

^{248}Cm SF decay **1997Ur01**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	A. A. Sonzogni	NDS 93, 599 (2001)	1-Dec-2000

Parent: ^{248}Cm : E=0.0; $J^\pi=0^+$; $T_{1/2}=3.48\times 10^5$ y 6; %SF decay=8.39

Eurogam2, 52 Ge including 24 4-crystal clover detectors, 4 LEPs. Measured γ - γ - $\gamma(\theta)$. Assigned by coincidence with Zr partner.

It is noted by the authors of **1997Ur01** that the differences between their level and gamma energies and those of **1995Zh34** (^{252}Cf and ^{242}Pu SF decay) appear to lie outside the bounds of experimental errors and this is a fact that they cannot explain.

 ^{144}Ba Levels

E(level) [†]	J^π [‡]	E(level) [†]	J^π [‡]	E(level) [†]	J^π [‡]	E(level) [†]	J^π [‡]
0.0 [#]	0 ⁺	1354.96 [@] 18	7 ⁻	2158.98 ^a 22	(7 ⁺)	2903.4 ^{&} 3	
199.20 [#] 10	2 ⁺	1470.55 [#] 19	8 ⁺	2278.79 [@] 21	11 ⁻	3320.4 [#] 3	(14 ⁺)
529.90 [#] 15	4 ⁺	1772.67 [@] 19	9 ⁻	2362.66 ^{&} 24	(8 ⁻)	3518.7 [@] 3	(15 ⁻)
838.00 [@] 23	3 ⁻	1880.70 ^a 23	(5 ⁺)	2663.7 ^a 3		3991.2 [#] 4	(16 ⁺)
961.25 [#] 17	6 ⁺	1991.19 ^{&} 22	(6 ⁻)	2666.79 [#] 23	12 ⁺	4241.8 [@] 4	(17 ⁻)
1038.56 [@] 17	5 ⁻	2044.04 [#] 20	10 ⁺	2863.40 [@] 22	13 ⁻		

[†] From a least-squares fit to Ey data.

[‡] from $\gamma\gamma\gamma(\theta)$, linear polarization and branchings ratios.

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

[@] Band(B): octupole band.

[&] Band(C): rotational band 1.

^a Band(D): rotational band 2.

 $\gamma(^{144}\text{Ba})$

E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
115.6 2	2.7 3	1470.55	8 ⁺	1354.96	7 ⁻	
167.8 2	1.1 3	2158.98	(7 ⁺)	1991.19	(6 ⁻)	
196.6 2	1.6 4	2863.40	13 ⁻	2666.79	12 ⁺	DCO($\gamma\gamma\gamma$)=1.10 7.
198.3 3	0.3 1	3518.7	(15 ⁻)	3320.4	(14 ⁺)	
199.2 1	100 5	199.20	2 ⁺	0.0	0 ⁺	
203.3 [†] 3	≤0.3	2362.66	(8 ⁻)	2158.98	(7 ⁺)	
234.8 2	7 1	2278.79	11 ⁻	2044.04	10 ⁺	DCO($\gamma\gamma\gamma$)=1.20 3; DCO($\gamma\gamma$)=1.08 3; lin pol=+0.35 15.
250.4 [†] 3	≤0.3	4241.8	(17 ⁻)	3991.2	(16 ⁺)	
271.4 2	4.2 5	2044.04	10 ⁺	1772.67	9 ⁻	DCO($\gamma\gamma\gamma$)=1.24 6.
278.3 3	0.9 2	2158.98	(7 ⁺)	1880.70	(5 ⁺)	
301.1 3	0.6 2	2663.7		2362.66	(8 ⁻)	
302.1 1	23 2	1772.67	9 ⁻	1470.55	8 ⁺	DCO($\gamma\gamma\gamma$)=1.17 2; DCO($\gamma\gamma$)=1.15 2; lin pol=-0.02 4.
316.5 2	5.3 7	1354.96	7 ⁻	1038.56	5 ⁻	
330.7 1	95 5	529.90	4 ⁺	199.20	2 ⁺	DCO($\gamma\gamma$)=0.93 1; lin pol=+0.14 2.
371.5 3	0.6 2	2362.66	(8 ⁻)	1991.19	(6 ⁻)	
388.0 2	2.1 4	2666.79	12 ⁺	2278.79	11 ⁻	DCO($\gamma\gamma\gamma$)=1.28 9; lin pol=+0.2 1.
393.7 1	24 2	1354.96	7 ⁻	961.25	6 ⁺	DCO($\gamma\gamma\gamma$)=1.18 2; DCO($\gamma\gamma$)=1.12 1; lin pol=+0.08 2.
417.7 1	14 1	1772.67	9 ⁻	1354.96	7 ⁻	
431.3 1	84 5	961.25	6 ⁺	529.90	4 ⁺	DCO($\gamma\gamma\gamma$)=1.02 1; DCO($\gamma\gamma$)=0.93 1; lin pol=+0.09 2.
457.0 2	1.2 3	3320.4	(14 ⁺)	2863.40	13 ⁻	
472.5 3	0.6 2	3991.2	(16 ⁺)	3518.7	(15 ⁻)	
504.7 3	0.7 3	2663.7		2158.98	(7 ⁺)	

