Coulomb excitation 1988Fa07

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 113, 515 (2012)	1-Jan-2012

E(p)=2.7-3 MeV (1969Mi07).
E(α)=8-18 MeV (1961St02,1969Sa27,1970Kl12,1970Wa04,1970Pr07,1971Be36,1976Es02).
E(^{12}C)=24 MeV (1970An09).
E(^{16}O)=35-49 MeV (1962Ec03,1965Mc05,1967Gl02,1967Si03,1967St03,1969Sa27,1970Kl12,1971Be36,1976Es02,1978Jo07,1988Fa07).
E(^{32}S)=49-55 MeV (1970Kl12,1972La17), 72-80 MeV (1980Br01).
E(^{40}Ca)=122 MeV (1988Fa07).
E(^{58}Ni)=184 MeV (1988Fa07).
E(^{208}Pb)=916 MeV (1988Fa07).
Measured: γ, $\gamma\gamma$, $\gamma\gamma(\theta)$, semi, scin (1961St02,1962Ec03,1965Mc05,1969Mi07,1973Gr16,1978Jo07,1988Fa07), $\gamma\gamma\gamma$ and recoiling.
Measured reorientation effect: (1967Gl02,1967Si03,1967St03,1968Si05,1969Sa27,1970Kl12,1971Be36,1976Es02).
Measured: σ(E,θ) nuclear interference (1970Pr07,1970Wa04).
Measured: (p,p,γ), Ge(Li) detectors, particle detector, deduced matrix elements using Gosia code. 86 matrix element included were fitted to 522 experimental data points (1988Fa07).

^{114}Cd Levels

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$	Comments
0	0$^+$	stable	
558	2$^+$	10.2 ps *6*	B(E2)↑=0.510 *30* (1988Fa07); Q=−0.36 *8* (1976Es02); g=0.29 *7* (1980Br01) g=0.321 *21* (2011Ch23) $T_{1/2}$: from B(E2). Other B(E2) values: 0.584 *41*, (1958St32), 0.571 *67* (1965Mc05), 0.567 *18* (1967Gl02), 0.480 *50* (1967Si03), 0.503 *13* (1967St03), 0.509 *9* (1968Si05), 0.576 *23* (1969Mi07), 0.560 *17* (1969Sa27), 0.506 *27* (1970Kl12), 0.547 *13* (1970Wa04), 0.553 *14* (1970Pr07), 0.513 *5* (1972Be66), 0.528 *4* (1976Es02). Other Q values: −0.53 *17* (1970An09), −0.28 *9* (1971Be36), −0.35 *7* (1972La17), 0.574 *18* (1985Si01). All Q values are for constructive multiple Coulomb interference.
1135	0$^+$	9.9 ps *6*	B(E2)↑=0.018 *1* (1988Fa07) $T_{1/2}$: from B(E2) of 1988Fa07. Other B(E2): 0.0197 (1965Mc05), 0.027 *5* (1978Jo07).
1210	2$^+$	3.1 ps *3*	B(E2)↑=0.0082 *6* (1988Fa07) $T_{1/2}$: from B(E2). Other B(E2): 0.0095 *15* (1969Mi07).
1284	4$^+$	1.39 ps *8*	B(E2)↑=0.36 *2* (1988Fa07) $T_{1/2}$: from B(E2). Other B(E2): 0.380 *44* (1965Mc05), 0.33 *5* (1978Jo07).
1306	0$^+$	4.7 ns *3*	$T_{1/2}$: from ^{16}O, γ(t) (1980Ju05).
1364	2$^+$	5.2 ps *4*	B(E2)↑=0.00540 *35* $T_{1/2}$: from B(E2). Other B(E2): 0.007 *12* (1969Mi07).
1732	4$^+$	4.8 ps *2*	B(E2)↑=0.189 *10* (1988Fa07) $T_{1/2}$: from B(E2).
1842	2$^+$	0.65 ps *12*	B(E2)↑=0.0031 *5* (1988Fa07) $T_{1/2}$: from B(E2).
1860	0$^+$	1.75 ps *43*	B(E2)↑=0.0016 *43* (1988Fa07) $T_{1/2}$: from B(E2).
1958	3$^-$		B(E3)↑=0.091 (1965Mc05) B(E3)↑: other B(E3): 0.202 *52* (1978Jo07).
1991	6$^+$	0.82 ps *10*	B(E2)↑=0.56 *10* (1988Fa07) $T_{1/2}$: from B(E2).
2048	2$^+$	0.38 ps *11*	B(E2)↑=1.8×10^{-3} *4* (1988Fa07) $T_{1/2}$: from B(E2).
2400?	(6$^+$)	1.0 ps *3*	B(E2)↑=0.6 *2* (1988Fa07) $T_{1/2}$: from B(E2).
2670?	(8$^+$)	1.4 ps *4*	B(E2)↑=0.37 *12* (1988Fa07) $T_{1/2}$: from B(E2).

