

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	K. Kitao	NDS 75,99 (1995)	1-Feb-1993

$Q(\beta^-) = -2892$ 23; $S(n) = 8.61 \times 10^3$ 4; $S(p) = 3165$ 24; $Q(\alpha) = 1.10 \times 10^3$ 3 [2012Wa38](#)
 Note: Current evaluation has used the following Q record -2.9E3 108.29E3 102860 801.58E3 22 [1993Au05](#).

 ^{118}I Levels

Band(α ,C) negative parity $\Delta J=1$ band.

Cross Reference (XREF) Flags

A ^{118}Xe β^+ decay
B (HI,xn γ)

E(level) [†]	J $^\pi$	T _{1/2}	XREF	Comments
0.0	2 ⁻	13.7 min 5	AB	$\% \epsilon + \% \beta^+ = 100$ $\mu = 2.0$ 2 μ : static low-temperature nuclear orientation (1989Ra17). $T_{1/2}$: average of 13.9 min 5 (1965An05), 13.0 min 3 (1968La18), 14.3 min 1 (1969Ha03). Others: ≈ 10 min (1957Aa04), 17 min 2 (1960Za07), 17.2 min 7 (1965Bu08). J^π : from $\gamma(\theta)$ from oriented nuclei; $\log ft = 6.6$ to 2^+ . Additional information 1.
0.0+x 104.0+x [‡] 20	(7 ⁻)	8.5 min 5		$\% \epsilon + \% \beta^+ < 100$; $\% IT > 0$ $\mu = 4.2$ 2 Additional information 2. $E(\text{level})$: 1993Au05 indicated $E(\text{level}) = 90$ 310 as adjusted value. μ : static low-temperature nuclear orientation (1989Ra17). J^π : on-line nuclear orientation (1985Sh16). $T_{1/2}$: from 1968La18 .
129.58 25			B	
222.22 25			B	
226.9+x 21	(8 ⁻) [#]			Configuration = $((\pi \text{ g}_{9/2})^{-1} (\nu \text{ h}_{11/2}))$.
247.8 4			B	
412.9 4			B	
451.9+x 21				
456.6+x 21	(9 ⁻) [#]			
704.8 5			B	
750.9+x 21	(10 ⁻) [#]			
900.7 5			B	
983.2 6			B	
1084.0+x 21	(11 ⁻) [#]			
1106.6 6			B	
1375.5 6			B	
1432.6 7			B	
1447.5+x 21	(12 ⁻) [#]			
1529.2 6			B	
1726.3 7			B	
1772.2 7			B	
1836.9+x 21	(13 ⁻) [#]			
2061.3 8			B	
2252.6+x 22	(14 ⁻) [@]			

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued) ^{118}I Levels (continued)

<u>E(level)[†]</u>	<u>XREF</u>
2401.9 8	B
2805.9 8	B

[†] From (HI,xn γ).

[‡] [1968La18](#) suggest that the 104 γ is an isomeric transition to 13.7-min state in ^{118}I . However, RUL does not support multipolarity $\Delta J=4$ or larger, and thus one expects an intermediate level.

[#] From $\gamma(\theta)$ in (HI,xn γ) and syst of negative $\Delta J=1$ bands in odd-odd ^{122}Sb - ^{120}Sb and ^{116}I - ^{120}I .

[@] From $\gamma\gamma$ coin and expected band structure.

$\gamma(^{118}\text{I})$								
$E_i(\text{level})$	J_i^{π}	$E_{\gamma}^{\dagger}$	I_{γ}	E_f	J_f^{π}	Mult. [#]	$\delta^{\#}$	Comments
104.0+x	(7 ⁻)	104 2	100	0.0+x				E_{γ} : from 1968La18 .
129.58		129.6 3	100	0.0	2 ⁻			
222.22		92.6 3	100.0 8	129.58				
		222.2 3	53.5 10	0.0	2 ⁻			
226.9+x	(8 ⁻)	122.9 [‡] 3	100	104.0+x	(7 ⁻)	M1		
247.8		118.4 5	100	129.58				
412.9		165.1 3	100.0 10	247.8				
		190.6 3	97.4 10	222.22				
451.9+x		225.0 [‡] 3	100	226.9+x	(8 ⁻)			
456.6+x	(9 ⁻)	229.7 [‡] 3	100	226.9+x	(8 ⁻)	M1+E2	+0.09 2	
704.8		291.9 3	100	412.9				
750.9+x	(10 ⁻)	294.2 [‡] 3	100	456.6+x	(9 ⁻)	M1+E2		
900.7		195.9 3	12.3 6	704.8				
		487.8 3	100.0 8	412.9				
983.2		82.5 3	100	900.7				
1084.0+x	(11 ⁻)	332.9 3	100 4	750.9+x	(10 ⁻)	(M1+E2)	-0.22 10	
		627.6 5		456.6+x	(9 ⁻)	(E2)		
1106.6		123.4 [‡] 3	100	983.2				
1375.5		392.3 3	100	983.2				
1432.6		57.1 3	100	1375.5				
1447.5+x	(12 ⁻)	363.4 [‡] 3	100 2	1084.0+x	(11 ⁻)	M1+E2		
		696.9 5		750.9+x	(10 ⁻)	E2		
1529.2		546.0 3	100	983.2				
1726.3		350.8 3	100	1375.5				
1772.2		396.7 3	100	1375.5				
1836.9+x	(13 ⁻)	389.5 3	100 7	1447.5+x	(12 ⁻)	M1+E2	+0.13 16	
		752.9 5		1084.0+x	(11 ⁻)	E2		
2061.3		628.7 3	100	1432.6				
2252.6+x	(14 ⁻)	415.7 5	100	1836.9+x	(13 ⁻)			
2401.9		675.6 3	100	1726.3				
2805.9		744.6 3	100	2061.3				

[†] From (HI,xn γ), unless otherwise noted.

[‡] Doublet.

[#] From (HI,xn γ).

Adopted Levels, GammasLevel Scheme

Intensities: Relative photon branching from each level

