^{110}Pd(p,nγ), ^{109}Ag(d,pγ) 1976Ha57,1974Be47

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	G. Gürdal and F. G. Kondev	NDS 113, 1315 (2012)	1-Aug-2011

1976Ha57: E(p) = 1.6 – 3.95 MeV provided by the 4MVVan de Graff Accelerator at Tokyo Institute of Technology. 96.9% isotopically enriched in ^{110}Pd targets (1.0mg/cm^2 for excitation functions, 2.4mg/cm^2 for angular distributions, 11.7mg/cm^2 for lifetime and g-factor measurements) were used. The γ-rays were detected using 50 cm^3 and 30 cm^3 Ge(Li) detectors. Measured: σ(E;Eγ,θ_γ), Eγ, Iγ. Deduced: J^π, δ, $T_{1/2}$ and g-factor.

1974Be47:Reaction:^{110}Pd(p,nγ) and ^{109}Ag(d,pγ). The proton and deuteron beams, E(p,d)=7 MeV, were provided by the 7MV Van de Graff accelerator at the Hahn-Meitner-Institute Berlin. Isotopically enriched ^{110}Pd and ^{109}Ag (99% and 98%, respectively) targets were used. The γ-rays were detected using Ge(Li) and NaI(Tl) detectors. Measured: Eγ, γ(θ,H,t). Deduced: J^π, g-factor.

^{110}Ag Levels

E(level)†	J^π‡	$T_{1/2}$	Comments
0.0	1^+	24.56 s *11*	$T_{1/2}$: From Adopted Levels.
1.112 *16*	2^-		E(level),J^π: From Adopted Levels.
117.59 *5*	6^+		E(level),J^π: From Adopted Levels.
118.6 *5*	3^+	36.6 ns *6*	$T_{1/2}$: From Adopted Levels. μ: +3.726 *36* in 1976Ha57 (g=1.242 *12*) and 3.831 *45* in 1974Be47 (g=1.277 *15*, average of g=1.264 *20* from ^{110}Pd(p,nγ) and g=1.289 *18* from ^{109}Ag(d,pγ)). Both 1976Ha57 and 1974Be47 determined the g-factor using the pulsed-beam differential perturbed angular distribution (DPAD) method.
191.5 *4*	3		
198.5 *4*	2		J^π: J=2 from γ(θ).
237.1 *4*			
266.9 *3*	(0,1,2)		
271.3 *7*			
302.0 *4*			
304.1 *4*			
338.9 *5*			
360.6 *4*			
381.4 *5*			
423.6 *4*			
432.7 *4*			
548.9 *5*			
586.8 *5*			
654.2 *5*			

† From a least-squares fit to Eγ, unless otherwise stated.
‡ From γ(θ) and comparison of the γ-ray excitation functions with the theoretical predictions in 1976Ha57, unless otherwise stated.

γ(^{110}Ag)

E_γ†	E_i(level)	J_i^π	E_f	J_f^π	Mult.‡	δ‡	Comments
1.112 *16*	1.112	2^-	0.0	1^+			E_γ: From adopted gammas.
93.8 *5*	360.6		266.9	(0,1,2)			
105.7 *5*	304.1		198.5	2			
110.5 *5*	302.0		191.5	3			
117.4 *5*	118.6	3^+	1.112	2^-	D+Q	+0.034 *9*	E_γ: From 1976Ha57. Other: 117 keV *1* in 1974Be47. Mult.: A_2=−0.142 *5*, A_4=+0.019 *8* (for E(p)=3.5 MeV), A_2=−0.149 *16*, A_4=+0.019 *8* (for E(p)=3.0 MeV).
152.7 *5*	271.3		118.6	3^+			
161.7 *5*	360.6		198.5	2			

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^{110}Pd(p,nγ), ^{109}Ag(d,pγ) 1976Ha57,1974Be47 (continued)

γ(^{110}Ag) (continued)

E_γ [†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	δ[‡]	Comments
191.2 *5*	191.5	3	0.0	1^+	Q+O	+0.034 *61*	Mult.: A_2=+0.235 *13*, A_4=−0.030 *22*.
195.1 *5*	432.7		237.1				
198.3 *5*	198.5	2	0.0	1^+	D(+Q)	+0.017 *17*	Mult.: A_2=−0.084 *4*, A_4=+0.014 *6*.
231.7 *5*	423.6		191.5	3			
235.6 *5*	237.1		1.112	2^-			Mult.: A_2=+0.115 *4*, A_4=+0.003 *6*, coefficient of summed angular distribution for 235.35γ, 235.55γ and 236.66γ from 1976Ha57 (no mult assignment).
236.9 *5*	237.1		0.0	1^+			
265.7 *5*	266.9	(0,1,2)	1.112	2^-			
267.0 *5*	266.9	(0,1,2)	0.0	1^+			Mult.: A_2=+0.013 *9*, A_4=+0.026 *16*, coefficient of summed angular distribution for 265.7γ and 267.0γ.
302.0 *5*	302.0		0.0	1^+			
304.0 *5*	304.1		0.0	1^+			
338.9 *5*	338.9		0.0	1^+			
360.8 *5*	360.6		0.0	1^+			
381.4 *5*	381.4		0.0	1^+			
423.9 *5*	423.6		0.0	1^+			
432.0 *5*	432.7		1.112	2^-			
548.9 *5*	548.9		0.0	1^+			
586.8 *5*	586.8		0.0	1^+			
654.2 *5*	654.2		0.0	1^+			

