

Adopted Levels, Gammas

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	S. Lalkovski, J. Timar and Z. Elekes		NDS 161, 1 (2019)	1-Apr-2019

$Q(\beta^-) = -9323$ 22; $S(n) = -9782$ 7; $S(p) = -4444$ 7; $Q(\alpha) = 74$ 4 [2017Wa10](#)

 ^{105}Sn LevelsCross Reference (XREF) Flags

A ^{109}Te α decay (4.4 s)
B $^{50}\text{Cr}(^{58}\text{Ni}, 2p\text{n}\gamma)$

E(level) [†]	J ^π	T _{1/2}	XREF	Comments
0	(5/2 ⁺)	32.7 s 5	AB	$\% \epsilon + \% \beta^+ = 100$; $\% \beta^+ p = 0.011$ 4 (2006Ka44) J ^π : Direct feeding from (5/2 ⁺) in ^{109}Te α decay (4.4 s); systematics. T _{1/2} : from $\gamma(t)$ and X-ray(t) in 2006Ka44 ; Others: 34 s <i>l</i> in 1995Pf01 , 31 s 4 in 1981Ti03 and ≈ 30 s in 1978AuZY .
199.7 3	(7/2 ⁺)	0.33 ns 8	B	J ^π : 200.0 γ to (5/2 ⁺); systematics; yrast state assumed; Also, B(M1)(W.u.)=0.0077 19 consistent with the l-forbidden nature of the 200.0 γ . T _{1/2} : from RDDS in 1994IsZX .
1194.0 3	(9/2 ⁺)		B	J ^π : 994.5 γ to (7/2 ⁺), 1193.4 γ to (5/2 ⁺); yrast state assumed.
1393.8 4	(11/2 ⁺)		B	J ^π : 1194.6 γ to (7/2 ⁺); yrast states assumed.
1848.7 4	(13/2 ⁺)		B	J ^π : 455.0 5 γ to (11/2 ⁺), 654.4 γ to (9/2 ⁺).
1915.6 6	(13/2 ⁺)		B	J ^π : 523 γ to (11/2 ⁺), 721 γ to (9/2 ⁺).
2030.7 4	(15/2 ⁺)		B	J ^π : 181.8 γ to (13/2 ⁺), 637.0 γ to (11/2 ⁺) ; yrast state assumed.
2167.0 6	(15/2 ⁺)		B	J ^π : 137 γ to (15/2 ⁺) ; 252 γ to (13/2 ⁺).
2203.5 5	(17/2 ⁺)	0.38 ns 5	B	T _{1/2} : from RDDS in 1994IsZX . J ^π : 37 γ to (15/2 ⁺); 288 γ to (13/2 ⁺); yrast state assumed.
3012.9 5	(19/2 ⁺)		B	J ^π : 809.3 γ to (17/2 ⁺), 846.0 γ to (15/2 ⁺); yrast state assumed.
3283.8 6	(21/2 ⁺)		B	J ^π : 271.0 γ to (19/2 ⁺), 1080.3 γ to (17/2 ⁺); yrast state assumed.
3427.0 6	(17/2 ⁺)		B	J ^π : 1396.0 to (15/2 ⁺).
3755.2 9	(19/2 ⁺)		B	J ^π : 743 γ to (19/2 ⁺).
3831.6 11	(21/2 ⁺)		B	J ^π : 1628 γ to (17/2 ⁺); yrast state assumed.
4082.7 8	(21/2 ⁺)		B	J ^π : 655.5 γ to (17/2 ⁺).
4429.6 8	(23/2 ⁺)		B	J ^π : 346.6 γ to (21/2 ⁺), 675 γ to (19/2 ⁺); yrast state assumed.
4551.5 10	(23/2 ⁺)		B	J ^π : 1268 γ to (21/2 ⁺).
5375.2 14	(19/2 ⁺ , 21/2 ⁺)		B	J ^π : 1620 γ to (19/2 ⁺).
5529.0 8	(25/2 ⁺)		B	J ^π : 1099.2 γ to (23/2 ⁺), 1448 γ to (21/2 ⁺); yrast state assumed.
5693.3 14	(19/2 ⁺ , 21/2 ⁺)		B	J ^π : 1938 γ to (19/2 ⁺).
5874.1 12	(27/2 ⁻)		B	J ^π : 1323 γ to (23/2 ⁻); yrast state assumed.
6126.3 9	(27/2 ⁺)		B	J ^π : 597.3 γ to (25/2 ⁺).
6582.7 11	(29/2 ⁻)		B	J ^π : 709 γ to (27/2 ⁻); yrast state assumed.
7039.5 [‡] 11	(29/2 ⁻)		B	J ^π : 457 γ to (29/2 ⁻), 913 γ to (27/2 ⁺); yrast state assumed.
7340.5 [‡] 11	(31/2 ⁻)		B	J ^π : 758 γ to (29/2 ⁻); band member.
7728.5 [‡] 15	(33/2 ⁻)		B	J ^π : 388 γ to (31/2 ⁻); band member.
8194.5 [‡] 18	(35/2 ⁻)		B	J ^π : 466 γ to (33/2 ⁻); band member.
8680.5 [‡] 21	(37/2 ⁻)		B	J ^π : 486 γ to (35/2 ⁻); band member.
9136.5 [‡] 23	(39/2 ⁻)		B	J ^π : 456 γ to (37/2 ⁻); band member.
9692 [‡] 3	(41/2 ⁻)		B	J ^π : 555 γ to (39/2 ⁻); band member.
10288 [‡] 3	(43/2 ⁻)		B	J ^π : 596 γ to (41/2 ⁻); band member.

