^{108}Ag ε decay (2.382 min) 1973Si02

History

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

Parent: ^{108}Ag: E=0.0; $J^\pi=1^+$; $T_{1/2}$=2.382 min *11*; Q(ε)=1922 *5*; %ε+%β^+ decay=2.85 *20*
%ε+%β^+= 2.85 *20*.
See also ^{108}Ag β^- decay (2.382 min).
The decay scheme is that proposed by 1973Si02 on the basis of energy fits and extensive $\gamma\gamma$ coin studies.

^{108}Pd Levels

$\gamma\gamma(\theta)$: 1) (619γ)(434γ)(θ) (1971Ok01,1973Si02), 2) (880γ)(434γ)(θ) (1973Si02), 3) (1007γ)(434γ)(θ) (1971Ok01,1973Si02).
Data from cascade 1) are consistent with the spin sequence J(d,Q)2(Q)0 only for J(1053 level)=0. Data from cascade 2) are consistent with the spin sequence J(d,Q)2(Q)0 only for J(1314 level)=0. Data from cascade 3) are consistent with the spin sequence J(d,Q)2(Q)0 only for J(1441 level)=2. Data of 1973Si02 yield δ(1007γ)=+ 7 +*9*–*3*, whereas data of 1971Ok01 yield δ=–0.27. 1973Si02 suggest that the discrepancy may be due to random summing of $\gamma^\pm$ radiation contributing to the 1007 peak in the work of 1971Ok01 since these authors used large NaI detectors. We adopt the value from 1973Si02.

E(level)	J^π	$T_{1/2}$
0.0	0^+	stable
433.938 *5*	2^+	
931.07 *12*	2^+	
1052.80 *5*	0^+	
1314.20 *10*	0^+	
1441.16 *5*	2^+	
1539.95 *7*	$(1^+,2^+)$	

ε,β^+ radiations

E(decay)	E(level)	Iβ^+ ‡	Iε‡	Log *ft*	I($\varepsilon+\beta^+$)†‡	Comments
(382 *5*)	1539.95		0.0027 *3*	6.12 *6*	0.0027 *3*	εK= 0.8532; εL= 0.11781 *23*; εM+= 0.02894 *7*
(481 *5*)	1441.16		0.020 *3*	5.46 *6*	0.020 *3*	εK= 0.8564; εL= 0.11536 *14*; εM+= 0.02825 *4*
(608 *5*)	1314.20		0.0041 *5*	6.37 *6*	0.0041 *5*	εK= 0.8588; εL= 0.11345; εM+= 0.02771
(869 *5*)	1052.80		0.259 *23*	4.89 *4*	0.259 *23*	εK= 0.8615; εL= 0.11135; εM+= 0.02711
(1488 *5*)	433.938	0.0026 *3*	0.21 *2*	5.46 *4*	0.216 *20*	av Eβ= 209 *3*; εK= 0.8537; εL= 0.10809; εM+= 0.02624 εK(exp)/β^+=5.6 *10* (1965Fr01), εK(exp)/β^+=6.19 (theory).
(1922 *5*)	0.0	0.28 *2*	2.07 *16*	4.70 *3*	2.35 *16*	av Eβ= 398 *3*; εK= 0.7610 *25*; εL= 0.0957 *4*; εM+= 0.02322 *8*

† From I(γ+ce)-imbalance at each level.
‡ Absolute intensity per 100 decays.

$\gamma(^{108}Pd)$

Iγ normalization: branching from I(β^- to g.s.)+I(633γ)+I(β^+ to g.s.)(1+ε/β^+)+ I(434+931+1441+1540γ's)=100 and I(633γ)/β^-=0.0181 *10* (1962Fr07), I(β^+)/I(633γ)=0.160 *7* (1962Fr07) and ε/β^+(g.s.)=7.33 *22* (theory). The data quoted from 1962Fr07 are not given explicitly by the authors although they are the quantities determined experimentally. The values were deduced by the evaluator from the β^-, β^+ and ε branchings given by the authors.

Continued on next page (footnotes at end of table)

^{108}Ag ε decay (2.382 min) 1973Si02 (continued)

γ(^{108}Pd) (continued)

E_γ [†]	I_γ [‡#]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	δ	Comments
383.2 *10*	0.18 *6*	1314.20	0^+	931.07	2^+			
388.6 *4*	0.37 *12*	1441.16	2^+	1052.80	0^+			
433.96 *5*	100	433.938	2^+	0.0	0^+			
497.1 *2*	0.45 *11*	931.07	2^+	433.938	2^+			
510.1 *2*	≤0.7	1441.16	2^+	931.07	2^+			E_γ: from energy level difference. I_γ: from intensity balance at the 931 level. From the 511 peak in coin with the 434γ the authors estimate I(510.1γ)=0.7 *5*.
618.86 *5*	52.4 *26*	1052.80	0^+	433.938	2^+			
880.26 *10*	0.64 *5*	1314.20	0^+	433.938	2^+			
931.12 *20*	0.11 *1*	931.07	2^+	0.0	0^+			
1007.22 *6*	2.79 *14*	1441.16	2^+	433.938	2^+	(M1+E2)	+7 *+9−3*	Mult.: from γγ(θ) and Δπ=no from decay scheme.
1106.00 *7*	0.33 *3*	1539.95	$(1^+,2^+)$	433.938	2^+			
1441.14 *10*	0.61 *4*	1441.16	2^+	0.0	0^+			
1540.0 *2*	0.21 *2*	1539.95	$(1^+,2^+)$	0.0	0^+			

[†] From 1973Si02, except for the 434γ. Others: 1971Jo07, 1971Ok01, 1971Si07.
[‡] From 1973Si02. Others: 1971Jo07, 1971Ok01, 1971Si07.
[#] For absolute intensity per 100 decays, multiply by 0.0050 *4*.

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Decay Scheme

Intensities: I_γ per 100 parent decays

Legend

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