Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli	NDS 113, 715 (2012)	31-May-2011

Q(β^-)=7471 *23*; S(n)=3045 *6*; S(p)=1.27×10^4 *4*; Q(α)=−2423 *6* 2012Wa38

Note: Current evaluation has used the following Q record.

Q(β^-)=7472 *23*; S(n)=3045 *5*; S(p)=12468 *SY*; Q(α)=−2259 *SY* 2011AuZZ

Based on the shell model for deformed or spherical nuclei it is unlikely the existence of two ^{143}Xe long lived β^- decaying isomers.

The $T_{1/2}$=0.99 s activity previously assigned to ^{143}Xe ($T_{1/2}$=0.99 s *14* (1971Kr22), 0.96 s *2* (1965Pa14), ≈1 s (1950Di01); Eγ=139.5, 194.2 (1971Kr22)) possibly belongs to another Xe isotope, maybe ^{142}Xe ($T_{1/2}$=1.22 s *2*).

Observed delayed neutrons (1972Am01) and γ rays following the emission of delayed neutrons (in nuclei with A=142) (1988Fa06).

Fission fragment yields: 2003Ga21, 2000Ga60.

Atomic mass measurements: 2010Li02, 2009Ne11, 2008Su19.

Calculated level energies, magnetic and quadrupole moments: 2007Ji14.

^{143}Xe Levels

Cross Reference (XREF) Flags

A ^{248}Cm SF decay

E(level)	J$^\pi$	$T_{1/2}$	XREF	Comments
0.0	5/2$^-$	0.511 s *6*	A	%β^-=100; %β^-n>0 (1988Fa06) μ=−0.4599 *14* (1989Bo03,2011StZZ) Q=+0.93 *3* (1989Bo03,2011StZZ) J$^\pi$: J from hfs (1989Bo03); π from analysis of μ (1989Bo03). $T_{1/2}$: From 2003Be05; others: 0.4 s *1* (1988Fa06), ≈0.3 s (1976PrZX), 0.30 s *3* (1972Am01).
78.8†	(3/2,5/2,7/2)$^+$		A	J$^\pi$: E1 to 5/2$^-$.
322.9†			A	
547.3			A	
567.0			A	
741.1†			A	
1008.2†			A	
1428.9†			A	
1962.7†			A	

† Band(A): γ cascade.

γ(^{143}Xe)

E$_i$(level)	J$_i^\pi$	E$_\gamma$	I$_\gamma$	E$_f$	J$_f^\pi$	Mult.	α†	Comments
78.8	(3/2,5/2,7/2)$^+$	78.8	100	0.0	5/2$^-$	E1	0.411	α(K)exp=0.40 *34* α(K)=0.351 *5*; α(L)=0.0477 *7*; α(M)=0.00963 *14*; α(N+..)=0.00300 *5*
322.9		244.1	100	78.8	(3/2,5/2,7/2)$^+$			
547.3		224.4	100	322.9				
567.0		244.1	100	322.9				
741.1		174.0		567.0				
		193.7	68 *3*	547.3				

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Adopted Levels, Gammas (continued)

$\gamma(^{143}Xe)$ (continued)