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Adopted Levels, Gammas (continued) ^{105}Sn Levels (continued)[†] From a least-squares fit to E_γ .[‡] Band(A): Magnetic rotational (M1) band from $^{50}\text{Cr}(^{58}\text{Ni}, 2\text{pn}\gamma)$.

$\gamma(^{105}\text{Sn})$								
$E_i(\text{level})$	J_i^π	$E_\gamma^{\dagger\ddagger}$	I_γ	E_f	J_f^π	Mult.	$\alpha^\dagger$	Comments
199.7	(7/2 ⁺)	200.0 [#] 3	100 [#] 5	0	(5/2 ⁺)	[M1]	0.0830	$\alpha(\text{K})=0.0719$ 11; $\alpha(\text{L})=0.00902$ 14; $\alpha(\text{M})=0.00177$ 3; $\alpha(\text{N}+..)=0.000361$ 6 $\alpha(\text{N})=0.000333$ 5; $\alpha(\text{O})=2.89\times 10^{-5}$ 5 $\text{B}(\text{M1})(\text{W.u.})=0.0077$ 19
1194.0	(9/2 ⁺)	994.5 [#] 5	6 [#] 3	199.7 (7/2 ⁺)				
		1193.4 [#] 4	100 [#] 2	0 (5/2 ⁺)				
1393.8	(11/2 ⁺)	1194.6 [#] 4	100 [#]	199.7 (7/2 ⁺)				
1848.7	(13/2 ⁺)	455.0 [#] 5	17 [#] 5	1393.8 (11/2 ⁺)				
		654.4 [#] 4	100 [#] 11	1194.0 (9/2 ⁺)				
1915.6	(13/2 ⁺)	523		1393.8 (11/2 ⁺)				
		721		1194.0 (9/2 ⁺)				
2030.7	(15/2 ⁺)	181.8 [#] 3	100 [#] 5	1848.7 (13/2 ⁺)				
		637.0 [#] 4	49 [#] 8	1393.8 (11/2 ⁺)				
2167.0	(15/2 ⁺)	137		2030.7 (15/2 ⁺)				
		252		1915.6 (13/2 ⁺)				
2203.5	(17/2 ⁺)	37	4 1	2167.0 (15/2 ⁺)		[M1]	9.98	$\alpha(\text{K})=8.60$ 12; $\alpha(\text{L})=1.116$ 16; $\alpha(\text{M})=0.219$ 3; $\alpha(\text{N}+..)=0.0447$ 7 $\alpha(\text{N})=0.0411$ 6; $\alpha(\text{O})=0.00354$ 5 $\text{B}(\text{M1})(\text{W.u.})\leq 0.029$ 9
		172.8 [#] 3	100 [#]	2030.7 (15/2 ⁺)		[M1]	0.1232	$\alpha(\text{K})=0.1066$ 16; $\alpha(\text{L})=0.01343$ 20; $\alpha(\text{M})=0.00263$ 4; $\alpha(\text{N}+..)=0.000538$ 8 $\alpha(\text{N})=0.000495$ 8; $\alpha(\text{O})=4.30\times 10^{-5}$ 7 $\text{B}(\text{M1})(\text{W.u.})\leq 0.0072$ 11
		288		1915.6 (13/2 ⁺)		[E2]	0.0405	$\alpha(\text{K})=0.0340$ 5; $\alpha(\text{L})=0.00529$ 8; $\alpha(\text{M})=0.001051$ 15; $\alpha(\text{N}+..)=0.000206$ 3 $\alpha(\text{N})=0.000193$ 3; $\alpha(\text{O})=1.346\times 10^{-5}$ 19
3012.9	(19/2 ⁺)	809.3 [#] 5	24 [#] 10	2203.5 (17/2 ⁺)				
		846.0 [#] 3	100 [#] 19	2167.0 (15/2 ⁺)				
		982.3 [#] 5	36 [#] 10	2030.7 (15/2 ⁺)				
3283.8	(21/2 ⁺)	271.0 [#] 4	6.1 [#] 1	3012.9 (19/2 ⁺)				
		1080.3 [#] 5	100 [#] 20	2203.5 (17/2 ⁺)				
3427.0	(17/2 ⁺)	1396.0 [#] 5	100 [#]	2030.7 (15/2 ⁺)				
3755.2	(19/2 ⁺)	743	100	3012.9 (19/2 ⁺)				
3831.6	(21/2 ⁺)	1628	100	2203.5 (17/2 ⁺)				
4082.7	(21/2 ⁺)	655.5 5	100	3427.0 (17/2 ⁺)				
4429.6	(23/2 ⁺)	346.6 3	100	4082.7 (21/2 ⁺)				
		675		3755.2 (19/2 ⁺)				
4551.5	(23/2 ⁻)	1268	100	3283.8 (21/2 ⁺)				
5375.2	(19/2 ⁺ , 21/2 ⁺)	1620	100	3755.2 (19/2 ⁺)				
5529.0	(25/2 ⁺)	1099.2 3	100	4429.6 (23/2 ⁺)				
		1448		4082.7 (21/2 ⁺)				
5693.3	(19/2 ⁺ , 21/2 ⁺)	1938	100	3755.2 (19/2 ⁺)				
5874.1	(27/2 ⁻)	1323	100	4551.5 (23/2 ⁻)				
6126.3	(27/2 ⁺)	597.3 3	100	5529.0 (25/2 ⁺)				
6582.7	(29/2 ⁻)	709	100	5874.1 (27/2 ⁻)				

