^{119}Sn(p,nγ) 1975Du05,1994Pa19

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	D. M. Symochko, E. Browne, J. K. Tuli	NDS 110,2945 (2009)	1-Dec-2008

1975Du05: E(p)<4 MeV; 90% enriched target (4 mg/cm^2 thick); semi γ, measured DSA $T_{1/2}$.

1994Pa19: E(p)=4.529-5.553 MeV; 86% enriched target (1 mg/cm^2); semi γ, measured neutron Γ(n) and proton Γ(p)=4.1 keV from the decay of 0^+ analog state of ^{120}Sb.

The level scheme is that proposed by 1975Du05.

^{119}Sb Levels

E(level)†	Jπ‡	$T_{1/2}$#	Comments
0	$5/2^+$		
270.45 *4*	$7/2^+$		
644.02 *4*	$1/2^+$	>350 fs	Γ(n)=20.3 *76* keV from 1994Pa19.
699.84 *6*	$3/2^+$,$5/2^+$	>300 fs	Γ(n)=14.2 *76* keV from 1994Pa19.
970.7 *10*	$9/2^+$		
1048.51 *8*	$7/2^+$	>300 fs	
1212.70 *5*	$9/2^+$	>350 fs	
1327.23 *11*	$(1/2^-)$	>76 fs	
1338.69 *10*	$3/2^+$	0.07 ps *+6−3*	Γ(n)=4.2 *27* keV from 1994Pa19.
1413.23 *8*	$3/2^-$	0.12 ps *+10−5*	Γ(n)=7.0 *23* keV from 1994Pa19.
1487.60 *7*	$(3/2^+)$	>215 fs	Γ(n)=2.5 *10* keV from 1994Pa19.
1646.5 *10*	$1/2^+$	>450 fs	Γ(n)=7.2 *34* keV from 1994Pa19.
1749.63 *6*	$3/2^+$	23 fs *+11−7*	
1821.11 *8*	$1/2^+$	55 fs *22*	Γ(n)=7.5 *27* keV from 1994Pa19.
1848.2 *10*		>130 fs	
1875.32 *20*	$(1/2^+,3/2)$	0.08 ps *+21−4*	
1982.0 *10*		0.11 ps *+28−7*	
2269.1 *10*	$1/2^+$,$3/2^+$,$5/2^+$	<14 fs	
2415.5 *10*	$1/2^+$	0.12 ps *+28−6*	

† Deduced by evaluators from least-squares fit to γ-ray energies.

‡ From Adopted Levels.

From DSA by 1975Du05.

γ(^{119}Sb)

Eγ†	Iγ‡	Ei(level)	J_i^π	E_f	J_f^π
270.45 *4*	32	270.45	$7/2^+$	0	$5/2^+$
644.01 *4*	100	644.02	$1/2^+$	0	$5/2^+$
683.21 *10*	18	1327.23	$(1/2^-)$	644.02	$1/2^+$
694.5 *3*	8	1338.69	$3/2^+$	644.02	$1/2^+$
699.85 *6*	110	699.84	$3/2^+$,$5/2^+$	0	$5/2^+$
769.30 *15*	4	1413.23	$3/2^-$	644.02	$1/2^+$
778.10@ *15*		1048.51	$7/2^+$	270.45	$7/2^+$
787.76 *10*	9	1487.60	$(3/2^+)$	699.84	$3/2^+$,$5/2^+$
843.57 *8*	8	1487.60	$(3/2^+)$	644.02	$1/2^+$
970.65#	2	970.7	$9/2^+$	0	$5/2^+$
1048.50 *8*	23	1048.51	$7/2^+$	0	$5/2^+$
1105.57 *8*	3	1749.63	$3/2^+$	644.02	$1/2^+$
1121.30 *10*	4	1821.11	$1/2^+$	699.84	$3/2^+$,$5/2^+$
1177.04 *10*	22	1821.11	$1/2^+$	644.02	$1/2^+$
1212.69 *5*	5	1212.70	$9/2^+$	0	$5/2^+$

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^{119}Sn(p,nγ) 1975Du05,1994Pa19 (continued)

γ(^{119}Sb) (continued)

E_γ [†]	I_γ [‡]	E_i(level)	J_i^π	E_f	J_f^π	E_γ [†]	I_γ [‡]	E_i(level)	J_i^π	E_f	J_f^π
1338.70 *10*	20	1338.69	$3/2^+$	0	$5/2^+$	1848.2[#]	5	1848.2		0	$5/2^+$
1413.19 *8*	41	1413.23	$3/2^-$	0	$5/2^+$	1875.30 *20*	11	1875.32	$(1/2^+,3/2)$	0	$5/2^+$
1646.5[#]	10	1646.5	$1/2^+$	0	$5/2^+$	1982.0[#]	3	1982.0		0	$5/2^+$
1749.65 *8*	18	1749.63	$3/2^+$	0	$5/2^+$	2269.1[#]	4	2269.1	$1/2^+,3/2^+,5/2^+$	0	$5/2^+$
1821.3[@] *3*		1821.11	$1/2^+$	0	$5/2^+$	2415.5[#]	2	2415.5	$1/2^+$	0	$5/2^+$

