^{124}Sn(α,3nγ):XUNDL-11 2025DeAA

Compiled (unevaluated) dataset from 2025DeAA: Phys Rev C xxx, xxxxxx (2025).
Compiled by L. J. Sun and J. Chen (FRIB, MSU), July 10, 2025.
2025DeAA: 31- and 35-MeV α beams were produced from the K-130 cyclotron at the Variable Energy Cyclotron Center (VECC), India. The target was 8.1-mg/cm^2 ^{124}Sn. The high-spin states of ^{125,126}Te were populated by α-induced fusion-evaporation reactions ^{124}Sn(α,3n) and ^{124}Sn(α,2n), and the deexciting γ rays were detected using the Indian National Gamma Array (INGA), consisting of seven Compton-suppressed HPGe detectors. Four detectors were placed at 90°, two at 125°, and one at 40°. Measured Eγ, Iγ, $\gamma\gamma$-coin, $\gamma\gamma(\theta)$, $\gamma\gamma(\theta)$(DCO), and integrated polarization direction correlation (POL). Deduced levels, J, π, γ-ray multipolarities. Comparisons with the Particle Rotor Model (PRM) calculations.

^{125}Te Levels

E(level)[†]	J^π[‡]	E(level)[†]	J^π[‡]	E(level)[†]	J^π[‡]	E(level)[†]	J^π[‡]
0[#]	$1/2^+$	1569.39[@] *13*	$15/2^+$	2938.53[b] *17*	$25/2^-$	3913.68[b] *23*	$29/2^{(-)}$
35.43[@] *8*	$3/2^+$	1597.14[#] *14*	$13/2^{(+)}$	2946.48 *18*		3931.48 *22*	
144.94[a] *15*	$11/2^-$	1710.92 *15*	$15/2^{(+)}$	3118.57 *20*	$25/2^{(-)}$	3983.74 *21*	$29/2^{(+)}$
321.18 *13*	$9/2^-$	1715.84 *19*		3165.51 *19*		3984.1 *5*	
442.10 *10*	$3/2^+$	1818.7 *4*	$13/2^{(-)}$	3250.60 *19*	$27/2^-$	4034.08 *24*	
463.07[#] *8*	$5/2^+$	1828.04 *19*		3286.92 *19*	$25/2^-$	4054.61[c] *21*	$31/2^-$
525.53 *13*	$7/2^-$	1837.64 *19*		3293.13 *20*	$25/2^{(-)}$	4061.18[&] *22*	$31/2^+$
635.89[@] *10*	$7/2^+$	1850.96[b] *17*	$21/2^-$	3294.2 *4*	$23/2^{(+)}$	4127.58 *21*	$29/2^{(-)}$
642.27 *11*	$7/2^+$	2028.46 *20*	$(17/2^-)$	3331.08[&] *19*	$27/2^+$	4148.08 *24*	
786.94 *14*	$7/2^-$	2057.95 *19*	$(15/2^-)$	3388.67 *20*	$25/2^{(-)}$	4160.0 *6*	
824.08? *16*	13/2	2174.88 *15*	$19/2^+$	3434.26[a] *18*	$27/2^-$	4212.51 *21*	$31/2^{(+)}$
841.06[a] *16*	$15/2^-$	2221.36[#] *15*	$17/2^{(+)}$	3452.27 *19*	$27/2^{(-)}$	4238.3 *4*	$31/2^{(-)}$
1016.30 *14*	$7/2^+$	2262.70[@] *16*	$19/2^+$	3465.58 *19*	$25/2^{(+)}$	4292.39 *29*	$29/2^{(+)}$
1029.92[#] *12*	$9/2^+$	2374.46[a] *17*	$23/2^-$	3471.9[@] *5*	$(27/2^+)$	4331.18 *29*	$29/2^{(+)}$
1072.14 *17*	$5/2^-$	2425.59 *17*	$15/2^{(+)}$	3475.0 *4*	$25/2^{(-)}$	4407.31 *23*	$33/2^{(+)}$
1091.67 *15*	$9/2^+$	2461.39 *24*	$17/2^{(+)}$	3511.07 *20*	$25/2^-$	4432.37[a] *21*	$(31/2^-)$
1115.97 *16*	$9/2^{(-)}$	2547.91 *17*	$23/2^{(-)}$	3526.67 *19*	$27/2^{(+)}$	4484.6[c] *10*	$33/2^-$
1119.44 *16*	$(13/2^-)$	2568.87[&] *17*	$23/2^+$	3535.6 *7*		4593.38[&] *24*	$33/2^+$
1191.22[@] *11*	$11/2^+$	2571.21 *18*	$19/2^{(+)}$	3572.6 *4*		4914.6[c] *14*	$35/2^-$
1209.61 *14*	$11/2^-$	2607.79 *17*	$17/2^{(+)}$	3594.68 *22*	$27/2^{(+)}$	5034.98[&] *26*	$35/2^{(+)}$
1323.81 *14*	$7/2^-$	2653.39 *17*		3693.68 *26*	$27/2^-$	5272.4? *10*	
1389.43 *16*	$9/2^{(-)}$	2691.20 *17*	$19/2^{(+)}$	3697.0 *4*	$27/2^{(+)}$	5452.3[c] *14*	$37/2^-$
1500.67[a] *16*	$19/2^-$	2813.55[#] *17*	$21/2^{(+)}$	3707.9 *4*	$25/2^+$	5732.3[c] *15*	$(39/2^-)$
1514.28? *19*	15/2	2840.80 *19*		3773.13 *20*	$27/2^{(-)}$		
1527.83? *16*	15/2	2863.60[@] *34*	$23/2^+$	3804.98 *22*	$27/2^{(+)}$		
1527.92 *15*	$11/2^{(+)}$	2914.98 *18*		3808.53 *20*	$25/2^{(-)}$		

[†] From a least-squares fit to γ-ray energies (by compiler).
[‡] As given in 2025DeAA, based on measured $\gamma\gamma$(DCO) and γ(pol).
[#] Band(A): Band based on $1/2^+$ ground state, α=+1/2.
[@] Band(a): Band based on $3/2^+$ 35.43-keV level, α=−1/2.
[&] Seq.(D): Sequence based on $23/2^+$ 2568.87-keV level.
[a] Band(B): Band based on 11/2- 144.94-keV level.
[b] Band(b): Band based on 21/2- 1850.96-keV level.
[c] Band(C): Band based on 31/2- 4054.61-keV level.

