

$^{102}\text{Ru}(n,\gamma)$ E=th 1979SeZT

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	D. De Frenne	NDS 110, 2081 (2009)	1-Mar-2009

1979SeZT: $^{102}\text{Ru}(n,\gamma)$ E=thermal. Measured: $E\gamma$, $I\gamma$, $\gamma\gamma$ and $\gamma\gamma(\theta)$. Deduced: ^{103}Ru levels, J^π , multipolarity, δ .

Others: 1972SeZV, 1974Ba22, 1982Ba69.

1990Hi02: measured $\gamma(\theta,T,H)$, NMR on oriented ^{103}Ru in Fe.

 ^{103}Ru Levels

E(level)	J^π [†]	Comments
0.0	$3/2^+$	$g=0.1381$ 2 (1990Hi02)
2.77 8	$5/2^+$	
136.09 10	$5/2^+$	
174.14 10	$1/2^+$	
213.38 14	$7/2^+$	
297.28 14	$(7/2)^-$	
346.23 11	$3/2^+$	
404.32 20	$(7/2)^+$	1979SeZT suggest $J=9/2$ from γ decay pattern.
406.00 11	$3/2^+, 5/2^+$	
431.93 15	$1/2^+$	
501.15 13	$(5/2)^+$	
548.10 13	$(1/2)^+$	
554.53 16	$(1/2^+)$	
562.89 14	$(3/2^+, 5/2^+)$	
568.10 17		$J^\pi=(3/2^-)$ given by 1979SeZT.
592.15 13	$(5/2)^+$	
621.8 5	$(5/2^+)$	J^π : adopted value in disagreement with $J\geq 9/2$ suggested by 1979SeZT.
661.28 13	$(3/2)^+$	
697.3 4	$7/2^+, 9/2^+$	
736.84 14	$1/2^+$	
774.94 21	$(3/2^+, 5/2^+)$	
873.48 24	$(3/2^+, 5/2^+)$	
902.96 20	$(\leq 5/2^+)$	
905.50 22	$3/2^+, 5/2^+$	
907.58 19	$(\leq 5/2^+)$	
927.17 19	$1/2^+$	J^π : from (n,γ) $J^\pi=(3/2^-, 5/2^+)$ but in disagreement with adopted value of $1/2^+$.
940.27 20		
991.4 8		
1065.29 25	$3/2^+, 5/2^+, 7/2^+$	
1106.5 7	$1/2^+$	
1110.0 3	$(3/2^+, 5/2^+)$	
1174.00 23	$(3/2)$	
1324.2 4		
1347.12 20		
1400.91 13		
1431.10 18		
1604.42 16		
1717.0 4		
1730.4 3		
1835.88 24		
1880.5 2		
1906.06 23		
1961.94 18	$3/2^+, 5/2^+$	
2003.6 8		
2206.04 19		
2223.6 4		

Continued on next page (footnotes at end of table)

 $^{102}\text{Ru}(n,\gamma) \text{E=th}$ **1979SeZT (continued)**

 ^{103}Ru Levels (continued)

<u>E(level)</u>	<u>J^π[†]</u>
2576.17 25	
(6232.04 11)	1/2 ⁺

[†] From Adopted Levels.

¹⁰²Ru(n, γ) E=th **1979SeZT** (continued)

$\gamma(^{103}\text{Ru})$									
E_γ †	I_γ †‡@	E_i (level)	J_i^π	E_f	J_f^π	Mult.#	$\delta^\#$	$\alpha\&$	Comments
(2.7 1)		2.77	5/2 ⁺	0.0	3/2 ⁺				E_γ : from several observed γ -pairs with $\Delta E=2.7$ keV.
122.5 4	0.07 4	554.53	(1/2 ⁺)	431.93	1/2 ⁺				
133.4 4	0.47 24	136.09	5/2 ⁺	2.77	5/2 ⁺				
136.1 2	12.2 6	136.09	5/2 ⁺	0.0	3/2 ⁺	M1+E2	-0.27 +9-16	0.15 3	
160.1 3	0.28 4	661.28	(3/2) ⁺	501.15	(5/2) ⁺				
171.3 4	0.44 20	174.14	1/2 ⁺	2.77	5/2 ⁺				
174.0 2	12.5 5	174.14	1/2 ⁺	0.0	3/2 ⁺				
182.5 9	0.11 3	736.84	1/2 ⁺	554.53	(1/2 ⁺)				
190.5 3	0.095 19	404.32	(7/2) ⁺	213.38	7/2 ⁺				
201.8 3	0.35 4	548.10	(1/2) ⁺	346.23	3/2 ⁺				
210.2 3	1.88 20	346.23	3/2 ⁺	136.09	5/2 ⁺	M1+E2			Mult.: $\delta=0.03$ +4-5 or 3.2 +5-7.
210.6 3	3.1 3	213.38	7/2 ⁺	2.77	5/2 ⁺	M1+E2			Mult.: $0.4<\delta<9$ if $\delta(287\gamma)<0$ or $-7<\delta<-0.2$ if $\delta(287\gamma)>0$.
213.4 3	0.17 4	213.38	7/2 ⁺	0.0	3/2 ⁺				
231.5 3	0.19 5	406.00	3/2 ⁺ ,5/2 ⁺	174.14	1/2 ⁺				
^x 245.0 3	0.22 4								
246.1 3	0.39 4	592.15	(5/2) ⁺	346.23	3/2 ⁺				
250.5 2	3.56 19	548.10	(1/2) ⁺	297.28	(7/2) ⁻	M1+E2	-0.39 17	0.029 3	
257.5 4	0.52 5	431.93	1/2 ⁺	174.14	1/2 ⁺				
268.6 5	0.19 10	404.32	(7/2) ⁺	136.09	5/2 ⁺				
269.9 4	0.95 7	406.00	3/2 ⁺ ,5/2 ⁺	136.09	5/2 ⁺				
270.4 4	3.93 21	568.10		297.28	(7/2) ⁻	E2		0.0381 6	
287.3 3	0.48 9	501.15	(5/2) ⁺	213.38	7/2 ⁺	M1+E2			Mult.: $-9<\delta<-0.4$ or $0.2<\delta<7$.
294.4 2	8.7 7	297.28	(7/2) ⁻	2.77	5/2 ⁺	M1(+E2)	0.03 3	0.01719 25	
304.4 9	0.08 4	736.84	1/2 ⁺	431.93	1/2 ⁺				
305.4 6	0.02 1	927.17	1/2 ⁺	621.8	(5/2 ⁺)				
314.9 2	0.44 16	661.28	(3/2) ⁺	346.23	3/2 ⁺				
324.7 8	0.02 1	621.8	(5/2) ⁺	297.28	(7/2) ⁻				
330.4 3	0.19 4	736.84	1/2 ⁺	406.00	3/2 ⁺ ,5/2 ⁺				
343.3 2	0.99 5	346.23	3/2 ⁺	2.77	5/2 ⁺				
346.2 2	3.99 13	346.23	3/2 ⁺	0.0	3/2 ⁺				
^x 352.2 3	0.08 3								
^x 353.4 3	0.07 3								
359.0 2	1.21 5	927.17	1/2 ⁺	568.10					
365.0 3	0.26 8	501.15	(5/2) ⁺	136.09	5/2 ⁺				
^x 370.0 3	0.11 5								
373.9 3	0.58 19	548.10	(1/2) ⁺	174.14	1/2 ⁺				
378.4 6	1.40 10	592.15	(5/2) ⁺	213.38	7/2 ⁺	M1+E2			$\alpha(K)=0.0095$ 14; $\alpha(L)=0.00116$ 23; $\alpha(M)=0.00021$ 5 Mult.: $-9<\delta<-0.4$ if $\delta(210\gamma)>0$ or $-0.09<\delta<8$ if $\delta(210\gamma)<0$.
378.4 6	1.40 10	927.17	1/2 ⁺	548.10	(1/2) ⁺	D+Q			Mult.: $\delta<-5.8$ or $\delta>0.42$. If J^π initial and final states are correct, Q fraction excluded.
380.3 3	0.51 3	554.53	(1/2 ⁺)	174.14	1/2 ⁺				

