^{124}Te(n,n′γ) 1989GoZK,1978De41,1980De07

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. Katakura, Z. D. Wu	NDS 109, 1655 (2008)	1-Apr-2008

1989GoZK: reactor fast neutrons; enriched target 92.4%; measured Eγ, γ(θ), linear polarity.
1978De41: reactor neutrons, semi γ.
1990Be50: fast reactor neutron; measured Eγ, γ(θ), linear polarity.
1980De07: reactor fast neutrons, measured Eγ, γ(θ), deduced γ-branching, J^π, mixing; enriched target.

^{124}Te Levels

E(level)	J^π†	E(level)	J^π†	E(level)	J^π†	E(level)	J^π†
0.0	0^+	2091.59 *3*	2^+	2529.63 *6*	1^+	2774.87 *7*	3^-,4^-
602.7050 *20*	2^+	2153.29 *4*	0^+	2600.86 *8*	1^+	2808.49 *10*	2^+
1248.574 *15*	4^+	2182.37 *4*	2^+	2618.57 *5*	(3)	2817.02 *9*	2^+
1325.510 *13*	2^+	2224.91 *3*	4^+	2640.85 *8*	2^+	2834.92 *6*	3^-
1657.259 *20*	0^+	2293.76 *3*	3^-	2673.75 *8*	$7^{(-)}$	2858.76 *9*	2,3
1746.955 *25*	6^+	2322.96 *3*	2^+	2681.46 *6*	2^+	2885.83 *7*	3^-
1882.96 *4*	0^+	2335.059 *25*	5^-	2693.71 *6*	3^-	2974.57 *12*	1
1957.847 *19*	4^+	2454.12 *4*	2^+	2701.63 *5*	2^-	2987.93 *12*	1,2^+
2039.291 *17*	3^+	2483.23 *4*	4^+	2710.57 *6*	4^+	3220.80 *14*	2^+
2039.312 *25*	2^+	2521.33 *4*	2^+	2746.78 *15*	$1^{(-)}$	3529.8 *3*	1^-,2^+

† From Adopted Levels.

γ(^{124}Te)

γ(θ) data (1989GoZK)

Eγ(keV)	A_2	A_4	Eγ(keV)	A_2	A_4
498.38	+0.364 *7*	-0.012 *10*	1560.24	-0.5 *2*	-0.3 *3*
525.44	+0.24 *4*	-0.04 *5*	1579.67	-0.010 *11*	-0.029 *17*
557.45	+0.005 *11*	-0.004 *17*	1622.25	+0.25 *2*	-0.04 *3*
602.703	+0.209 *5*	-0.060 *8*	1691.04	-0.171 *8*	0.012 *11*
645.86	+0.305 *5*	-0.042 *7*	1720.25	+0.186 *10*	0.032 *14*
709.26	+0.125 *5*	-0.003 *13*	1851.40	+0.25 *3*	-0.01 *5*
713.78	-0.210 *11*	+0.100 *13*	1918.61	+0.22 *2*	0.00 *2*
722.79	-0.169 *4*	-0.017 *7*	1926.91	+0.14 *7*	+0.10 *9*
790.73	+0.012 *11*	+0.020 *16*	1998.11	+0.01 *3*	-0.04 *5*
827.78	-0.02 *3*	-0.02 *4*	2015.77	-0.47 *8*	+0.12 *11*
856.84	-0.12 *5*	+0.01 *5*	2039.36	+0.259 *14*	-0.100 *18*
926.79	-0.16 *3*	-0.06 *5*	2078.72	+0.14 *2*	-0.02 *3*
976.32	+0.405 *14*	-0.011 *19*	2090.98	-0.06 *3*	-0.01 *2*
1086.48	-0.22 *2*	0.00 *2*	2107.70	-0.27 *6*	0.05 *6*
1325.52	+0.217 *9*	-0.058 *12*	2182.26	+0.10 *5*	0.05 *6*
1355.18	+0.316 *9*	-0.064 *10*	2214.29	+0.17 *5*	0.02 *8*
1368.20	-0.22 *5*	+0.03 *6*	2232.2	-0.20 *10*	-0.11 *14*
1370.00	-0.33 *4*	-0.14 *4*	2256.03	+0.20 *3*	0.07 *4*
1376.12	+0.19 *2*	-0.01 *3*	2283.10	-0.16 *3*	0.00 *4*
1385.12	-0.17 *4*	+0.08 *5*	2454.12	+0.18 *8*	-0.07 *9*
1436.56	+0.291 *5*	+0.055 *7*	2601.2	-0.14 *6*	0.04 *6*
1488.88	+0.122 *12*	+0.002 *14*	2746.7	-0.07 *3*	0.04 *5*
1509.40	-0.07 *3*	-0.01 *4*	2808.47	+0.25 *3*	-0.11 *4*
1526.29	+0.28 *3*	-0.06 *5*	2974.53	-0.05 *7*	0.10 *10*

