Coulomb excitation 1980Bo05,1983Sc38

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 187,355 (2023)	20-Sep-2022

1980Bo05: (^{16}O,^{16}O′), E(^{16}O)=35 to 64 MeV; (α,α'), E(^{4}He)=15 MeV. 81% ^{201}Hg target; Detectors: Ge(Li); Measured: γ-ray yield, $\gamma(\theta)$; Deduced: B(E2), δ.

1983Sc38: (α,α'), E(^{4}He)=16 MeV magnetic spectrograph, FWHM=14 keV. B(E2) values for levels up to 167 keV measured; normalization based on B(E2) values from 1980Bo05 for the 414 and 464 levels.

^{201}Hg Levels

E(level)[†]	Jπ[‡]	Comments
0	3/2^{-}[#]	
1.5648 *10*	1/2^{-}[#]	
26.2738 *3*	5/2^{-}	B(E2)↑≤0.07 (1983Sc38)
32.149 *17*	3/2^{-}[#]	B(E2)↑=0.14 *5* (1983Sc38)
167.43 *5*	1/2^{-}[#]	B(E2)↑=0.014 *4* (1980Bo05) B(E2)=0.017 *4* (1983Sc38).
384.603 *17*	5/2^{-}	B(E2)↑=0.085 *5* (1980Bo05)
414.541 *19*	7/2^{-}	B(E2)↑=0.152 *6* (1980Bo05)
464.41 *4*	5/2^{-}	B(E2)↑=0.209 *5* (1980Bo05)
553.04 *6*		B(E2)↑=0.035 *2* (1980Bo05)

[†] From a least-squares fit to Eγ.
[‡] From $\gamma(\theta)$ and direct excitation in Coulomb excitation (1980Bo05), unless otherwise stated.
[#] From Adopted Levels.

Coulomb excitation **1980Bo05,1983Sc38 (continued)**

$\gamma(^{201}Hg)$

E_i(level)	J_i^π	E_γ[†]	I_γ[#]	E_f	J_f^π	Mult.	δ[†]	α[@]	Comments
1.5648	1/2$^-$	1.5648[‡] *10*		0	3/2$^-$				
26.2738	5/2$^-$	26.2738[‡] *3*		0	3/2$^-$				
32.149	3/2$^-$	30.60[‡] *3*		1.5648	1/2$^-$				
		32.19[‡] *3*		0	3/2$^-$				
167.43	1/2$^-$	167.43 *5*	≈100	0	3/2$^-$				
384.603	5/2$^-$	352.42 *5*	42.8 *7*	32.149	3/2$^-$	M1(+E2)	+0.07 *7*		α(K)=0.12 *8*; α(L)=0.026 *8*; α(M)=0.0061 *16*; α(N+..)=0.0019 *5* Mult.: A_2=−0.047 *24*. δ: other (alternative): δ=−4.5 *+1.2−1.7* (1980Bo05).
		358.36 *4*	23.3 *4*	26.2738	5/2$^-$	M1+E2		0.15 *9*	α(K)=0.12 *8*; α(L)=0.024 *8*; α(M)=0.0058 *15*; α(N+..)=0.0018 *5* Mult.: A_2=+0.08 *6*. δ: −0.3≤δ≤3.9 (1980Bo05).
		384.60 *2*	33.9 *6*	0	3/2$^-$	M1+E2			α(K)=0.10 *7*; α(L)=0.020 *7*; α(M)=0.0047 *14*; α(N+..)=0.0015 *5* I_γ: Possibly a doublet. See Adopted Levels for details. Mult.: A_2=−0.144 *22*. δ: δ=−0.23 *9* or −1.8 *3* (1980Bo05).
414.541	7/2$^-$	382.45 *3*	30.4 *5*	32.149	3/2$^-$	E2		0.0540	α(K)=0.0357 *11*; α(L)=0.0137 *5*; α(M)=0.00343 *11*; α(N+..)=0.00108 *4* Mult.: A_2=+0.202 *26*.
		388.26 *3*	32.9 *5*	26.2738	5/2$^-$	M1+E2	+1.5 *+5−7*	0.09 *4*	α(K)=0.07 *4*; α(L)=0.017 *4*; α(M)=0.0041 *8*; α(N+..)=0.0013 *3* Mult.: A_2=+0.38 *3*.
		414.49 *3*	36.7 *7*	0	3/2$^-$	E2		0.0436	α(K)=0.0297 *9*; α(L)=0.0105 *4*; α(M)=0.00260 *8*; α(N+..)=0.00081 *3* Mult.: A_2=+0.187 *24*.
464.41	5/2$^-$	432.32 *7*	4.2 *2*	32.149	3/2$^-$	M1+E2	+1.4 *6*	0.07 *3*	α(K)=0.057 *24*; α(L)=0.012 *3*; α(M)=0.0030 *6*; α(N+..)=0.00095 *20* Mult.: A_2=+0.183 *26*.
		438.11 *6*	72.8 *23*	26.2738	5/2$^-$	M1(+E2)	≤0.1	0.09 *5*	α(K)=0.07 *5*; α(L)=0.014 *5*; α(M)=0.0032 *11*; α(N+..)=0.0010 *4* Mult.: A_2=+0.077 *21*. δ: other: 1.8 *5*, if J^π=7/2$^-$.
		464.39 *5*	23.0 *7*	0	3/2$^-$	M1+E2	+1.4 *+13−6*	0.061 *23*	α(K)=0.047 *20*; α(L)=0.0101 *24*; α(M)=0.0024 *6*; α(N+..)=0.00076 *17* Mult.: A_2=+0.20 *6*.
553.04		520.9 *1*	37 *4*	32.149	3/2$^-$				
		526.8 *1*	31 *2*	26.2738	5/2$^-$				
		553.0 *1*	32 *2*	0	3/2$^-$				