¹⁰²Ru(n,γ) E=th ¹⁹⁷⁹SeZT (continued)

γ(¹⁰³Ru) (continued)

<u>E_γ[†]</u>	<u>I_γ^{‡@}</u>	<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.#</u>	<u>δ[#]</u>
^x 382.9 3	0.09 4						
388.5 3	0.89 17	562.89	(3/2 ⁺ ,5/2 ⁺)	174.14	1/2 ⁺		
^x 390.5 5	0.05 3						
401.4 3	0.09 5	404.32	(7/2) ⁺	2.77	5/2 ⁺		
401.4 3	0.09 5	902.96	(≤5/2 ⁺)	501.15	(5/2) ⁺		
403.1 2	4.46 19	406.00	3/2 ⁺ ,5/2 ⁺	2.77	5/2 ⁺		
406.2 2	0.11 3	406.00	3/2 ⁺ ,5/2 ⁺	0.0	3/2 ⁺		
417.9 3	0.36 12	592.15	(5/2) ⁺	174.14	1/2 ⁺		
426.8 4	0.15 5	562.89	(3/2 ⁺ ,5/2 ⁺)	136.09	5/2 ⁺		
428.8 3	0.47 9	774.94	(3/2 ⁺ ,5/2 ⁺)	346.23	3/2 ⁺		
432.0 2	3.56 13	431.93	1/2 ⁺	0.0	3/2 ⁺		
455.9 3	0.64 5	592.15	(5/2) ⁺	136.09	5/2 ⁺		
487.2 3	0.44 18	661.28	(3/2) ⁺	174.14	1/2 ⁺		
501.2 2	1.57 5	501.15	(5/2) ⁺	0.0	3/2 ⁺		
525.5 3	0.12 1	661.28	(3/2) ⁺	136.09	5/2 ⁺		
^x 528.9 3	0.09 3						
^x 532.7 3	0.03 1						
^x 534.9 3	0.05 1						
^x 539.6 2	0.58 4						
545.5 2	2.85 13	548.10	(1/2) ⁺	2.77	5/2 ⁺		
^x 548.6 3	0.09 1						
554.6 2	3.23 9	554.53	(1/2) ⁺	0.0	3/2 ⁺		
561.2 3	0.20 4	697.3	7/2 ⁺ ,9/2 ⁺	136.09	5/2 ⁺		
561.2 3	0.16 9	1961.94	3/2 ⁺ ,5/2 ⁺	1400.91			
562.9 2	2.77 15	562.89	(3/2 ⁺ ,5/2 ⁺)	0.0	3/2 ⁺		
562.9 2	0.75 10	736.84	1/2 ⁺	174.14	1/2 ⁺		
568.4 3	0.27 7	568.10		0.0	3/2 ⁺		
576.2 2	0.35 6	873.48	(3/2 ⁺ ,5/2 ⁺)	297.28	(7/2) ⁻		
^x 582.6 3	0.05 4						
589.3 3	0.86 5	592.15	(5/2) ⁺	2.77	5/2 ⁺		
592.1 3	0.91 7	592.15	(5/2) ⁺	0.0	3/2 ⁺		
600.6 3	0.22 4	736.84	1/2 ⁺	136.09	5/2 ⁺		
605.7 3	0.10 4	902.96	(≤5/2 ⁺)	297.28	(7/2) ⁻		
^x 613.0 3	0.05 4						
^x 619.6 3	0.07 4						
^x 623.4 3	0.49 10						
625.8 3	1.30 10	1174.00	(3/2)	548.10	(1/2) ⁺	D+Q	-0.13 11
630.0 4	0.34 9	927.17	1/2 ⁺	297.28	(7/2) ⁻		
639.0 7	0.34 5	774.94	(3/2 ⁺ ,5/2 ⁺)	136.09	5/2 ⁺		
^x 654.5 5	0.04 3						
658.8 7	0.62 4	661.28	(3/2) ⁺	2.77	5/2 ⁺		
660.5 3	0.28 13	1065.29	3/2 ⁺ ,5/2 ⁺ ,7/2 ⁺	404.32	(7/2) ⁺		
661.5 3	0.88 4	661.28	(3/2) ⁺	0.0	3/2 ⁺		

