

$^{248}\text{Cm}$  SF decay **2000Rz02**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	S. K. Basu, E. A. Mccutchan		NDS 165, 1 (2020)	1-Mar-2020

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

**2000Rz02**: Spontaneous fission decay of  $^{248}\text{Cm}$ ; EUROGAM2 array; measured  $\gamma$ ,  $\gamma\gamma\gamma$ ,  $\gamma\gamma(\theta)$ , linear polarization.

 $^{90}\text{Kr}$  Levels

E(level) <sup>†</sup>	$J^\pi$ <sup>‡</sup>	Comments
0.0	$0^+$	
707.10	$2^+$	
1362.61	$2^+$	
1506.4	$3^-$	E(level): the 799.3 $\gamma$ from this level has been assigned to $^{91}\text{Kr}$ by <b>2017Rz01</b> in $^{235}\text{U}(\text{n},\text{F}\gamma)$ . Hence, this level is excluded from Adopted Levels.
1764.1	$(4^+)$	
1830.1	$4$	
1974.2		E(level): the 467.9 $\gamma$ from this level has been assigned to $^{91}\text{Kr}$ by <b>2017Rz01</b> in $^{235}\text{U}(\text{n},\text{F}\gamma)$ . Hence, this level is excluded from Adopted Levels.
2596.6		E(level): either E(level)=2599.7, as quoted by <b>2000Rz02</b> seems to be in error or $E_\gamma=832.5$ needs adjustment. Evaluator opts for the adjustment of E(level) to be consistent with $^{252}\text{Cf}$ SF decay ( <b>2011Li34</b> ).
2678.1		E(level): the 1171.5 $\gamma$ from this level has been assigned to $^{91}\text{Kr}$ by <b>2017Rz01</b> in $^{235}\text{U}(\text{n},\text{F}\gamma)$ . Hence, this level is excluded from Adopted Levels.
2745.5		E(level): the 771.4 $\gamma$ ray from this level has been assigned to $^{91}\text{Kr}$ by <b>2017Rz01</b> in $^{235}\text{U}(\text{n},\text{F}\gamma)$ . Hence, this level is excluded from Adopted Levels.
2761.8		E(level): the 1255.5 $\gamma$ ray from this level has been assigned to $^{91}\text{Kr}$ by <b>2017Rz01</b> in $^{235}\text{U}(\text{n},\text{F}\gamma)$ . Hence, this level is excluded from Adopted Levels.
2852.6		
3084.3		
3222.6		
3407.9		E(level): The $\gamma$ rays from this level have been assigned to $^{91}\text{Kr}$ by <b>2017Rz01</b> in $^{235}\text{U}(\text{n},\text{F}\gamma)$ . Hence, this level is excluded from Adopted Levels. levels.
3896.0		
4003.6		E(level): the 1258.1 $\gamma$ ray from this level has been assigned to $^{91}\text{Kr}$ by <b>2017Rz01</b> in $^{235}\text{U}(\text{n},\text{F}\gamma)$ . Hence, this level is excluded from Adopted Levels.
4035.2		
4324.5		E(level): the 916.6 $\gamma$ ray from this level has been assigned to $^{91}\text{Kr}$ by <b>2017Rz01</b> in $^{235}\text{U}(\text{n},\text{F}\gamma)$ . Hence, this level is excluded from Adopted Levels.
5052.3		

<sup>†</sup> From least-squares fit to  $E_\gamma$ , by evaluators.

<sup>‡</sup> As proposed by **2000Rz02** based on multipolarity deduced from  $\gamma\gamma$  angular correlation measurements and systematics.

 $\gamma(^{90}\text{Kr})$ 

$E_\gamma$	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$	Mult. <sup>†</sup>	Comments
401.6	1764.1	$(4^+)$	1362.61	$2^+$	Q	(401 $\gamma$ )(655 $\gamma$ )( $\theta$ ): $A_2=-0.03$ 2, $A_4=-0.03$ 1. (401 $\gamma$ )(1362 $\gamma$ )( $\theta$ ): $A_2=+0.13$ 2, $A_4=+0.03$ 1.
467.9	1974.2		1506.4	$3^-$	D	(468 $\gamma$ )(799 $\gamma$ )( $\theta$ ): $A_2=+0.12$ 2, $A_4=+0.07$ 1. $E_\gamma$ : in $^{235}\text{U}(\text{n},\text{F}\gamma)$ , this transition is assigned to $^{91}\text{Kr}$ ; thus it is not included in the Adopted Levels.
646.2	3407.9		2761.8			$E_\gamma$ : in $^{235}\text{U}(\text{n},\text{F}\gamma)$ , this transition is assigned to $^{91}\text{Kr}$ ; thus it is not included in the Adopted Levels.
655.6	1362.61	$2^+$	707.10	$2^+$	D	(655 $\gamma$ )(707 $\gamma$ )( $\theta$ ): $A_2=-0.23$ 4, $A_4=+0.13$ 2.

