

^{248}Cm SF decay **1999No05**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	P. K. Joshi, B. Singh, S. Singh, A. K. Jain		NDS 138, 1 (2016)	15-Oct-2016

Parent: ^{248}Cm : $E=0.0$; $J^\pi=0^+$; $T_{1/2}=3.48\times 10^5$ y 6; %SF decay=0.081 52

^{248}Cm - $T_{1/2}$: From ^{248}Cm Adopted Levels in the ENSDF database (Sept 2014 update).

^{248}Cm -%SF decay: from 0.97 62 per 100 fissions ([1994EnZZ](#)) and %SF=8.39 16 (^{248}Cm Adopted Levels in the ENSDF database, Sept 2014 update).

1999No05: Measured E_γ and $\gamma\gamma$ - and $\gamma\gamma\gamma$ -coincidences (EUROGAM).

From their data, **1999No05** note that the most pronounced fission partners for the 218.6 γ -408.6 γ -618.4 γ -387.5 γ -503.0 γ cascade assigned by [1998Hw04](#) to ^{139}Cs in ^{252}Cf SF decay are ^{103}Nb and ^{105}Nb instead of the expected ^{105}Nb and ^{107}Nb normalization. A strong 96.9 γ was also observed and a double gate on this line with the 127 γ from $^{103,105}\text{Nb}$ yielded ^{105}Nb and ^{142}Cs γ 's. A 408.6 γ -218.6 γ gate yielded 205.6 γ , 404.7 γ , and 544.9 γ which had been assigned to ^{142}Cs by [1998Hw04](#) in ^{252}Cf SF decay. Therefore, **1999No05** conclude that this cascade should be assigned to ^{142}Cs and the 218.6 γ occurs for both the ^{139}Cs and ^{142}Cs nuclides.

 ^{139}Cs Levels

$E(\text{level})^\dagger$	$J^\pi^\ddagger$	$E(\text{level})^\dagger$	$J^\pi^\ddagger$	$E(\text{level})^\dagger$	$E(\text{level})^\dagger$
0.0 [#]	7/2 ⁺	601.6 [#] 3	(11/2 ⁺)	1498.8 [@] 4	2491.8 [#] 5
218.6 3	(5/2 ⁺)	1070.4 [@] 3	(13/2 ⁺)	1735.5 [#] 4	2966.7 [@] 6
595.4 [@] 3	(9/2 ⁺)	1145.8 [#] 4	(15/2 ⁺)	2239.1 [@] 5	

[†] From least-squares fit to E_γ data, assuming 0.3 keV uncertainty for each E_γ value.

[‡] As proposed in **1999No05** based on band structures.

[#] Band(A): g.s. yrast band.

[@] Band(B): side band.

 $\gamma(^{139}\text{Cs})$

Coincidences are from double gates on 475.2 γ -740.3 γ and 127.9 $\gamma(^{105}\text{Nd})$ -740.3 γ .