^{124}Sn(α,3nγ):XUNDL-11 2025DeAA (continued)

γ(^{125}Te)

E_γ[†]	I_γ[†]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[‡]	Comments
35.5[@] *1*		35.43	$3/2^+$	0	$1/2^+$	M1+E2	
116.7 *1*	0.43 *3*	642.27	$7/2^+$	525.53	$7/2^-$	E1	
146.6[#] *2*	0.50 *3*	2174.88	$19/2^+$	2028.46	$(17/2^-)$		
161.5[#] *1*	8.8 *5*	1191.22	$11/2^+$	1029.92	$9/2^+$	M1+E2	R_{DCO}(D)=1.1 *2*.
165.4[#] *1*	22 *1*	3452.27	$27/2^{(-)}$	3286.92	$25/2^-$	(M1+E2)	R_{DCO}(Q)=0.56 *2*.
172.8 *1*	22 *1*	635.89	$7/2^+$	463.07	$5/2^+$	M1+E2	R_{DCO}(D)=1.18 *4*.
176.3 *1*	66 *3*	321.18	$9/2^-$	144.94	$11/2^-$	M1+E2	
194.8[#] *1*	6.9 *4*	4407.31	$33/2^{(+)}$	4212.51	$31/2^{(+)}$	(M1+E2)	R_{DCO}(D)=1.3 *1*.
195[a]		2568.87	$23/2^+$	2374.46	$23/2^-$		
204.3 *1*	5.5 *3*	525.53	$7/2^-$	321.18	$9/2^-$	M1+E2	R_{DCO}(D)=0.81 *1*, POL=−0.27 *8*.
219.8[#] *2*	0.8 *1*	3913.68	$29/2^{(-)}$	3693.68	$27/2^-$		
228.7[#] *1*	2.6 *2*	4212.51	$31/2^{(+)}$	3983.74	$29/2^{(+)}$		
229.1[#] *1*	<0.2	4034.08		3804.98	$27/2^{(+)}$		
242.3[#] *2*	2.6 *1*	2813.55	$21/2^{(+)}$	2571.21	$19/2^{(+)}$	(M1+E2)	R_{DCO}(Q)=0.61 *3*.
261.4[@] *1*	<0.2	786.94	$7/2^-$	525.53	$7/2^-$	M1+E2	
263.6[#] *1*	5.0 *3*	3594.68	$27/2^{(+)}$	3331.08	$27/2^+$	M1+E2	R_{DCO}(Q)=0.91 *3*.
280.0[#] *1*	0.24 *1*	5732.3	$(39/2^-)$	5452.3	$37/2^-$	(M1+E2)	
285.2 *1*	0.22 *2*	1072.14	$5/2^-$	786.94	$7/2^-$	M1+E2	R_{DCO}(D)=1.30 *14*.
308.5[#] *1*	10.5 *6*	2571.21	$19/2^{(+)}$	2262.70	$19/2^+$	(M1+E2)	R_{DCO}(Q)=1.02 *5*.
312.6[#] *3*	2.1 *1*	3250.60	$27/2^-$	2938.53	$25/2^-$		
321.1 *1*	2.6 *1*	642.27	$7/2^+$	321.18	$9/2^-$	E1	R_{DCO}(D)=1.00 *2*, POL=0.10 *7*.
328.8[#] *2*	<0.2	1115.97	$9/2^{(-)}$	786.94	$7/2^-$		
336.7[#] *1*	3.8 *2*	1527.92	$11/2^{(+)}$	1191.22	$11/2^+$	(M1+E2)	R_{DCO}(Q)=0.88 *4*.
339.4[#] *1*	7.3 *4*	3804.98	$27/2^{(+)}$	3465.58	$25/2^{(+)}$	(M1+E2)	R_{DCO}(D)=0.99 *4*.
350.4 *1*	7.5×10^2 *4*	1850.96	$21/2^-$	1500.67	$19/2^-$	M1+E2	R_{DCO}(Q)=0.61 *2*, POL=−0.06 *1*.
354.6[#] *1*	3.3 *2*	3293.13	$25/2^{(-)}$	2938.53	$25/2^-$	(M1+E2)	R_{DCO}(D)=1.57 *12*, POL=−0.17 *3*.
378[#]		3913.68	$29/2^{(-)}$	3535.6			
378.2 *1*	224 *11*	1569.39	$15/2^+$	1191.22	$11/2^+$	E2	R_{DCO}(Q)=1.00 *4*, POL=0.34 *3*.
381[#]		4593.38	$33/2^+$	4212.51	$31/2^{(+)}$	(M1+E2)	
390.5[#] *1*	50 *3*	2938.53	$25/2^-$	2547.91	$23/2^{(-)}$	M1+E2	R_{DCO}(D)=1.01 *1*, POL=−0.09 *2*.
394.1[#] *1*		2568.87	$23/2^+$	2174.88	$19/2^+$	E2	R_{DCO}(Q)=0.85 *2*, POL=0.26 *6*.
394.2[#] *1*	23 *1*	1029.92	$9/2^+$	635.89	$7/2^+$	(M1+E2)	R_{DCO}(Q)=0.66 *2*.
405.9[#] *1*	20 *1*	1597.14	$13/2^{(+)}$	1191.22	$11/2^+$	(M1+E2)	R_{DCO}(Q)=0.69 *5*.
427.7 *1*	89 *18*	463.07	$5/2^+$	35.43	$3/2^+$	M1+E2	R_{DCO}(Q)=0.59 *1*.
430[&]	16[&] *1*	4484.6	$33/2^-$	4054.61	$31/2^-$	M1+E2	E_γ: From 2014As01, rounded to the nearest integer. R_{DCO}(Q)=0.47 *2*.
430[&]	16[&] *1*	4914.6	$35/2^-$	4484.6	$33/2^-$	M1+E2	E_γ: From 2014As01, rounded to the nearest integer. R_{DCO}(Q)=0.47 *2*.
430.6[#] *1*	2.6 *3*	3294.2	$23/2^{(+)}$	2863.60	$23/2^+$	(M1+E2)	R_{DCO}(Q)=1.11 *6*.
441.6[#] *1*	11.3 *6*	5034.98	$35/2^{(+)}$	4593.38	$33/2^+$	(M1+E2)	R_{DCO}(D)=1.09 *6*.
442.1 *1*		442.10	$3/2^+$	0	$1/2^+$	M1+E2	
449.4 *1*		1091.67	$9/2^+$	642.27	$7/2^+$	M1+E2	
463.0 *1*	23 *7*	463.07	$5/2^+$	0	$1/2^+$	E2	R_{DCO}(Q)=0.95 *3*.
465.7 *1*	4.6 *3*	786.94	$7/2^-$	321.18	$9/2^-$	M1+E2	R_{DCO}(D)=1.34 *1*.
465.9[#] *1*	4.3 *2*	3931.48		3465.58	$25/2^{(+)}$	(M1+E2)	