E_γ [†]	I_γ [‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [#]	δ [@]	Comments
443.88 *4*	0.51 *5*	2483.23	4^+	2039.291	3^+	M1+E2		Mult.: from adopted gammas.
498.38 *2*	2.43 *24*	1746.955	6^+	1248.574	4^+	Q		
525.44 *5*	0.39 *8*	2483.23	4^+	1957.847	4^+	D+Q		δ=−0.16 *6* or +1.3 *2* (1989GoZK).
557.45 *3*	1.06 *11*	1882.96	0^+	1325.510	2^+			
602.703 *2*	100 *10*	602.7050	2^+	0.0	0^+	Q		
645.86 *2*	19.9 *20*	1248.574	4^+	602.7050	2^+	Q		
709.26 *2*	1.98 *20*	1957.847	4^+	1248.574	4^+	M1+E2	−0.332 *8*	
713.78 *2*	2.00 *20*	2039.291	3^+	1325.510	2^+	M1+E2	−3.9 *2*	
722.79 *2*	15.7 *16*	1325.510	2^+	602.7050	2^+	M1+E2	−3.3 *2*	
790.73 *3*	0.66 *7*	2039.291	3^+	1248.574	4^+	D+Q	−4.3 *3*	
827.78 *3*	0.52 *5*	2153.29	0^+	1325.510	2^+			
856.84 *7*	0.192 *19*	2182.37	2^+	1325.510	2^+	D+Q		
926.79 *7*	0.17 *4*	2673.75	$7^{(-)}$	1746.955	6^+	D(+Q)	+0.04 *3*	
968.43 *14*	0.09 *4*	2293.76	3^-	1325.510	2^+			
976.32 *3*	0.85 *9*	2224.91	4^+	1248.574	4^+	M1+E2	+0.68 *6*	
997.31 *17*	0.042 *17*	2322.96	2^+	1325.510	2^+			
1045.12 *14*	0.17 *3*	2293.76	3^-	1248.574	4^+			
1054.55 *2*	2.04 *20*	1657.259	0^+	602.7050	2^+			
1086.48 *2*	1.43 *14*	2335.059	5^-	1248.574	4^+	E1		δ: $\gamma(\theta)$ gives +0.03 *2* for D+Q.
1128.56 *9*	0.118 *24*	2454.12	2^+	1325.510	2^+			
1325.52 *2*	2.35 *24*	1325.510	2^+	0.0	0^+	Q		
1355.18 *3*	1.40 *14*	1957.847	4^+	602.7050	2^+	Q		
1368.20 *7*	0.19 *4*	2693.71	3^-	1325.510	2^+	D(+Q)	−0.02 *4*	
1370.00 *5*	0.35 *7*	2618.57	(3)	1248.574	4^+	D+Q		δ=+0.32 *6* or 9 *+13−2* (1989GoZK).
1376.12 *5*	0.46 *5*	2701.63	2^-	1325.510	2^+	D+Q	−0.07 *3*	
1385.12 *7*	0.22 *4*	2710.57	4^+	1325.510	2^+			
1436.56 *3*	0.64 *6*	2039.291	3^+	602.7050	2^+	D+Q	+3 *+15−2*	I_γ,δ: from 1990Be50.
1436.56 *3*	1.99 *20*	2039.312	2^+	602.7050	2^+	D+Q	+0.13 *4*	δ: from 1990Be50.
1488.88 *3*	2.13 *21*	2091.59	2^+	602.7050	2^+	M1+E2	−0.12 *2*	α(K)exp=0.00076 *12* (1978De41).
1509.40 *6*	0.37 *7*	2834.92	3^-	1325.510	2^+			
1526.29 *6*	0.38 *8*	2774.87	3^-,4^-	1248.574	4^+	E1		α(K)exp<0.00036 (1978De41). δ=−0.10 *5* or +1.17 *12* (J^π(2775)=4^+) (1989GoZK).
1550.55 *13*	0.16 *3*	2153.29	0^+	602.7050	2^+			
1560.24 *14*	0.08 *3*	2885.83	3^-	1325.510	2^+	D(+Q)	−0.2 *2*	
1579.67 *4*	0.89 *9*	2182.37	2^+	602.7050	2^+	D+Q		δ=−0.00 *8* or −3.4 *13* (1989GoZK).
1622.25 *6*	0.45 *9*	2224.91	4^+	602.7050	2^+			
1637.4 *2*	0.06 *2*	2885.83	3^-	1248.574	4^+			
1691.04 *3*	2.19 *22*	2293.76	3^-	602.7050	2^+	E1+M2	+0.051 *6*	
1720.25 *3*	1.30 *13*	2322.96	2^+	602.7050	2^+	D(+Q)	−0.01 *2*	
1851.40 *5*	0.53 *5*	2454.12	2^+	602.7050	2^+	D+Q		δ=−0.02 *4* or +2.1 *3* (1989GoZK).
1895.1 *2*	0.10 *4*	3220.80	2^+	1325.510	2^+			
1918.61 *4*	0.71 *7*	2521.33	2^+	602.7050	2^+	D(+Q)	−0.02 *3*	
1926.91 *6*	0.22 *4*	2529.63	1^+	602.7050	2^+	D(+Q)	−0.14 *10*	
1998.11 *8*	0.27 *5*	2600.86	1^+	602.7050	2^+			
2015.77 *11*	0.124 *24*	2618.57	(3)	602.7050	2^+	D+Q	−0.29 *12*	
2038.13 *8*	0.26 *5*	2640.85	2^+	602.7050	2^+			
2039.36 *6*	1.13 *11*	2039.312	2^+	0.0	0^+	E2		
2078.72 *6*	0.43 *9*	2681.46	2^+	602.7050	2^+	D+Q	−0.14 *3*	
2090.98 *8*	0.57 *6*	2693.71	3^-	602.7050	2^+	D+Q	+0.11 *3*	
2098.7 *3*	0.046 *18*	2701.63	2^-	602.7050	2^+			
2107.70 *10*	0.19 *4*	2710.57	4^+	602.7050	2^+			
2144.1 *2*	0.07 *3*	2746.78	$1^{(-)}$	602.7050	2^+			
2182.26 *10*	0.24 *5*	2182.37	2^+	0.0	0^+			
2205.7 *2*	0.14 *3*	2808.49	2^+	602.7050	2^+			
2214.29 *9*	0.34 *7*	2817.02	2^+	602.7050	2^+			
2232.2 *2*	0.07 *3*	2834.92	3^-	602.7050	2^+	D(+Q)	+0.03 *8*	
2256.03 *9*	0.24 *5*	2858.76	2,3	602.7050	2^+	D+Q	−0.05 *4*	

