^{248}Cm SF decay 2006Ur01

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	S. Kumar(a), J. Chen(b) and F. G. Kondev	NDS 137, 1 (2016)	31-May-2016

Parent: ^{248}Cm: E=0.0; $J^\pi=0^+$; $T_{1/2}=3.48\times10^5$ y *6*; %SF decay=8.39 *16*

2006Ur01: Source: ^{248}Cm; Detectors: EUROGAM 2 array and four LEPS detectors, Measured Eγ, Iγ, γγ coin, γγ(θ).

^{109}Mo Levels

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$	Comments
0.0[#]	(5/2$^+$)	0.61 s *+3–4*	$T_{1/2}$: from Adopted Levels.
144.01[#] *25*	(7/2$^+$)		
222.19[@] *25*	(7/2$^-$)		
333.0[@] *3*	(9/2$^-$)		
336.4[#] *6*	(9/2$^+$)		
472.0[@] *4*	(11/2$^-$)		
553.3[#] *4*	(11/2$^+$)		
730.3[@] *5*	(13/2$^-$)		
810.6[#] *8*	(13/2$^+$)		
885.7[@] *5*	(15/2$^-$)		
1095.4[#] *7*	(15/2$^+$)		
1286.7[@] *11*	(17/2$^-$)		
1442.7[@] *6*	(19/2$^-$)		
2137.7[@] *12*	(23/2$^-$)		

[†] From a least-square fit to Eγ.
[‡] From 2006Ur01, based on deduced transition multipolarities, using α(exp) and γγ(θ), and the proposed band structures.
[#] Band(A): *ν*5/2[402] band; assignment is tentative.
[@] Band(B): *ν*7/2[523] band; assignment is tentative.

γ(^{109}Mo)

Eγ[†]	Iγ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	δ	α[#]	Comments
78.2 *5*	23 *2*	222.19	(7/2$^-$)	144.01	(7/2$^+$)	E1		0.257 *6*	α(K)=0.226 *6*; α(L)=0.0264 *7*; α(M)=0.00468 *11* α(N)=0.000694 *17*; α(O)=3.37×10^{-5} *8* Mult.: from α(exp) in 2006Ur01 using intensity balance considerations.
110.8 *3*	77 *3*	333.0	(9/2$^-$)	222.19	(7/2$^-$)	M1+E2	0.55 *20*	0.34 *9*	α(K)=0.29 *7*; α(L)=0.044 *14*; α(M)=0.0079 *25* α(N)=0.0011 *4*; α(O)=4.6×10^{-5} *9* Mult.: from α(exp) = 0.34 *8*, deduced by the evaluators from the intensity balances and Iγ in 2006Ur01; A_2/A_0=+0.11 *2*, A_4/A_0=−0.03 *2* for (110.8γ)(222.2γ)(θ), gives ΔJ=1 for 110.8γ. δ: deduced by evaluators from α(exp) using the BrIccMixing program.
138.9 *3*	68 *3*	472.0	(11/2$^-$)	333.0	(9/2$^-$)	M1(+E2)		0.23 *14*	α(K)=0.20 *11*; α(L)=0.030 *20*;

Continued on next page (footnotes at end of table)

^{248}Cm SF decay 2006Ur01 (continued)

$\gamma(^{109}Mo)$ (continued)