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^{124}Sn(α,3nγ):XUNDL-11 2025DeAA (continued)

γ(^{125}Te) (continued)

Eγ[†]	Iγ[†]	Ei(level)	J^{π}_i	Ef	J^{π}_f	Mult.[‡]	Comments
479.7[#] 2	3.4 2	3913.68	29/2$^{(-)}$	3434.26	27/2$^-$	(M1+E2)	R_{DCO}(D)=1.3 1.
487.4[#] 2	0.30 2	4292.39	29/2$^{(+)}$	3804.98	27/2$^{(+)}$	(M1+E2)	R_{DCO}(D)=1.2 4.
495.8[#] 1	16 3	3434.26	27/2$^-$	2938.53	25/2$^-$	M1+E2	R_{DCO}(D)=1.1 1.
509.1[#] 1	4.3 9	3984.1		3475.0	25/2$^{(-)}$		
513.7[#] 1	11 2	3452.27	27/2$^{(-)}$	2938.53	25/2$^-$	(M1+E2)	R_{DCO}(D)=0.93 6.
519[#]		4432.37	(31/2$^-$)	3913.68	29/2$^{(-)}$		
519.7[#] 1	6 3	1710.92	15/2$^{(+)}$	1191.22	11/2$^+$	(E2)	R_{DCO}(Q)=1.17 5.
523.6 1	231 12	2374.46	23/2$^-$	1850.96	21/2$^-$	M1+E2	R_{DCO}(Q)=0.62 1, POL=−0.05 1.
526.2[#] 2	4.4 3	4331.18	29/2$^{(+)}$	3804.98	27/2$^{(+)}$	(M1+E2)	R_{DCO}(D)=1.19 4.
532.2[#] 1	16 1	4593.38	33/2$^+$	4061.18	31/2$^+$	M1+E2	R_{DCO}(D)=0.99 7, POL=−0.16 12.
537.7 1	1.02 12	5452.3	37/2$^-$	4914.6	35/2$^-$	M1+E2	R_{DCO}(D)=0.87 3.
544.6[#] 3	2.7 2	4238.3	31/2$^{(-)}$	3693.68	27/2$^-$	(E2)	R_{DCO}(D)=1.92 16.
548.8 1	2.0 1	1191.22	11/2$^+$	642.27	7/2$^+$	E2	R_{DCO}(Q)=0.97 1.
553.4[#] 1	<0.2	4148.08		3594.68	27/2$^{(+)}$		
555.3 1	363 18	1191.22	11/2$^+$	635.89	7/2$^+$	E2	R_{DCO}(Q)=1.03 1, POL=0.19 3.
564.0[#] 2	23 4	2938.53	25/2$^-$	2374.46	23/2$^-$	M1+E2	R_{DCO}(Q)=0.61 3, POL=−0.02 3.
567[&]	60[&] 3	1029.92	9/2$^+$	463.07	5/2$^+$	E2	R_{DCO}(D)=1.70 8, POL=0.10 3.
567[&#]	60[&] 3	1597.14	13/2$^{(+)}$	1029.92	9/2$^+$	(E2)	R_{DCO}(D)=1.70 8, POL=0.10 3.
574.2[@] 1		1016.30	7/2$^+$	442.10	3/2$^+$		
578.1[#] 1	<0.2	2840.80		2262.70	19/2$^+$		
590.5[#] 1	0.64 7	1115.97	9/2$^{(-)}$	525.53	7/2$^-$	(M1+E2)	R_{DCO}(D)=0.62 11.
592.2[#] 1	<0.2	2813.55	21/2$^{(+)}$	2221.36	17/2$^{(+)}$		
596.4[#] 1	<0.2	1715.84		1119.44	(13/2$^-$)		
597[#]		3535.6		2938.53	25/2$^-$		
600.6 1	431 22	635.89	7/2$^+$	35.43	3/2$^+$	E2	R_{DCO}(Q)=1.01 1.
600.9[#] 3	78 11	2863.60	23/2$^+$	2262.70	19/2$^+$	E2	R_{DCO}(Q)=0.94 23, POL=0.05 2.
605.5[#] 1	30 7	2174.88	19/2$^+$	1569.39	15/2$^+$	E2	R_{DCO}(Q)=1.14 1, POL=0.08 1.
606.7 1	87 5	642.27	7/2$^+$	35.43	3/2$^+$	E2	Iγ: contains contribution from the neighboring 608.3γ.
608.3[#] 3	37 2	3471.9	(27/2$^+$)	2863.60	23/2$^+$	(E2)	Iγ: contains contribution from the neighboring 606.7γ. R_{DCO}(Q)=1.00 14.
609.1[#] 4	1.83 13	1818.7	13/2$^{(-)}$	1209.61	11/2$^-$	(M1+E2)	R_{DCO}(D)=1.1 7.
624.2[#] 1	5.7 4	2221.36	17/2$^{(+)}$	1597.14	13/2$^{(+)}$	(E2)	R_{DCO}(D)=1.6 5.
647.0[#a] 1		2174.88	19/2$^+$	1527.83?	15/2	(E2)	R_{DCO}(Q)=0.83 4.
652.0[#] 1	14 1	2221.36	17/2$^{(+)}$	1569.39	15/2$^+$	(M1+E2)	R_{DCO}(Q)=0.56 1.
652.6[#] 1	4.0 2	3983.74	29/2$^{(+)}$	3331.08	27/2$^+$	(M1+E2)	R_{DCO}(D)=1.03 4.
659.6 1	1000	1500.67	19/2$^-$	841.06	15/2$^-$	E2	R_{DCO}(D)=1.65 2.
661[#a]		2174.88	19/2$^+$	1514.28?	15/2		
674.3 1	16 1	2174.88	19/2$^+$	1500.67	19/2$^-$	(E1)	R_{DCO}(Q)=1.06 6.
675.3[#] 1	19 1	4127.58	29/2$^{(-)}$	3452.27	27/2$^{(-)}$	(M1+E2)	R_{DCO}(D)=0.63 4.
679[#a]		5272.4?		4593.38	33/2$^+$		
679.1[#a] 1		824.08?	13/2	144.94	11/2$^-$		R_{DCO}(Q)=0.71 2.
684.0 1	0.18 8	1209.61	11/2$^-$	525.53	7/2$^-$		
690.2[#a] 1		1514.28?	15/2	824.08?	13/2	(M1+E2)	R_{DCO}(Q)=0.42 1.
693.3 1	148 12	2262.70	19/2$^+$	1569.39	15/2$^+$	E2	R_{DCO}(Q)=1.04 3, POL=0.10 1.
696.1[@] 1		841.06	15/2$^-$	144.94	11/2$^-$	E2	R_{DCO}(Q)=0.9, POL=0.10 1.