Continued on next page (footnotes at end of table)

^{248}Cm SF decay [1997Ur01](#) (continued) $\gamma(^{144}\text{Ba})$ (continued)

E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
506.1 1	19 2	2278.79	11 ⁻	1772.67	9 ⁻	
508.7 1	11 3	1038.56	5 ⁻	529.90	4 ⁺	
509.3 1	45 5	1470.55	8 ⁺	961.25	6 ⁺	DCO($\gamma\gamma\gamma$)=1.01 2; lin pol=+0.09 3.
541.0 [†] 3	≤0.2	2903.4		2362.66	(8 ⁻)	
573.5 1	12 1	2044.04	10 ⁺	1470.55	8 ⁺	DCO($\gamma\gamma\gamma$)=0.97 3; lin pol=+0.07 4.
584.6 1	10 1	2863.40	13 ⁻	2278.79	11 ⁻	DCO($\gamma\gamma\gamma$)=1.01 4; lin pol=+0.13 5.
622.8 2	3.0 5	2666.79	12 ⁺	2044.04	10 ⁺	DCO($\gamma\gamma\gamma$)=1.05 7.
624.6 2	2.4 4	2903.4		2278.79	11 ⁻	
638.8 2	3 1	838.00	3 ⁻	199.20	2 ⁺	
653.7 2	2.1 4	3320.4	(14 ⁺)	2666.79	12 ⁺	
655.3 2	3.1 5	3518.7	(15 ⁻)	2863.40	13 ⁻	
670.8 3	0.9 2	3991.2	(16 ⁺)	3320.4	(14 ⁺)	
723.1 2	1.2 3	4241.8	(17 ⁻)	3518.7	(15 ⁻)	
859.3 3	0.5 2	2903.4		2044.04	10 ⁺	
892.0 3	0.9 2	2362.66	(8 ⁻)	1470.55	8 ⁺	
952.8 3	0.8 2	1991.19	(6 ⁻)	1038.56	5 ⁻	
1007.8 3	0.4 2	2362.66	(8 ⁻)	1354.96	7 ⁻	
1029.8 3	0.8 2	1991.19	(6 ⁻)	961.25	6 ⁺	DCO($\gamma\gamma$)=0.86 5; lin pol=-0.1 3.
1197.7 2	1.6 3	2158.98	(7 ⁺)	961.25	6 ⁺	DCO($\gamma\gamma$)=1.26 9; lin pol=-0.4 3.
1350.8 2	1.2 2	1880.70	(5 ⁺)	529.90	4 ⁺	

[†] Placement of transition in the level scheme is uncertain.