Continued on next page (footnotes at end of table)

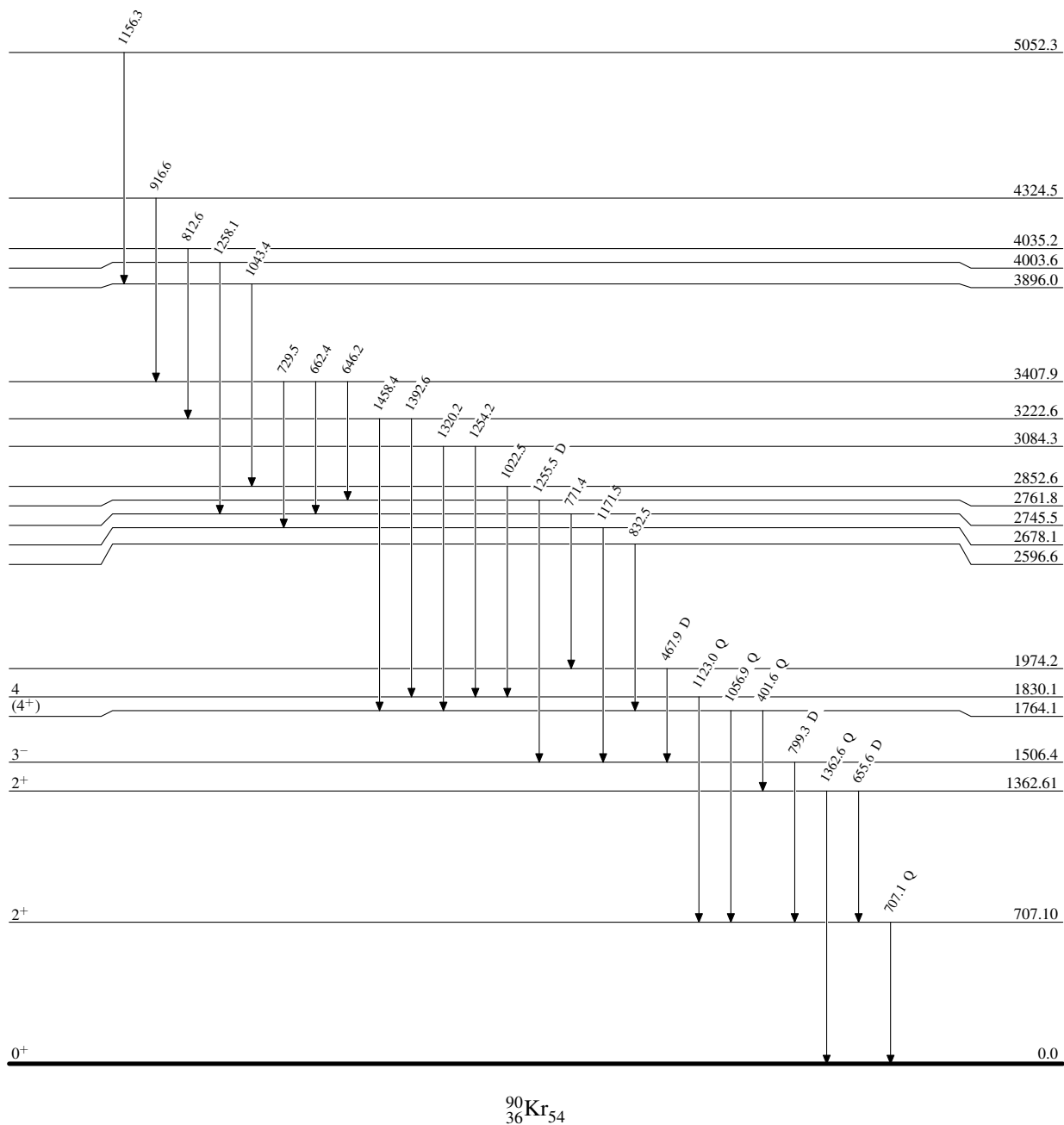
**$^{248}\text{Cm}$  SF decay 2000Rz02 (continued)** $\gamma(^{90}\text{Kr})$  (continued)