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^{124}Sn(α,3nγ):XUNDL-11 2025DeAA (continued)

γ(^{125}Te) (continued)

E_γ†	I_γ†	E_i(level)	J_i^π	E_f	J_f^π	Mult.‡	Comments
697	939 4	2547.91	23/2$^{(-)}$	1850.96	21/2$^-$		E_γ: From 2014As01, rounded to the nearest integer.
703.0 2	60 9	3250.60	27/2$^-$	2547.91	23/2$^{(-)}$	E2	R_{DCO}(D)=2.33 16.
703#		4034.08		3331.08	27/2$^+$		
703.7#a 1		1527.83?	15/2	824.08?	13/2		R_{DCO}(Q)=0.54 3.
707.7# 6	2.7 2	4160.0		3452.27	27/2$^{(-)}$		
708.6# 1	<0.2	1828.04		1119.44	(13/2$^-$)		
709.0# 3	<0.2	1029.92	9/2$^+$	321.18	9/2$^-$		
709.0# 2	2.5 2	3572.6		2863.60	23/2$^+$		
717.8 1	221 12	2568.87	23/2$^+$	1850.96	21/2$^-$	E1	R_{DCO}(Q)=0.65 1, POL=0.06 4.
718.2# 1	<0.2	1837.64		1119.44	(13/2$^-$)		
730.1 1	61 3	4061.18	31/2$^+$	3331.08	27/2$^+$	E2	R_{DCO}(Q)=0.82 3, POL=0.08 4.
740.1# 1	1.36 8	2914.98		2174.88	19/2$^+$		
744.1# 1	6.6 4	3118.57	25/2$^{(-)}$	2374.46	23/2$^-$	(M1+E2)	R_{DCO}(D)=1.2 1.
754.7# 3	26 3	3693.68	27/2$^-$	2938.53	25/2$^-$	(M1+E2)	R_{DCO}(D)=0.99 3, POL=−0.01 4.
762.2 1	80 4	3331.08	27/2$^+$	2568.87	23/2$^+$	E2	R_{DCO}(Q)=1.07 2, POL=0.16 2.
766#a		4292.39	29/2$^{(+)}$	3526.67	27/2$^{(+)}$		
771.6# 1	<0.2	2946.48		2174.88	19/2$^+$		
798.3&# 1	4.3& 3	1119.44	(13/2$^-$)	321.18	9/2$^-$		R_{DCO}(Q)=0.92 3 from a 909.2γ (E2) gate.
798.3& 1	4.3& 3	1323.81	7/2$^-$	525.53	7/2$^-$	M1+E2	R_{DCO}(D)=1.46 2.
804.0 1	36 2	4054.61	31/2$^-$	3250.60	27/2$^-$	E2	R_{DCO}(Q)=0.86 19.
833.4# 1	4.5 1	3697.0	27/2$^{(+)}$	2863.60	23/2$^+$	(E2)	R_{DCO}(Q)=1.3 1.
834.6# 1	7.3 4	3773.13	27/2$^{(-)}$	2938.53	25/2$^-$	M1+E2	R_{DCO}(D)=1.03 4, POL=−0.04 15.
844.3# 2	16 1	3707.9	25/2$^+$	2863.60	23/2$^+$	M1+E2	R_{DCO}(Q)=0.77 3, POL=−0.46 13.
856.2# 1	9 1	2425.59	15/2$^{(+)}$	1569.39	15/2$^+$	(M1+E2)	R_{DCO}(Q)=0.98 16.
863.9# 1	1.00 9	1389.43	9/2$^{(-)}$	525.53	7/2$^-$	(M1+E2)	R_{DCO}(D)=0.83 15.
870.0# 1	1.00 9	3808.53	25/2$^{(-)}$	2938.53	25/2$^-$	(M1+E2)	R_{DCO}(D)=2.40 17.
873.6 1	48 6	2374.46	23/2$^-$	1500.67	19/2$^-$	E2	R_{DCO}(Q)=1.22 2.
876.0 1	31 3	3250.60	27/2$^-$	2374.46	23/2$^-$	E2	R_{DCO}(D)=2.05 14.
881.5# 1	9.2 5	4212.51	31/2$^{(+)}$	3331.08	27/2$^+$	E2	R_{DCO}(D)=1.66 8.
888.5 1	2.5 2	1209.61	11/2$^-$	321.18	9/2$^-$	M1+E2	R_{DCO}(D)=1.2 5.
892.0# 2	1.2 4	2461.39	17/2$^{(+)}$	1569.39	15/2$^+$	(M1+E2)	R_{DCO}(Q)=0.60 4.
896.7# 1	46 2	3465.58	25/2$^{(+)}$	2568.87	23/2$^+$	M1+E2	R_{DCO}(D)=0.87 2.
902.8# 1	1.5 1	3165.51		2262.70	19/2$^+$		
909.2# 2	1.7 1	2028.46	(17/2$^-$)	1119.44	(13/2$^-$)	(E2)	R_{DCO}(D)=1.75 10.
912.5# 1	54 10	3286.92	25/2$^-$	2374.46	23/2$^-$	(M1+E2)	R_{DCO}(D)=1.20 2.
938.5# 1	1.7 1	2057.95	(15/2$^-$)	1119.44	(13/2$^-$)	(M1+E2)	R_{DCO}(D)=0.63.
957.8# 1	5.4 3	3526.67	27/2$^{(+)}$	2568.87	23/2$^+$	(E2)	R_{DCO}(D)=1.8 3.
975.0 3	22 2	3913.68	29/2$^{(-)}$	2938.53	25/2$^-$	E2	R_{DCO}(D)=1.56 11.
998.1# 1	2.8 2	4432.37	(31/2$^-$)	3434.26	27/2$^-$	(E2)	
1002.6 1	0.20 2	1323.81	7/2$^-$	321.18	9/2$^-$	M1+E2	R_{DCO}(D)=1.3 5.
1014.2# 1	8.3 4	3388.67	25/2$^{(-)}$	2374.46	23/2$^-$	(M1+E2)	R_{DCO}(D)=0.78 8.
1038.4# 1	3.5 4	2607.79	17/2$^{(+)}$	1569.39	15/2$^+$	(M1+E2)	R_{DCO}(Q)=0.78 4.
1047.2# 1	2.7 2	2547.91	23/2$^{(-)}$	1500.67	19/2$^-$	E2	R_{DCO}(Q)=1.00 3, POL=0.01 2.
1059.8# 1	26 1	3434.26	27/2$^-$	2374.46	23/2$^-$	E2	R_{DCO}(D)=1.7 1, POL=0.09 5.
1084.0# 1	<0.2	2653.39		1569.39	15/2$^+$		
1087.7 1	101 5	2938.53	25/2$^-$	1850.96	21/2$^-$	E2	R_{DCO}(D)=1.8 3, POL=0.10 8.

