Coulomb excitation **1969Ga25,1967No04,1977Do16**

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 151, 1 (2018)	1-Apr-2018

Others: 1998Mu04, 1967St11, 1964Al27, 1961An07, 1960Ad01.
1969Ga25: (^{14}N,^{14}N′γ), E=31.1 MeV. Measured Eγ. Ge(Li) detector with FWHM=5.8 keV at 661 keV, placed at 55°.
1967No04: (^{16}O,^{16}Oγ), E(^{16}O)=36 MeV. Measured Eγ, Iγ, O′-$\gamma(\theta)$, DSAM; NaI and Ge(LI) detectors.
1977Do16: (^{16}O,^{16}Oγ), E=35 MeV. Measured Eγ, γ(t). Ge(Li) detector. DSAM method.

^{59}Co Levels

E(level)†	Jπ†	$T_{1/2}$	Comments
0.0	7/2−		
1099.26	3/2−‡	3.0 ps *6*	B(E2)↑=0.0058 *11* B(E2): weighted average of 0.0089 *18* (1964Al27), 0.005 *2* (1967No04), 0.005 *1* (1969Ga25). Other: 1961An07. $T_{1/2}$: from B(E2). 10 ps *11* (1977Do16) and >2.9 ps (1967No04) from DSAM.
1190.45	9/2−#	55 fs *7*	B(E2)↑=0.021 *2* B(E2): weighted average of 0.017 *3* (1964Al27), 0.022 *2* (1967No04), 0.023 *4* (1969Ga25). Others: 1961An07, 1960Ad01. $T_{1/2}$: from DSAM (1967No04). Others: 54 fs *17* (from B(E2), branching and adopted δ=0.20 *3*), 71 fs *11* (DSAM, 1977Do16), 50 ps *20* (DSAM, 1967St11).
1291.6	3/2−		B(E2)=0.0007 *3* (1969Ga25), 0.012 *2* (1964Al27); B(E2)≈0.000013 is implied by adopted $T_{1/2}$(1292 level), so both measured B(E2) values are presumed to be erroneous.
1459.5	(11/2)−@	1.14 ps *14*	B(E2)↑=0.0104 *20* B(E2): weighted average of 0.007 *2* (1969Ga25), 0.012 *2* (1967No04), 0.010 *3* (1964Al27), 0.013 *3* (1961An07), 0.015 *5* (1960Ad01). Uncertainty lowest input value. $T_{1/2}$: weighted average of 1.15 ps *14* (from B(E2) and Iγ) and 1.11 ps *28* (DSAM, 1967No04). Uncertainty lowest input value.
1481.7	5/2−		B(E2)↑=0.0010 *4* (1969Ga25)
1744.7	7/2−	0.28 ps *12*	B(E2)↑=0.003 *1* (1969Ga25) $T_{1/2}$: from B(E2) and Adopted Gammas branching and δ(1745γ)=−0.87 *22*.

† From Adopted Levels.
‡ O′−1099$\gamma(\theta)$ allows J=3/2, 5/2 (1967No04).
# O′−1191$\gamma(\theta)$ allows J=5/2,7/2,9/2, not 11/2; J=3/2 improbable (1967No04).
@ O′−1460$\gamma(\theta)$ allows J=5/2,11/2, not 3/2,9/2; J=7/2 improbable (1967No04).

γ(^{59}Co)

Eγ†	Ei(level)	J^π_i	E_f	J^π_f	Mult.‡	δ‡	Comments
192.343 *5*	1291.6	3/2−	1099.26	3/2−			
263.0	1744.7	7/2−	1481.7	5/2−			
554.2 *2*	1744.7	7/2−	1190.45	9/2−			
1099.245 *3*	1099.26	3/2−	0.0	7/2−	E2		δ: from O′-$\gamma(\theta)$, δ(D,Q)=∞ if J(1099 level)=3/2 (1967No04).
1189.70 *5*	1190.45	9/2−	0.0	7/2−	M1(+E2)	0.0 *6*	δ: from O′-$\gamma(\theta)$, δ(D,Q)=0.0 *6* if J(1191 level)=9/2 (1967No04).
1291.590 *6*	1291.6	3/2−	0.0	7/2−			
1459.61 *16*	1459.5	(11/2)−	0.0	7/2−	E2		δ: from O′-$\gamma(\theta)$, δ(D,Q)=∞ if J(1460 level)=11/2 (1967No04).
1481.70 *14*	1481.7	5/2−	0.0	7/2−	(M1+E2)	0.19 *4*	Mult.: from adopted gammas. δ: from B(E2), assuming adopted $T_{1/2}$ and branching.
1744.7 *3*	1744.7	7/2−	0.0	7/2−			

Continued on next page (footnotes at end of table)

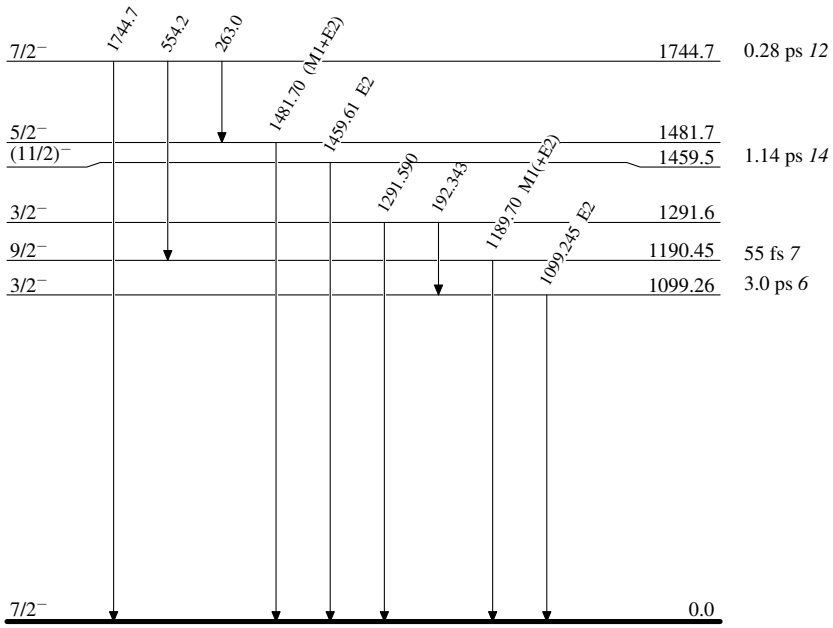
Coulomb excitation 1969Ga25,1967No04,1977Do16 (continued)

$\gamma(^{59}Co)$ (continued)

† From Adopted Levels. γ ray observed in Coulomb excitation (1745γ excepted).
‡ From O′-$\gamma(\theta)$ (1967No04).

Coulomb excitation 1969Ga25,1967No04,1977Do16

Level Scheme



$^{59}_{27}Co_{32}$