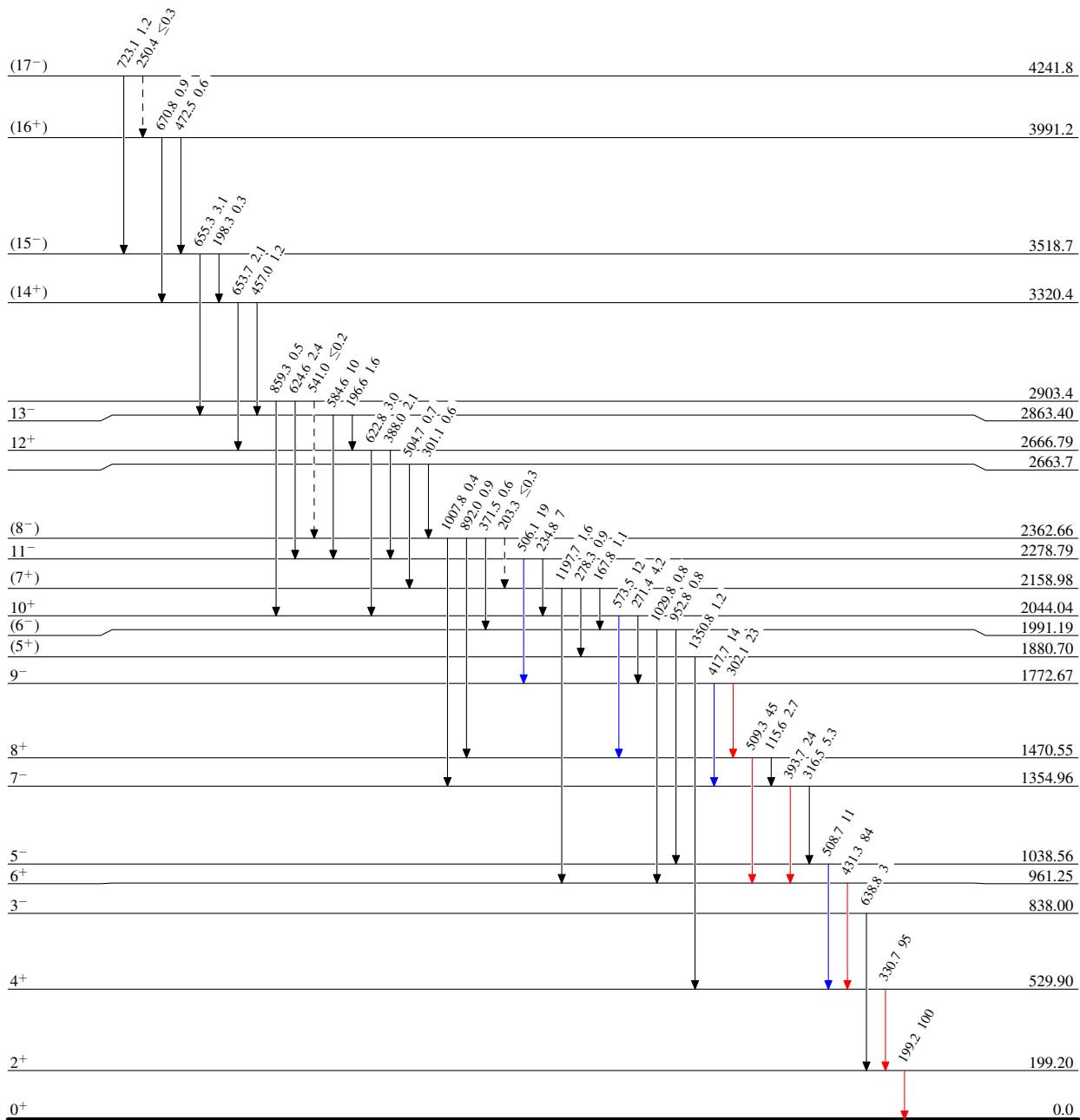
^{248}Cm SF decay $^{1997}\text{Ur01}$

Legend

Level Scheme

Intensities: Type not specified

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

 $^{144}_{56}\text{Ba}_{88}$

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