

$^{108}\text{Cd}(n,n'\gamma)$ **1988GoZE**

Type	History		Literature Cutoff Date
	Author	Citation	
Full Evaluation	Jean Blachot	ENSDF	1-Jul-2008

E=fast neutrons (Kurchatov reactor).

Enriched target: 70%.

Measured: γ , $\gamma\gamma$, $\gamma(\theta)$, linear polarization.

[1990Ar20](#) have reported a comparison of the $^{106-116}\text{Cd}$. They give experimental δ which agree with [1988GoZE](#).

 ^{108}Cd Levels

E(level)	J^π^\dagger	E(level)	J^π^\dagger	E(level)	J^π^\dagger	E(level)	J^π^\dagger
0	0^+	2555.22 4	(3^+)	2819.95 6	$2(3^+)$	3267.68 11	
633.0 2	2^+	2565.22 4	5^+	2876.00 7	$3^+,4^+$	3292.5 2	1
1508.44 3	4^+	2601.55 4	5^-	2912.30 5	$2,3^+$	3294.3? 2	$2,3^+$
1601.8 2	2^+	2619.95 4	$3^+,(2)$	2936.10? 12		3316.3? 2	(3^+)
1720.64 3	0^+	2645.59 4	4^+	2993.08 7	$1^+,2^+$	3326.0 2	$3,(2^+)$
1913.42 4	0^+	2677.98 4	1	3005.62 13	1	3453.7? 6	
2146.84 3	3^+	2682.61 4	$1,2^+,3^+$	3031.42 8	$2^+,3$	3482.20? 14	2
2162.70 3	2^+	2707.06 4	5^-	3048.36? 14		3535.8? 2	$(3,4)^+$
2202.20 3	3^-	2738.83 6	4^+	3057.0 2	(7^-)	3540.24? 14	
2239.33 4	4^+	2762.76 6	3^+	3081.76 8	3^+	3554.85? 15	(3^+)
2365.75 3	2^+	2805.02 5	3	3171.02 11	$2,3^+$	3559.59? 18	$(0^+,1^+)$
2374.54 4	(0^+)	2807.96 6	$(5^+),6^+$	3181.67 9			
2486.29 4	2^+	2810.08 4	$3^+,4^-$	3194.79? 12	2^+		
2541.38 4	6^+	2816.6 2	2^+	3264.91? 11	$1,2^+,3$		

† From $\gamma(\theta)$ and linear polarization.

 $\gamma(^{108}\text{Cd})$

E_γ	I_γ^\dagger	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. ‡	δ	Comments
242.74 5	0.265 11	2807.96	$(5^+),6^+$	2565.22	5^+			
^x 268.28 12	0.070 9							
^x 295.72 11	0.028 12							
311.58 3	0.90 3	1913.42	0^+	1601.8	2^+	E2		
325.87 4	0.36 2	2565.22	5^+	2239.33	4^+			
^x 328.67 9	0.161 12							
455.47 24	0.101 10	3057.0	(7^-)	2601.55	5^-			
544.00 3	0.48 2	2146.84	3^+	1601.8	2^+	D+Q	-1.22 12	Mult.: same δ given by 1990Ar20 .
632.97 2	100 2	633.0	2^+	0	0^+	E2		
637.50 5	0.59 2	2239.33	4^+	1601.8	2^+	E2		
^x 646.22 [#] 8	0.152 9							
^x 664.60 [#] 11	0.230 10							
^x 671.10 [#] 13	0.080 7							
^x 710.9 [#] 2	0.118 8							
^x 715.8 [#] 2	0.126 9							
730.87 2	1.29 4	2239.33	4^+	1508.44	4^+	D+Q	-0.43 2	
^x 740.9 2	0.055 8							
^x 760.01 17	0.103 9							
773.40 [#] 12	0.114 9	2936.10?		2162.70	2^+			
^x 825.77 12	0.145 9							
^x 833.24 5	0.308 11							

