^{248}Cm SF decay 2009Rz01

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

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

EUROGAM-2 array of anti-Compton spectrometers; measured Eγ, Iγ, high-fold γγ coin, γγ(θ), linear polarization; shell-model calculations in large valence space (π $f_{5/2}$, $p_{1/2}$, $p_{3/2}$, $g_{9/2}$ and ν $d_{5/2}$, $s_{1/2}$, $d_{3/2}$, $g_{7/2}$, $h_{11/2}$ orbitals outside ^{78}Ni core).

^{92}Sr Levels

E(level)†	J^π‡	Comments
0.0#	0^+	
814.6# *10*	2^+	
1673.6# *13*	$(4)^+$	
2185.7 *13*	(3^-)	
2766.4 *15*	(5^-)	
3015.9 *15*	$(5,6^+)$	
3130.1# *17*	$(5,6^+)$	
3363.6 *14*	(5^-)	
3559.2 *17*	$(6^-,7^-)$	
3787.2 *15*	$(6^-,7^-)$	
4022.5 *16*	$(6^-,7^-)$	
4930.0 *18*	$(8^-,9^-)$	configuration involves (ν $g_{7/2}$)⊗(ν $h_{11/2}$).

† From least-squares fit to Eγ, assigning 1 keV uncertainty to all Eγ data.

‡ From Adopted Levels for E<3000; authors′ recommended values otherwise. the authors′ values assume that M2 transitions are unlikely for Eγ<1200, and that spontaneous fission decay predominantly populates yrast states In the secondary fission fragments so J is expected to rise with increasing level energy.

Band(A): g.s. band.

γ(^{92}Sr)

E_γ†	E_i(level)	J_i^π	E_f	J_f^π	Mult.‡	Comments
235.4	4022.5	$(6^-,7^-)$	3787.2	$(6^-,7^-)$		
580.5	2766.4	(5^-)	2185.7	(3^-)		
597.2	3363.6	(5^-)	2766.4	(5^-)		
658.9	4022.5	$(6^-,7^-)$	3363.6	(5^-)		
771.3	3787.2	$(6^-,7^-)$	3015.9	$(5,6^+)$		
792.8	3559.2	$(6^-,7^-)$	2766.4	(5^-)		
814.6	814.6	2^+	0.0	0^+	E2	Mult.: Q from γγ(θ); not M2 from RUL because γ observed In prompt coin (partial $T_{1/2}$<5 ns).
859.0	1673.6	$(4)^+$	814.6	2^+	E2	Mult.: Q ΔJ=2 from (1371γ)(815γ)(θ); not M2 from RUL because γ observed In prompt coin (partial $T_{1/2}$<5 ns).
1020.8	3787.2	$(6^-,7^-)$	2766.4	(5^-)		
1092.9	2766.4	(5^-)	1673.6	$(4)^+$	(D)	Mult.: tentative ΔJ=1 from (1093γ)(815γ+859γ)(θ).
1142.8	4930.0	$(8^-,9^-)$	3787.2	$(6^-,7^-)$		
1178.0	3363.6	(5^-)	2185.7	(3^-)		
1342.3	3015.9	$(5,6^+)$	1673.6	$(4)^+$		
1371.1	2185.7	(3^-)	814.6	2^+	D	Mult.: ΔJ=1 from (1371γ)(815γ)(θ).
1456.5	3130.1	$(5,6^+)$	1673.6	$(4)^+$		
1689.8	3363.6	(5^-)	1673.6	$(4)^+$		

Continued on next page (footnotes at end of table)

^{248}Cm SF decay 2009Rz01 (continued)

$\gamma(^{92}Sr)$ (continued)

† Uncertainty unstated by authors.
‡ From $\gamma\gamma(\theta)$ measurements for 859γ-815γ, 1371γ-815γ and 1092γ-(815γ+859γ) cascades.