Continued on next page (footnotes at end of table)

^{124}Sn(α,3nγ):XUNDL-11 2025DeAA (continued)

γ(^{125}Te) (continued)

E_γ †	I_γ †	E_i(level)	J^π_i	E_f	J^π_f	Mult. ‡	Comments
1100.5# *4*	14 *1*	3475.0	$25/2^{(-)}$	2374.46	$23/2^-$	(M1+E2)	R_{DCO}(D)=0.60 *3*.
1121.8# *1*	1.9 *2*	2691.20	$19/2^{(+)}$	1569.39	$15/2^+$	(E2)	R_{DCO}(Q)=1.0 *2*.
1136.6# *1*	13 *1*	3511.07	$25/2^-$	2374.46	$23/2^-$	M1+E2	R_{DCO}(D)=0.82 *6*, POL=−0.05 *4*.

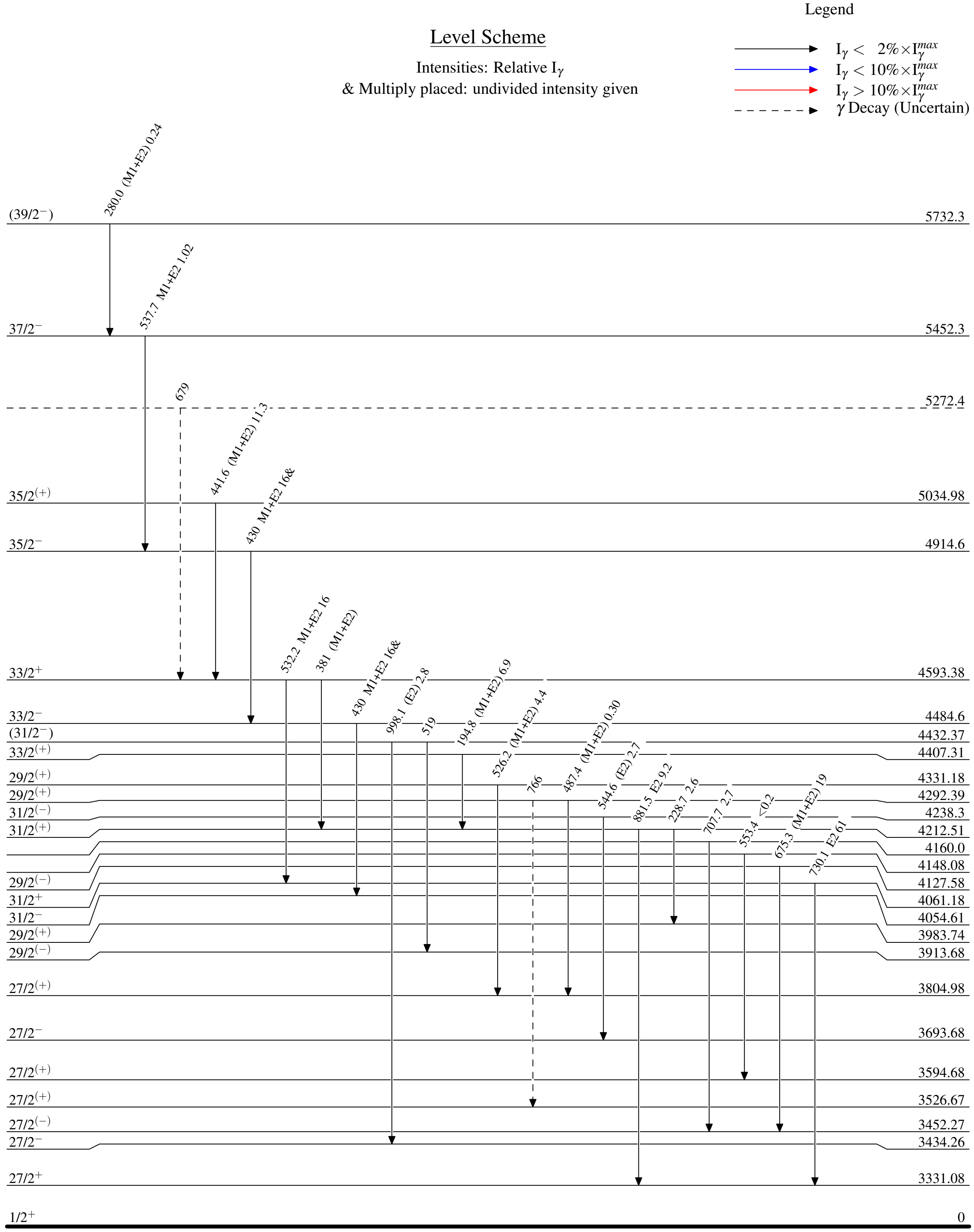
† From 2025DeAA, unless otherwise noted.
‡ From measured $\gamma\gamma$(DCO) and γ(pol) where available, as given under comments, and from proposed level scheme for others. Expected R_{DCO} values are 0.65 *1* for a pure dipole transition in a quadrupole gate and 1.07 *2* for a quadrupole transition in a quadrupole gate. A positive POL indicates an electric type transition, and a negative POL indicates a magnetic type transition.
# Newly observed γ transitions in 2025DeAA.
@ From the Adopted Levels in 2011Ka02 rounded to the nearest 0.1 keV.
& Multiply placed with undivided intensity.
a Placement of transition in the level scheme is uncertain.

