

^{252}Cf SF decay [2011Li34](#)

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

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

[2011Li34](#): Spontaneous fission decay of ^{252}Cf ; GAMMASPHERE Array at LBL; measured γ , $\gamma\gamma$, $\gamma\gamma(\theta)$.

 ^{90}Kr Levels

E(level) [†]	J^π [‡]	Comments
0.0 [#]	0 ⁺	
707.60 [#]	2 ⁺	
1362.41 ^a	2 ⁺	
1506.7 [@]	3 ⁻	J^π : confirmed from angular correlation of 707.6-799.1 keV cascade; consistent with 2000Rz02 . E(level): the 799.1 γ from this level has been assigned to ^{91}Kr by 2017Rz01 in $^{235}\text{U}(\text{n},\text{F}\gamma)$. Hence, this level is excluded from Adopted Levels.
1763.8 ^a	(4 ⁺)	
1830.9 [#]	(4 ⁺)	
1975.0 ^{&}		E(level): the 468.3 γ from this level has been assigned to ^{91}Kr by 2017Rz01 in $^{235}\text{U}(\text{n},\text{F}\gamma)$. Hence, this level is excluded from Adopted Levels.
2596.6 ^a	(6 ⁺)	
2678.8		E(level): the 1172.1 γ from this level has been assigned to ^{91}Kr by 2017Rz01 in $^{235}\text{U}(\text{n},\text{F}\gamma)$. Hence, this level is excluded from Adopted Levels.
2746.5 ^{&}		E(level): the 771.5 γ ray from this level has been assigned to ^{91}Kr by 2017Rz01 in $^{235}\text{U}(\text{n},\text{F}\gamma)$. Hence, this level is excluded from the Adopted Levels.
2762.3 [@]		E(level): the 1255.6 γ ray from this level has been assigned to ^{91}Kr by 2017Rz01 in $^{235}\text{U}(\text{n},\text{F}\gamma)$. Hence, this level is excluded from the Adopted Levels.
2853.6 [#]	(6 ⁺)	
3085.3	(6 ⁺)	
3224.1	(6 ⁺)	
3408.6 [@]		E(level): the γ rays from this level have been assigned to ^{91}Kr by 2017Rz01 in $^{235}\text{U}(\text{n},\text{F}\gamma)$. Hence, this level is excluded from the Adopted Levels.
3695.6 ^a	(8 ⁺)	
3897.0 [#]	(8 ⁺)	
4005.5 ^{&}		E(level): the 1259.0 γ ray from this level has been assigned to ^{91}Kr by 2017Rz01 in $^{235}\text{U}(\text{n},\text{F}\gamma)$. Hence, this level is excluded from the Adopted Levels.
4037.5	(8 ⁺)	
4285.3	(8 ⁺)	
4325.4 [@]		E(level): the 916.8 γ ray from this level has been assigned to ^{91}Kr by 2017Rz01 in $^{235}\text{U}(\text{n},\text{F}\gamma)$. Hence, this level is excluded from the Adopted Levels.
5053.6 [#]	(10 ⁺)	
5081.3 ^{&}		E(level): The 1075.8 γ ray from this level has been assigned to ^{91}Kr by 2017Rz01 in $^{235}\text{U}(\text{n},\text{F}\gamma)$. Hence, this level is excluded from the Adopted Levels.
6298.9 [#]	(12 ⁺)	

[†] From least-squares fit to E_γ by evaluators.

[‡] Based on deduced multipolarity in ^{248}Cm decay ([2000Rz02](#)) and from systematics of N=52 isotones, unless otherwise stated.

[#] Band(A): Band-1.

[@] Band(B): Band-2.

[&] Band(C): Band-3.

^a Band(D): Band-4.

