^{248}Cm SF decay 2000Ur05

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Yu. Khazov and A. Rodionov, F. G. Kondev	NDS 112, 855 (2011)	31-Oct-2010

Parent: ^{248}Cm: E=0.0; $J^\pi=0^+$; $T_{1/2}=3.40\times10^5$ y *4*; %SF decay=8.39 *16*

2000Ur05: ^{133}Sb γ's from ^{248}Cm(SF); measured Eγ, Iγ, $\gamma\gamma$-coin., γ(t), $\gamma\gamma(\theta)$, lin. pol.; deduced levels, J^π, configurations. EUROGAM2 array, shell model calculations.

^{133}Sb Levels

E(level)†	J^π‡	$T_{1/2}$	Comments
0.0	$7/2^+$	2.34 min *5*	$T_{1/2}$: from 'Adopted Levels'.
962.0 *8*	$5/2^+$		
2792.0 *7*	$11/2^-$		
4297.1 *8*	$13/2^{(-)}$		Probable configuration=$\pi g_{7/2}\otimes3^-$.
4302.1 *11*	$13/2^+$		
4359.9 *12*	(15/2)		Probable configuration=$\pi g_{7/2}\otimes4^-$.
4464.4 *10*	$15/2^{(+)}$		
4525.7 *15*	$(17/2^+)$		
4.56×10^3 *10*	$(21/2^+)$	16 μs	Additional information 1. E(level): from Adopted Levels. $T_{1/2}$: from 2000Ur05, but no information on gating transitions is given. configuration: Probable $\pi g_{7/2}\nu f_{7/2}h^{-1}_{11/2}$.
4625.3 *12*	(17/2)		configuration: Probable $\pi g_{7/2}\otimes5^-$.

† From a least-squares fit to Eγ.

‡ From 2000Ur05, based on deduced transition multipolarities using angular correlation and linear polarization measurements.

$\gamma(^{133}$Sb)

Eγ†	Iγ†	E_i(level)	J^π_i	E_f	J^π_f	Mult.†	Comments
61.3‡	8 *1*	4525.7	$(17/2^+)$	4464.4	$15/2^{(+)}$		
62.7	1.0 *2*	4359.9	(15/2)	4297.1	$13/2^{(-)}$		
161.0	1.2 *4*	4625.3	(17/2)	4464.4	$15/2^{(+)}$		
162.3‡	28 *3*	4464.4	$15/2^{(+)}$	4302.1	$13/2^+$	D	Mult.: from 1510γ-162$\gamma(\theta)$. Eγ: No 3 μs time component is observed (2000Ur05, see 2009Ur01 also).
167.5	0.2 *1*	4464.4	$15/2^{(+)}$	4297.1	$13/2^{(-)}$		
265.3	0.5 *2*	4625.3	(17/2)	4359.9	(15/2)		
962.0	94 *5*	962.0	$5/2^+$	0.0	$7/2^+$		Iγ: Most of the γ-ray intensity comes from ^{133}Sn β^- decay.
1505.0	7 *1*	4297.1	$13/2^{(-)}$	2792.0	$11/2^-$	M1	Mult.: from 1505γ-2792$\gamma(\theta)$; linear polarization of P<0.
1510.0‡	50 *4*	4302.1	$13/2^+$	2792.0	$11/2^-$	E1	Mult.: from 1510γ-2792$\gamma(\theta)$; linear polarization of P=+0.2 1.
1830.0	1.4 *5*	2792.0	$11/2^-$	962.0	$5/2^+$		
2792.0‡	100 *6*	2792.0	$11/2^-$	0.0	$7/2^+$		
4297.0	10 *1*	4297.1	$13/2^{(-)}$	0.0	$7/2^+$		

† From 2000Ur05.

‡ γ ray that shows 16 μs time component.

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Level Scheme

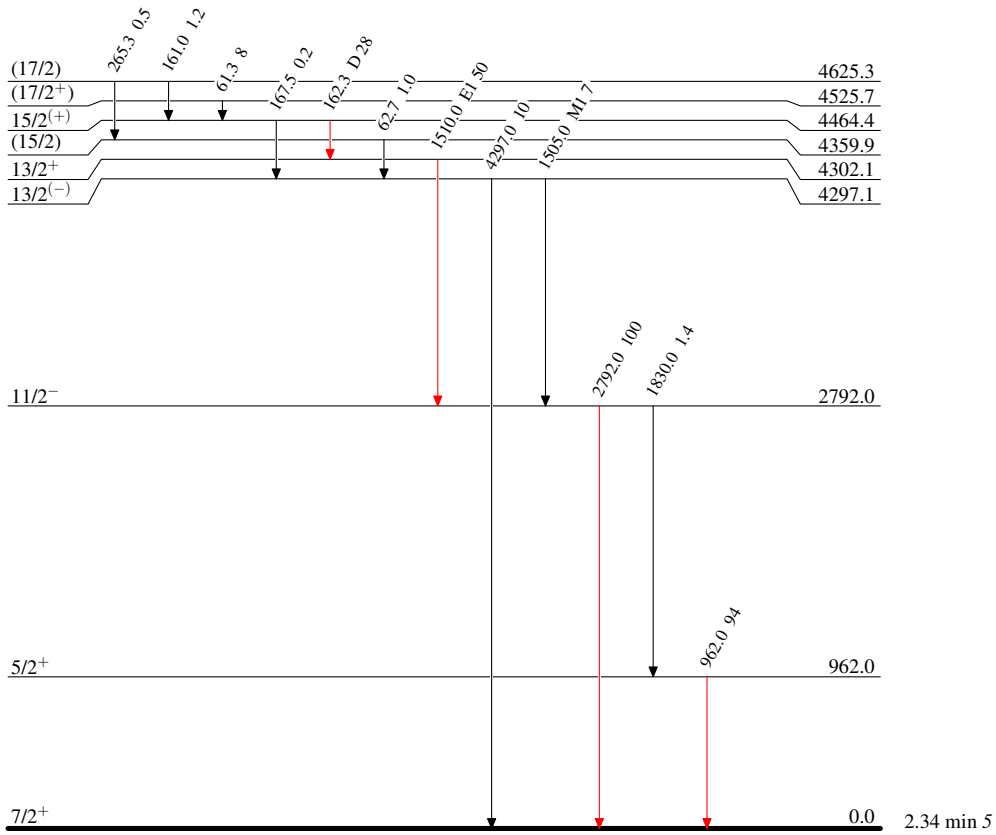
Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$



$^{133}_{51}Sb_{82}$