Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	ENSDF	31-May-2008

Q(β^-)=8.35×10^3 *16*; S(n)=6.1×10^3 *syst*; S(p)=1.66×10^4 *syst*; Q(α)=−1.19×10^4 *syst* 2012Wa38
Note: Current evaluation has used the following Q record 8.34E3 16 *6440* syst 16410 syst −12180 calc 2003Au03,1997Mo25.
Q(β^-): 8344 *+165−157* from β end-point energy of 6224 *+165−157* (2003Di06) to 2120 level. 2003Au03 give 8320 *280*.
S(n), S(p) from 2003Au03, Q(α) from 1997Mo25.
ΔS(n)=410, ΔS(p)=490 (syst,2003Au03).
Q(β^-n)=3300 *290* (2003Au03).
^{130}Cd produced by U(p,X) E=600 MeV followed by mass separation and selective detection of β-delayed neutrons (1986Kr17).
Additional information 1.

^{130}Cd Levels

Cross Reference (XREF) Flags

A ^{130}Ag β^- decay (50 ms):?
B ^{130}Cd IT decay (220 ns)

E(level)[†]	J$^\pi$	T$_{1/2}$	XREF	Comments
0.0[#]	0$^+$[‡]	162 ms *7*	AB	%β^-=100; %β^-n=3.5 *10* (2001Ha39) T$_{1/2}$: from 2001Ha39 (also 2001Pf04). Other: 0.20 s *4* (1986Kr17). Other %β^-n≈4 (1986Kr17). Additional information 2.
1325[#] *1*	(2$^+$)[‡]		B	
1864[#] *2*	(4$^+$)[‡]		B	
1992?[#] *2*	(6$^+$)[‡]		B	E(level): the ordering of the 128-138 cascade is not determined (2007Ju05).
2130[#] *2*	(8$^+$)[‡]	220 ns *30*	B	T$_{1/2}$: $\gamma\gamma$(t) (2007Ju05).

[†] From Eγ's, assuming 1 keV uncertainty for each Eγ.
[‡] Possible $\pi g^2_{9/2}$ structure and E2 multipolarity for two transitions at the top of the structure.
[#] Band(A): Yrast structure. Configuration=pure $\pi g^{-2}_{9/2}$ for 2$^+$ to 8$^+$ states from systematics of similar states in ^{76}Ni and ^{98}Cd.

γ(^{130}Cd)

E$_i$(level)	J$_i^\pi$	E$_\gamma$	I$_\gamma$	E$_f$	J$_f^\pi$	Mult.	α[‡]	Comments
1325	(2$^+$)	1325	100	0.0	0$^+$			
1864	(4$^+$)	539	100	1325	(2$^+$)			
1992?	(6$^+$)	128[†]	100	1864	(4$^+$)	E2	0.621 *20*	α(K)=0.489 *15*; α(L)=0.107 *4*; α(M)=0.0211 *8*; α(N+..)=0.00364 *13* α(N)=0.00355 *13*; α(O)=9.4×10^{-5} *3*
2130	(8$^+$)	138[†]	100	1992?	(6$^+$)	E2	0.475 *14*	α(K)=0.379 *11*; α(L)=0.079 *3*; α(M)=0.0155 *6*; α(N+..)=0.00268 *9* α(N)=0.00261 *9*; α(O)=7.40×10^{-5} *21*

[†] The ordering of the 138-128 γ cascade is not established.
[‡] 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.

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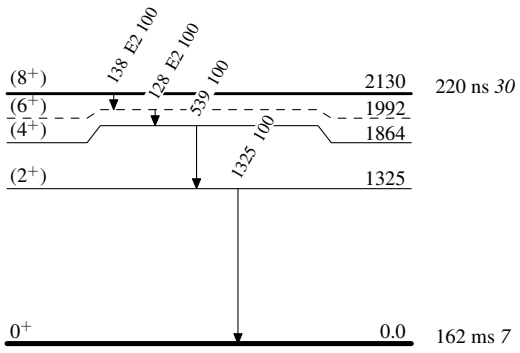
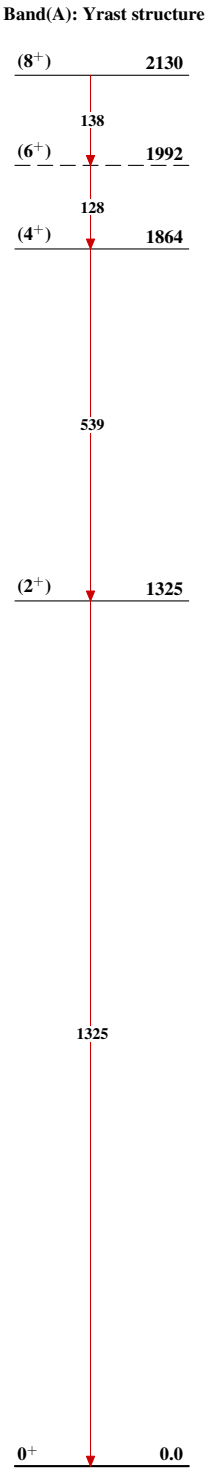
Level Scheme

Intensities: Relative photon branching from each level



$^{130}_{48}Cd_{82}$

Adopted Levels, Gammas



$^{130}_{48}Cd_{82}$