

Adopted Levels, Gammas

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Huo Junde, Huang Xiaolong, J. K. Tuli		NDS 106,159 (2005)	1-Apr-2005

Q(β⁻)=561.3 15; S(n)=9132.0 14; S(p)=8601.5 19; Q(α)=-7893 19 [2012Wa38](#)

Note: Current evaluation has used the following Q record 561.7 159131.8 148601.5 19-7903 20 [2003Au03](#).

⁶⁷Cu Levels

Cross Reference (XREF) Flags

A	⁶⁷ Cu IT decay	E	⁶⁸ Zn(d, ³ He)
B	⁶⁷ Ni β ⁻ decay	F	⁷⁰ Zn(n,d)
C	⁶⁴ Ni(α,p)	G	⁷⁰ Zn(p,α)
D	⁶⁵ Cu(t,p)		

E(level) [†]	J ^π [‡]	T _{1/2}	XREF	Comments
0	3/2 ⁻	61.83 h 12	ABCDEFGG	%β ⁻ =100 J ^π : L(t,p)=0. T _{1/2} : weighted average of 61.88 h 14 (1968Re04), 61.00 h 25 (1970Ma56), 61.83 h 7 (1972La14), 62.01 h 14 (1974Ro18).
1115.4 4	5/2 ⁻		ABCDEFGG	J ^π : compatible with ΔJ=1 M1 for γ to 3/2 ⁻ . M2 γ from 9/2 ⁺ , 2502.
1170 20	(1/2) ⁻		CDE	J ^π : from (d,p) ΔJ. ΔJ=2, E2 from 7/2 ⁻ . π from E2 from 7/2 ⁻ .
1633 2			CD	
1669.63 23	7/2 ⁻		A EFG	J ^π : compatible with ΔJ=1 M1 for γ to 5/2 ⁻ and ΔJ=2 E2 for γ to 1/2 ⁻ .
1937.1 4	3/2 ⁻		BCD	J ^π : L(t,p)=0.
2272.0 10	(1/2,3/2) ⁻		BCD	J ^π : log ft≈5.5 for β ⁻ from (1/2) ⁻ .
2340	7/2 ⁻		E G	
2502.8 3	9/2 ⁺	<0.3 ns	A CD	J ^π : ΔJ=3 E3 γ to 3/2 ⁻ , g.s. and ΔJ=2 M2 γ to 5/2 ⁻ , 1115.4.
2623.1 10	(1/2,3/2) ⁻		B D	J ^π : log ft≈5.2 for β ⁻ from (1/2) ⁻ .
2680.1 10	3/2 ⁻		BCD	J ^π : L(t,p)=0.
2841.1 10	(1/2,3/2) ⁻		B D	J ^π : log ft≈4.5 for β ⁻ from (1/2) ⁻ .
≈2930			D	
≈2940			D	
2996 4			CD	
3036 5			CD	
3090 20	3/2 ⁻		D	J ^π : L(t,p)=0.
3123 3			CD	
3250 4	(7/2 ⁺ ,9/2 ⁻)		C	
3277 4	(5/2)		C	
3334 4			C	
3363.7 5	13/2 ⁺		A C	J ^π : E2 γ to 9/2 ⁺ . Configuration=(πp _{3/2} v _g 9/2v _p 1/2) (2000As05).
3394 5			C	
3463.6 7	15/2 ⁺	<2.4 ns	A	%IT=100 J ^π : M1 γ to 13/2 ⁺ . Configuration=(πp _{3/2} v _g 9/2v _f _{5/2} ⁻¹) (2000As05).
3480 3	(11/2 ⁻ ,9/2)		C	
3522 4	(7/2,9/2 ⁻)		C	
3638 2	(11/2 ⁻)		C	
3693 4	(11/2 ⁻ ,9/2)		C	
3736 4	(5/2)		C	
3838 4	(5/2)		C	
3865 3	(5/2)		C	
3947 5	(5/2)		C	
3998 4	(17/2 ⁺ ,15/2 ⁻)		C	
4031 4			C	
4059 3	(7/2)		C	
4127 3	(7/2)		C	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

⁶⁷Cu Levels (continued)

E(level) [†]	J ^π [‡]	XREF	Comments
4163 2	(9/2)	C	
4195 3	(7/2)	C	
4262 3	(7/2)	C	
4315 3	(13/2 ⁺)	CD	XREF: D(4310).
4364 2	(7/2,11/2 ⁻)	C	
4406 3	(11/2 ⁻)	C	
4448 5	(7/2,9/2 ⁻)	C	
4493 4		C	
4518 4		C	
4561 4		C	
4603 4		C	

[†] From a least-squares fit to the E_γ data or from ⁶⁵Cu(t,p).

[‡] From (d,p) based on angular distribution and DWBA analysis (2001Ny01), unless given otherwise.

γ(⁶⁷Cu)

E _i (level)	J _i ^π	E _γ [†]	I _γ [‡]	E _f	J _f ^π	Mult.#	α [@]
1115.4	5/2 ⁻	1115.3 5	100	0	3/2 ⁻	M1	
1669.63	7/2 ⁻	554.2 3	89 11	1115.4	5/2 ⁻	M1	
		1669.6 3	100 14	0	3/2 ⁻	E2	
1937.1	3/2 ⁻	821.6 5	73 12	1115.4	5/2 ⁻		
		1937.1 5	100 16	0	3/2 ⁻		
2272.0	(1/2,3/2) ⁻	2272 1	100	0	3/2 ⁻		
2502.8	9/2 ⁺	833.1 3	100 8	1669.63	7/2 ⁻	E1	
		1387.7 5	13 4	1115.4	5/2 ⁻	M2	
		2502.6 6	100 13	0	3/2 ⁻	E3	
2623.1	(1/2,3/2) ⁻	2623 1	100	0	3/2 ⁻		
2680.1	3/2 ⁻	2680 1	100	0	3/2 ⁻		
2841.1	(1/2,3/2) ⁻	2841 1	100	0	3/2 ⁻		
3363.7	13/2 ⁺	860.9 3	100	2502.8	9/2 ⁺	E2	
3463.6	15/2 ⁺	99.9 5	100	3363.7	13/2 ⁺	M1	0.0551

[†] From ⁶⁷Cu IT decay and ⁶⁷Ni β⁻ decay.

[‡] Relative photon branching from each level.

From 2000As05 in IT decay.

@ Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

Adopted Levels, GammasLevel Scheme

Intensities: Relative photon branching from each level