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^{124}Te(n,n′γ) 1989GoZK,1978De41,1980De07 (continued)

γ(^{124}Te) (continued)

E_γ[†]	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[@]	Comments
2283.10 *8*	0.20 *4*	2885.83	3^-	602.7050	2^+	D+Q	+0.06 *2*	
2385.25 *13*	0.13 *3*	2987.93	$1,2^+$	602.7050	2^+			
2454.12 *8*	0.109 *22*	2454.12	2^+	0.0	0^+	Q		
2601.2 *3*	0.119 *24*	2600.86	1^+	0.0	0^+			
2617.4 *6*	0.10 *4*	3220.80	2^+	602.7050	2^+			
2640.4[&] *4*	0.040 *16*	2640.85	2^+	0.0	0^+			Not observed in ^{124}I ε decay.
2681.6 *2*	0.061 *24*	2681.46	2^+	0.0	0^+			
2746.7 *2*	0.39 *8*	2746.78	$1^{(-)}$	0.0	0^+			
2808.47 *11*	0.20 *4*	2808.49	2^+	0.0	0^+	Q		
2927.1 *3*	0.05 *2*	3529.8	$1^-,2^+$	602.7050	2^+			
2974.53 *12*	0.18 *4*	2974.57	1	0.0	0^+			
2987.6 *3*	0.07 *3*	2987.93	$1,2^+$	0.0	0^+			
3221.0 *2*	0.10 *4*	3220.80	2^+	0.0	0^+			
3529.8 *6*	0.05 *2*	3529.8	$1^-,2^+$	0.0	0^+			

[†] From 1989GoZK.
[‡] From 1989GoZK relative to I(602.76γ)=100; uncertainties are set to be 10% for Iγ>0.5, 20% for Iγ 0.5 to 0.1 and 40% for Iγ<0.1 by evaluators according to author's note.
[#] From γ(θ) and linear polarization in 1989GoZK and α(K)exp in 1978De41.
[@] From γ(θ) in 1989GoZK.
[&] Placement of transition in the level scheme is uncertain.

