^{92}Mo(^{3}He,2npγ) 1983Fi08

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 113, 2187 (2012)	15-Sep-2012

E(^{3}He)=33 MeV; Ge(Li), high purity Ge. Measured Eγ, Iγ, $\gamma\gamma$(t), $\gamma(\theta)$, $\gamma\gamma$-coincidences.

^{92}Tc Levels

E(level)[†]	J$^{\pi}$[‡]	Comments
0.0	8^{+}	
213.80 *20*	6^{+}	
270.14 *20*	4^{+}	
389.2 *3*	5^{+}	
529.5 *3*	3^{+}	
577.0 *3*	2^{+}	
626.3 *4*	(6)	
686.14 *17*	9^{+}	
711.4 *4*	1^{+}	
965.6 *4*	(6)	
1119.3 *4*		
1163.4		
1163.6		
1355.48 *17*	10^{+}[#]	
1502.9 *3*	(6,8^{+})	
1590.1 *4*	(7,8)	
2002.7 *3*	(11^{+})[@]	
2548.9 *4*	(12^{+})[@]	
2940.0 *4*	(13)[@]	
3088.0?		Level not adopted because attribution of deexciting γ is in question. See comment on 148γ.

[†] From least-squares fit to Eγ.

[‡] Authors' suggested values, based primarily on $\gamma(\theta)$ and reaction systematics. See Adopted Levels for evaluator's preferred values.

[#] J=8 or 10 from 1355$\gamma(\theta)$ and 669$\gamma(\theta)$. J=10 favored, based on yrast selectivity of reaction. π=+ favored, based on branching ratio (1983Fi08).

[@] Cascade of stretched D γ's feeds 10^{+} level. Monotonically increasing spin sequence likely, based on yrast selectivity and absence of energetically favored crossover transitions to lower spin states (1983Fi08). Note that adopted π=(−) for these levels.

γ(^{92}Tc)

A$_2$ and A$_4$ values are from $\gamma(\theta)$ data from 1983Fi08.

E$_\gamma$	I$_\gamma$	E$_i$(level)	J$^{\pi}_i$	E$_f$	J$^{\pi}_f$	Mult.[†]	Comments
(47.46[b] *3*)		577.0	2^{+}	529.5	3^{+}		
(56.34[b] *2*)		270.14	4^{+}	213.80	6^{+}		
119.1 *2*	36 *4*	389.2	5^{+}	270.14	4^{+}		A$_2$=+0.07 *2*, A$_4$=−0.05 *3*.
134.4 *2*	7.0 *7*	711.4	1^{+}	577.0	2^{+}	D	A$_2$=−0.25 *4*, A$_4$=−0.05 *5*.
148[a@c]		3088.0?		2940.0	(13)		
198[&]		1163.6		965.6	(6)		
213.8 *2*	100	213.80	6^{+}	0.0	8^{+}		A$_2$=−0.06 *2*, A$_4$=−0.03 *2*.
237.1 *2*	22.0 *22*	626.3	(6)	389.2	5^{+}	D	A$_2$=−0.027 *4* (presumably a misprint of −0.27 *4*), A$_4$=+0.10 *5*.
259.4 *2*	19.0 *19*	529.5	3^{+}	270.14	4^{+}	D	A$_2$=−0.17 *4*, A$_4$=−0.04 *6*.

Continued on next page (footnotes at end of table)

^{92}Mo(^{3}He,2npγ) 1983Fi08 (continued)

γ(^{92}Tc) (continued)

E_γ	I_γ	E_i(level)	J^π_i	E_f	J^π_f	Mult.[†]	δ[‡]	Comments
391.1[a] *2*	14.0 *14*	2940.0	(13)	2548.9	(12$^+$)	D		A_2=−0.14 *10*, A_4=0.00.
452[#]		1163.4		711.4	1$^+$			
493.0 *2*	2.9 *3*	1119.3		626.3	(6)			
546.2[a] *2*	12.0 *12*	2548.9	(12$^+$)	2002.7	(11$^+$)	D+Q	−0.18 *10*	A_2=−0.58 *12*, A_4=0.00.
576.4 *2*	3.1 *3*	965.6	(6)	389.2	5$^+$	D		A_2=−0.3 *2*, A_4=0.00.
647.2[a] *2*	25.0 *25*	2002.7	(11$^+$)	1355.48	10$^+$	D+Q	+0.10 *3*	A_2=−0.08 *4*, A_4=0.00.
669.4[a] *2*	13.0 *13*	1355.48	10$^+$	686.14	9$^+$	D		A_2=−0.27 *6*, A_4=−0.09 *8*.
686.2[a] *2*	25.0 *25*	686.14	9$^+$	0.0	8$^+$	D		A_2=−0.40 *4*; A_4=0.00.
962.8 *2*	4.0 *4*	1590.1	(7,8)	626.3	(6)			A_2=+0.15 *16*, A_4=−0.02 *19*.
1289.1 *2*	25.0 *25*	1502.9	(6,8$^+$)	213.80	6$^+$			A_2=+0.7 *2*, A_4=0.00 implies ΔJ=0 or 2.
1355.4[a] *2*	45 *5*	1355.48	10$^+$	0.0	8$^+$	Q		A_2=+0.5 *2*, A_4=0.00.