¹⁰²Ru(n,γ) E=th ¹⁹⁷⁹SeZT (continued)

γ(¹⁰³Ru) (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
^x 664.7 4	0.12 5					845.8 3	0.14 3	1347.12		501.15	(5/2) ⁺
^x 672.9 3	0.08 3					^x 847.1 7	0.05 3				
^x 676.6 3	0.04 2					852.3 3	0.13 3	1065.29	3/2 ⁺ ,5/2 ⁺ ,7/2 ⁺	213.38	7/2 ⁺
678.1 3	0.03 2	1110.0	(3/2 ⁺ ,5/2 ⁺)	431.93	1/2 ⁺	^x 855.5 7	0.08 3				
^x 681.5 3	0.08 3					863.1 3	0.80 19	1431.10		568.10	
^x 684.2 3	0.10 3					868.2 4	0.49 13	1431.10		562.89	(3/2 ⁺ ,5/2 ⁺)
^x 687.1 7	0.17 4					^x 870.7 6	0.26 7				
692.5 3	0.13 4	905.50	3/2 ⁺ ,5/2 ⁺	213.38	7/2 ⁺	^x 874.1 4	0.50 13				
694.3 3	0.12 4	907.58	(≤5/2 ⁺)	213.38	7/2 ⁺	^x 895.7 6	0.09 5				
^x 695.7 3	0.19 4					^x 898.2 6	0.12 7				
^x 701.6 3	0.12 4					902.5 ^a 6	0.43 ^a 12	902.96	(≤5/2 ⁺)	0.0	3/2 ⁺
704.4 7	0.05 3	1110.0	(3/2 ⁺ ,5/2 ⁺)	406.00	3/2 ⁺ ,5/2 ⁺	902.5 ^a 6	0.43 ^a 12	905.50	3/2 ⁺ ,5/2 ⁺	2.77	5/2 ⁺
706.9 5	0.15 5	1880.5		1174.00	(3/2)	904.9 6	0.73 19	905.50	3/2 ⁺ ,5/2 ⁺	0.0	3/2 ⁺
^x 711.2 7	0.04 2					907.4 6	0.51 13	907.58	(≤5/2 ⁺)	0.0	3/2 ⁺
727.1 4	0.11 3	940.27		213.38	7/2 ⁺	909.2 7	0.07 3	1835.88		927.17	1/2 ⁺
729.7 4	0.10 3	902.96	(≤5/2 ⁺)	174.14	1/2 ⁺	^x 915.3 3	0.12 3				
731.7 4	0.13 5	1906.06		1174.00	(3/2)	^x 918.8 7	0.07 4				
733.3 5	0.28 13	907.58	(≤5/2 ⁺)	174.14	1/2 ⁺	^x 920.9 7	0.08 4				
736.9 3	0.93 22	736.84	1/2 ⁺	0.0	3/2 ⁺	^x 926.7 7	0.11 7				
739.7 4	0.13 5	1400.91		661.28	(3/2) ⁺	929.9 10	0.05 3	1065.29	3/2 ⁺ ,5/2 ⁺ ,7/2 ⁺	136.09	5/2 ⁺
^x 745.7 7	0.03 2					932.4 7	0.59 18	1106.5	1/2 ⁺	174.14	1/2 ⁺
^x 748.7 3	0.04 2					937.5 3	0.93 21	940.27		2.77	5/2 ⁺
753.0 7	0.07 3	927.17	1/2 ⁺	174.14	1/2 ⁺	940.5 5	0.22 9	940.27		0.0	3/2 ⁺
^x 755.0 3	0.19 4					^x 952.7 7	0.07 4				
^x 760.6 7	0.09 3					^x 955.5 7	0.11 7				
769.2 4	0.39 13	905.50	3/2 ⁺ ,5/2 ⁺	136.09	5/2 ⁺	969.1 4	0.19 7	1400.91		431.93	1/2 ⁺
771.5 3	0.51 14	907.58	(≤5/2 ⁺)	136.09	5/2 ⁺	978.0 3	0.32 9	1324.2		346.23	3/2 ⁺
774.9 3	0.64 13	774.94	(3/2 ⁺ ,5/2 ⁺)	0.0	3/2 ⁺	994.9 3	0.32 8	1400.91		406.00	3/2 ⁺ ,5/2 ⁺
778.0 7	0.05 3	991.4		213.38	7/2 ⁺	^x 998.8 7	0.05 3				
^x 782.0 8	0.07 3					^x 1001.2 3	0.27 8				
^x 784.5 8	0.15 4					^x 1029.8 7	0.04 3				
791.3 8	0.16 4	927.17	1/2 ⁺	136.09	5/2 ⁺	1031.6 7	0.23 8	2206.04		1174.00	(3/2)
803.8 4	0.26 9	940.27		136.09	5/2 ⁺	1034.4 5	0.44 12	1961.94	3/2 ⁺ ,5/2 ⁺	927.17	1/2 ⁺
805.2 3	0.29 9	2206.04		1400.91		1036.6 5	0.19 7	1604.42		568.10	
^x 810.8 3	0.20 4					^x 1040.6 5	0.24 13				
^x 816.1 3	0.10 5					^x 1043.1 5	0.34 18				
^x 818.7 3	0.10 5					^x 1048.1 7	0.29 13				
^x 822.5 3	0.05 3					1050.3 7	0.32 12	1347.12		297.28	(7/2) ⁻
^x 823.8 7	0.07 3					^x 1053.2 7	0.20 10				
^x 830.6 4	0.31 7					1076.4 7	0.27 9	2003.6		927.17	1/2 ⁺
^x 832.8 6	0.03 2					1104.6 4	0.30 10	1400.91		297.28	(7/2) ⁻
837.8 3	0.17 7	1400.91		562.89	(3/2 ⁺ ,5/2 ⁺)	1109.7 7	0.15 5	1110.0	(3/2 ⁺ ,5/2 ⁺)	0.0	3/2 ⁺
^x 839.2 7	0.07 3					^x 1156.9 7	0.07 3				
^x 841.7 7	0.08 3					^x 1162.3 7	0.16 7				

