

^{252}Cf SF decay [1993Bu12](#)

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 146, 1 (2017)	30-Sep-2017

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

^{252}Cf - $T_{1/2}$: From Adopted Levels of ^{252}Cf .

[1993Bu12](#): 0.1 g ^{252}Cf source was placed in the centre of the 20 Compton-suppressed Ge-detector close-packed ball at the Hollifield Heavy Ion Research facility at ORNL. Measured E_γ , I_γ , $\gamma\gamma$ -coin, $\gamma\gamma\gamma$ -coin. Deduced levels.

Others: [2013Mc04](#), [2005Ja12](#), [1983MaYT](#), [1972Wi15](#), [1971Ch44](#), [1970Wi16](#), [1970Tr02](#).

 ^{138}Xe Levels

E(level) [†]	J^π [‡]	Comments
0.0 [#]	0 ⁺	
588.9 [#] 5	2 ⁺	$T_{1/2}$: the measured value of $T_{1/2}=169$ ps 20 (1983MaYT) leads to $B(E2)(\text{W.u.})=1.1$ I , significantly smaller than typical values of 8-10 expected for collective 2 ⁺ states in this mass region. The measured $T_{1/2}$ thus appears too large to correspond to this level. It may strongly be affected by the feeding time.
1072.5 [#] 7	(4 ⁺)	
1554.5 [#] 9	(6 ⁺)	
2284.1 [#] 10	(8 ⁺)	
2972.1 [#] 12	(10 ⁺)	
3571.3 [#] 13	(12 ⁺)	

[†] From a least-squares fit to γ -ray energies, assuming $\Delta E_\gamma=0.5$ keV.

[‡] From Adopted Levels.

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

 $\gamma(^{138}\text{Xe})$

E_γ [†]	I_γ [†]	$E_i(\text{level})$	J^π_i	E_f	J^π_f	Comments
482.0	71 4	1554.5	(6 ⁺)	1072.5	(4 ⁺)	
483.6	100 5	1072.5	(4 ⁺)	588.9	2 ⁺	I_γ : $I(482\gamma)/I(589.5\gamma)\approx 1$ (1972Wi15).
588.9		588.9	2 ⁺	0.0	0 ⁺	
599.2	9 3	3571.3	(12 ⁺)	2972.1	(10 ⁺)	
688.0	29 9	2972.1	(10 ⁺)	2284.1	(8 ⁺)	
729.6	37 11	2284.1	(8 ⁺)	1554.5	(6 ⁺)	

[†] From [1993Bu12](#). Intensities in coincidence with 2⁺ to 0⁺ transition and uncertainties vary from 5% for γ 's from levels with low J to 30% from levels with high J .

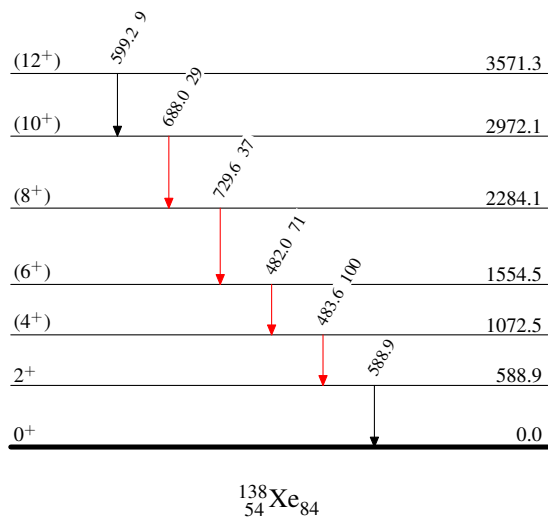
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Level Scheme

Intensities: Relative I_γ

Legend

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



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