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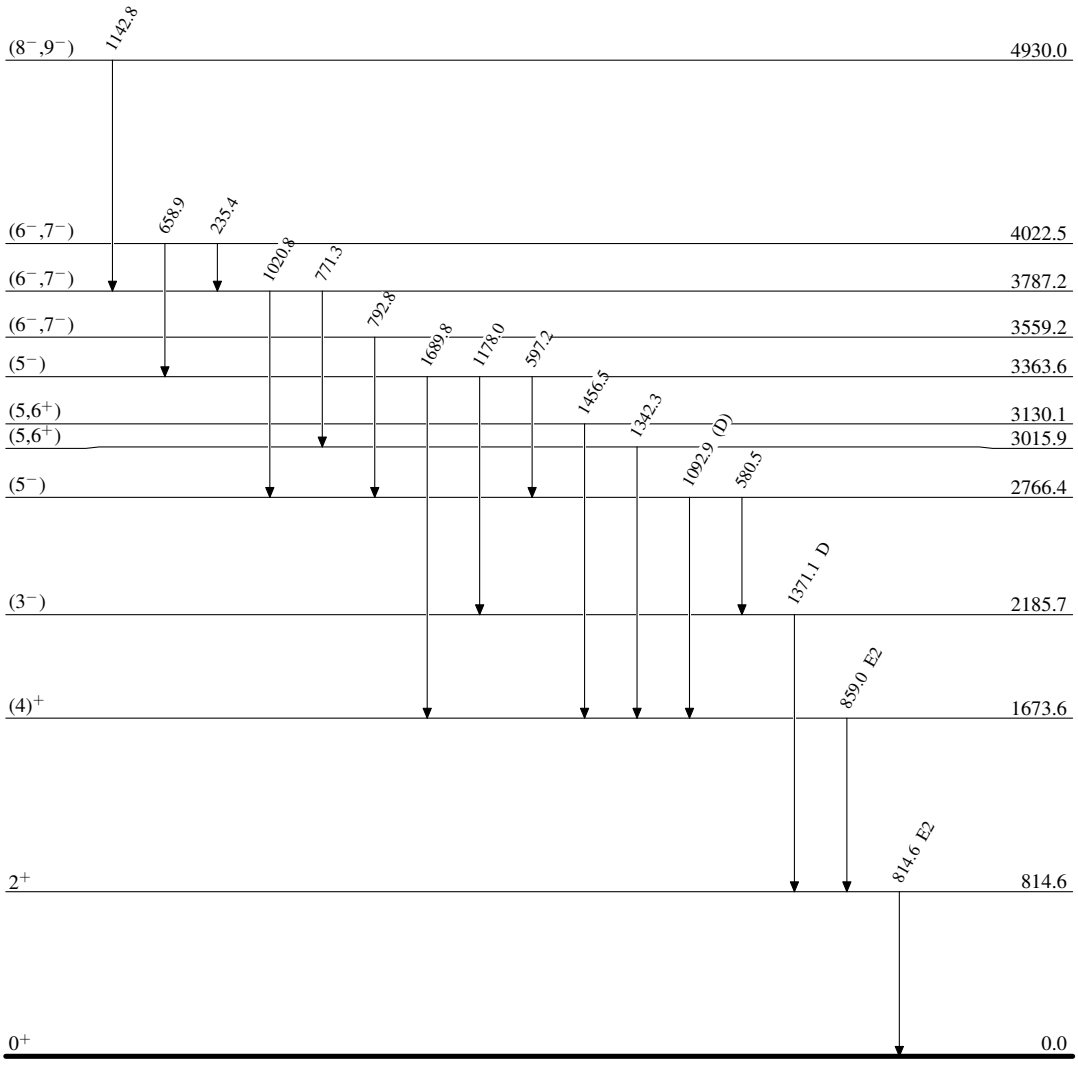
Level Scheme



$^{92}_{38}Sr_{54}$

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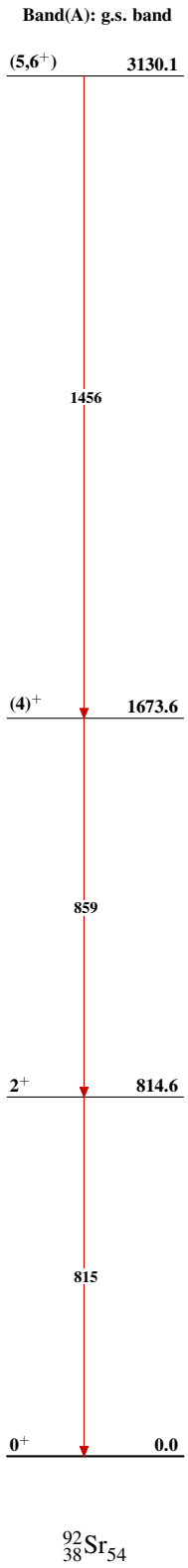

$^{92}_{38}Sr_{54}$