

²⁴⁸Cm SF decay 2002Sa02,1996Zh21

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, Alexander A. Rodionov And Yuri L. Khazov		NDS 109, 517 (2008)	22-Jan-2008

Parent: ²⁴⁸Cm: E=0; J^π=0⁺; T_{1/2}=3.48×10⁵ y 6; %SF decay=?

2002Sa02: Measured E_γ, triple and higher-fold γγ coin using GAMMASPHERE array of Compton-suppressed Ge detectors.

1996Zh21, 1997Da15 (also 1997Zh14,1997Bh06): measured E_γ, triple and higher-fold γγ coin using EUROGAM II array of 124 Ge detectors and four LEPS detectors.

Both studies (2002Sa02 and 1996Zh21) are by the same group.

Other: 2005Ur01 All data taken here are from 2002Sa02.

¹³⁵I Levels

E(level) [†]	J ^π [‡]	E(level) [†]	J ^π [‡]	E(level) [†]	J ^π [‡]	E(level) [†]	J ^π [‡]
0.0 [@]	7/2 ⁺	2422.1 [#] 5		4242.5 ^a 4	(19/2 ⁺)	5578.2 ^a 4	(27/2 ⁺)
1134.01 [@] 20	(11/2 ⁺)	2874.1 [#] 4		4381.0 ^a 4	(21/2 ⁺)	5616.8 ^b 7	(23/2 ⁻)
1422.1 [@] 3	(15/2 ⁺)	3655.9 ^{&} 4	(19/2 ⁻)	4777.0 ^a 4	(23/2 ⁺)	5849.8 ^b 7	(25/2 ⁻)
1994.5 ^c 4	(17/2 ⁺)	3690.3 ^{&} 4	(23/2 ⁻)	4779.8 7			
2350.8 [#] 4		3766.4 ^{&} 4	(21/2 ⁻)	5329.7 ^a 4	(25/2 ⁺)		

[†] From least-squares fit to E_γ's. The 947.5γ from 5329.7 level not used in the fitting procedure due to its poor fit.

[‡] From shell-model predictions.

[#] From table II of 2002Sa02, not shown in authors' figure 2.

[@] Member of πg_{7/2}³ multiplet.

[&] Member of πg_{7/2}²πh_{11/2} multiplet.

^a Member of πg_{7/2}³νf_{7/2}νh_{11/2}⁻¹ multiplet.

^b Member of πg_{7/2}³νf_{7/2}νd_{3/2}⁻¹ multiplet.

^c Configuration=π(g_{7/2})²πd_{5/2}.

γ(¹³⁵I)

E _γ [†]	I _γ [‡]	E _i (level)	J _i ^π	E _f	J _f ^π
138.5 2	2.8 6	4381.0	(21/2 ⁺)	4242.5	(19/2 ⁺)
248.4 2	0.6 2	5578.2	(27/2 ⁺)	5329.7	(25/2 ⁺)
288.1 2	87 17	1422.1	(15/2 ⁺)	1134.01	(11/2 ⁺)
395.9 2	5.0 10	4777.0	(23/2 ⁺)	4381.0	(21/2 ⁺)
523.1 5	0.1 1	2874.1		2350.8	
552.5 2	2.0 4	5329.7	(25/2 ⁺)	4777.0	(23/2 ⁺)
572.3 2	33.9 7	1994.5	(17/2 ⁺)	1422.1	(15/2 ⁺)
690.7 2	1.4 3	4381.0	(21/2 ⁺)	3690.3	(23/2 ⁻)
725.1 2	4.1 8	4381.0	(21/2 ⁺)	3655.9	(19/2 ⁻)
801.2 2	1.0 2	5578.2	(27/2 ⁺)	4777.0	(23/2 ⁺)
928.7 2	0.8 2	2350.8		1422.1	(15/2 ⁺)
947.5 ^{#@} 2	1.4 3	5329.7	(25/2 ⁺)	4381.0	(21/2 ⁺)
1000.0 5	0.5 1	2422.1		1422.1	(15/2 ⁺)
1010.5 5	0.3 1	4777.0	(23/2 ⁺)	3766.4	(21/2 ⁻)
1089.5 5	0.3 1	4779.8		3690.3	(23/2 ⁻)
1134.0 2	100 20	1134.01	(11/2 ⁺)	0.0	7/2 ⁺
1288.0 5	0.4 1	2422.1		1134.01	(11/2 ⁺)
1452.0 2	0.8 2	2874.1		1422.1	(15/2 ⁺)
1639.5 2	0.8 2	5329.7	(25/2 ⁺)	3690.3	(23/2 ⁻)

Continued on next page (footnotes at end of table)

^{248}Cm SF decay [2002Sa02,1996Zh21](#) (continued) $\gamma(^{135}\text{I})$ (continued)