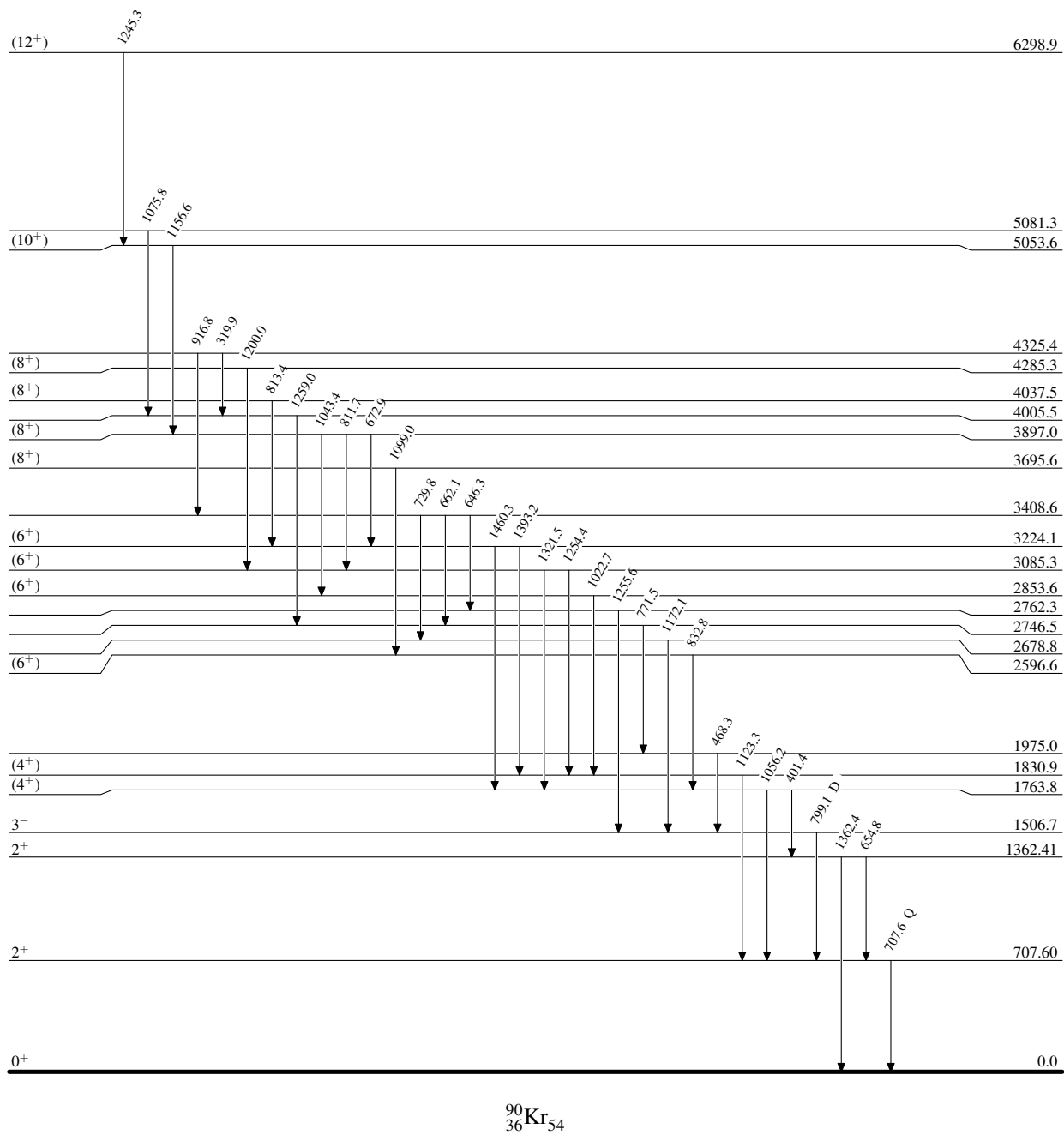
^{252}Cf SF decay **2011Li34** (continued) $\gamma(^{90}\text{Kr})$

