

Coulomb excitation 1975An19,1969Wa09

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	A. Hashizume	NDS 112, 1647 (2011)	1-Oct-2009

1975An19: ($^{12}\text{C}, ^{12}\text{C}'$) E=37 and 41 MeV, (α, α') E=12 MeV, semi γ .

1966Th07: (α, α') E=1-3.3 MeV, scin γ .

1967Im01: ($^{14}\text{N}, ^{14}\text{N}'$) E=11.5 MeV, scin γ .

1969De03: (α, α'), (p,p') E=3.5-5 MeV, semi γ .

1969Wa09: ($^{16}\text{O}, ^{16}\text{O}'$) E=35-55 MeV, semi γ .

1973Re08: (α, α') E=6-11 MeV, semi γ .

Other: 1969WaZW: (α, α') E=10 MeV, semi γ , $\gamma(\theta)$.

^{127}I Levels

E(level) [†]	J π [‡]	T _{1/2} [#]	Comments
0.0	5/2 ⁺	stable	
57.40 23	7/2 ⁺		B(E2) \uparrow =0.058 11 B(E2) \uparrow : Weighted av of 0.086 29 (1966Th07) and 0.054 11 (1967Im01).
202.8 3	3/2 ⁺	0.52 ns 8	B(E2) \uparrow =0.037 2 B(E2) \uparrow : Weighted av of 0.035 5 (1969De03), 0.033 5 (1969Wa09), 0.043 5 (1973Re08), and 0.037 5 (1975An19). Others: 0.042 14 (1973Re08), 0.072 14 (1967Im01). T _{1/2} : from B(E2). Other: 0.52 ns 10 from DSA.
374.8 4	1/2 ⁺	31 ps 8	B(E2) \uparrow =0.027 2 B(E2) \uparrow : Weighted av of 0.029 5 (1969Wa09), 0.027 3 (1973Re08), and 0.026 2 (1975An19). Other: 0.015 2 (1969De03). T _{1/2} : from B(E2). Others: 41 ps 3 from DSA.
418.1 3	5/2 ⁺	3.0 ps 6	B(E2) \uparrow =0.0082 12 B(E2) \uparrow : Weighted av of 0.0061 12 (1969De03), 0.0072 11 (1969Wa09), and 0.0101 9 (1975An19).
617.9 5	3/2 ⁺		B(E2) \uparrow =0.0018 4 (1973Re08,1975An19)
628.0 4	7/2 ⁺	1.9 ps 6	B(E2) \uparrow =0.084 6 B(E2) \uparrow : Weighted av of 0.087 13 (1969Wa09) and 0.083 12 (1973Re08), 0.084 4 (1975An19).
650.7 4	9/2 ⁽⁺⁾	3.9 ps 4	B(E2) \uparrow =0.0231 15 B(E2) \uparrow : Weighted av of 0.0235 35 (1969Wa09), 0.023 2 (1975An19), and 0.023 3 (1973Re08). T _{1/2} : from B(E2). Other: 1.5 ps 3 from DSA.
715.7 6	(11/2 ⁺)	3.0 ps 6	B(E2)(11/2 ⁺ to 7/2 ⁺)=0.15 3 (1969WaZW). T _{1/2} : from B(E2).
744.3 4	9/2 ⁽⁺⁾	2.79 ps 18	B(E2) \uparrow =0.115 6 B(E2) \uparrow : Weighted av of 0.135 20 (1969Wa09), 0.110 8 (1975An19), and 0.120 13 (1973Re08). T _{1/2} : from B(E2). Other: 1.6 ps 3 from DSA.
991.0 3	3/2 ⁺ ,5/2 ⁺		B(E2) \uparrow =0.003 1 (1975An19)
1043.9 4	7/2 ⁺	0.21 ps 7	B(E2) \uparrow =0.0076 7 (1975An19)
1095.1 4	3/2 ⁺ ,5/2 ⁺	0.21 ps 7	B(E2) \uparrow =0.011 1 (1975An19)

[†] From a least-squares fit to E γ 's.

[‡] From Adopted Levels.

[#] From Doppler-shift attenuation (1975An19), unless otherwise noted.

Coulomb excitation 1975An19,1969Wa09 (continued) $\gamma(^{127}\text{I})$

$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	E_f	J_f^π	$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	E_f	J_f^π
57.40	7/2 ⁺	57.6 5	100	0.0	5/2 ⁺	715.7	(11/2 ⁺)	658.3 5	100	57.40	7/2 ⁺
202.8	3/2 ⁺	145.8 5	6	57.40	7/2 ⁺	744.3	9/2 ⁽⁺⁾	116.2 ^{‡@} 5	0.7	628.0	7/2 ⁺
		202.6 5	94	0.0	5/2 ⁺			686.8 5	22	57.40	7/2 ⁺
374.8	1/2 ⁺	172.0 5	56	202.8	3/2 ⁺			744.4 5	77	0.0	5/2 ⁺
		374.7 5	44	0.0	5/2 ⁺	991.0	3/2 ⁺ ,5/2 ⁺	572.4 5	21	418.1	5/2 ⁺
418.1	5/2 ⁺	215.5 5	3	202.8	3/2 ⁺			616.0 5	34	374.8	1/2 ⁺
		360.0 5	10	57.40	7/2 ⁺			788.5 5	7	202.8	3/2 ⁺
		417.9 5	87	0.0	5/2 ⁺			933.4 ^{#@} 5		57.40	7/2 ⁺
617.9	3/2 ⁺	560.0 [@] 5	3	57.40	7/2 ⁺			991.2 5	38	0.0	5/2 ⁺
		617.9 5	97	0.0	5/2 ⁺	1043.9	7/2 ⁺	840.5 [#] 5		202.8	3/2 ⁺
628.0	7/2 ⁺	426 ^{‡@} 1	2	202.8	3/2 ⁺			986.7 5	31	57.40	7/2 ⁺
		570.4 5	7	57.40	7/2 ⁺			1044.3 5	69	0.0	5/2 ⁺
		628.2 5	91	0.0	5/2 ⁺	1095.1	3/2 ⁺ ,5/2 ⁺	1038.4 5	28	57.40	7/2 ⁺
650.7	9/2 ⁽⁺⁾	593.2 5	94	57.40	7/2 ⁺			1094.4 5	72	0.0	5/2 ⁺
		650.8 5	6	0.0	5/2 ⁺						