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¹⁰²Ru(n,γ) E=th ¹⁹⁷⁹SeZT (continued)

γ(¹⁰³Ru) (continued)

<u>E_γ[†]</u>	<u>I_γ^{‡@}</u>	<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>	<u>E_γ[†]</u>	<u>I_γ^{‡@}</u>	<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>
^x 1168.2 7	0.10 5					^x 1575.0 9	0.20 13				
1172.1 9	0.26 9	1604.42		431.93	1/2 ⁺	1581.1 12	0.32 13	1717.0		136.09	5/2 ⁺
1174.8 9	0.24 9	1835.88		661.28	(3/2) ⁺	1604.4 4	0.95 20	1604.42		0.0	3/2 ⁺
^x 1180.8 5	0.45 13					^x 1608.0 9	0.20 10				
^x 1183.9 5	0.37 13					1614.5 9	0.15 8	1961.94	3/2 ⁺ ,5/2 ⁺	346.23	3/2 ⁺
^x 1194.8 9	0.05 3					^x 1668.6 9	0.13 8				
1198.6 5	0.91 24	1604.42		406.00	3/2 ⁺ ,5/2 ⁺	^x 1673.7 9	0.22 12				
^x 1209.5 4	0.28 12					^x 1693.9 9	0.11 7				
1211.0 4	0.19 9	1347.12		136.09	5/2 ⁺	1699.6 5	0.68 13	1835.88		136.09	5/2 ⁺
^x 1216.3 7	0.19 9					1716.5 9	0.54 14	1717.0		0.0	3/2 ⁺
^x 1218.8 7	0.08 4					1730.3 5	1.07 13	1730.4		0.0	3/2 ⁺
^x 1220.7 7	0.13 7					1732.0 6	0.52 12	1906.06		174.14	1/2 ⁺
^x 1233.2 5	0.52 12					1743.9 9	0.20 5	1880.5		136.09	5/2 ⁺
^x 1235.7 7	0.17 8					^x 1750.1 9	0.09 5				
^x 1240.6 7	0.25 8					^x 1758.9 9	0.09 4				
1243.2 7	0.31 13	1835.88		592.15	(5/2) ⁺	^x 1788.0 8	0.11 4				
1246.2 7	0.66 16	1906.06		661.28	(3/2) ⁺	^x 1805.6 15	0.09 5				
1277.4 9	0.13 5	2206.04		927.17	1/2 ⁺	1838.9 5	0.50 13	2576.17		736.84	1/2 ⁺
^x 1286.4 9	0.12 5					1859.6 5	0.29 10	2206.04		346.23	3/2 ⁺
1288.3 7	0.36 10	1880.5		592.15	(5/2) ⁺	1880.1 10	0.27 9	1880.5		0.0	3/2 ⁺
^x 1293.3 9	0.15 7					^x 1889.8 5	0.58 13				
1295.4 7	0.17 7	1431.10		136.09	5/2 ⁺	^x 1927.1 5	0.13 5				
1298.4 7	0.14 5	1730.4		431.93	1/2 ⁺	^x 1937.8 8	0.25 4				
1298.4 7	0.40 20	2206.04		907.58	(≤5/2 ⁺)	1959.5 7	0.64 25	1961.94	3/2 ⁺ ,5/2 ⁺	2.77	5/2 ⁺
^x 1310.5 8	0.27 9					2027.8 9	0.34 18	2576.17		548.10	(1/2) ⁺
^x 1317.6 8	0.12 5					2031.8 9	0.27 10	2206.04		174.14	1/2 ⁺
^x 1321.2 4	0.32 14					2075.6 9	0.32 17	2576.17		501.15	(5/2) ⁺
^x 1327.9 7	0.24 14					^x 2100.6 9	0.30 16				
1332.2 3	1.27 25	1880.5		548.10	(1/2) ⁺	^x 2180.4 8	0.34 4				
^x 1339.9 7	0.13 5					^x 2190.9 9	0.14 7				
^x 1343.7 5	0.38 9					^x 2204.8 8	0.34 12				
^x 1350.7 10	0.13 4					2223.8 4	1.5 7	2223.6		0.0	3/2 ⁺
1369.6 3	0.70 14	1961.94	3/2 ⁺ ,5/2 ⁺	592.15	(5/2) ⁺	^x 2250.7 9	0.15 8				
1400.6 3	0.47 18	1400.91		0.0	3/2 ⁺	^x 2254.9 9	0.19 8				
1430.0 3	0.61 16	1604.42		174.14	1/2 ⁺	^x 2262.0 9	0.22 10				
1461.6 9	0.27 9	1961.94	3/2 ⁺ ,5/2 ⁺	501.15	(5/2) ⁺	^x 2304.6 9	0.32 5				
1467.7 9	0.23 9	1604.42		136.09	5/2 ⁺	^x 2315.5 9	0.25 13				
^x 1481.1 9	0.27 12					^x 2321.0 9	0.19 10				
^x 1484.5 9	0.27 12					^x 2341.0 9	0.30 8				
^x 1538.5 9	0.11 5					^x 2361.3 9	0.19 7				
1544.3 9	0.23 5	2206.04		661.28	(3/2) ⁺	^x 2371.3 9	0.20 7				
^x 1555.1 9	0.22 5					^x 2396.7 9	0.19 10				
1560.2 9	0.19 8	1906.06		346.23	3/2 ⁺	^x 2424.9 5	0.19 4				
^x 1564.3 5	0.45 10					^x 2438.0 10	0.19 7				

