^{252}Cf SF decay 2009Lu11

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen	NDS 172, 1 (2021)	31-Jan-2021

Parent: ^{252}Cf: E=0.0; $J^\pi=0^+$; $T_{1/2}$=2.645 y *8*; %SF decay=?

2009Lu01: γ rays from the spontaneous fission of ^{252}Cf were detected with the Gammasphere array. Measured Eγ, Iγ, $\gamma\gamma$-coin.

^{100}Nb Levels

E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡
0.0@	1^+	261.3# *3*	(4^+)	542.4# *4*	(6^+)	1058.8# *4*	(8^+)
67.39# *24*	(2^+)	368.2@ *3*	(5^+)	771.9@ *4*	(7^+)	1235.3 *6*	
159.11@ *24*	(3^+)	492.6 *5*		835.7 *6*		1525.9 *6*	

† From least-squares fit to Eγ data assuming 0.3 keV uncertainty for each Eγ value.

‡ Proposed by 2009Lu11 based on band structure.

Band(A): $K^\pi=1^+$, $\pi g_{9/2}\otimes\nu g_{7/2}$,$\alpha$=0.

@ Band(a): $K^\pi=1^+$ $\pi g_{9/2}\otimes\nu g_{7/2}$,$\alpha$=1.

$\gamma(^{100}$Nb)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π
67.39	(2^+)	67.4	100	0.0	1^+	542.4	(6^+)	281.2	18.2	261.3	(4^+)
159.11	(3^+)	91.6	100	67.39	(2^+)	771.9	(7^+)	229.7	100	542.4	(6^+)
		159.1	10.8	0.0	1^+			403.6	25.6	368.2	(5^+)
261.3	(4^+)	102.1	100	159.11	(3^+)	835.7		343.1	100	492.6	
		194.0	5.3	67.39	(2^+)	1058.8	(8^+)	286.9	100	771.9	(7^+)
368.2	(5^+)	106.9	100	261.3	(4^+)			516.4	27.0	542.4	(6^+)
		209.1	12.9	159.11	(3^+)	1235.3		742.6	100	492.6	
492.6		124.4	100	368.2	(5^+)	1525.9		290.6	100	1235.3	
542.4	(6^+)	174.1	100	368.2	(5^+)						

