

Coulomb excitation

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Yu. Khazov, I. Mitropolsky, A. Rodionov		NDS 107, 2715 (2006)	17-Jul-2006

1978Pa09: ¹³¹Xe($\alpha, \alpha'\gamma$) E=8, 10 MeV, ¹³¹Xe(¹⁶O, ¹⁶O' γ) E=42 MeV; measured $\gamma\gamma$, E γ , I γ , deduced levels, J, π , B(E2) \uparrow .

Reanalyzed by 1979Ir01.

1990Na18: Ni(¹³¹Xe, ¹³¹Xe' γ) E=440 MeV; measured $\gamma(\theta)$, deduced levels, T_{1/2}, B(λ). RDM.

¹³¹Xe Levels

E(level) [†]	J π	T _{1/2} [‡]	Comments
0.0	3/2 ⁺	stable	
80.20 7	1/2 ⁺		B(E2) \uparrow =0.0019 3 (1978Pa09)
364.49 8	5/2 ⁺	70 ps 2	B(E2) \uparrow =0.15 1 (1978Pa09) T _{1/2} : from RDM (1990Na18). T _{1/2} =76 ps 6 from B(E2).
404.78 9	3/2 ⁺	18 ps 3	B(E2) \uparrow =0.057 4 (1978Pa09) T _{1/2} : from RDM (1990Na18). T _{1/2} =32 ps +20-30 from B(E2).
565.20 15	(1/2,3/2) ⁺	5.9 ps 11	B(E2) \uparrow =0.024 2 (1978Pa09) T _{1/2} : from RDM (1990Na18).
636.90 9	7/2 ⁺	6.1 ps 5	B(E2) \uparrow =0.16 1 (1978Pa09) T _{1/2} : weighted average of 6.7 ps 4 (from B(E2)) and 5.76 ps 27 (1990Na18).
699.89 11	3/2 ⁺		B(E2) \uparrow =0.027 2 (1978Pa09)
722.90 8	5/2 ⁺	0.53 ps 5	B(E2) \uparrow =0.019 1 (1978Pa09)
913.84 15			
973.95 22	7/2 ⁺	4.9 ps 9	B(E2) \uparrow =0.010 1 (1978Pa09)

[†] From least-squares fit to E γ 's.

[‡] From B(E2) and adopted gammas, except as noted.

$\gamma(^{131}\text{Xe})$

E _i (level)	J _i π	E γ [†]	I γ [‡]	E _f	J _f π	Mult. &	δ ^{&}	Comments
80.20	1/2 ⁺	80.2 1	100	0.0	3/2 ⁺	M1+E2	<0.1	
364.49	5/2 ⁺	284.3 2	7 1	80.20	1/2 ⁺	E2		
		364.5 1	93 1	0.0	3/2 ⁺	M1+E2	-4.34 19	
404.78	3/2 ⁺	324.7 2	30 2	80.20	1/2 ⁺			
		404.8 1	70 2	0.0	3/2 ⁺	M1+E2	+1.0 9	
565.20	(1/2,3/2) ⁺	485.0 2	8 2	80.20	1/2 ⁺			
		565.2 2	92 2	0.0	3/2 ⁺	[M1+E2]	0.6 2	δ : from both T _{1/2} and B(E2) for J π =(1/2,3/2) ⁺ .
636.90	7/2 ⁺	272.4 2	0.8 4	364.49	5/2 ⁺			
		636.9 1	99 1	0.0	3/2 ⁺	E2		
699.89	3/2 ⁺	295.3 2	6 3	404.78	3/2 ⁺			
		335.4 2	27 5	364.49	5/2 ⁺			
		619.6 2	21 5	80.20	1/2 ⁺			
		699.8 2	46 7	0.0	3/2 ⁺			
722.90	5/2 ⁺	318.1 3	6 3	404.78	3/2 ⁺			
		358.4 3	2.0 15	364.49	5/2 ⁺			
		642.7 1	10 1	80.20	1/2 ⁺			
		722.9 1	82 1	0.0	3/2 ⁺	M1+E2	-0.207 5	
913.84		549.4 [#] 2	44 8	364.49	5/2 ⁺			
		833.6 [#] 2	55 4	80.20	1/2 ⁺			
		913.8 [#] 4	1.1 8	0.0	3/2 ⁺			

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Coulomb excitation (continued) $\gamma(^{131}\text{Xe})$ (continued)

<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>E_γ^\dagger</u>	<u>I_γ^\ddagger</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult. &</u>
973.95	7/2 ⁺	609.5 @ 3	62 @ 6	364.49	5/2 ⁺	
		973.9 @ 3	38 @ 6	0.0	3/2 ⁺	E2

† From 1978Pa09.