¹⁰²Ru(n,γ) E=th **1979SeZT** (continued)

γ(¹⁰³Ru) (continued)

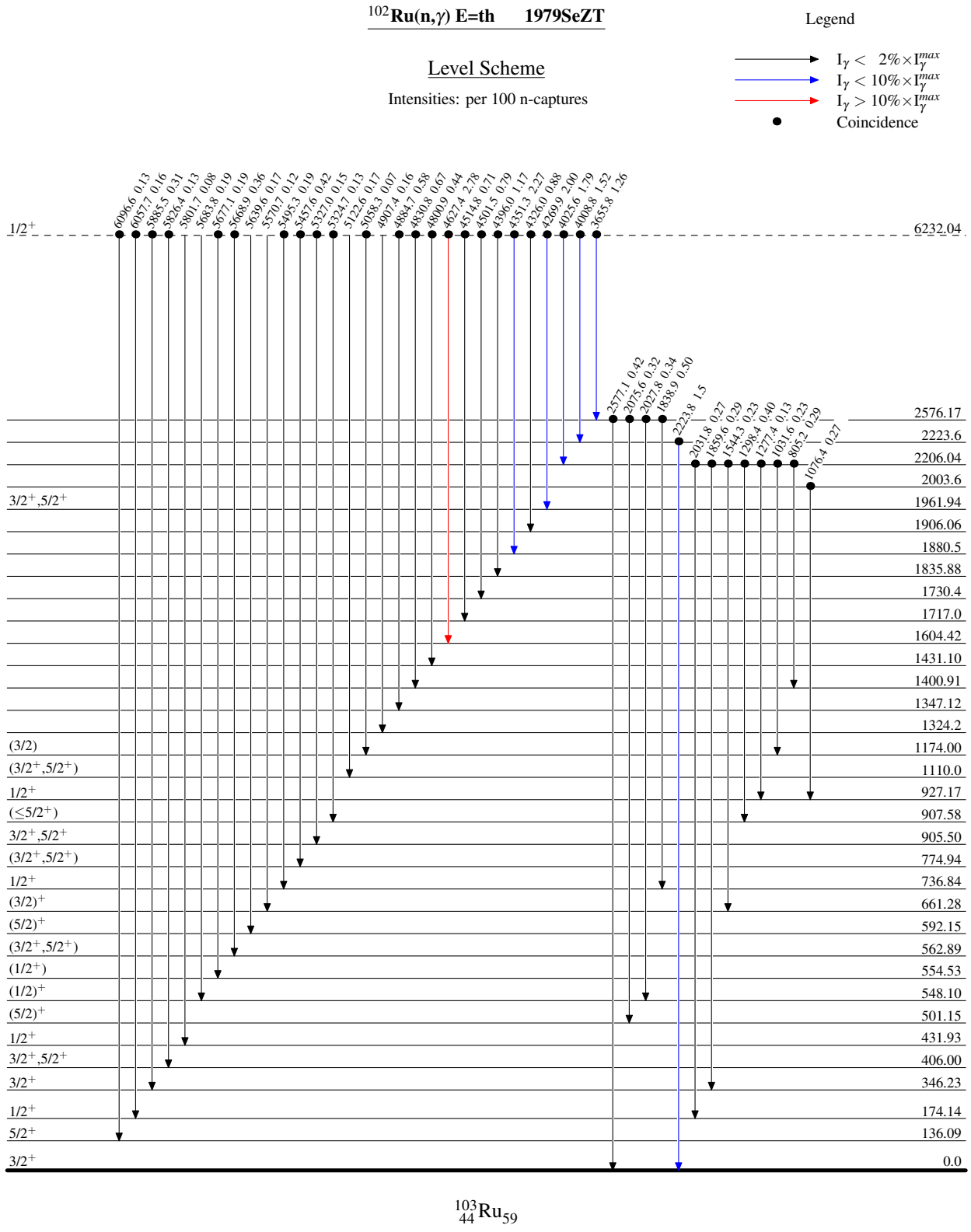
<u>E_γ[†]</u>	<u>I_γ^{†‡@}</u>	<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>	<u>E_γ[†]</u>	<u>I_γ^{†‡@}</u>	<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>
^x 2449.0 5	0.51 13					4025.6 3	1.79 14	(6232.04)	1/2 ⁺	2206.04	
^x 2477.2 9	0.16 8					^x 4065.3 7	0.86 13				
^x 2481.9 9	0.28 13					^x 4123.3 3	0.20 3				
^x 2489.1 15	0.13 8					^x 4151.3 7	0.22 3				
^x 2493.1 15	0.10 5					^x 4159.1 2	0.28 3				
^x 2505.0 12	0.25 13					^x 4166.9 3	0.33 4				
^x 2510.7 12	0.19 7					^x 4218.1 7	0.94 13				
^x 2516.5 9	0.23 7					^x 4236.3 5	0.42 8				
^x 2525.1 9	0.17 9					^x 4260.8 5	0.90 5				
^x 2549.3 9	0.32 14					4269.9 3	2.00 10	(6232.04)	1/2 ⁺	1961.94	3/2 ⁺ , 5/2 ⁺
2577.1 9	0.42 10	2576.17		0.0	3/2 ⁺	4326.0 3	0.88 5	(6232.04)	1/2 ⁺	1906.06	
^x 2619.5 5	0.62 9					^x 4331.6 12	0.29 10				
^x 2625.9 9	0.19 5					4351.3 3	2.27 8	(6232.04)	1/2 ⁺	1880.5	
^x 2765.9 3	0.32 8					4396.0 3	1.17 20	(6232.04)	1/2 ⁺	1835.88	
^x 2830.0 5	0.25 4					4501.5 3	0.79 3	(6232.04)	1/2 ⁺	1730.4	
^x 2892.0 5	0.57 4					4514.8 4	0.71 8	(6232.04)	1/2 ⁺	1717.0	
^x 2940.9 5	0.19 7					4627.4 2	2.78 5	(6232.04)	1/2 ⁺	1604.42	
^x 3053.5 5	0.70 7					^x 4746.3 2	0.24 4				
^x 3164.7 3	0.6 3					4800.9 2	0.44 3	(6232.04)	1/2 ⁺	1431.10	
^x 3221.0 12	0.19 3					4830.8 4	0.67 3	(6232.04)	1/2 ⁺	1400.91	