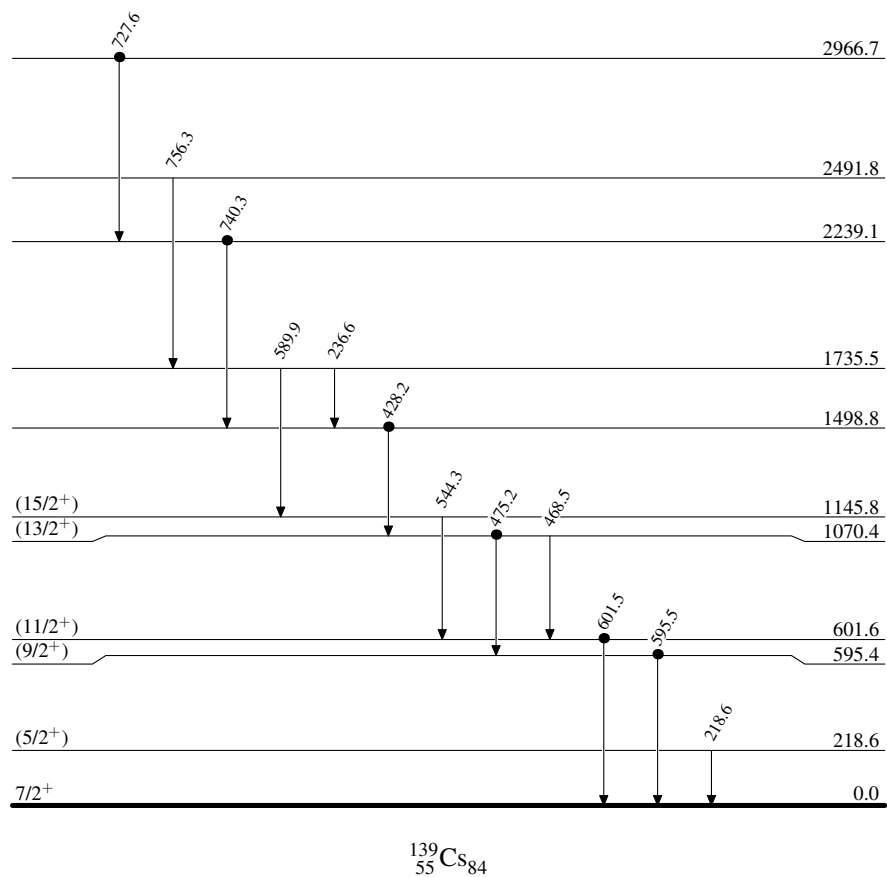
E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π
218.6	218.6	(5/2 ⁺)	0.0	7/2 ⁺	589.9	1735.5		1145.8	(15/2 ⁺)
236.6	1735.5		1498.8		595.5	595.4	(9/2 ⁺)	0.0	7/2 ⁺
428.2	1498.8		1070.4	(13/2 ⁺)	601.5	601.6	(11/2 ⁺)	0.0	7/2 ⁺
468.5	1070.4	(13/2 ⁺)	601.6	(11/2 ⁺)	727.6	2966.7		2239.1	
475.2	1070.4	(13/2 ⁺)	595.4	(9/2 ⁺)	740.3	2239.1		1498.8	
544.3	1145.8	(15/2 ⁺)	601.6	(11/2 ⁺)	756.3	2491.8		1735.5	

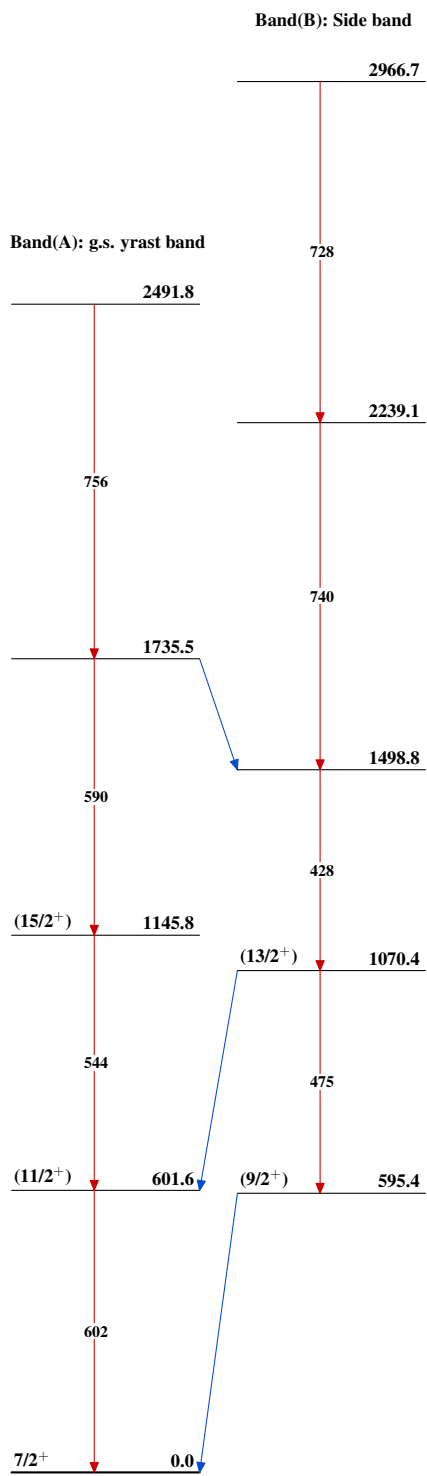
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Legend

Level Scheme

• Coincidence



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