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$^{108}\text{Cd}(n,n'\gamma)$ 1988GoZE (continued) $\gamma(^{108}\text{Cd})$ (continued)

E_γ	I_γ^\dagger	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. ‡	δ	Comments
875.47 2	17.2 5	1508.44	4 ⁺	633.0	2 ⁺	E2		
^x 932.46 9	0.098 7							
968.81 2	7.07 20	1601.8	2 ⁺	633.0	2 ⁺	M1+E2	-1.48 4	Mult.: $\delta=-1.5$ 3 (1990Ar20).
^x 977.8 4	0.153 9							
^x 984.2 [#] 3	0.151 9							
^x 1028.73 13	0.140 9							
1032.93 3	0.88 3	2541.38	6 ⁺	1508.44	4 ⁺	E2		
1043.9 3	0.022 6	2645.59	4 ⁺	1601.8	2 ⁺			
^x 1053.72 13	0.100 7							
1056.79 3	0.76 2	2565.22	5 ⁺	1508.44	4 ⁺	M1+E2	-0.119 11	
^x 1061.9 2	0.093 8							
1087.66 2	2.62 8	1720.64	0 ⁺	633.0	2 ⁺	E2		
1093.10 2	1.43 4	2601.55	5 ⁻	1508.44	4 ⁺	E1+M2	+0.04 2	
1137.14 3	0.66 2	2645.59	4 ⁺	1508.44	4 ⁺	M1+E2	-0.48 3	
1160.91 6	0.40 2	2762.76	3 ⁺	1601.8	2 ⁺	D+Q		$\delta: +3.7$ 4 or +0.51 3.
^x 1189.14 11	0.180 10							
1198.61 3	0.94 3	2707.06	5 ⁻	1508.44	4 ⁺	E1+M2	+0.001 12	
1230.42 5	0.57 2	2738.83	4 ⁺	1508.44	4 ⁺	M1+E2	-0.09 3	
^x 1246.69 5	0.57 2							E_γ : can be placed from a 2755 level or from a 2848 level.
1280.45 3	0.83 3	1913.42	0 ⁺	633.0	2 ⁺	E2		
1296.57 4	0.62 2	2805.02	3	1508.44	4 ⁺	D+Q		$\delta: -4.5$ +12-9 or - 0.09 5.
1301.63 3	0.75 2	2810.08	3 ⁺ ,4 ⁻	1508.44	4 ⁺			
1367.56 6	0.259 11	2876.00	3 ⁺ ,4 ⁺	1508.44	4 ⁺			
^x 1374.73 16	0.082 7							
^x 1381.42 15	0.081 8							
^x 1397.51 8	0.124 7							
^x 1425.97 14	0.131 9							
^x 1486.98 5	0.49 2							E_γ : can be placed from a 2995 level or from a 3088 level.
1512.86 2	3.30 9	2146.84	3 ⁺	633.0	2 ⁺	M1+E2	-1.84 3	Mult.: same δ given by 1990Ar20.
1522.9 2	0.056 7	3031.42	2 ⁺ ,3	1508.44	4 ⁺			
1529.72 2	3.03 9	2162.70	2 ⁺	633.0	2 ⁺	M1+E2	+0.13 2	Mult.: same δ given by 1990Ar20.
1547.0 3	0.058 7	3267.68		1720.64	0 ⁺			
1569.22 2	4.42 13	2202.20	3 ⁻	633.0	2 ⁺	D+Q	+0.008 5	Mult.: $\delta=+0.41$ 2 (1990Ar20).
1601.84 2	6.68 19	1601.8	2 ⁺	0	0 ⁺	E2		
1606.37 3	1.22 4	2239.33	4 ⁺	633.0	2 ⁺	E2		
1665.84 11	0.145 9	3267.68		1601.8	2 ⁺			
^x 1713.09 9	0.276 11							
1732.77 2	1.73 5	2365.75	2 ⁺	633.0	2 ⁺	D+Q		$\delta: -0.151$ 14 or +3.8 3 (1988GoZE,1990Ar20).
1741.56 4	0.67 2	2374.54	(0 ⁺)	633.0	2 ⁺			
1853.30 3	1.32 4	2486.29	2 ⁺	633.0	2 ⁺	D+Q		$\delta: -0.61$ 3 or - 6.3 10 (1988GoZE,1990Ar20).
^x 1868.3 [#] 3	0.060 8							
1880.24 14	0.102 7	3482.20?	2	1601.8	2 ⁺			
^x 1903.4 2	0.066 7							
1922.23 3	1.17 4	2555.22	(3 ⁺)	633.0	2 ⁺			
1938.2 3	0.028 6	3540.24?		1601.8	2 ⁺			
1986.96 3	0.91 3	2619.95	3 ⁺ ,(2)	633.0	2 ⁺	D+Q	+0.41 2	
^x 1994.8 3	0.047 7							
^x 2003.64 13	0.143 8							
2012.6 2	0.079 7	2645.59	4 ⁺	633.0	2 ⁺	E2		
2031.82 14	0.151 9	3540.24?		1508.44	4 ⁺			
2049.62 4	0.65 2	2682.61	1,2 ⁺ ,3 ⁺	633.0	2 ⁺			
^x 2073.7 3	0.030 6							