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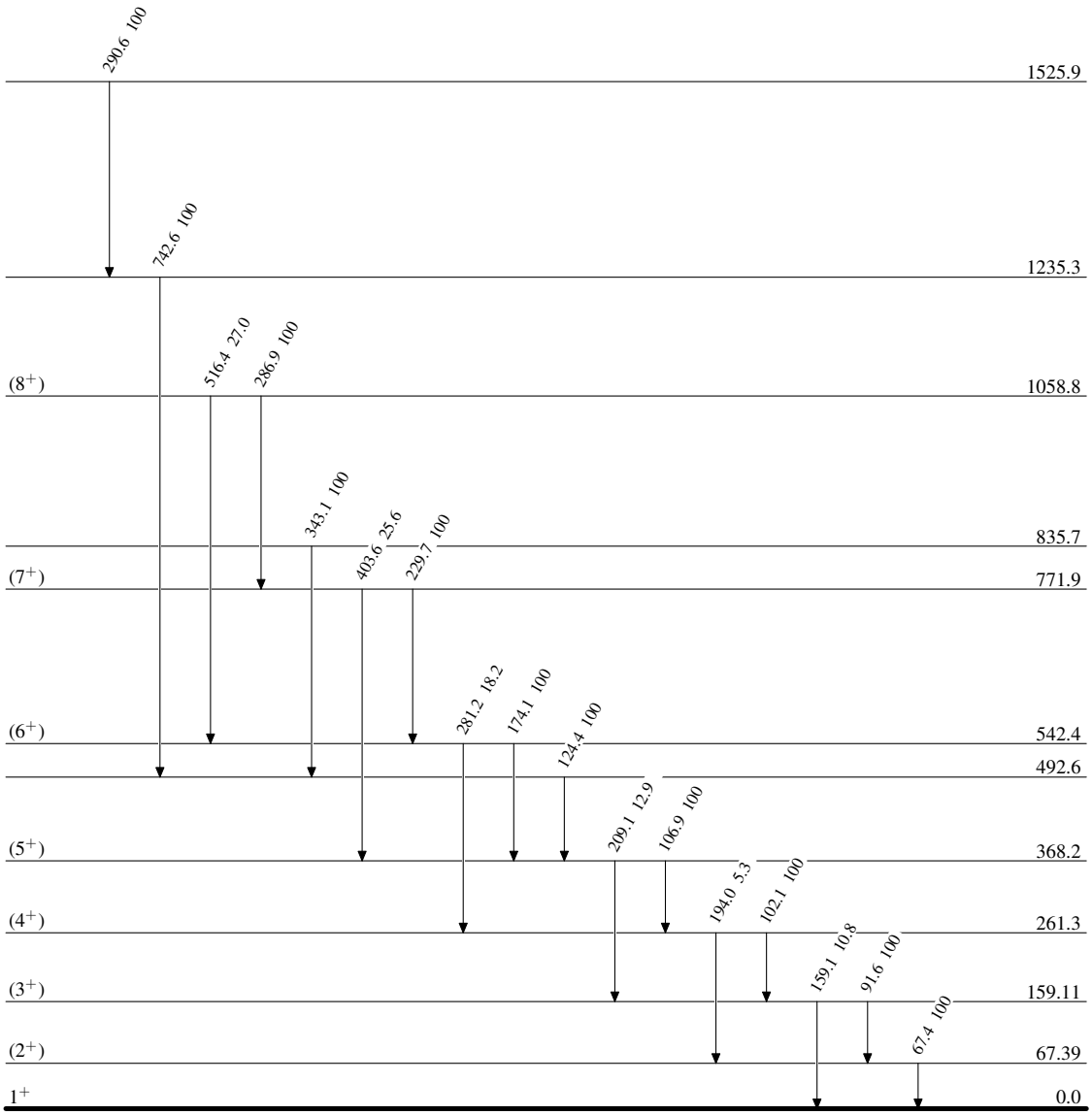
Level Scheme

Intensities: Relative photon branching from each level



$^{100}_{41}Nb_{59}$

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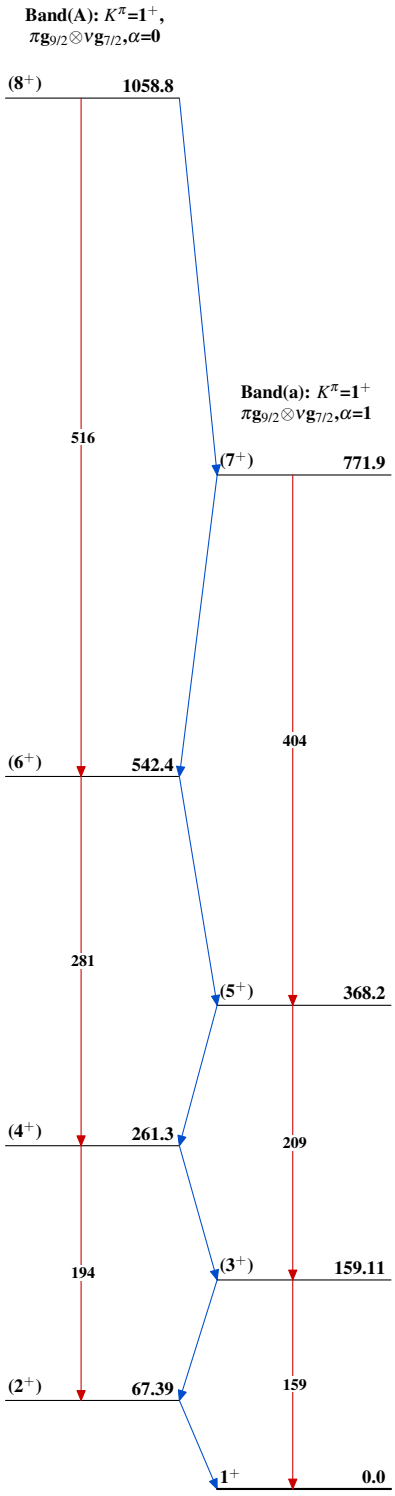

$^{100}_{41}Nb_{59}$