^x 3276.7 12	0.16 7					4884.7 3	0.58 5	(6232.04)	1/2 ⁺	1347.12	
^x 3287.0 12	0.32 8					4907.4 18	0.16 7	(6232.04)	1/2 ⁺	1324.2	
^x 3290.8 12	0.25 5					^x 4994.8 9	0.07 3				
^x 3320.1 10	0.67 5					5058.3 9	0.07 4	(6232.04)	1/2 ⁺	1174.00	(3/2)
^x 3347.7 5	0.35 7					5122.6 9	0.17 3	(6232.04)	1/2 ⁺	1110.0	(3/2 ⁺ , 5/2 ⁺)
^x 3358.2 10	0.56 12					5324.7 9	0.13 3	(6232.04)	1/2 ⁺	907.58	(≤5/2 ⁺)
^x 3447.3 9	0.12 3					5327.0 9	0.15 3	(6232.04)	1/2 ⁺	905.50	3/2 ⁺ , 5/2 ⁺
^x 3551.6 18	0.22 4					^x 5457.6 9	0.42 4	(6232.04)	1/2 ⁺	774.94	(3/2 ⁺ , 5/2 ⁺)
^x 3629.2 3	0.19 3					5495.3 6	0.19 3	(6232.04)	1/2 ⁺	736.84	1/2 ⁺
3655.8 3	1.26 7	(6232.04)	1/2 ⁺	2576.17		5570.7 15	0.12 4	(6232.04)	1/2 ⁺	661.28	(3/2) ⁺
^x 3675.3 12	0.71 21					5639.6 9	0.17 3	(6232.04)	1/2 ⁺	592.15	(5/2) ⁺
^x 3714.9 8	0.51 5					5668.9 6	0.36 3	(6232.04)	1/2 ⁺	562.89	(3/2 ⁺ , 5/2 ⁺)
^x 3724.3 3	0.32 9					5677.1 15	0.19 4	(6232.04)	1/2 ⁺	554.53	(1/2) ⁺
^x 3749.4 4	0.36 10					5683.8 9	0.19 4	(6232.04)	1/2 ⁺	548.10	(1/2) ⁺
^x 3764.9 3	0.39 3					5801.7 18	0.07 1	(6232.04)	1/2 ⁺	431.93	1/2 ⁺
^x 3787.5 5	0.34 5					5826.4 10	0.12 1	(6232.04)	1/2 ⁺	406.00	3/2 ⁺ , 5/2 ⁺
^x 3859.6 4	0.27 3					5885.5 5	0.31 3	(6232.04)	1/2 ⁺	346.23	3/2 ⁺
^x 3947.1 3	0.88 3					6057.7 3	0.16 3	(6232.04)	1/2 ⁺	174.14	1/2 ⁺
4008.8 5	1.52 13	(6232.04)	1/2 ⁺	2223.6		6096.6 5	0.13 3	(6232.04)	1/2 ⁺	136.09	5/2 ⁺