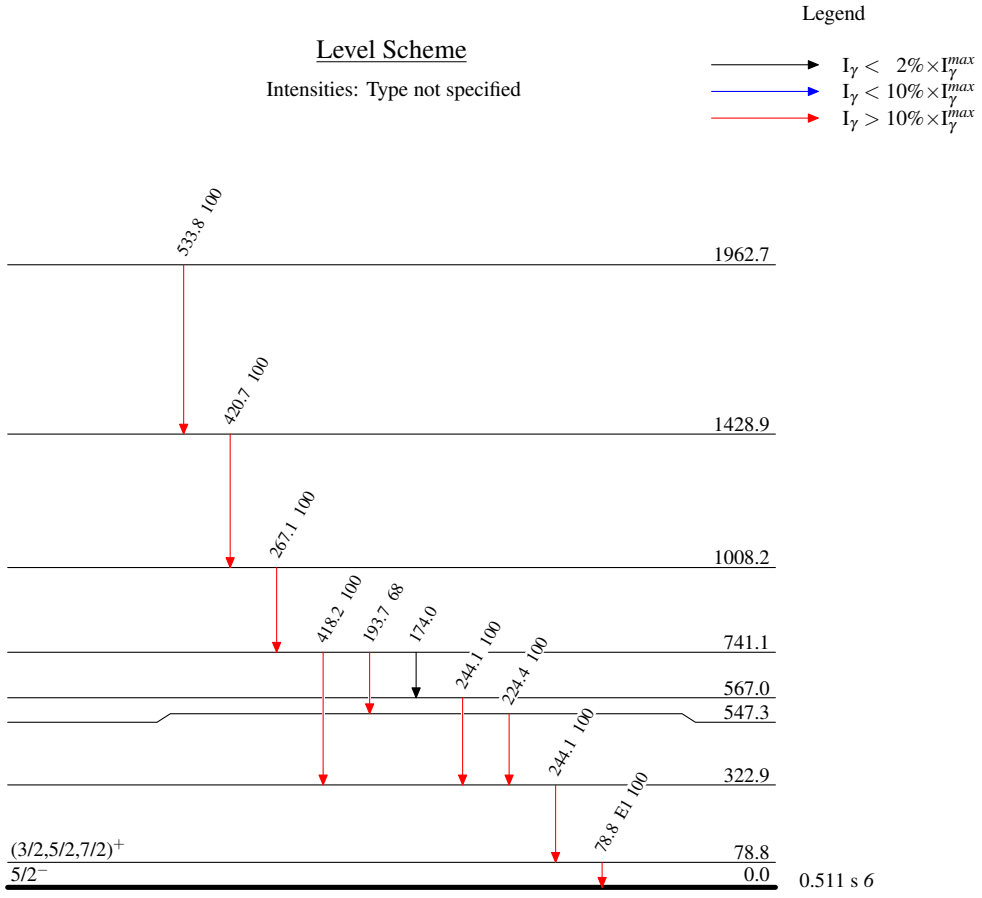
E_i(level)	E_γ	I_γ	E_f
741.1	418.2	100 *5*	322.9
1008.2	267.1	100	741.1
1428.9	420.7	100	1008.2
1962.7	533.8	100	1428.9

† 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, Gammas

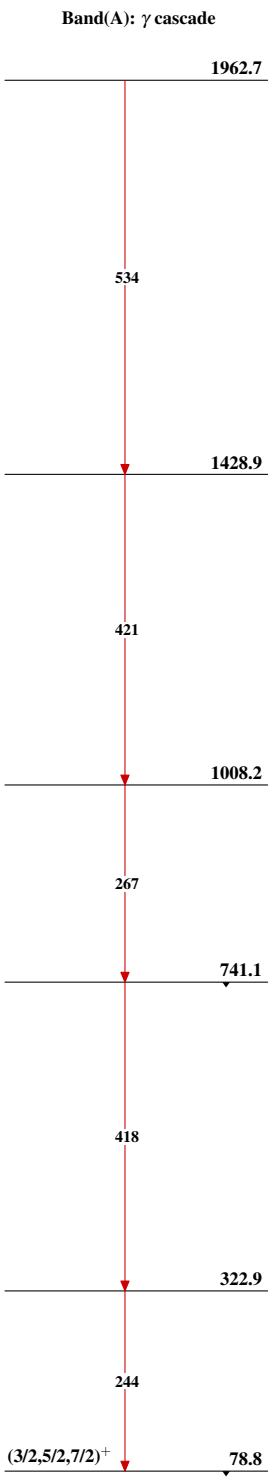
Level Scheme

Intensities: Type not specified



$^{143}_{54}Xe_{89}$

Adopted Levels, Gammas



$^{143}_{54}Xe_{89}$