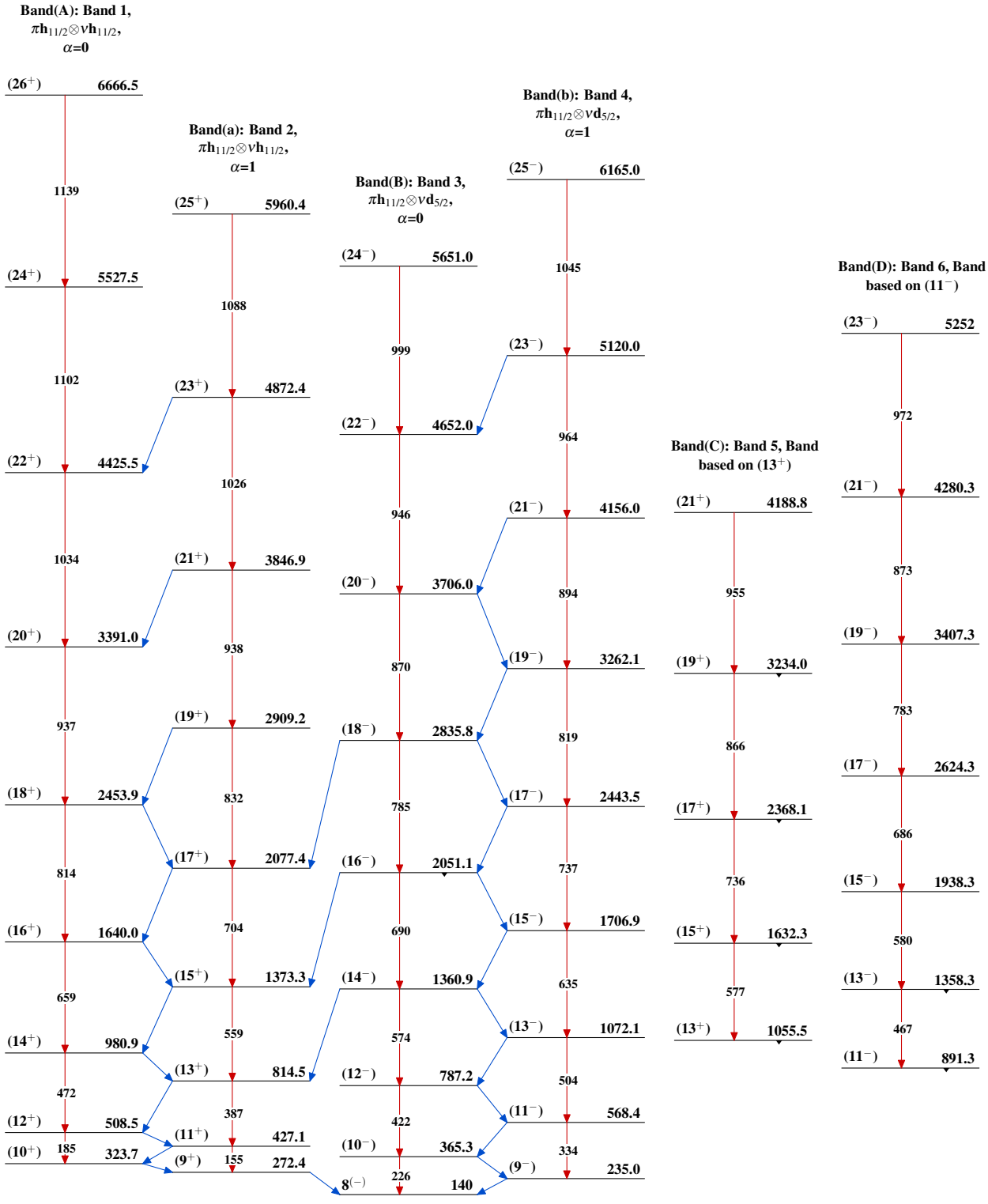
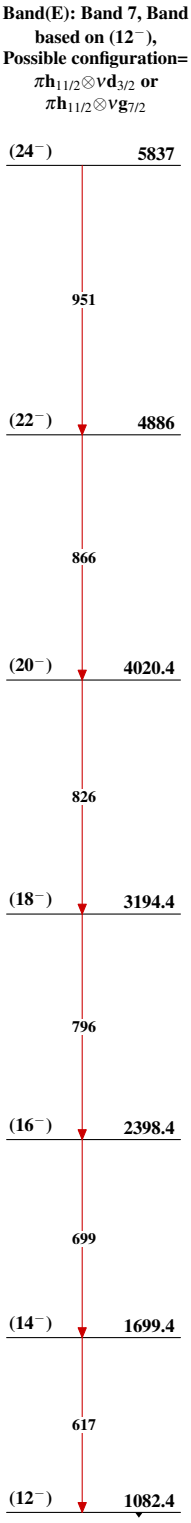


$^{122}_{55}Cs_{67}$

^{107}Ag(^{19}F,p3nγ) 2005Ku34,2005Uu01 (continued)



$^{122}_{55}Cs_{67}$