Coulomb excitation 1968Ke04

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	S. K. Basu, A. A. Sonzogni	NDS 114, 435 (2013)	1-Apr-2013

1968Ke04: used reaction ^{150}Sm(^{16}O,^{16}O′γ) E=40-49 MeV. Measured γ rays in coincidence with backscattered ^{16}O ions using NaI(Tl) detectors for γ detection. Singles γ-ray spectra were also taken with a Ge(Li) detector. Others: 1960El07, 1966Ec02, 1966Se06, 1967Si03, 1968Ve01, 1971Ca35.

^{150}Sm Levels

B(E2): Data are from 1968Ke04, except where noted and are not corrected for reorientation effects. See discussion under the 334 keV level for examples of the magnitude of the effect for ^{16}O beams and for B(E2) values obtained with other beams. Also, see 1968Ve01 for reduced transition probabilities obtained with inelastic α scattering.

E(level)	J^π	$T_{1/2}$ †	Comments
0.0	0^+		
333.7 *8*	2^+	48.4 ps *11*	B(E2)=1.35 *3* (1987Ra01); μ=+0.77 *5* (1989Ra17); Q=−1.3 *2* (2005St24); g=0.381 *27* (1987Be08); 0.407 *32* (1987By02); for a recent compilation of μ and Q, see also 2005St24.
740.7 *13*	0^+	19.7 ps *19*	B(E2) (from 334 keV (2^+) level)=0.051 *5* from singles data. $T_{1/2}$: branching from ^{150}Eu ε decay (36.9 y).
773.7 *13*	4^+	6.5 ps *10*	B(E2)↑: B(E2) (from 334 keV (2^+) level)=0.96 *10* from singles data, 0.68 *15* from coincidence data. 1968Ve01 get 0.9 *3* using inelastic α scattering.
1045.7 *13*	2^+	0.86 ps *+31−21*	B(E2)↑=0.019 *5* $T_{1/2}$: branching from ^{150}Pm β^- decay. B(E2)↑: Authors value of 0.019 *5* assumed branching(1046γ)=1.00.
1072.7 *13*	3^-		B(E3)↑=0.31 *3*
1193.3 *8*	2^+	1.3 ps *3*	B(E2)↑=0.048 *10*

† From B(E2) and adopted branching ratio.

γ(^{150}Sm)

E_γ	I_γ †	E_i(level)	J_i^π	E_f	J_f^π	Mult.
334	1.00	333.7	2^+	0.0	0^+	E2
407	2.7×10^{-03}	740.7	0^+	333.7	2^+	(M1+E2)
440	2.0×10^{-02}	773.7	4^+	333.7	2^+	E2
712	3.9×10^{-03}	1045.7	2^+	333.7	2^+	(M1+E2)
739	7.6×10^{-03}	1072.7	3^-	333.7	2^+	E3
860	2.7×10^{-03}	1193.3	2^+	333.7	2^+	(M1+E2)
1193	4.0×10^{-03}	1193.3	2^+	0.0	0^+	(M1+E2)

† Singles γ-ray yield, normalized by the yield of $2^+ - 0^+$ γ-ray.

Coulomb excitation 1968Ke04