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$^{108}\text{Cd}(n,n'\gamma)$ **1988GoZE (continued)** $\gamma(^{108}\text{Cd})$ (continued)

E_γ	I_γ^\dagger	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. ‡	δ	Comments
$^{x2105.82}_{15}$	0.163 9							
$^{x2114.06}_{7}$	0.227 10							
2129.79 11	0.142 9	2762.76	3 ⁺	633.0	2 ⁺	D+Q	-0.02 5	
2162.8 2	0.214 10	2162.70	2 ⁺	0	0 ⁺	E2		
2172.08 15	0.096 8	2805.02	3	633.0	2 ⁺	D+Q		$\delta: -3.3 +12-8$ or $-0.09 8$.
2183.49 11	0.274 11	2816.6	2 ⁺	633.0	2 ⁺	D+Q		$\delta: -0.54 14$ or $-13 +72-8$ (1988GoZE,1990Ar20).
2186.96 6	0.55 2	2819.95	2(3 ⁺)	633.0	2 ⁺			
2242.97 11	0.206 9	2876.00	3 ⁺ ,4 ⁺	633.0	2 ⁺			
2279.31 5	0.46 2	2912.30	2,3 ⁺	633.0	2 ⁺			
2303.1 2	0.095 7	2936.10?		633.0	2 ⁺			
$^{x2307.13}_{12}$	0.172 9							
$^{x2313.1}_{3}$	0.039 5							
$^{x2317.8}_{3}$	0.051 7							
2360.08 7	0.277 11	2993.08	1 ⁺ ,2 ⁺	633.0	2 ⁺			
2365.72 8	0.343 13	2365.75	2 ⁺	0	0 ⁺	E2		
$^{x2372.0}_{2}$	0.048 7							
2398.42 8	0.225 10	3031.42	2 ⁺ ,3	633.0	2 ⁺			
2415.30 14	0.125 8	3048.36?		633.0	2 ⁺			
2448.76 8	0.245 10	3081.76	3 ⁺	633.0	2 ⁺	D+Q		$\delta: +4.4 9$ or $+0.51 5$.
$^{x2467.2}_{3}$	0.021 6							
2486.7 4	0.020 6	2486.29	2 ⁺	0	0 ⁺			
2538.02 11	0.249 11	3171.02	2,3 ⁺	633.0	2 ⁺			
2548.67 9	0.238 11	3181.67		633.0	2 ⁺			
$^{x2561.74}_{12}$	0.136 9	3194.79?	2 ⁺	633.0	2 ⁺			
$^{x2587.87}_{19}$	0.112 8							
$^{x2594.19}_{6}$	0.174 9							
$^{x2609.2}_{4}$	0.014 5							
$^{x2631.90}_{11}$	0.186 10	3264.91?	1,2 ⁺ ,3	633.0	2 ⁺			
$^{x2661.30}_{17}$	0.154 9	3294.3?	2,3 ⁺	633.0	2 ⁺			
2677.95 4	0.88 3	2677.98	1	0	0 ⁺			
$^{x2683.32}_{23}$	0.142 9	3316.3?	(3 ⁺)	633.0	2 ⁺	D+Q		$\delta: -0.3 2$ or $-1.8 8$.
2693.0 2	0.269 12	3326.0	3,(2 ⁺)	633.0	2 ⁺			
$^{x2753.0}_{2}$	0.202 10							
$^{x2775.2}_{6}$	0.024 8							
$^{x2791.8}_{5}$	0.042 7							
$^{x2802.1}_{2}$	0.098 9							
2816.80 16	0.136 9	2816.6	2 ⁺	0	0 ⁺			
2849.36 17	0.158 9	3482.20?	2	633.0	2 ⁺			$\delta: -0.08 11$ or $+2.8 +14-8$.
2902.8 2	0.126 9	3535.8?	(3,4) ⁺	633.0	2 ⁺			
2921.84 15	0.156 9	3554.85?	(3 ⁺)	633.0	2 ⁺			
2926.58 18	0.092 8	3559.59?	(0 ⁺ ,1 ⁺)	633.0	2 ⁺			
$^{x2939.5}_{2}$	0.090 8							
$^{x2944.8}_{4}$	0.021 7							
$^{x2965.5}_{3}$	0.050 7							
2993.4 5	0.048 7	2993.08	1 ⁺ ,2 ⁺	0	0 ⁺			
$^{x3000.7}_{3}$	0.142 8							
3005.58 13	0.334 13	3005.62	1	0	0 ⁺			
3048.43 14	0.208 11	3048.36?		0	0 ⁺			
$^{x3090.8}_{6}$	0.047 7							
$^{x3105.4}_{4}$	0.088 8							
$^{x3120.4}_{4}$	0.046 8							
$^{x3133.0}_{5}$	0.058 7							
$^{x3195.3}_{4}$	0.060 8	3194.79?	2 ⁺	0	0 ⁺			
$^{x3230.8}_{3}$	0.055 8							