E_γ[†]	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	α[#]	Comments
								α(M)=0.005 *4* α(N)=0.0008 *5*; α(O)=3.1×10^{-5} *15* Mult.: A_2/A_0=+0.07 *1*, A_4/A_0=−0.0 *2* for (110.8γ)(138.9γ)(θ), gives ΔJ=1 for 138.9 γ; A_2/A_0=−0.09 *2*, A_4/A_0=−0.0 *2* (138.9γ)(413.7γ)(θ), gives also ΔJ=1 for 138.9γ (2006Ur01).
144.0 *3*	74 *4*	144.01	(7/2$^+$)	0.0	(5/2$^+$)			
155.4 *5*	16 *2*	885.7	(15/2$^-$)	730.3	(13/2$^-$)			
189.0 *3*	26 *2*	333.0	(9/2$^-$)	144.01	(7/2$^+$)			
192.4 *5*	15 *2*	336.4	(9/2$^+$)	144.01	(7/2$^+$)			
216.8[‡@] *5*		553.3	(11/2$^+$)	336.4	(9/2$^+$)			
222.2 *3*	100 *5*	222.19	(7/2$^-$)	0.0	(5/2$^+$)	E1	0.01262	α(K)=0.01110 *17*; α(L)=0.001258 *19*; α(M)=0.000224 *4* α(N)=3.37×10^{-5} *5*; α(O)=1.81×10^{-6} *3* Mult.: from α(exp) in 2006Ur01 using intensity balance considerations; A_2/A_0=+0.11 *2*, A_4/A_0=−0.03 *2* for (110.8γ)(222.2γ)(θ), gives ΔJ=1 for 222.2γ.
250.0 *5*	19 *2*	472.0	(11/2$^-$)	222.19	(7/2$^-$)			
258.3 *5*	23 *2*	730.3	(13/2$^-$)	472.0	(11/2$^-$)			
336[‡@] *1*		336.4	(9/2$^+$)	0.0	(5/2$^+$)			
397.3 *5*	13 *2*	730.3	(13/2$^-$)	333.0	(9/2$^-$)			
401 *1*		1286.7	(17/2$^-$)	885.7	(15/2$^-$)			
409.3 *3*	26 *3*	553.3	(11/2$^+$)	144.01	(7/2$^+$)			
413.7 *3*	55 *3*	885.7	(15/2$^-$)	472.0	(11/2$^-$)	E2	0.00846	α(K)=0.00737 *11*; α(L)=0.000904 *13*; α(M)=0.0001617 *23* α(N)=2.42×10^{-5} *4*; α(O)=1.226×10^{-6} *18* Mult.: A_2/A_0=−0.09 *2*, A_4/A_0=−0.0 *2* (138.9γ)(413.7γ)(θ), gives ΔJ=2 for 413.7γ.
474.2 *5*		810.6	(13/2$^+$)	336.4	(9/2$^+$)			
542.1 *5*	9 *3*	1095.4	(15/2$^+$)	553.3	(11/2$^+$)			
556[‡@] *1*		1286.7	(17/2$^-$)	730.3	(13/2$^-$)			
557.0 *3*	29 *3*	1442.7	(19/2$^-$)	885.7	(15/2$^-$)			
695 *1*	20 *4*	2137.7	(23/2$^-$)	1442.7	(19/2$^-$)			

[†] From 2006Ur01, ΔEγ is quoted as 0.1 keV for strong lines to 0.5 keV for weak lines. The evaluators have assigned 0.3 keV for Iγ>25, 0.5 keV for Iγ<25, and 1 keV for 336, 401, 556, 695 γ-rays.
[‡] Contaminated line.
[#] Additional information 1.
[@] Placement of transition in the level scheme is uncertain.

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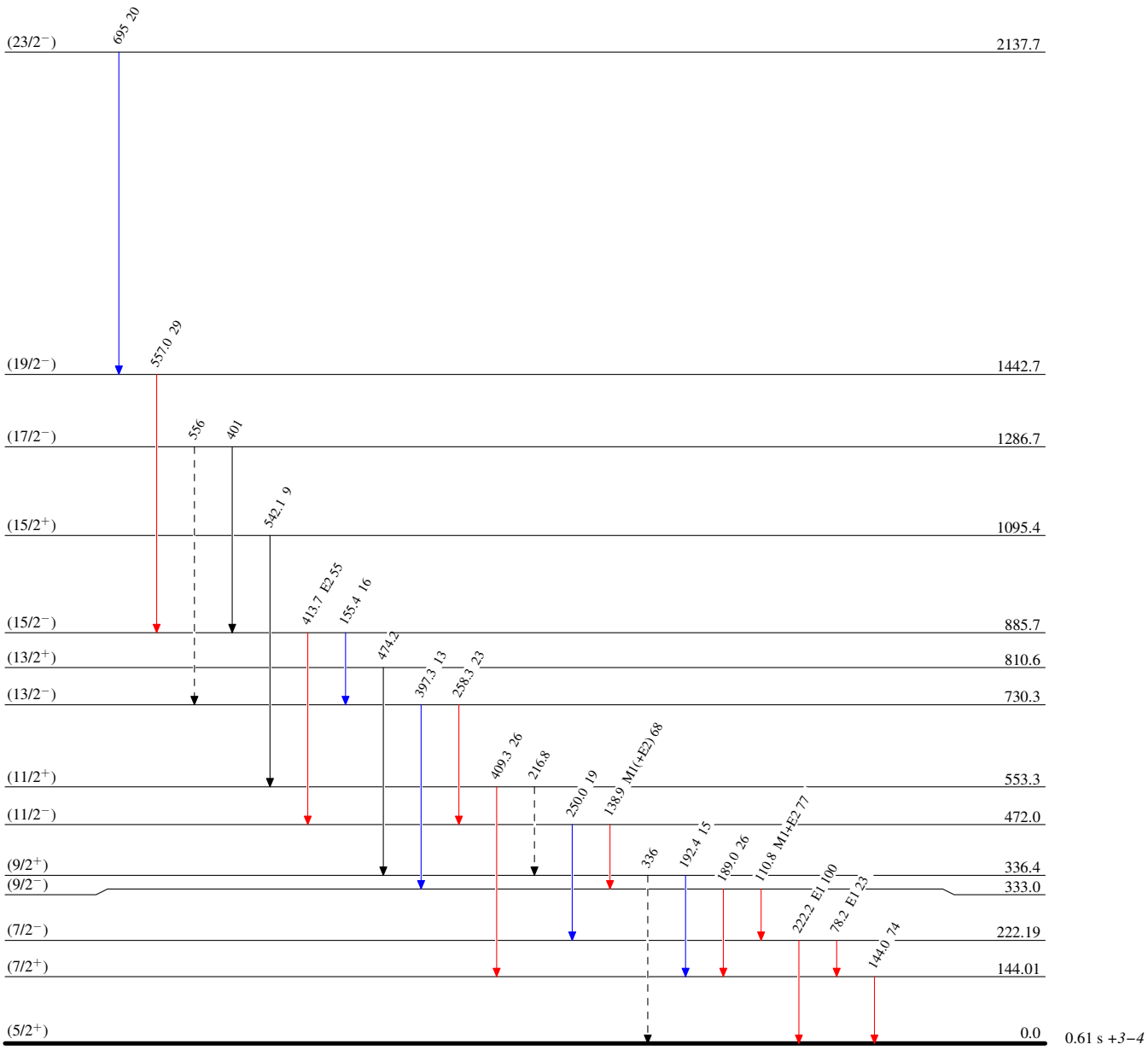
Level Scheme