E_γ^\dagger	I_γ^\ddagger	$E_i(\text{level})$	J_i^π	E_f	J_f^π	E_γ^\dagger	I_γ^\ddagger	$E_i(\text{level})$	J_i^π	E_f	J_f^π
1661.4 2	5.0 10	3655.9	(19/2 ⁻)	1994.5	(17/2 ⁺)	2247.8 2	3.1 6	4242.5	(19/2 ⁺)	1994.5	(17/2 ⁺)
1695.8 2	11.8 24	3690.3	(23/2 ⁻)	1994.5	(17/2 ⁺)	2344.2 2	0.8 2	3766.4	(21/2 ⁻)	1422.1	(15/2 ⁺)
1771.9 5	0.4 1	3766.4	(21/2 ⁻)	1994.5	(17/2 ⁺)	2386.8 5	0.5 1	4381.0	(21/2 ⁺)	1994.5	(17/2 ⁺)
1926.5 5	0.3 1	5616.8	(23/2 ⁻)	3690.3	(23/2 ⁻)	2821.2 5	0.2 1	4242.5	(19/2 ⁺)	1422.1	(15/2 ⁺)
2159.5 5	0.2 1	5849.8	(25/2 ⁻)	3690.3	(23/2 ⁻)						

[†] Uncertainty of 0.2 keV is assigned for $I_\gamma > 0.5$ and 0.5 keV for $I_\gamma < 0.5$, based on a general comment by [2002Sa02](#).

[‡] Uncertainties are assigned as $\approx 20\%$, as suggested by [2002Sa02](#).

[#] This γ was not used in the fitting procedure since it is poorly fitted.

[@] Level-energy difference=948.7.

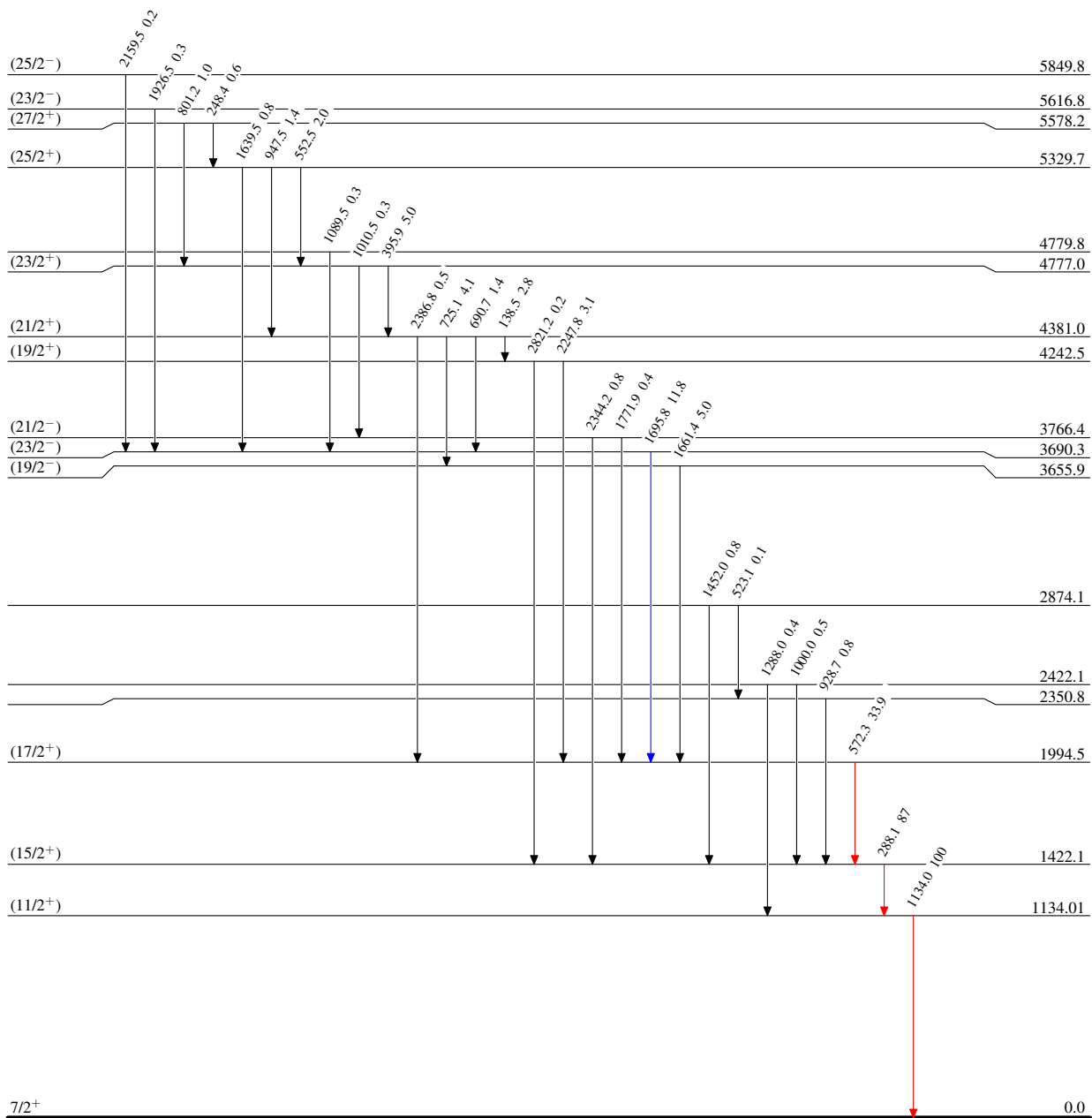
^{248}Cm SF decay 2002Sa02,1996Zh21

Level Scheme

Intensities: Relative I_γ

Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$



$^{135}_{53}\text{I}_{82}$