^{124}Sn(α,3nγ):XUNDL-11 2025DeAA

Level Scheme

Intensities: Relative I_γ

& Multiply placed: undivided intensity given



$^{125}_{52}Te_{73}$

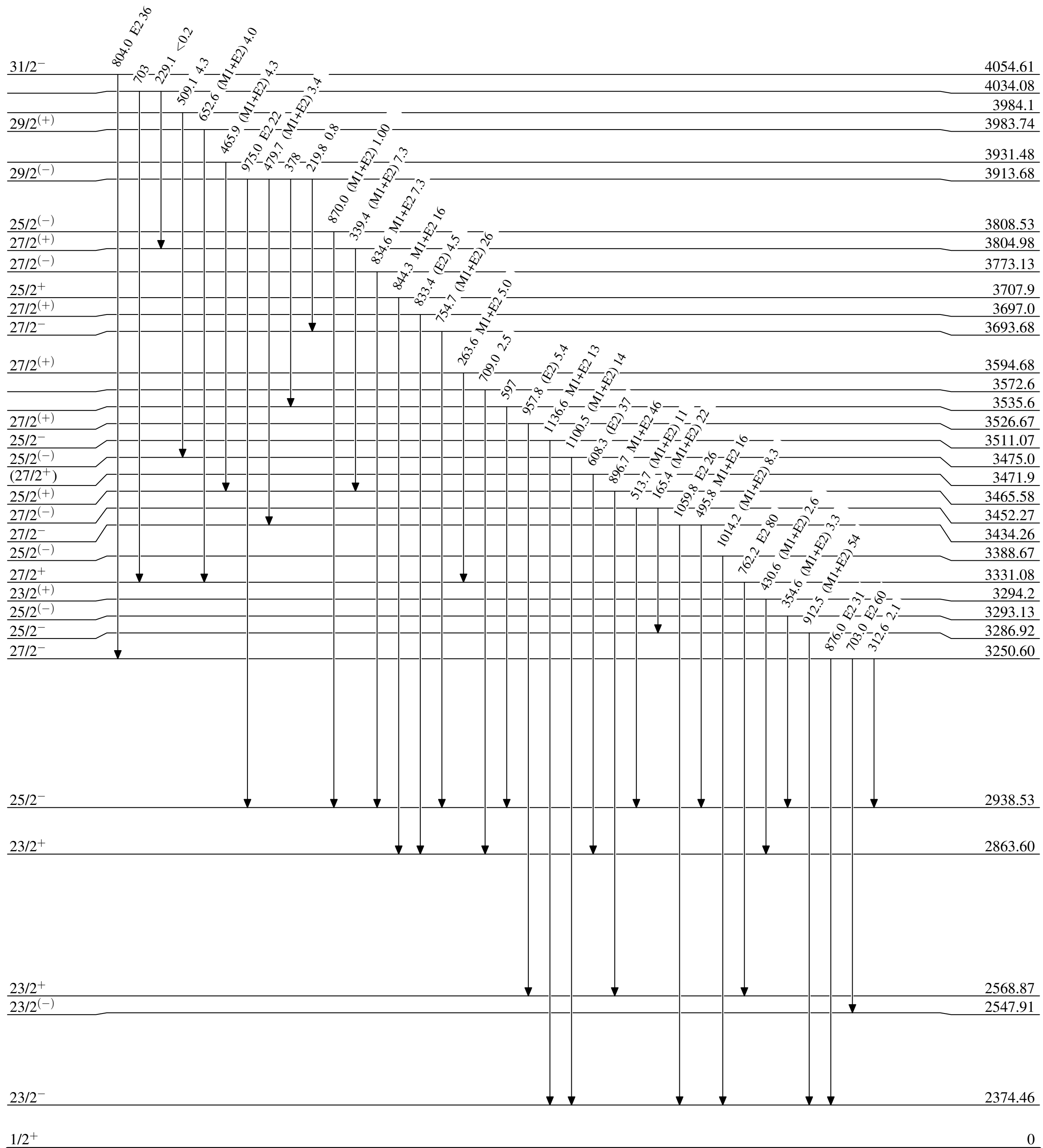
^{124}Sn(α,3nγ):XUNDL-11 2025DeAA

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given

