^{149}Sm(n,γ): av res 1970Bu19

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	S. K. Basu, A. A. Sonzogni	NDS 114, 435 (2013)	1-Apr-2013

The average intensity of primary γ-transitions to low-lying levels was measured during neutron capture in a large number of resonances. 100 eV to 10 keV epithermal neutrons were used. Spectra were taken both in singles and in triple coincidences between the double escape peak and the two annihilation rays. Data below 6 MeV are considered less reliable as contributions from the odd isotopes of Sm increase the complexity of the spectrum.

^{150}Sm Levels

E(level)	J$^{\pi}$[†]	Comments
334.3	2^{+}[#]	
740.4?	(0^{+})	
773.3	4^{+}[‡]	
1045.9	$2^{+},5^{+}$	
1071.8	$3^{-},4^{-}$	
1165.5	$(1^{-},6^{-})$	
1193.6	$2^{+},5^{+}$	
1256.6?	(0^{+})	
1278.8?		J$^{\pi}$: not $2^{+},3^{+},4^{+}$, or 5^{+}.
1357.7	$3^{-},4^{-}$	J$^{\pi}$: adopted value is 5^{-}, which is less likely from Iγ/Eγ^{5} but not completely ruled out.
1416.8	$2^{+},5^{+}$	
1448.7	$3^{+},4^{+}$	
1504.4	$3^{+},4^{+}$	
1642.1	$3^{+},4^{+}$	
1672.7?	$(2^{-},5^{-})$	J$^{\pi}$: could also be<1 or>6.
1684.5	$3^{-},4^{-}$	
1760.3	$3^{-},4^{-}$	J$^{\pi}$: less probably $2^{-},5^{-}$.
1773.3?	$2^{-},5^{-}$	J$^{\pi}$: less probably $3^{-},4^{-}$.
1793.7	$2^{+},5^{+}$	
1818.9	$3^{+},4^{+}$	
1883.3	$2^{+},5^{+}$	
1948.4	$2^{-},5^{-}$	J$^{\pi}$: less probably $3^{-},4^{-}$.
1969.9	$3^{+},4^{+}$	
1979.3	$3^{-},4^{-}$	
2003.8?	$2^{+},5^{+}$	
2019.2?	$2^{+},5^{+}$	
2023.8	$3^{+},4^{+}$	
2043.0	$3^{+},4^{+}$	
2054.5?	$2^{+},5^{+}$	
2061.7	$3^{+},4^{+}$	
2094.8	$2^{+},5^{+}$	
2108.9?	2^{-} to 5^{-}	
2151.4	$(3^{+},4^{+})$	
2193.1	$3^{+},4^{+}$	
2223.7		J$^{\pi}$: not $2^{+},3^{+},4^{+}$, or 5^{+}.
2233.5	2^{-} to 5^{-}	
2247.5	$(3^{+},4^{+})$	
2260.4	$3^{+},4^{+}$	
2280.1	$3^{-},4^{-}$	
2290.3	$3^{+},4^{+}$	
2328.1	$3^{-},4^{-}$	
2359.2?	$3^{+},4^{+}$	
2368.6	$3^{+},4^{+}$	

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^{149}Sm(n,γ): av res 1970Bu19 (continued)

^{150}Sm Levels (continued)

E(level)	J$^{\pi}$[†]	Comments
2452.7	$3^+,4^+$	
2471.7	$3^+,4^+$	J$^{\pi}$: less probably $2^+,5^+$.
2494.3	$3^+,4^+$	
7986.4 *18*	$3^-,4^-$	E(level): authors report S(n)=7986.4 *18* keV, taking account the finite energy of the captured neutron.

[†] Established by γ strength (Iγ/Eγ^5) from average resonance capture.
[‡] From Adopted Levels, used to define the $3^+,4^+$ group.
[#] From Adopted Levels, used to define the $2^+,5^+$ group.