^{124}Te(n,n′γ) 1989GoZK,1978De41,1980De07

Level Scheme

Intensities: Relative I_γ

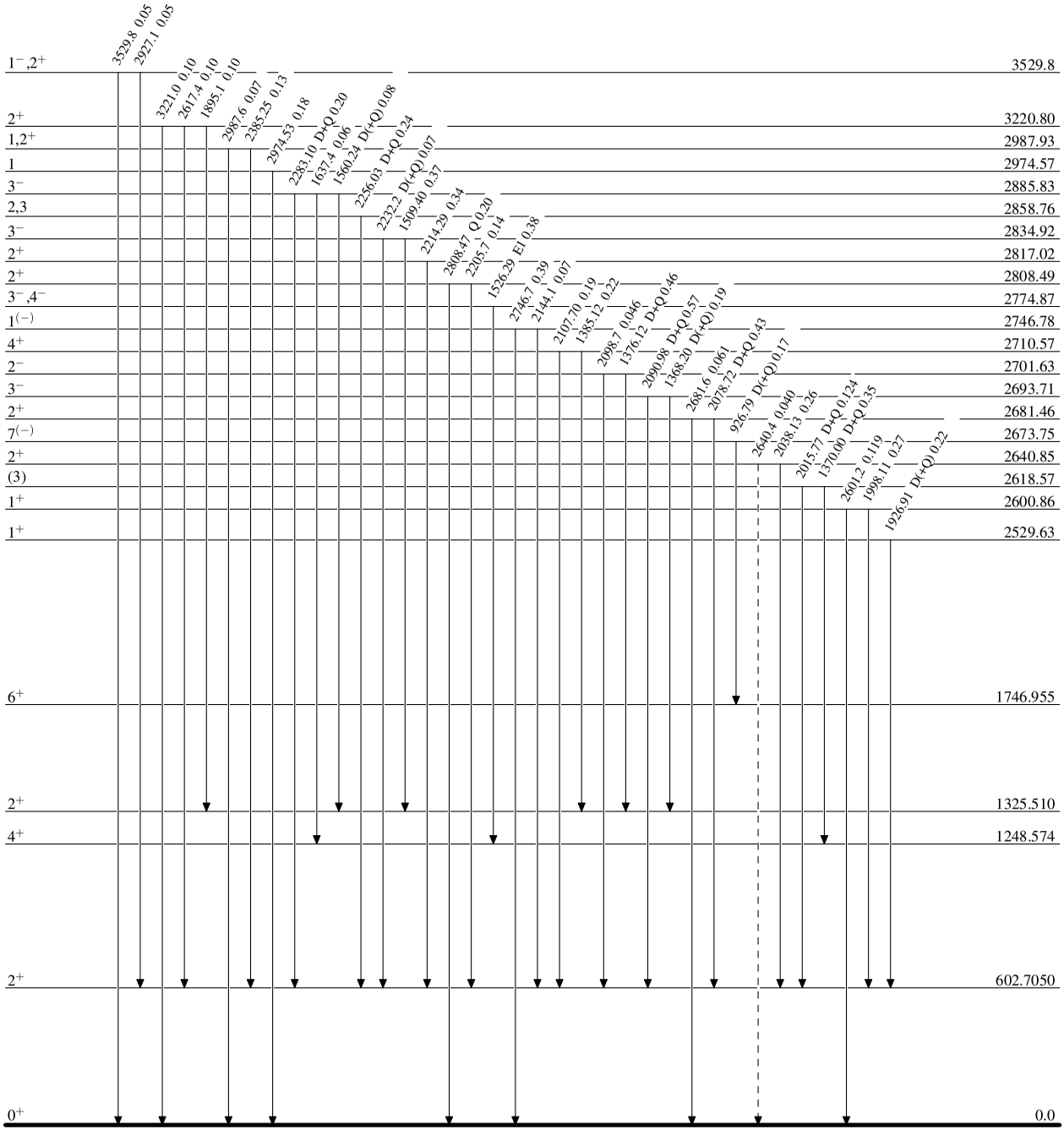
Legend

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

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

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

γ Decay (Uncertain)