Legend

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



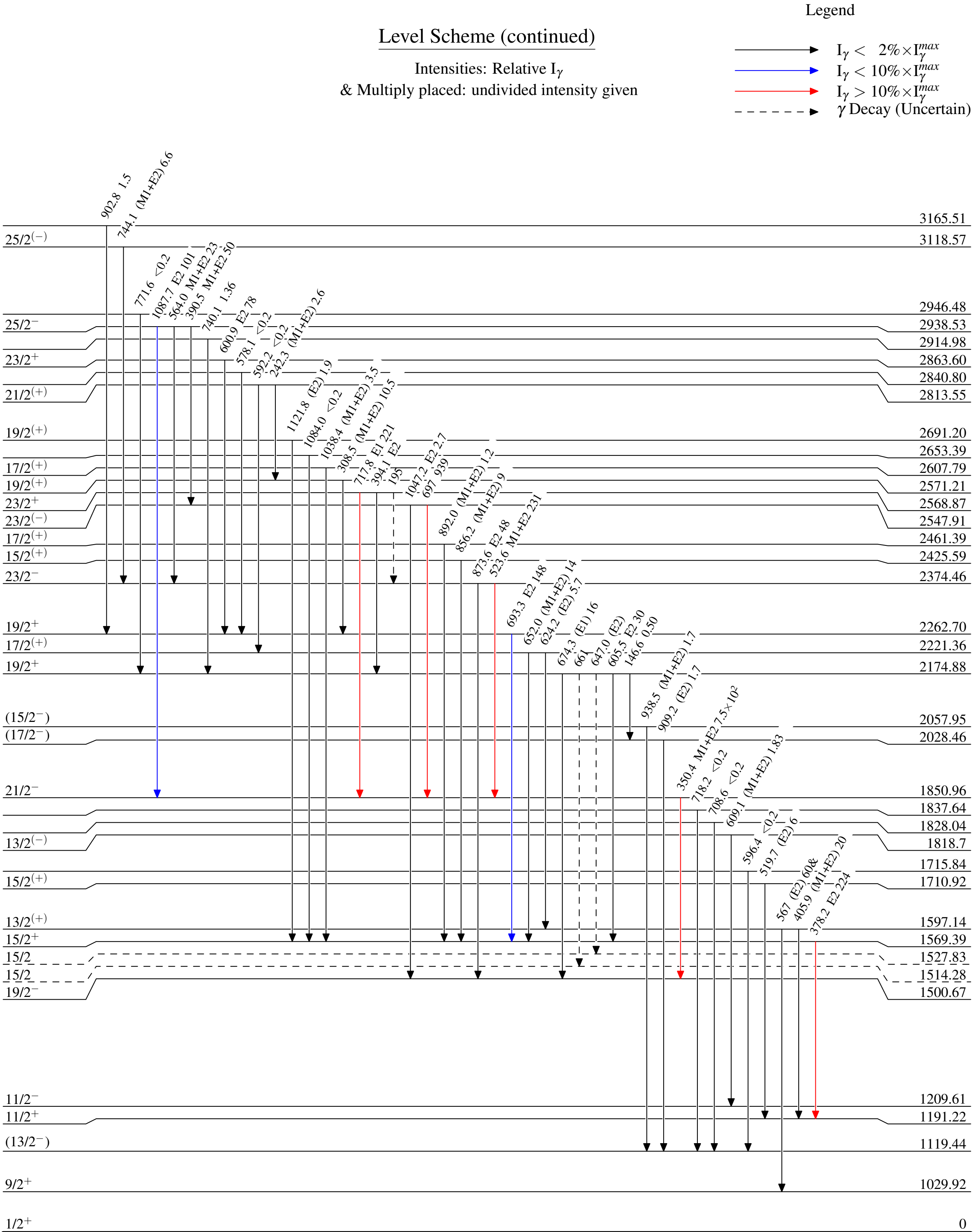
$^{125}_{52}Te_{73}$

^{124}Sn(α,3nγ):XUNDL-11 2025DeAA

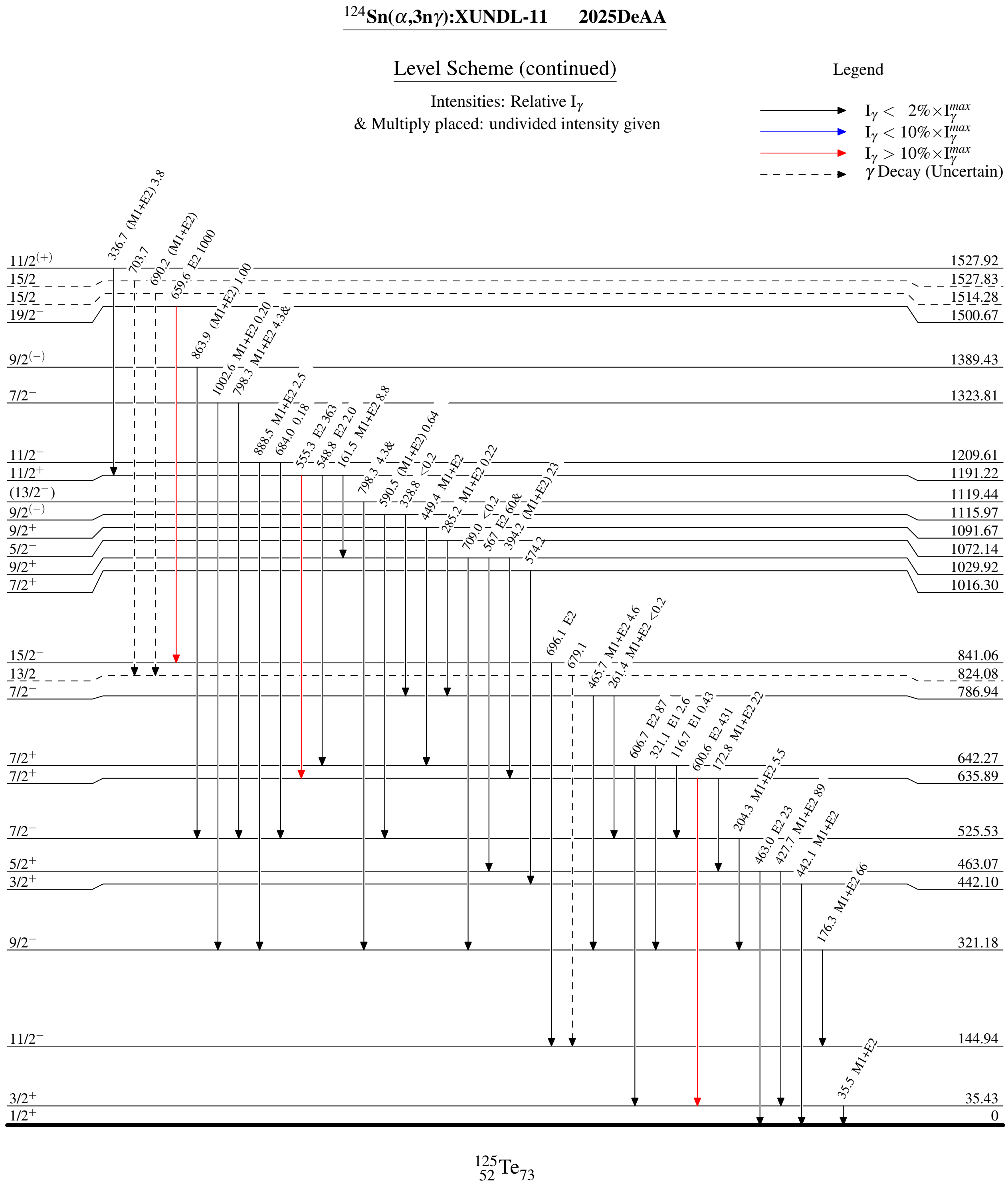
Level Scheme (continued)