Continued on next page (footnotes at end of table)

Coulomb excitation 1988Fa07 (continued)

^{114}Cd Levels (continued)

† Rounded-off values from Adopted Levels, gammas.
‡ From Adopted Levels.

$\gamma(^{114}Cd)$

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.	δ	α‡	Comments
75		1210	2^+	1135	0^+				
81	0.003 *1*	1364	2^+	1284	4^+	E2			B(E2)(W.u.)=13 *6*
96	142 *48*	1306	0^+	1210	2^+	E2		1.76	B(E2)(W.u.)=1.3×10^2 *6*
155	0.21 *5*	1364	2^+	1210	2^+				
230	0.7 *1*	1364	2^+	1135	0^+	E2			B(E2)(W.u.)=17 *6*
259†		1991	6^+	1732	4^+				
270†		2670?	(8^+)	2400?	(6^+)				
368	83 *17*	1732	4^+	1364	2^+	E2			B(E2)(W.u.)=1.3×10^2 *4*
409†		2400?	(6^+)	1991	6^+				
449	25 *8*	1732	4^+	1284	4^+	E2			B(E2)(W.u.)=14 *6*
478	67 *19*	1842	2^+	1364	2^+	E2			B(E2)(W.u.)=1.1×10^2 *5*
495	6.4 *31*	1860	0^+	1364	2^+	E2			B(E2)(W.u.)=20 *11*
522	133 *55*	1732	4^+	1210	2^+	E2			B(E2)(W.u.)=36 *17*
536	51 *16*	1842	2^+	1306	0^+				
558	100	558	2^+	0	0^+	E2			B(E2)(W.u.)=31.2 *19*
576	100	1135	0^+	558	2^+	E2			B(E2)(W.u.)=27.5 *17*
632	12 *8*	1842	2^+	1210	2^+	E2			B(E2)(W.u.)=5 *4*
651	100	1210	2^+	558	2^+	M1+E2	1.22		B(M1)(W.u.)=0.0080 *8*; B(E2)(W.u.)=21.9 *22* δ: from 1984Mh01.
668†		2400?	(6^+)	1732	4^+	(E2)			
679†		2670?	(8^+)	1991	6^+	E2			
707	198 *47*	1842	2^+	1135	0^+	E2			B(E2)(W.u.)=44 *17*
707†		1991	6^+	1284	4^+	(E2)			
725	100	1284	4^+	558	2^+	E2			B(E2)(W.u.)=62 *4*
742	128 *48*	2048	2^+	1306	0^+	E2			B(E2)(W.u.)=16 *8*
747	100	1306	0^+	558	2^+				
806	115 *58*	1364	2^+	558	2^+	M1+E2	−0.05 *+17−11*		B(M1)(W.u.)=0.0043 *25*; B(E2)(W.u.)=0.01 *+9−1* δ: from X$\gamma(\theta)$ (1973Gr16).
838	58 *28*	2048	2^+	1210	2^+	(E2)			B(E2)(W.u.)=4.0 *23*
1116		2400?	(6^+)	1284	4^+				
1174	100	1732	4^+	558	2^+	E2			B(E2)(W.u.)=0.47 *9*
1210	30 *3*	1210	2^+	0	0^+	E2			B(E2)(W.u.)=0.49 *7*
1284	2.4×10^2 *15*	1842	2^+	558	2^+	M1			B(M1)(W.u.)=0.006 *4*
1301	100	1860	0^+	558	2^+	E2			B(E2)(W.u.)=2.5 *7*
1364	100	1364	2^+	0	0^+	E2			B(E2)(W.u.)=0.33 *9*
1400		1958	3^-	558	2^+	E1			
1490	1288 *48*	2048	2^+	558	2^+	E2			B(E2)(W.u.)=5.1 *15*
1842	100	1842	2^+	0	0^+	E2			B(E2)(W.u.)=0.19 *6*
2048	100	2048	2^+	0	0^+	E2			B(E2)(W.u.)=0.080 *24*

† Seen only by 1988Fa07.
‡ 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.