E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [†]	Comments
319.9	4325.4		4005.5			E_γ : not seen in ^{248}Cm SF decay; consequent to exclusion of 4005.5 keV level, this γ ray is not included in the Adopted Levels.
401.4	1763.8	(4 ⁺)	1362.41	2 ⁺		
468.3	1975.0		1506.7	3 ⁻		E_γ : in $^{235}\text{U}(\text{n},\text{F}\gamma)$, this transition is assigned to ^{91}Kr ; thus it is not included in the Adopted Levels.
646.3	3408.6		2762.3			E_γ : in $^{235}\text{U}(\text{n},\text{F}\gamma)$, this transition is assigned to ^{91}Kr ; thus it is not included in the Adopted Levels.
654.8	1362.41	2 ⁺	707.60	2 ⁺		
662.1	3408.6		2746.5			E_γ : in $^{235}\text{U}(\text{n},\text{F}\gamma)$, this transition is assigned to ^{91}Kr ; thus it is not included in the Adopted Levels.
672.9	3897.0	(8 ⁺)	3224.1	(6 ⁺)		
707.6	707.60	2 ⁺	0.0	0 ⁺	Q	
729.8	3408.6		2678.8			E_γ : in $^{235}\text{U}(\text{n},\text{F}\gamma)$, this transition is assigned to ^{91}Kr ; thus it is not included in the Adopted Levels.
771.5	2746.5		1975.0			E_γ : in $^{235}\text{U}(\text{n},\text{F}\gamma)$, this transition is assigned to ^{91}Kr ; thus it is not included in the Adopted Levels.
799.1	1506.7	3 ⁻	707.60	2 ⁺	D	(707.6 γ)(799.1 γ)(θ): $A_2=-0.214\ 36$, $A_4=-0.01\ 5$. E_γ : in $^{235}\text{U}(\text{n},\text{F}\gamma)$, this transition is assigned to ^{91}Kr ; thus it is not included in the Adopted Levels.
811.7	3897.0	(8 ⁺)	3085.3	(6 ⁺)		
813.4	4037.5	(8 ⁺)	3224.1	(6 ⁺)		
832.8	2596.6	(6 ⁺)	1763.8	(4 ⁺)		
916.8	4325.4		3408.6			E_γ : in $^{235}\text{U}(\text{n},\text{F}\gamma)$, this transition is assigned to ^{91}Kr ; thus it is not included in the Adopted Levels.
1022.7	2853.6	(6 ⁺)	1830.9	(4 ⁺)		
1043.4	3897.0	(8 ⁺)	2853.6	(6 ⁺)		
1056.2	1763.8	(4 ⁺)	707.60	2 ⁺		
1075.8	5081.3		4005.5			
1099.0	3695.6	(8 ⁺)	2596.6	(6 ⁺)		
1123.3	1830.9	(4 ⁺)	707.60	2 ⁺		
1156.6	5053.6	(10 ⁺)	3897.0	(8 ⁺)		
1172.1	2678.8		1506.7	3 ⁻		E_γ : in $^{235}\text{U}(\text{n},\text{F}\gamma)$, this transition is assigned to ^{91}Kr ; thus it is not included in the Adopted Levels.
1200.0	4285.3	(8 ⁺)	3085.3	(6 ⁺)		
1245.3	6298.9	(12 ⁺)	5053.6	(10 ⁺)		
1254.4	3085.3	(6 ⁺)	1830.9	(4 ⁺)		
1255.6	2762.3		1506.7	3 ⁻		E_γ : in $^{235}\text{U}(\text{n},\text{F}\gamma)$, this transition is assigned to ^{91}Kr ; thus it is not included in the Adopted Levels.
1259.0	4005.5		2746.5			E_γ : in $^{235}\text{U}(\text{n},\text{F}\gamma)$, this transition is assigned to ^{91}Kr ; thus it is not included in the Adopted Levels.
1321.5	3085.3	(6 ⁺)	1763.8	(4 ⁺)		
1362.4	1362.41	2 ⁺	0.0	0 ⁺		
1393.2	3224.1	(6 ⁺)	1830.9	(4 ⁺)		
1460.3	3224.1	(6 ⁺)	1763.8	(4 ⁺)		

[†] Deduced from angular correlation data (2011Li34).

^{252}Cf SF decay $^{2011}\text{Li}34$

Level Scheme

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

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