[†] From 1979SeZT.

$^{102}\text{Ru}(n,\gamma)$ E=th **1979SeZT** (continued)

$\gamma(^{103}\text{Ru})$ (continued)

- ‡ Intensities per 100 n-captures in ^{102}Ru . Absolute values were obtained by normalizing to the 497 γ (90.8% 4) transition in the β^- decay of ^{103}Ru .
Deduced from A_2, A_4 coef in $\gamma\gamma(\theta)$ (**1979SeZT**).
@ Intensity per 100 neutron captures.
& 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.
^a Multiply placed with undivided intensity.
^x γ ray not placed in level scheme.



¹⁰³Ru₅₉

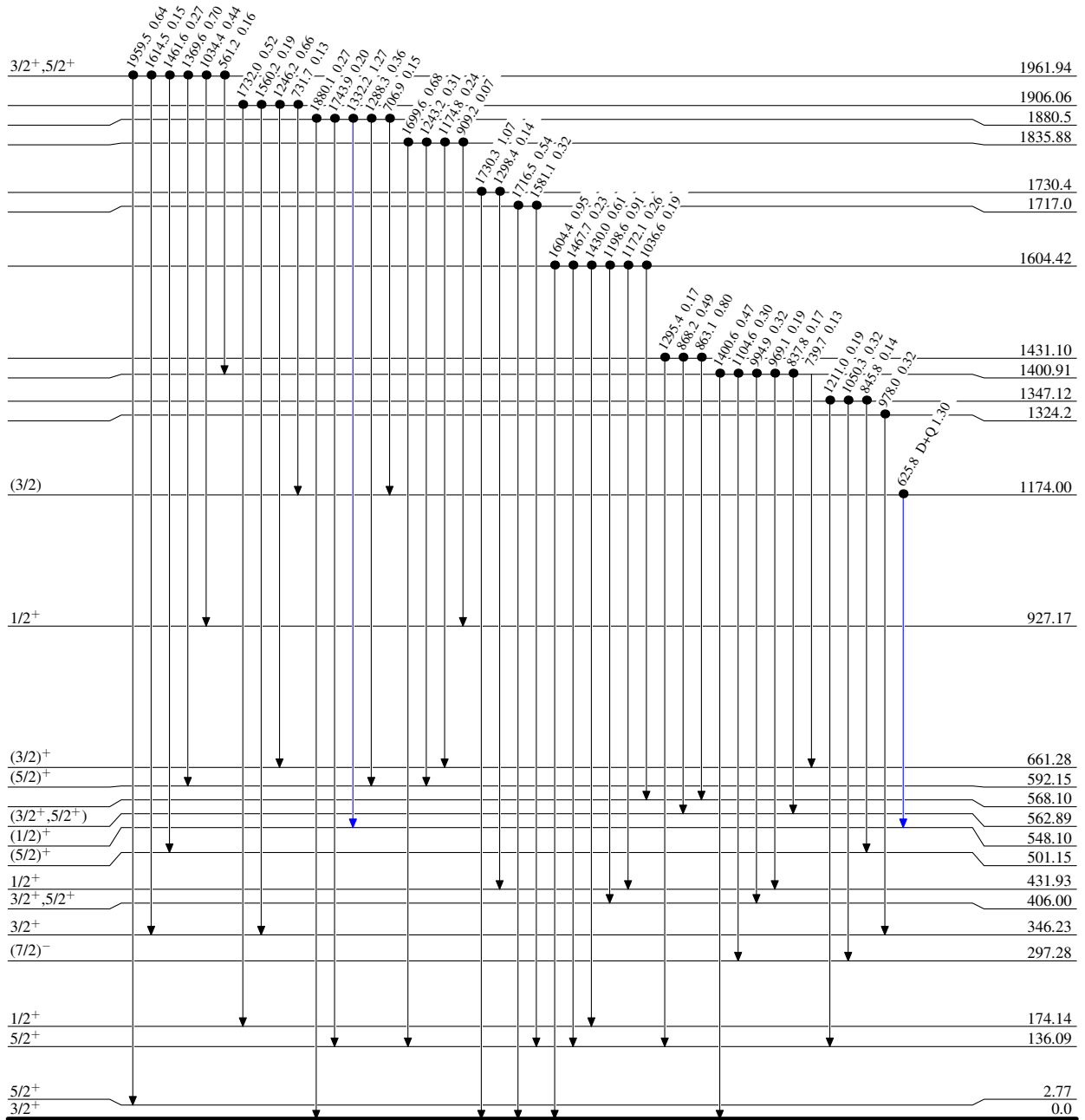
¹⁰²Ru(n,γ) E=th ¹⁹⁷⁹SeZT

Level Scheme (continued)

Intensities: per 100 n-captures

Legend

- I_γ < 2% × I_γ^{max}
- I_γ < 10% × I_γ^{max}
- I_γ > 10% × I_γ^{max}
- Coincidence