[†] From 1976Ha57, unless otherwise stated.
[‡] From γ(θ) in 1976Ha57 (E(p)=3.5 MeV, unless otherwise stated).

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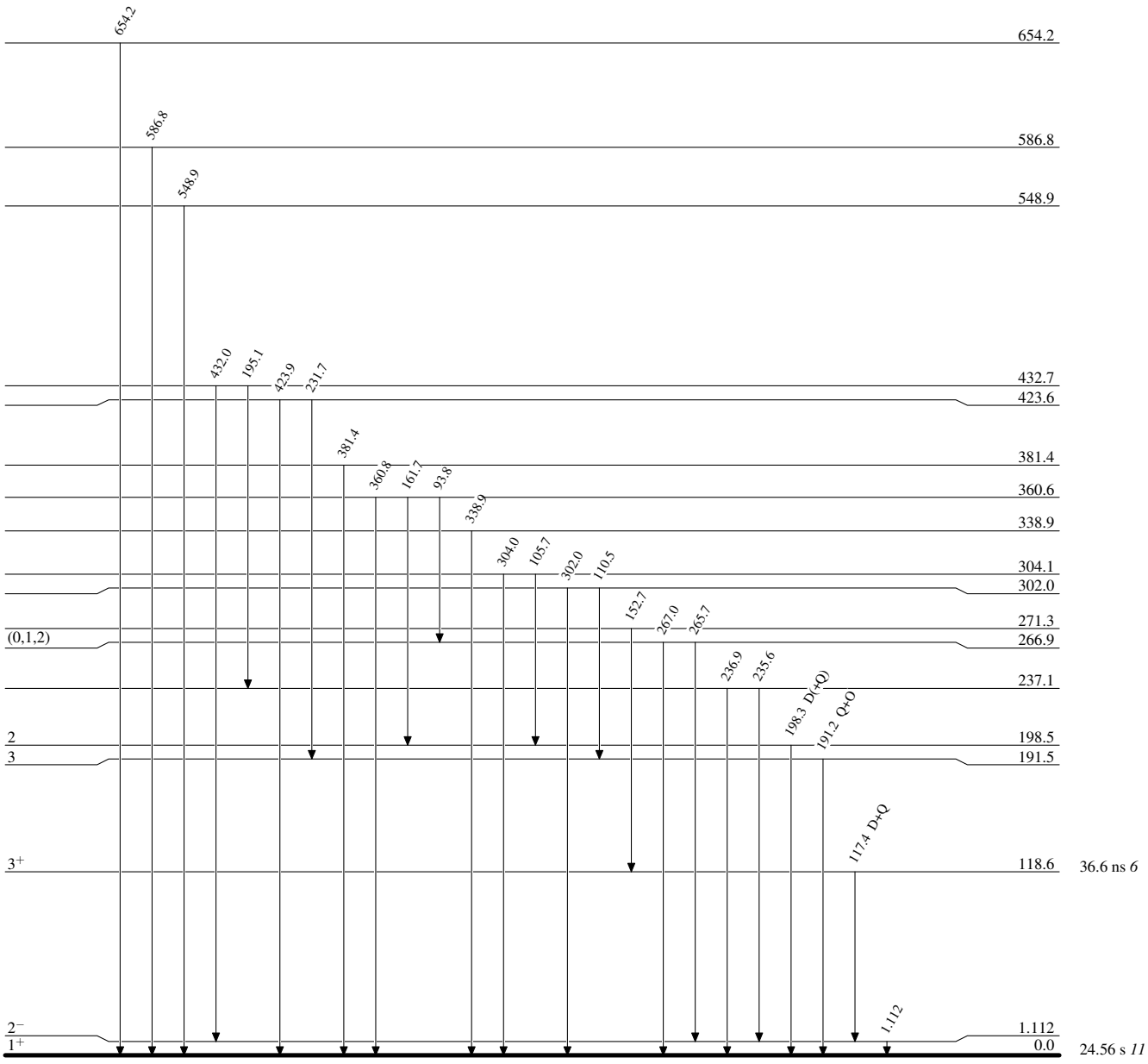
Level Scheme



$^{110}_{47}Ag_{63}$