[†] From 1975An19, uncertainty assigned by the evaluators.

[‡] E_γ and I_γ are from 1969Wa09, uncertainty assigned by the evaluators.

[#] No intensity is given (1975An19).

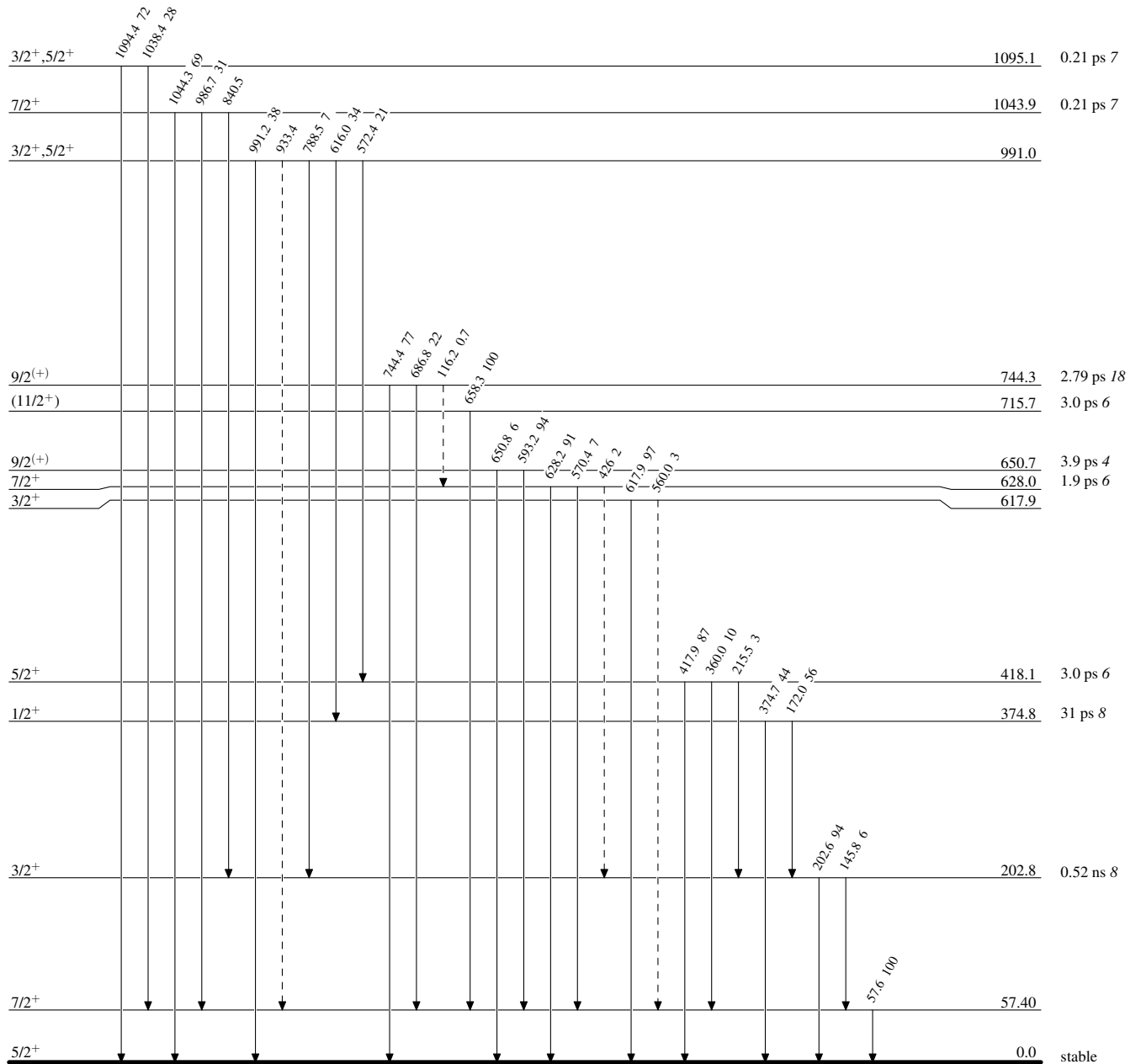
[@] Placement of transition in the level scheme is uncertain.

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Legend

Level Scheme

Intensities: % photon branching from each level

-----► γ Decay (Uncertain) $^{127}_{53}\text{I}_{74}$