$^{201}_{80}Hg_{121}$-2

Coulomb excitation **1980Bo05,1983Sc38** **(continued)**

$\gamma(^{201}Hg)$ (continued)

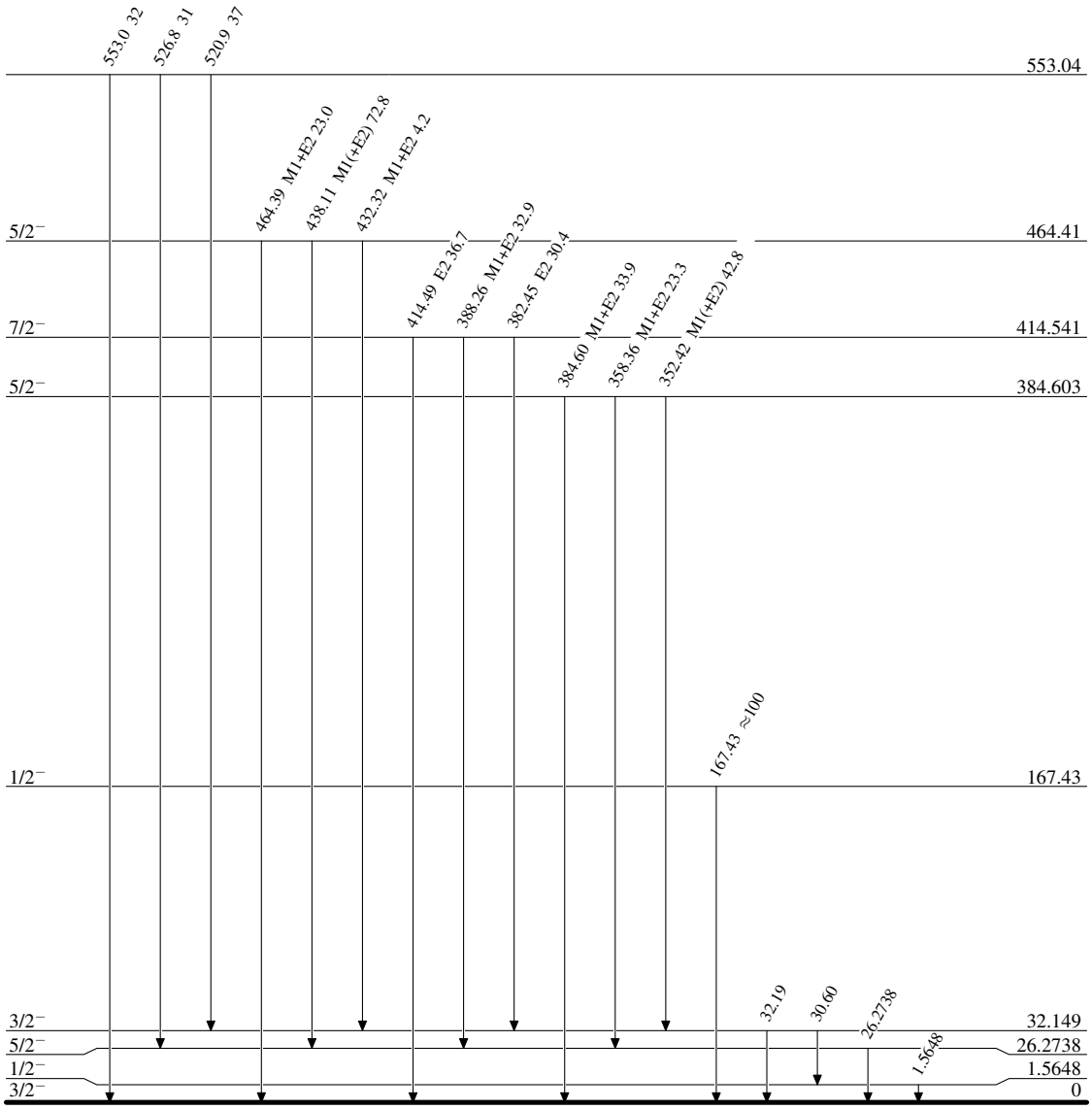
† From 1980Bo05, unless otherwise stated.
‡ From adopted gammas.
# Branching intensity from each level in % from 1980Bo05.
@ Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with "Frozen Orbitals" approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

$^{201}_{80}Hg_{121}$-3

Coulomb excitation 1980Bo05,1983Sc38

Level Scheme

Intensities: % photon branching from each level



$^{201}_{80}Hg_{121}$