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Adopted Levels, Gammas (continued) $\gamma(^{105}\text{Sn})$ (continued)

$E_i(\text{level})$	J_i^π	$E_\gamma^\ddagger$	E_f	J_f^π	$E_i(\text{level})$	J_i^π	$E_\gamma^\ddagger$	I_γ	E_f	J_f^π
7039.5	(29/2 ⁻)	457	6582.7	(29/2 ⁻)	8194.5	(35/2 ⁻)	466	100	7728.5	(33/2 ⁻)
		913	6126.3	(27/2 ⁺)	8680.5	(37/2 ⁻)	486	100	8194.5	(35/2 ⁻)
7340.5	(31/2 ⁻)	758	6582.7	(29/2 ⁻)	9136.5	(39/2 ⁻)	456	100	8680.5	(37/2 ⁻)
		1214	6126.3	(27/2 ⁺)	9692	(41/2 ⁻)	555	100	9136.5	(39/2 ⁻)
7728.5	(33/2 ⁻)	388	7340.5	(31/2 ⁻)	10288	(43/2 ⁻)	596	100	9692	(41/2 ⁻)

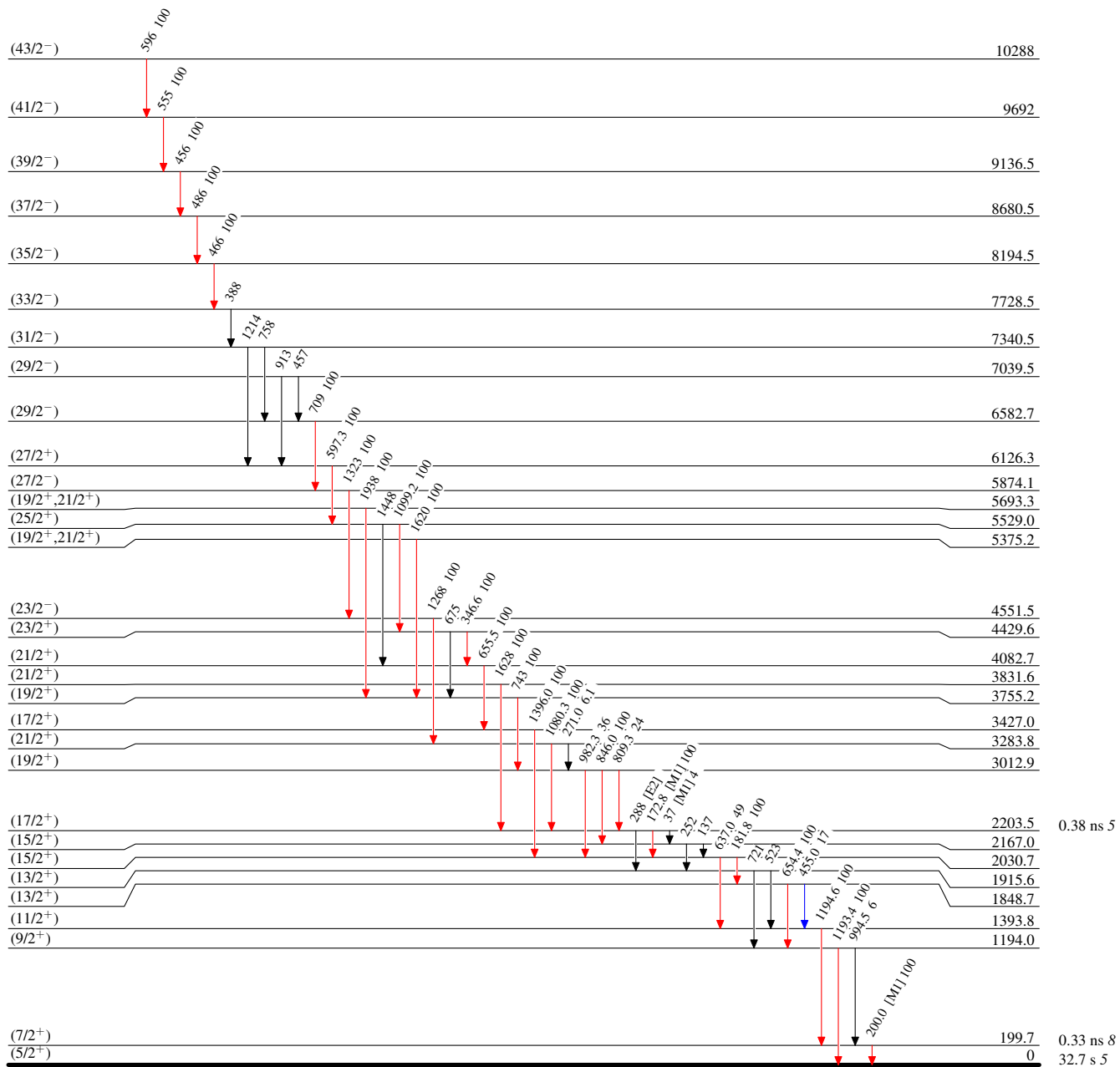
[†] [Additional information 1.](#)[‡] From [1999De50](#), unless noted otherwise.# From [1995Sc50](#).

Adopted Levels, Gammas**Level Scheme**

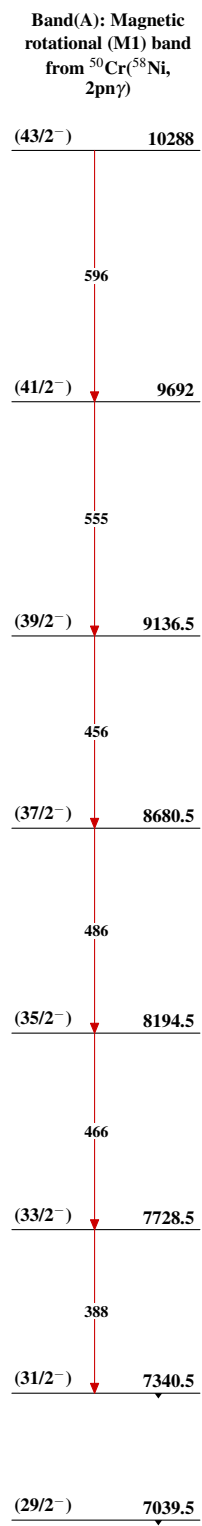
Intensities: Type not specified

Legend

- $\longrightarrow$ $I_\gamma < 2\% \times I_\gamma^{\max}$
 $\longrightarrow$ $I_\gamma < 10\% \times I_\gamma^{\max}$
 $\longrightarrow$ $I_\gamma > 10\% \times I_\gamma^{\max}$



Adopted Levels, Gammas


 $^{105}_{50}\text{Sn}_{55}$