^{241}Pu(n,Fγ) E=thermal 2003Ge04

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Janos Timar and Zoltan Elekes, Balraj Singh	NDS 121, 143 (2014)	31-May-2014

2003Ge04 (also 1998GeZX): E(n)=thermal. Measured Eγ, Iγ, $\gamma\gamma$, γ(t) using two large-volume Ge detectors and two cooled Si(Li) detectors after separation by the LOHENGRIN spectrometer.

^{129}Sb Levels

E(level)	J$^\pi$	T$_{1/2}$	Comments
0.0	7/2$^+$		J$^\pi$: from Adopted Levels.
1128.41 *20*	(11/2$^+$)		J$^\pi$: taken from literature and odd Sb systematics by 2003Ge04.
1851.0 *3*	(19/2$^-$)	17.7 min *1*	%IT=100 J$^\pi$: comparison to ^{131}Sb and shell model calculations.
1860.8 *3*	(15/2$^-$)	2.2 μs *2*	%IT=100 T$_{1/2}$: measured by 2003Ge04, 1998GeZX. J$^\pi$: comparison to ^{131}Sb and shell model calculations.
2040.5 *4*	(19/2$^+$)		J$^\pi$: comparison to shell model calculations.
2139.1 *4*	(23/2$^+$)	1.1 μs *1*	%IT=100 J$^\pi$: E2 γ to (19/2$^+$).

γ(^{129}Sb)

E$_\gamma$[†]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.	α[‡]	Comments
98.6 *2*	2139.1	(23/2$^+$)	2040.5	(19/2$^+$)	E2	1.73 *3*	α(K)exp=1.1 *2* (2003Ge04) α(K)=1.226 *19*; α(L)=0.406 *7*; α(M)=0.0838 *14* α(N)=0.0153 *3*; α(O)=0.001138 *19* Mult.: from α(K)exp.
189.5 *2*	2040.5	(19/2$^+$)	1851.0	(19/2$^-$)			
722.6 *2*	1851.0	(19/2$^-$)	1128.41	(11/2$^+$)	(M4)	0.0547	α(K)=0.0457 *7*; α(L)=0.00721 *11*; α(M)=0.001462 *21* α(N)=0.000281 *4*; α(O)=2.68×10^{-5} *4* Mult.: from ΔJ^π.
732.4 *2*	1860.8	(15/2$^-$)	1128.41	(11/2$^+$)	(M2)	0.00951 *14*	α=0.00951 *14*; α(K)=0.00820 *12*; α(L)=0.001059 *15*; α(M)=0.000210 *3* α(N)=4.06×10^{-5} *6*; α(O)=4.02×10^{-6} *6* Mult.: from ΔJ^π.
1128.4 *2*	1128.41	(11/2$^+$)	0.0	7/2$^+$			

[†] Δ(Eγ) assigned as 0.2 keV based on a general statement by 2003Ge04.
[‡] 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.

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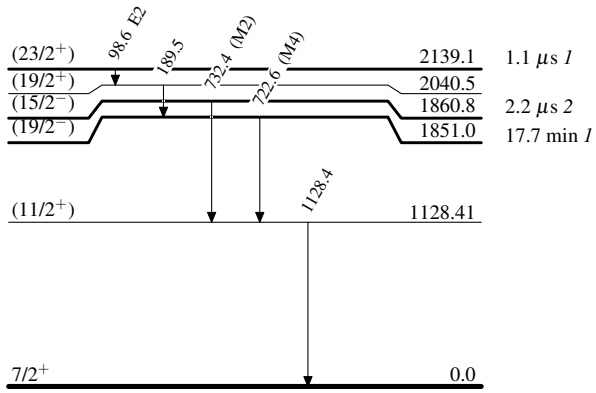
Level Scheme



$^{129}_{51}Sb_{78}$