$E_\gamma$	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$	Mult. <sup>†</sup>	Comments
662.4	3407.9		2745.5			$E_\gamma$ : in $^{235}\text{U}(\text{n},\text{F}\gamma)$ , this transition is assigned to $^{91}\text{Kr}$ ; thus it is not included in the Adopted Levels.
707.1	707.10	2 <sup>+</sup>	0.0	0 <sup>+</sup>	Q	
729.5	3407.9		2678.1			$E_\gamma$ : in $^{235}\text{U}(\text{n},\text{F}\gamma)$ , this transition is assigned to $^{91}\text{Kr}$ ; thus it is not included in the Adopted Levels.
771.4	2745.5		1974.2			$E_\gamma$ : in $^{235}\text{U}(\text{n},\text{F}\gamma)$ , this transition is assigned to $^{91}\text{Kr}$ ; thus it is not included in the Adopted Levels.
799.3	1506.4	3 <sup>-</sup>	707.10	2 <sup>+</sup>	D	(799 $\gamma$ )(707 $\gamma$ )( $\theta$ ): $A_2=-0.20$ 2, $A_4=-0.02$ 1. $E_\gamma$ : in $^{235}\text{U}(\text{n},\text{F}\gamma)$ , this transition is assigned to $^{91}\text{Kr}$ ; thus it is not included in the Adopted Levels.
812.6	4035.2		3222.6			
832.5	2596.6		1764.1	(4 <sup>+</sup> )		
916.6	4324.5		3407.9			$E_\gamma$ : in $^{235}\text{U}(\text{n},\text{F}\gamma)$ , this transition is assigned to $^{91}\text{Kr}$ ; thus it is not included in the Adopted Levels.
1022.5	2852.6		1830.1	4		
1043.4	3896.0		2852.6			
1056.9	1764.1	(4 <sup>+</sup> )	707.10	2 <sup>+</sup>	Q	(1056 $\gamma$ )(707 $\gamma$ )( $\theta$ ): $A_2=+0.08$ 3, $A_4=+0.02$ 1.
1123.0	1830.1	4	707.10	2 <sup>+</sup>	Q	(1123 $\gamma$ )(707 $\gamma$ )( $\theta$ ): $A_2=+0.10$ 2, $A_4=+0.04$ 1.
1156.3	5052.3		3896.0			
1171.5	2678.1		1506.4	3 <sup>-</sup>		$E_\gamma$ : in $^{235}\text{U}(\text{n},\text{F}\gamma)$ , this transition is assigned to $^{91}\text{Kr}$ ; thus it is not included in the Adopted Levels.
1254.2	3084.3		1830.1	4		
1255.5	2761.8		1506.4	3 <sup>-</sup>	D	(1255 $\gamma$ )(799 $\gamma$ )( $\theta$ ): $A_2=+0.13$ 4, $A_4=+0.07$ 2. $E_\gamma$ : in $^{235}\text{U}(\text{n},\text{F}\gamma)$ , this transition is assigned to $^{91}\text{Kr}$ ; thus it is not included in the Adopted Levels.
1258.1	4003.6		2745.5			$E_\gamma$ : in $^{235}\text{U}(\text{n},\text{F}\gamma)$ , this transition is assigned to $^{91}\text{Kr}$ ; thus it is not included in the Adopted Levels.
1320.2	3084.3		1764.1	(4 <sup>+</sup> )		
1362.6	1362.61	2 <sup>+</sup>	0.0	0 <sup>+</sup>	Q	
1392.6	3222.6		1830.1	4		
1458.4	3222.6		1764.1	(4 <sup>+</sup> )		

<sup>†</sup> Deduced from  $\gamma\gamma$  angular correlation measurements (2000Rz02).

$^{248}\text{Cm}$  SF decay 2000Rz02

## Level Scheme

 $^{90}_{36}\text{Kr}_{54}$