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$^{108}\text{Cd}(n,n'\gamma)$ **1988GoZE (continued)** $\gamma(^{108}\text{Cd})$ (continued)

E_γ	I_γ^\dagger	$E_i(\text{level})$	J_i^π	E_f	J_f^π	E_γ	I_γ^\dagger	$E_i(\text{level})$
^x 3240.3 4	0.056 7					^x 3606.3 5	0.033 7	
3292.5 2	0.141 10	3292.5	1	0	0 ⁺	^x 3613.5 7	0.021 6	
^x 3300.5 4	0.079 8					^x 3645.6 5	0.040 7	
^x 3313.8 4	0.056 7					^x 3666.7 3	0.099 9	
^x 3335.2 5	0.033 7					^x 3688.1 3	0.070 8	
^x 3377.8 6	0.038 7					^x 3695.9 4	0.083 8	
3453.7 6	0.083 8	3453.7?		0	0 ⁺			

[†] Relative intensity to 632 γ taken as 100.

[‡] From $\gamma(\theta)$ and $\gamma(\text{linear pol})$.

[#] The assignment of this transition to ^{108}Cd is uncertain.

^x γ ray not placed in level scheme.

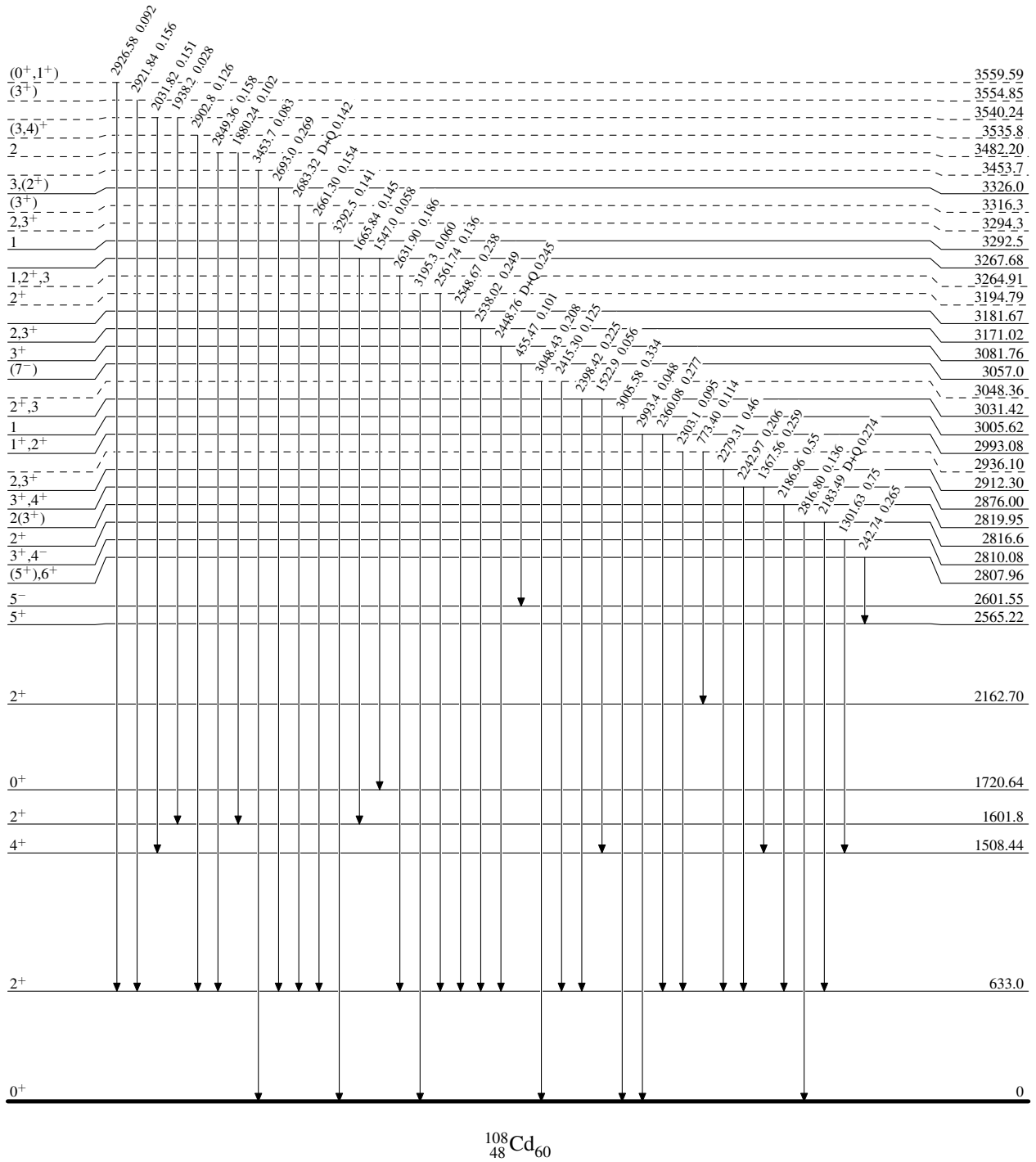
$^{108}\text{Cd}(n,n'\gamma)$ 1988GoZE

Legend

Level Scheme

Intensities: Type not specified

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

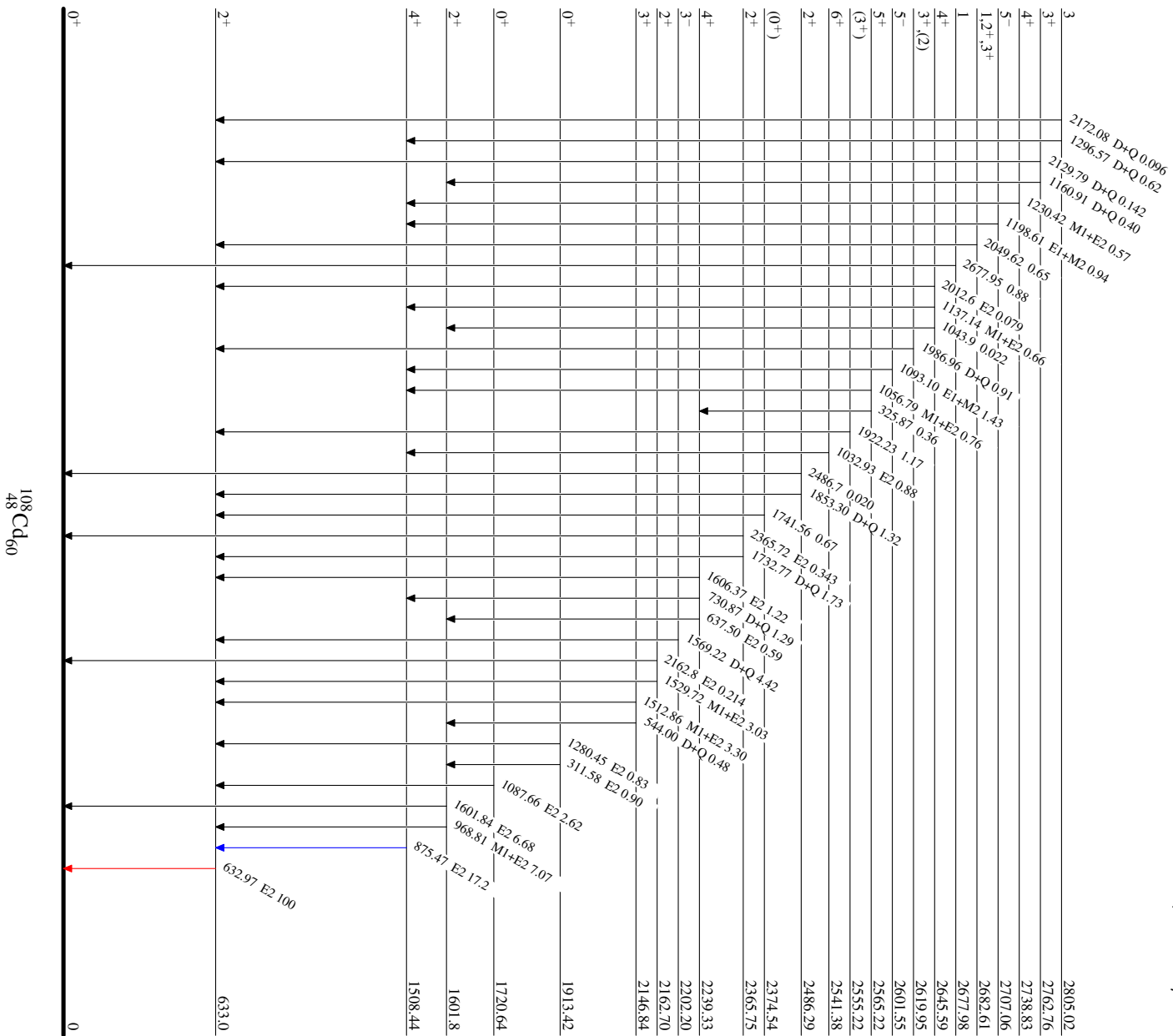
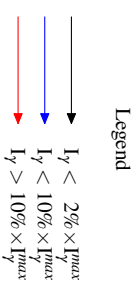


$^{108}_{48}\text{Cd}_{60}$

¹⁰⁸Cd(n,r' γ) **1988GoZE**

Level Scheme (continued)

Intensities: Type not specified



¹⁰⁸Cd₆₀