^{144}Sm(d,2nγ),(p,nγ) 1976Fu07

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	A. A. Sonzogni	NDS 93, 599 (2001)	1-Dec-2000

E(d)=13.5 MeV, E(p)=10 MeV.
Measured: γ, γ(t), $\gamma\gamma$, ce, $\gamma(\theta)$ at 6 angles, $\gamma\gamma$(t).
See also 1974Is07 for calculated levels.

^{144}Eu Levels

E(level)	J$^\pi$[†]	$T_{1/2}$	Comments
0.0	1^+	10.2 s *1*	$T_{1/2}$: from Adopted Levels.
333.3	2^+		
347.2	3^+		
580.7	4^+		
604.4	3^+		
763.1	5^+		
784.0	$(2)^+$		
887.9	5^-		
894.7	4^+		
926.6	6^-	28 ns *2*	
1049.1	(4)		
1120.8	7^-		
1128.4	8^-	1.0 μs *1*	
1194.9	$(6,7)^-$		

[†] Except for the g.s., J$^\pi$ values have been assigned by 1976Fu07 based upon shell-model expectations, level decay and comparison with ^{142}Pm. See 1976Fu07 for calculated energy levels and their suggested configurations.

$\gamma(^{144}Eu)$

E$_\gamma$	I$_\gamma$[†]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.[‡]	α[#]	I$_{(\gamma+ce)}$	Comments
(7.6)		1128.4	8^-	1120.8	7^-			≈5	I$_{(\gamma+ce)}$: from intensity imbalance in μs-delayed spectrum.
(14)		347.2	3^+	333.3	2^+			≈25	I$_{(\gamma+ce)}$: from $\gamma\gamma$ in delayed spectrum.
38.7	5.0	926.6	6^-	887.9	5^-				
122.5	2.9	1049.1	(4)	926.6	6^-				
124.8	1.5	887.9	5^-	763.1	5^+				
163.5	1.6	926.6	6^-	763.1	5^+				
182.4	8.3	763.1	5^+	580.7	4^+	M1,E2			
194.2	10.5	1120.8	7^-	926.6	6^-	M1	0.290		α(K)= 0.2461
201.8	9.1	1128.4	8^-	926.6	6^-	E2	0.210		α(K)= 0.1489
[x]208.5	1.7								
[x]210.5	2.8								
233.5	77.1	580.7	4^+	347.2	3^+	M1	0.176		α(K)= 0.1490
247.4	2.8	580.7	4^+	333.3	2^+	(E2)	0.108		α(K)= 0.0802 α(K)exp=0.055 *30*.
257.2	≈1	604.4	3^+	347.2	3^+				
268.3	5.0	1194.9	$(6,7)^-$	926.6	6^-	M1,E2			
271.1	14.5	604.4	3^+	333.3	2^+	M1,E2			
290.2	5.6	894.7	4^+	604.4	3^+	M1,E2			
307.2	60.1	887.9	5^-	580.7	4^+	E1	0.0145		α(K)=0.01231
314.1	2.6	894.7	4^+	580.7	4^+				
333.3	60.0	333.3	2^+	0.0	1^+	M1	0.0677		α(K)= 0.0575; α(L)=0.00801
347.2	100	347.2	3^+	0.0	1^+	E2	0.0376		α(K)= 0.0296

Continued on next page (footnotes at end of table)

^{144}Sm(d,2nγ),(p,nγ) 1976Fu07 (continued)

$\gamma(^{144}Eu)$ (continued)

E_γ	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	α[#]	Comments
415.6	7.7	763.1	5^+	347.2	3^+	E2	0.0222	α(K)=0.01786
450.7	6.1	784.0	$(2)^+$	333.3	2^+	M1,E2		
[x]542.3	5.8							
[x]550.3	5.6							
[x]621.4	4.2							
[x]629.7	15.6							
[x]714.7	4.7							
[x]717.7	13.8							
[x]728.0	5.8							

[†] Iγ in ^{144}Sm(d,2nγ).
[‡] From α(K)exp normalized with respect to 387γ (M2) in ^{145}Eu and 396γ (M2) in ^{147}Eu.
[#] 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.
[x] γ ray not placed in level scheme.