Intensities: Relative I_γ

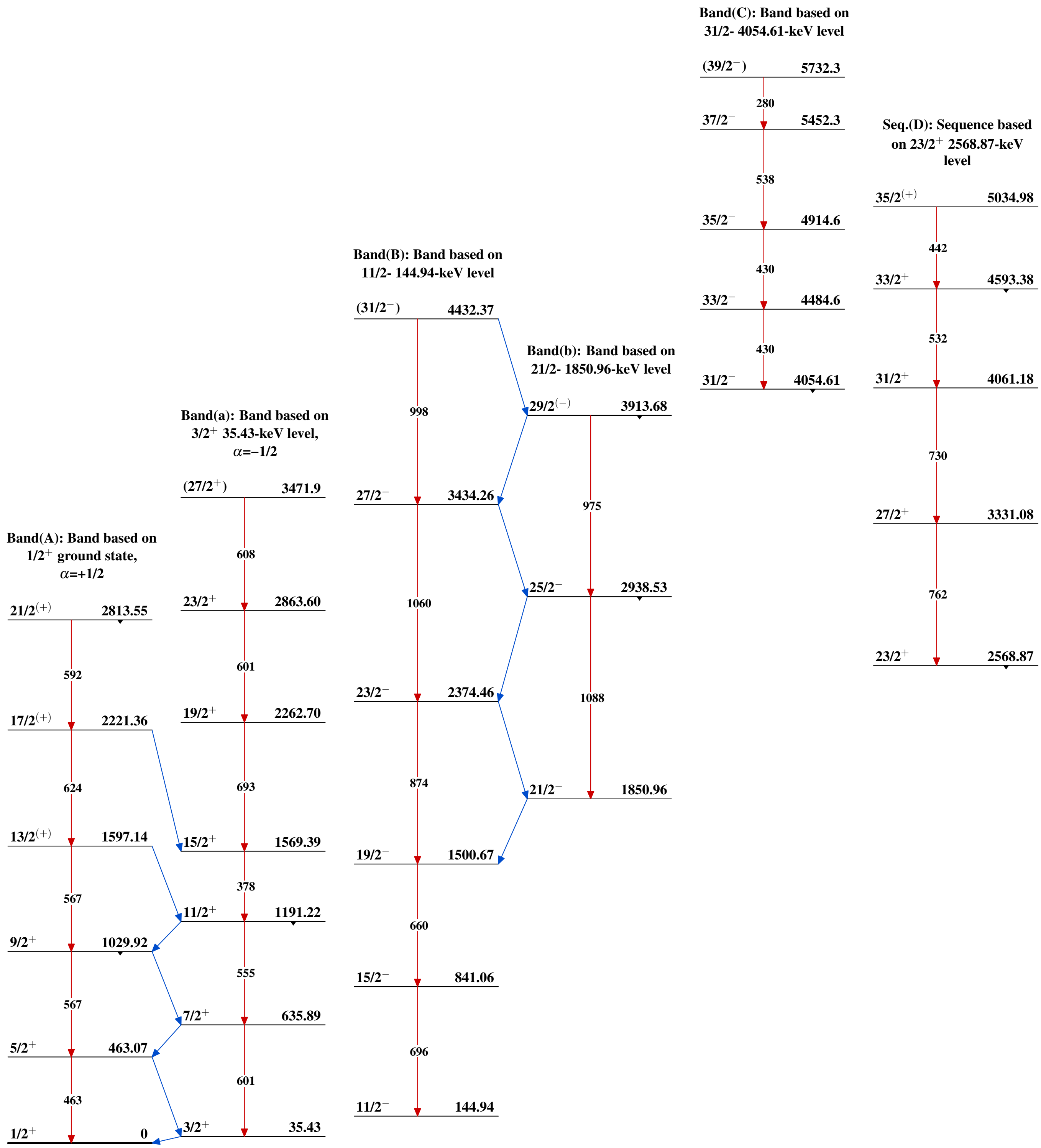
& Multiply placed: undivided intensity given



$^{125}_{52}Te_{73}$


^{124}Sn(α,3nγ):XUNDL-11 2025DeAA
Level Scheme (continued)
Intensities: Relative I_γ
& Multiply placed: undivided intensity given
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)
11/2(+) 1527.92
15/2 1527.83
15/2 1514.28
19/2− 1500.67
9/2(−) 1389.43
7/2− 1323.81
11/2− 1209.61
11/2+ 1191.22
(13/2−) 1119.44
9/2(−) 1115.97
9/2+ 1091.67
5/2− 1072.14
9/2+ 1029.92
7/2+ 1016.30
15/2− 841.06
13/2 824.08
7/2− 786.94
7/2+ 642.27
7/2+ 635.89
7/2− 525.53
5/2+ 463.07
3/2+ 442.10
9/2− 321.18
11/2− 144.94
3/2+ 35.43
1/2+ 0
336.7 (M1+E2) 3.8
703.7
690.2 (M1+E2)
659.6 E2 1000
863.9 (M1+E2) 1.00
1002.6 M1+E2 0.20
798.3 M1+E2 4.3&
888.5 M1+E2 2.5
684.0 0.18
555.3 E2 363
548.8 E2 2.0
161.5 M1+E2 8.8
798.3 4.3&
590.5 (M1+E2) 0.64
328.8 ≤0.2
449.4 M1+E2
285.2 M1+E2 0.22
709.0 ≤0.2
567 E2 60&
394.2 (M1+E2) 23
574.2
696.1 E2
679.1
465.7 M1+E2 4.6
261.4 M1+E2 ≤0.2
606.7 E2 87
321.1 E1 2.6
116.7 E1 0.43
600.6 E2 431
172.8 M1+E2 22
204.3 M1+E2 5.5
463.0 E2 23
427.7 M1+E2 89
442.1 M1+E2
176.3 M1+E2 66
35.5 M1+E2
$^{125}_{52}Te_{73}$

$^{124}Sn(\alpha,3n\gamma)$:XUNDL-11 2025DeAA



$^{125}_{52}Te_{73}$