[†] E(γ′s) are those measured in the ^{119}Te β^+ decay (1975Du04), unless otherwise noted.
[‡] Relative to I(644γ)=100 at E(p)=4 MeV.
[#] Uncertainty of E(γ′s) were not given.
[@] Placement of transition in the level scheme is uncertain.

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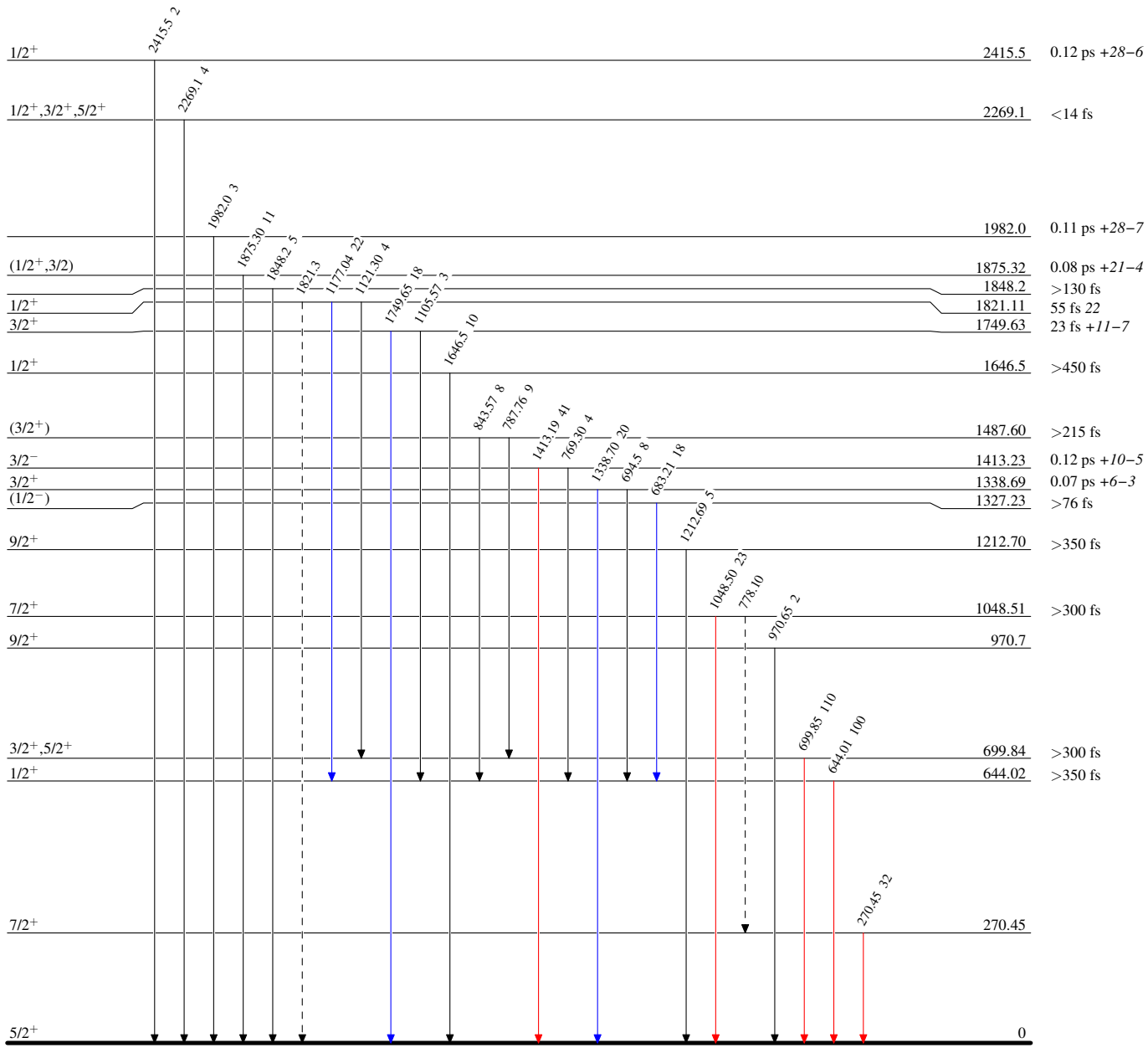
Level Scheme

Intensities: Relative I_γ

Legend
- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)



$^{119}_{51}Sb_{68}$