¹⁰³Ru₅₉

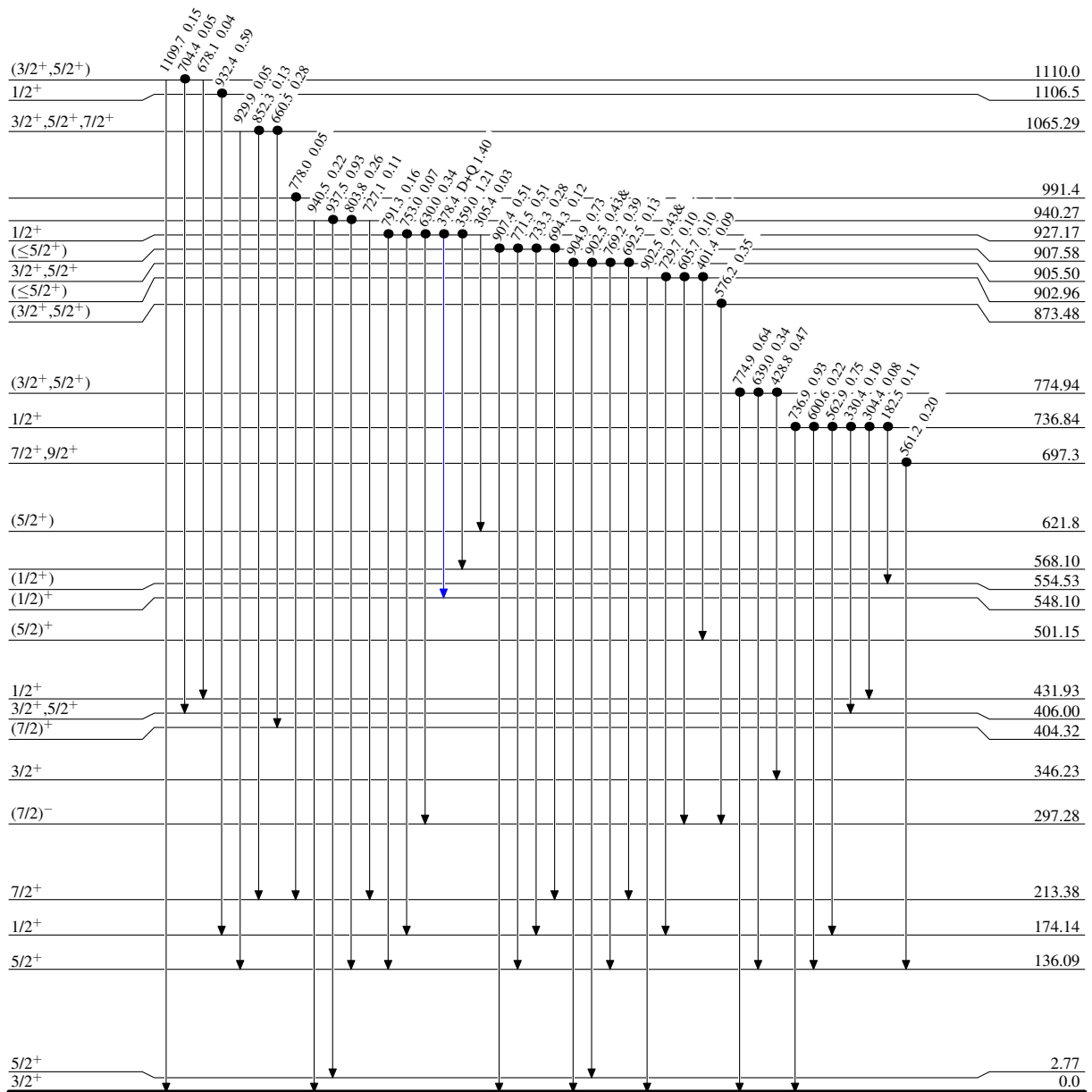
¹⁰²Ru(n,γ) E=th ¹⁹⁷⁹SeZT

Level Scheme (continued)

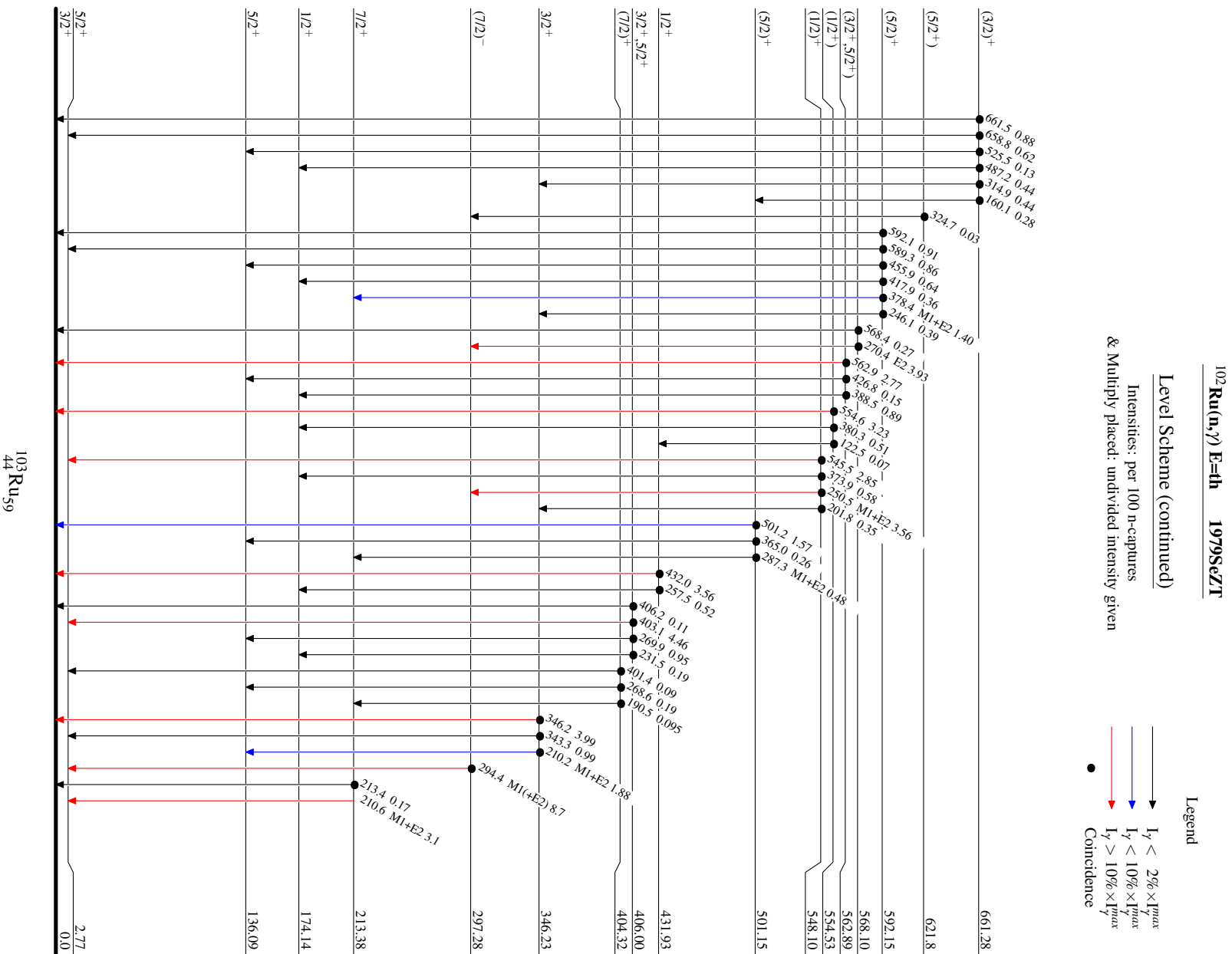
Intensities: per 100 n-captures
& Multiply placed: undivided intensity given

Legend

- I_γ < 2% × I_γ^{max}
- I_γ < 10% × I_γ^{max}
- I_γ > 10% × I_γ^{max}
- Coincidence



¹⁰³Ru₅₉



$^{102}\text{Ru}(n,\gamma)$ E=th 1979SeZT

Level Scheme (continued)

Intensities: per 100 n-captures
& 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)
- Coincidence

