^{105}Ag ε decay (7.23 min) 1996Me17,1972Kr28

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	S. Lalkovski, J. Timar and Z. Elekes	NDS 161, 1 (2019)	1-Apr-2019

Parent: ^{105}Ag: E=25.468 *16*; $J^\pi=7/2^+$; $T_{1/2}$=7.23 min *16*; Q(ε)=1347 *5*; %ε+%$β^+$ decay=0.34 *7*

1996Me17: Facility: LNL ICT accelerator; Source: from (n,γ) reactions on 50-100 mg thick target enriched to 82.09% in ^{106}Cd. Neutron flux= 6x10^{12} n/sec in 4π from ^{2}H(^{3}H,^{4}He)n reaction; Detectors: one large Ge(Li) and one small Ge(Li) x-ray detector; Measured: γ, Eγ, Iγ; Deduced: ^{105}Pd level scheme, log *ft*, J.

1972Kr28: Facility: Princeton cyclotron; Source: from ^{nat}Ag(p,xn)^{105}Cd reaction. Chemically separated ^{105m}Ag; Detectors: one Ge(Li) and one NaI(Tl) x-ray detector; Measured: γ, X rays; Eγ, Iγ.

Others: 1978Ve04.

^{105}Pd Levels

E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡
0.0	$5/2^+$	344.5 *7*	$1/2^+$	929.6 *6*	$(5/2^+)$
280.5 *5*	$3/2^+$	442.3 *6*	$(7/2)^+$	1072.1 *8*	$(5/2^+,7/2^+,9/2^+)$
306.3 *9*	$7/2^+$	560.3 *7*	$3/2^+$	1098.6 *7*	$(5/2^+,7/2^+,9/2^+)$
319.3 *5*	$5/2^+$	781.3 *9*	$9/2^+$		

† From a least-squares fit to Eγ, where ΔEγ=1 keV assumed by the evaluators.

‡ From the Adopted Levels.

ε,$β^+$ radiations

E(decay)	E(level)	Iβ+ ‡	Iε‡	Log *ft*	I(ε+β+)†‡	Comments
(274 *5*)	1098.6		0.0064 *14*	5.94 *10*	0.0064 *14*	εK=0.8474 *5*; εL=0.1224 *4*; εM+=0.03024 *10*
(300 *5*)	1072.1		0.00098 *21*	6.84 *10*	0.00098 *21*	εK=0.8493 *4*; εL=0.1208 *3*; εM+=0.02981 *8*
(443 *5*)	929.6		0.021 *5*	5.87 *11*	0.021 *5*	εK=0.8556 *2*; εL=0.1160 *2*; εM+=0.02843 *4*
(591 *5*)	781.3		0.0013 *3*	7.34 *10*	0.0013 *3*	εK=0.8587; εL=0.11357 *7*; εM+=0.02774 *2*
(812 *5*)	560.3		0.0049 *10*	7.05 *9*	0.0049 *10*	εK=0.8612; εL=0.11165 *4*; εM+=0.027197 *9*
(930 *5*)	442.3		0.0086 *18*	6.92 *10*	0.0086 *18*	εK=0.8620; εL=0.11101 *3*; εM+=0.027016 *7*
(1053 *5*)	319.3		0.15 *4*	5.79 *12*	0.15 *4*	εK=0.8626; εL=0.11050 *2*; εM+=0.026872 *6*
(1066 *5*)	306.3		0.030 *7*	6.50 *11*	0.030 *7*	εK=0.8627; εL=0.11045 *2*; εM+=0.026859 *6*
(1092# *5*)	280.5		≤0.002	≥7.7	≤0.002	εK=0.8628; εL=0.11036 *2*; εM+=0.026834 *5*
(1372 *5*)	0.0	0.00049 *11*	0.117 *25*	6.14 *10*	0.117 *25*	av Eβ=162.3 *22*; εK=0.8602 *2*; εL=0.10915 *4*; εM+=0.02651 *1*

† Note that uncertainties only reflect the uncertainty on the normalization factor, as Iγ values are reported without uncertainties.

‡ Absolute intensity per 100 decays.

Existence of this branch is questionable.

^{105}Ag ε decay (7.23 min) 1996Me17,1972Kr28 (continued)

γ(^{105}Pd)

Iγ normalization: from I(319.16γ)=48 % (1972Kr28) and Branching= 0.0034 *7* fom ^{105m}Ag.