Coulomb excitation 1988Fa07

Level Scheme

Intensities: Relative I_γ

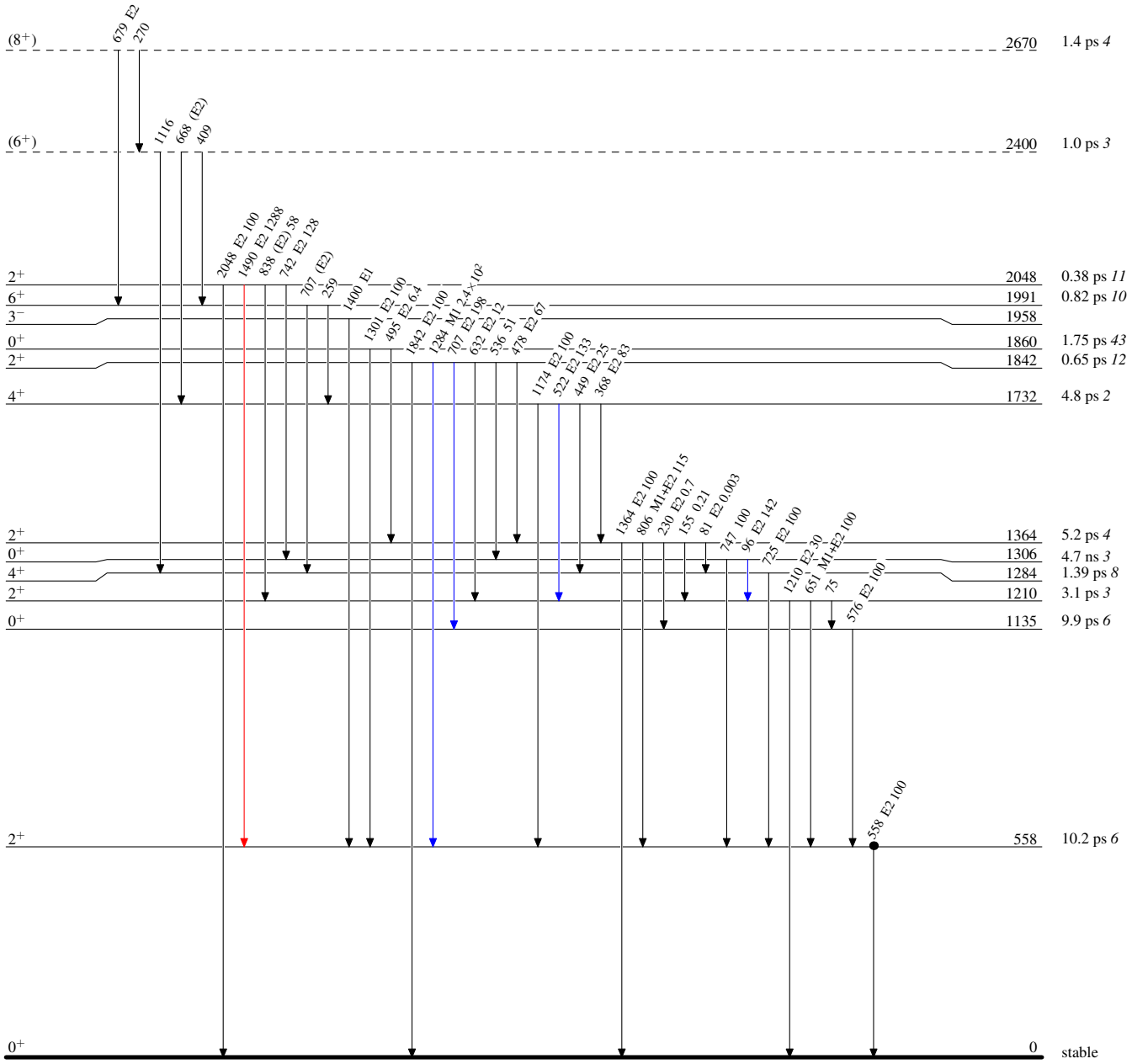
Legend

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

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

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

Coincidence



$^{114}_{48}Cd_{66}$