‡ % photon branching from each level (1978Pa09).

Seen only in ($^{16}\text{O}, ^{16}\text{O}'\gamma$).

@ From 1979Ir01.

& From adopted values, except as noted.

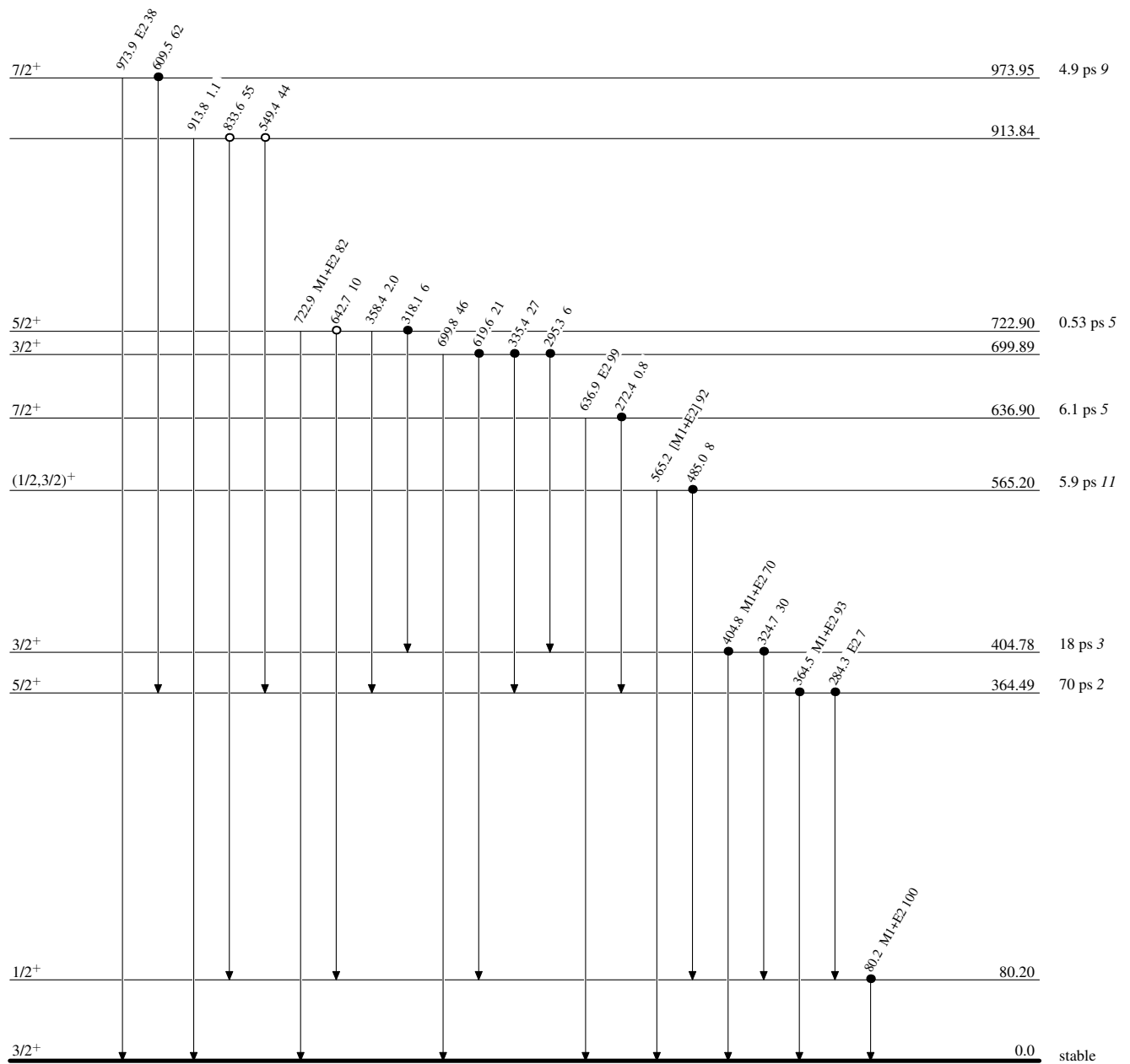
Coulomb excitation

Legend

Level Scheme

Intensities: % photon branching from each level

- Coincidence
- Coincidence (Uncertain)

 $^{131}_{54}\text{Xe}_{77}$