E_γ‡	I_γ‡@	E_i(level)	J_i^π	E_f	J_f^π	Mult.#	δ#	α†	Comments
38.77# *17*	0.11#	319.3	5/2+	280.5	3/2+	M1(+E2)		24 *18*	α(K)=12 *7*; α(L)=10 *10*; α(M)=1.9 *18*; α(N+..)=0.3 *3* α(N)=0.3 *3*
64.072#	0.004#	344.5	1/2+	280.5	3/2+	M1(+E2)	−0.025 *30*	1.7 *10*	α(K)=1.4 *6*; α(L)=0.2 *3*; α(M)=0.05 *6*; α(N+..)=0.008 *9* α(N)=0.008 *9*
216.1#	0.02#	560.3	3/2+	344.5	1/2+	[M1+E2]		0.068 *23*	α(K)=0.058 *18*; α(L)=0.008 *4*; α(M)=0.0016 *7*; α(N+..)=0.00026 *11* α(N)=0.00026 *11*
280.53	3.5	280.5	3/2+	0.0	5/2+	M1+E2	+0.143 *7*	0.0238	α(K)=0.0207 *3*; α(L)=0.00249 *4*; α(M)=0.000469 *7*; α(N+..)=7.89×10^{-5} *12* α(N)=7.89×10^{-5} *12* δ: +0.11 *3* in 1958Ra01, +0.035 *22* in 1962Bh03, +0.013 *3* in 1972Be67 and +0.07 *7* in 1976Ba39.
306.29	18.5	306.3	7/2+	0.0	5/2+	M1+E2	+0.055 *2*	0.0188	α(K)=0.01640 *23*; α(L)=0.00196 *3*; α(M)=0.000368 *6*; α(N+..)=6.20×10^{-5} *9* α(N)=6.20×10^{-5} *9*
319.23	90	319.3	5/2+	0.0	5/2+	M1+E2	+0.103 *8*	0.01697	α(K)=0.01481 *21*; α(L)=0.001769 *25*; α(M)=0.000332 *5*; α(N+..)=5.60×10^{-5} *8* α(N)=5.60×10^{-5} *8*
344.61#	0.016#	344.5	1/2+	0.0	5/2+	E2		0.0188	α(K)=0.01611 *23*; α(L)=0.00219 *3*; α(M)=0.000413 *6*; α(N+..)=6.80×10^{-5} *10* α(N)=6.80×10^{-5} *10*
370	1.2	929.6	(5/2+)	560.3	3/2+	[M1+E2]		0.0133 *17*	α(K)=0.0115 *14*; α(L)=0.0015 *3*; α(M)=0.00028 *5*; α(N+..)=4.6×10^{-5} *8* α(N)=4.6×10^{-5} *8*
442.25	8.5	442.3	(7/2)+	0.0	5/2+	M1+E2	−0.23 *6*	0.00756 *11*	α=0.00756 *11*; α(K)=0.00661 *10*; α(L)=0.000784 *13*; α(M)=0.0001471 *23*; α(N+..)=2.48×10^{-5} α(N)=2.48×10^{-5} *4*
475.1	0.5	781.3	9/2+	306.3	7/2+	[M1+E2]		0.0066 *4*	α=0.0066 *4*; α(K)=0.0058 *3*; α(L)=0.00071 *6*; α(M)=0.000133 *12*; α(N+..)=2.23×10^{-5} *18* α(N)=2.23×10^{-5} *18*
487.1	2.6	929.6	(5/2+)	442.3	(7/2)+	[M1+E2]		0.0062 *3*	α=0.0062 *3*; α(K)=0.00539 *21*; α(L)=0.00066 *6*; α(M)=0.000124 *10*; α(N+..)=2.08×10^{-5} *15* α(N)=2.08×10^{-5} *15*
560.79	4.2	560.3	3/2+	0.0	5/2+	M1+E2		0.00427 *7*	α=0.00427 *7*; α(K)=0.00372 *6*; α(L)=0.000451 *18*; α(M)=8.5×10^{-5} *4*; α(N+..)=1.42×10^{-5} *5* α(N)=1.42×10^{-5} *5*
610.1	1.9	929.6	(5/2+)	319.3	5/2+	[M1+E2]		0.00345 *6*	α=0.00345 *6*; α(K)=0.00300 *6*; α(L)=0.000361 *8*;

From ENSDF

$^{105}_{46}Pd_{59}$-2

^{105}Ag ε decay (7.23 min) 1996Me17,1972Kr28 (continued)

γ(^{105}Pd) (continued)

E_γ[‡]	I_γ[‡@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	α[†]	Comments
								α(M)=6.78×10^{-5} *16*; α(N+..)=1.138×10^{-5} *22* α(N)=1.138×10^{-5} *22*
629.7	0.2	1072.1	(5/2$^+$,7/2$^+$,9/2$^+$)	442.3	(7/2)$^+$			
649.2	1.6	929.6	(5/2$^+$)	280.5	3/2$^+$	[M1+E2]	0.00295 *7*	α=0.00295 *7*; α(K)=0.00257 *7*; α(L)=0.000308 *5*; α(M)=5.78×10^{-5} *9*; α(N+..)=9.70×10^{-6} *14* α(N)=9.70×10^{-6} *14*
656.5	0.4	1098.6	(5/2$^+$,7/2$^+$,9/2$^+$)	442.3	(7/2)$^+$			
781.3	0.27	781.3	9/2$^+$	0.0	5/2$^+$	E2	0.00180 *3*	α=0.00180 *3*; α(K)=0.001571 *22*; α(L)=0.000189 *3*; α(M)=3.55×10^{-5} *5*; α(N+..)=5.95×10^{-6} *9* α(N)=5.95×10^{-6} *9*
818	0.2	1098.6	(5/2$^+$,7/2$^+$,9/2$^+$)	280.5	3/2$^+$			
929.3	5.8	929.6	(5/2$^+$)	0.0	5/2$^+$	[M1+E2]	0.00126 *7*	α=0.00126 *7*; α(K)=0.00110 *7*; α(L)=0.000129 *6*; α(M)=2.41×10^{-5} *11*; α(N+..)=4.07×10^{-6} *20* α(N)=4.07×10^{-6} *20*
1072.2	0.4	1072.1	(5/2$^+$,7/2$^+$,9/2$^+$)	0.0	5/2$^+$			
1098.39	3.3	1098.6	(5/2$^+$,7/2$^+$,9/2$^+$)	0.0	5/2$^+$			

† Additional information 1.
‡ From ^{105}Ag ε decay (7.23 min) (1996Me17), unless otherwise noted.
# From the adopted gammas.
@ For absolute intensity per 100 decays, multiply by 0.0016 *3*.

From ENSDF

$^{105}_{46}Pd_{59}$-3

^{105}Ag ε decay (7.23 min) 1996Me17,1972Kr28

Decay Scheme

Intensities: I_γ per 100 parent decays

Legend

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