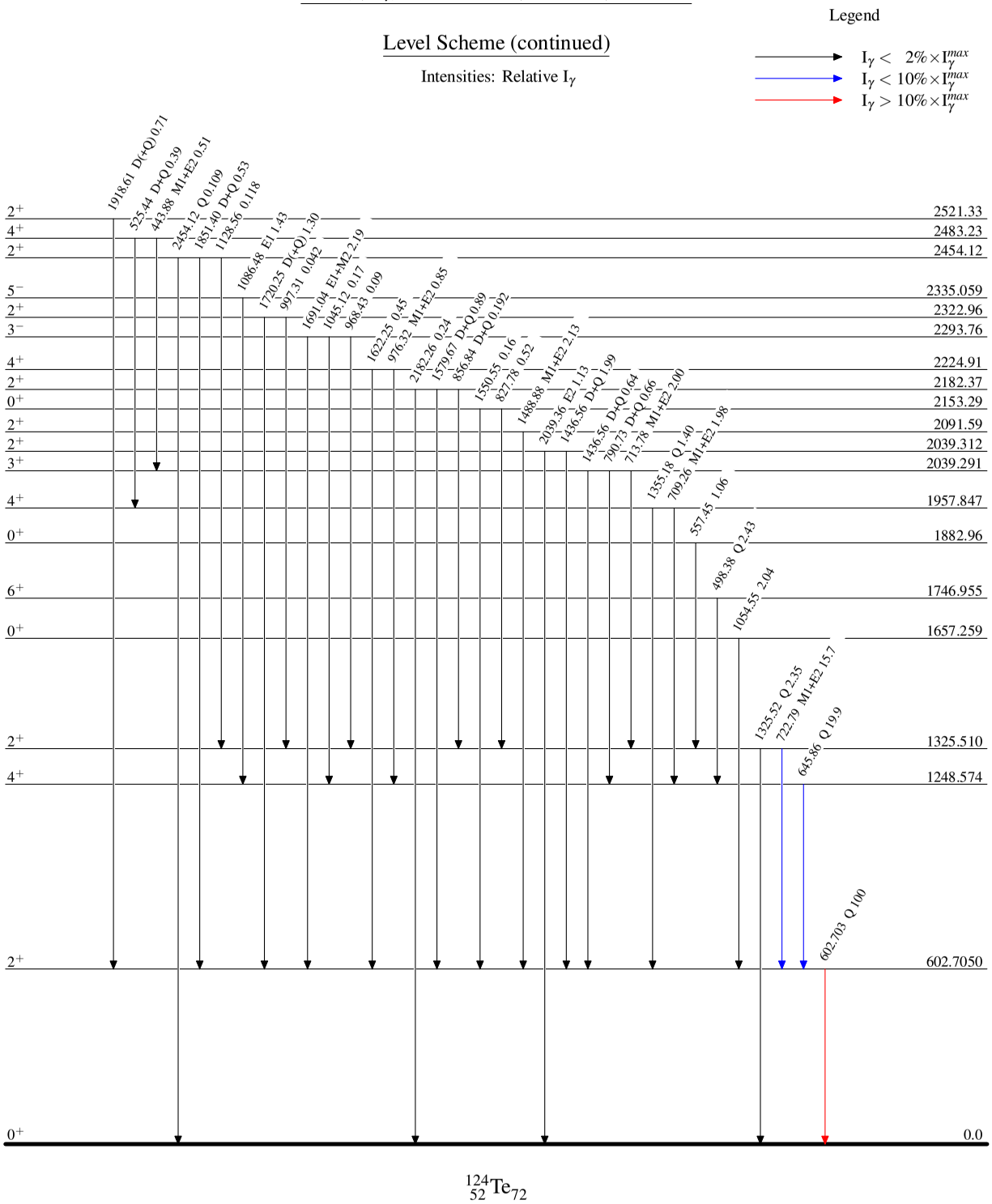


$^{124}_{52}Te_{72}$

^{124}Te(n,n′γ) 1989GoZK,1978De41,1980De07

Level Scheme (continued)

Intensities: Relative I_γ



$^{124}_{52}Te_{72}$