Intensities: Relative I_γ

Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)



$^{109}_{42}Mo_{67}$

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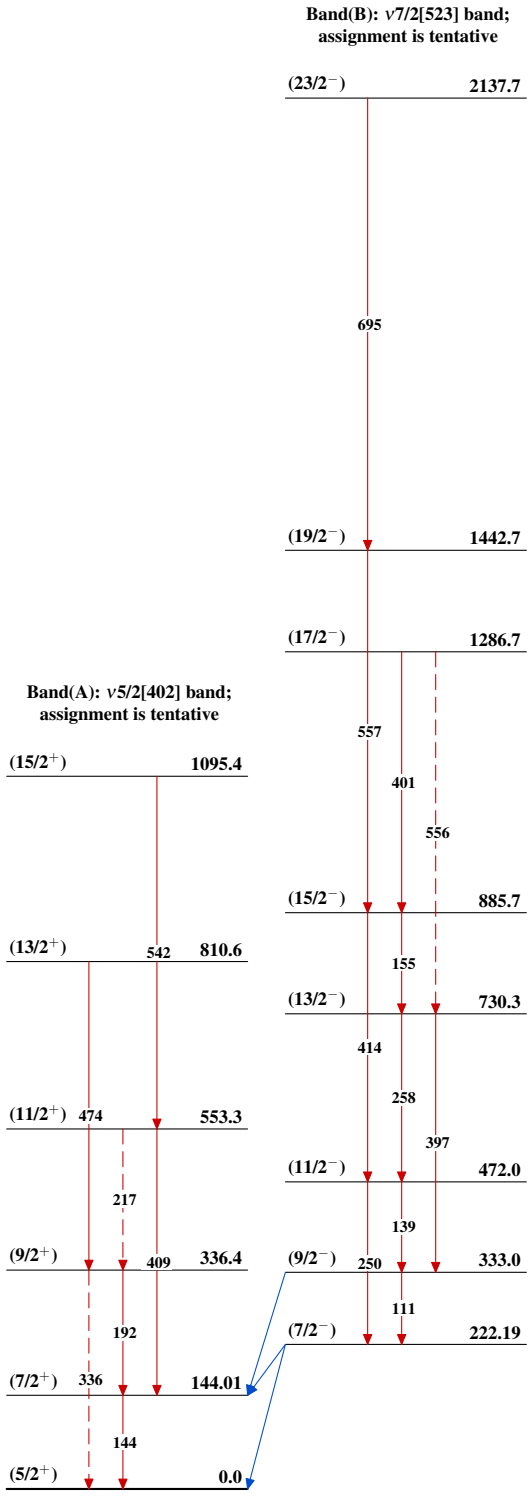

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