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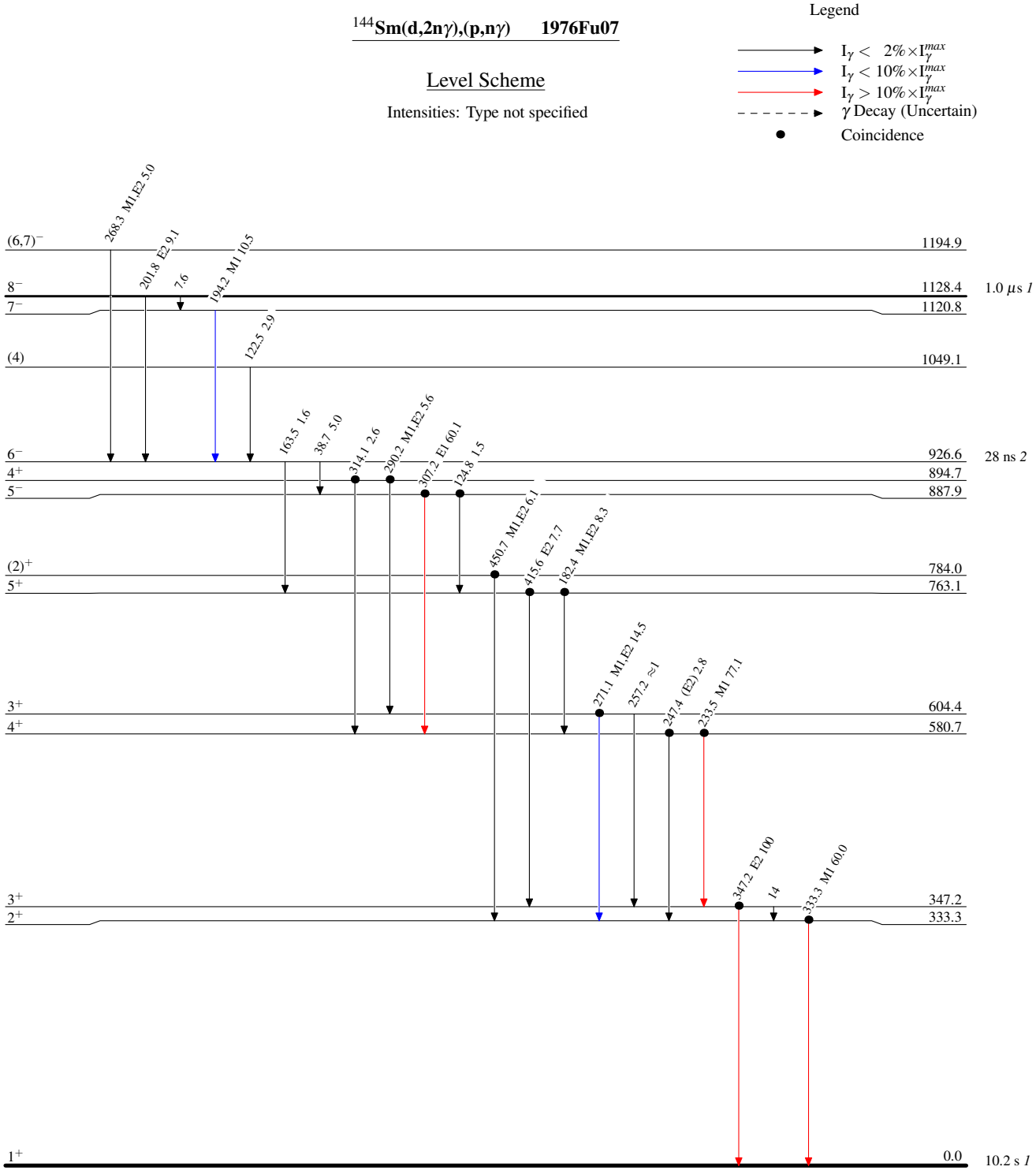
Level Scheme

Intensities: Type not specified



$^{144}_{63}Eu_{81}$