[†] From $\gamma(\theta)$.

[‡] From $\gamma(\theta)$ assuming same alignment coefficient (0.92 *17*) as measured for high spin states at same E(^{3}He) in ^{90}Zr(^{3}He,3nγ). Authors favor mult=E2+M1 based on this δ.

[#] Doublet.

[@] Unresolved from 148γ from ^{92}Tc ε decay. Also, this γ was identified as the 146γ in ^{93}Ru in a subsequent (HI,xnγ) study by 1995Gh02. Consequently, this γ's placement is shown as tentative here and it is omitted from Adopted Levels, Gammas.

[&] Unresolved from 197γ arising from ^{19}O β^- decay.

[a] Interpreted by authors as yrast cascade γ ray.

[b] From Adopted Gammas.

[c] Placement of transition in the level scheme is uncertain.

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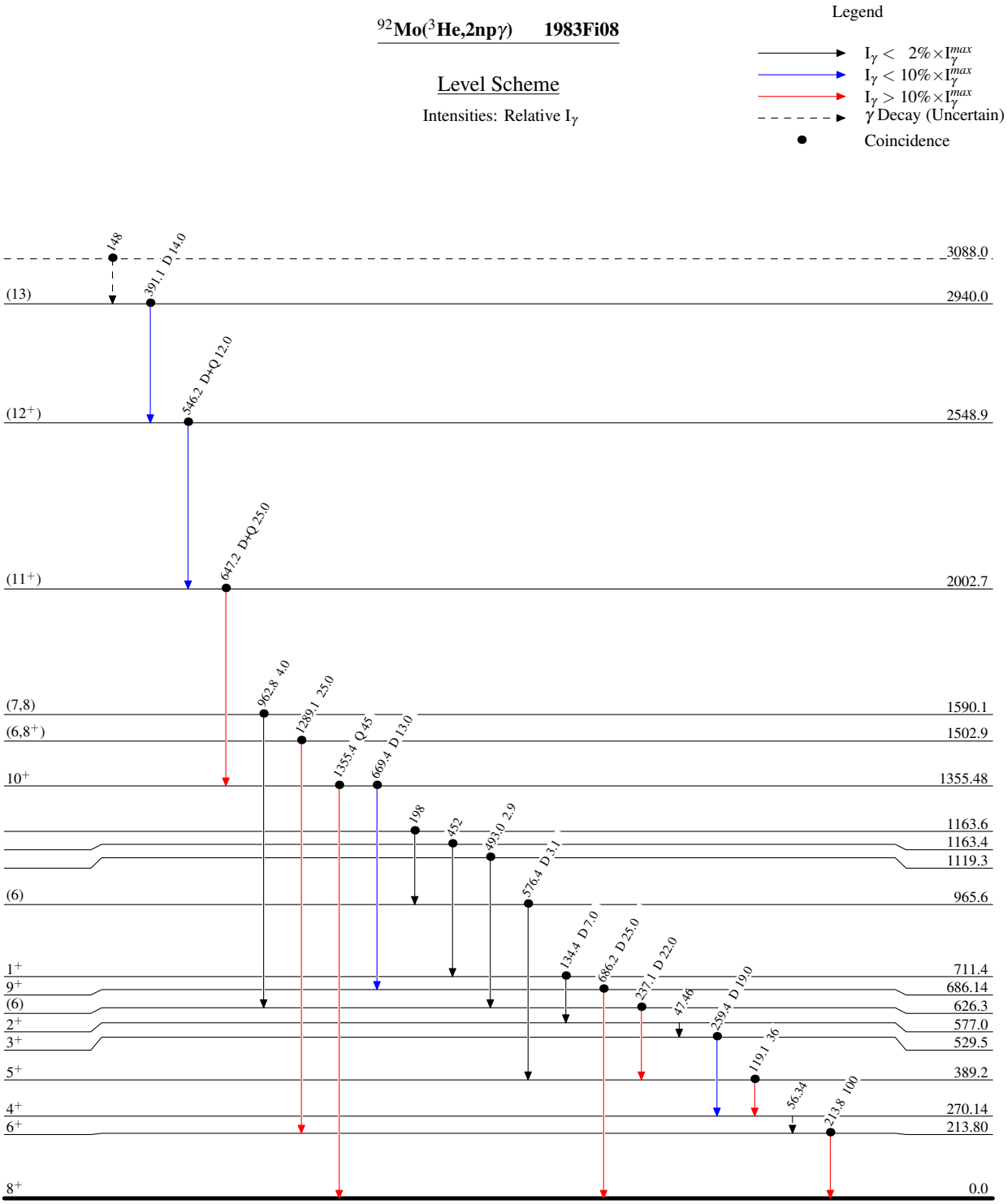
Level Scheme

Intensities: Relative I_γ



$^{92}_{43}Tc_{49}$