

^{252}Cf SF decay [2011Li25](#)

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 113, 515 (2012)	1-Jan-2012

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

^{252}Cf - $T_{1/2}$: From Adopted Levels for ^{252}Cf in ENSDF database.

Studied high-spin excited states of ^{114}Rh produced in the spontaneous fission of ^{252}Cf by examining prompt γ -rays emitted with the Gammasphere detector array at Lawrence Berkeley National Laboratory. Source= $62 \mu\text{Ci}$ ^{252}Cf placed between two 10 mg/cm^2 iron foils. Measured E_γ , I_γ , and $\gamma\gamma$ coin. Deduced levels, J, and bands. Comparison with shell-model calculations and systematics.

 ^{114}Rh Levels

E(level) [†]	J^π	Comments
0.0+x [‡] 3	(7 ⁻)	Additional information 1.
211.1+x [#] 8	(8 ⁻)	
407.0+x [‡] 8	(9 ⁻)	
489.2+x [@] 13	(9 ⁻)	
671.1+x [#] 10	(10 ⁻)	
813.7+x [@] 15	(10 ⁻)	
968.6+x [‡] 11	(11 ⁻)	
1246.0+x [@] 15	(11 ⁻)	
1285.6+x [#] 12	(12 ⁻)	
1309.0+x 18		
1564.2+x [@] 17	(12 ⁻)	
1706.5+x [‡] 13	(13 ⁻)	
2020.3+x [#] 16	(14 ⁻)	

[†] From least-squares fit to E_γ data, assuming 0.3 keV uncertainty for each γ ray.

[‡] Band(A): $\pi g_{9/2} \otimes \nu h_{11/2}, \alpha=1$.

[#] Band(a): $\pi g_{9/2} \otimes \nu h_{11/2}, \alpha=0$.

[@] Band(B): Side-band. Feeding the yrast 8⁻ state.

 $\gamma(^{114}\text{Rh})$

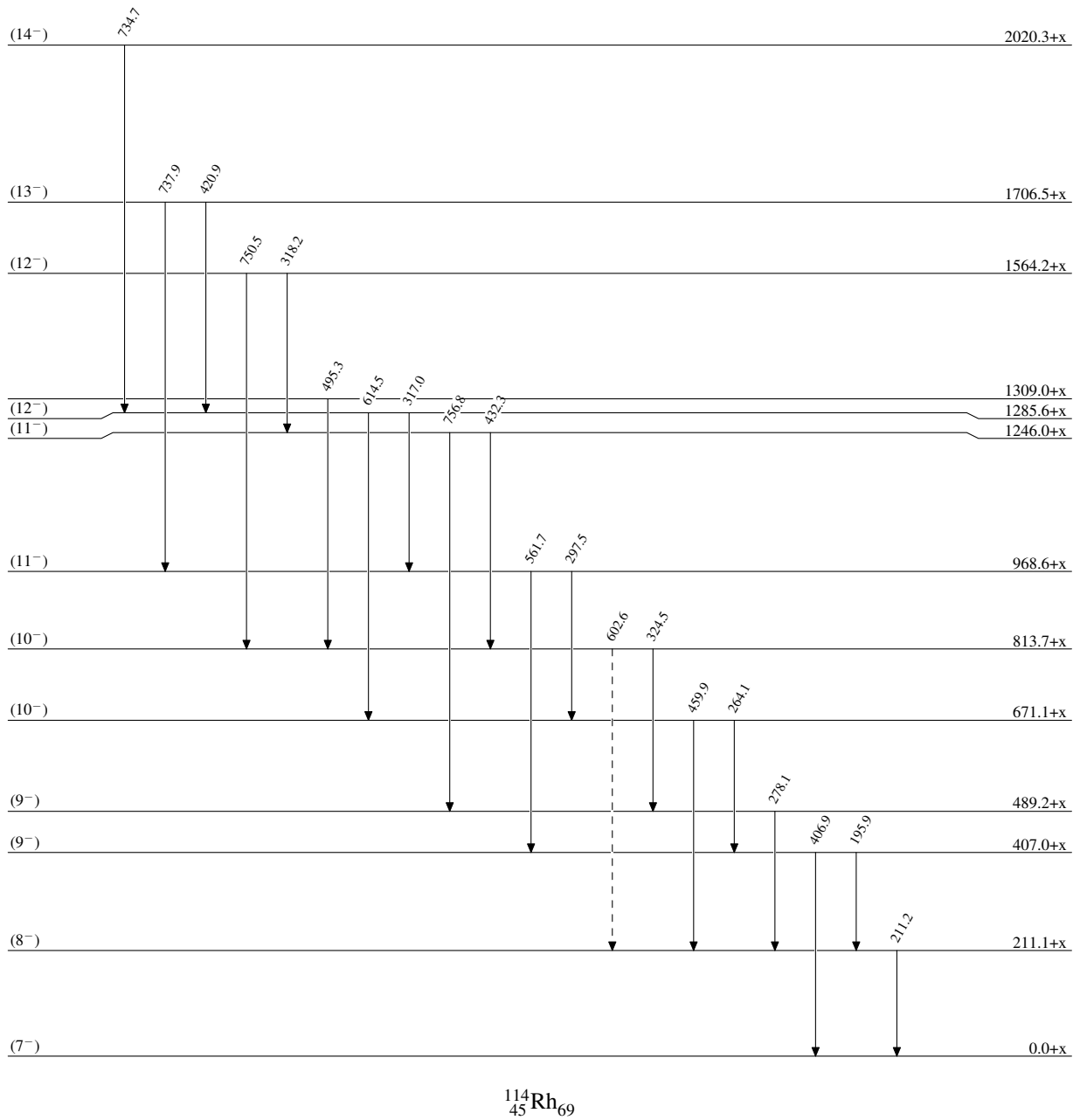
E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π
195.9	407.0+x	(9 ⁻)	211.1+x	(8 ⁻)	432.3	1246.0+x	(11 ⁻)	813.7+x	(10 ⁻)
211.2	211.1+x	(8 ⁻)	0.0+x	(7 ⁻)	459.9	671.1+x	(10 ⁻)	211.1+x	(8 ⁻)
264.1	671.1+x	(10 ⁻)	407.0+x	(9 ⁻)	495.3	1309.0+x		813.7+x	(10 ⁻)
278.1	489.2+x	(9 ⁻)	211.1+x	(8 ⁻)	561.7	968.6+x	(11 ⁻)	407.0+x	(9 ⁻)
297.5	968.6+x	(11 ⁻)	671.1+x	(10 ⁻)	602.6 [†]	813.7+x	(10 ⁻)	211.1+x	(8 ⁻)
317.0	1285.6+x	(12 ⁻)	968.6+x	(11 ⁻)	614.5	1285.6+x	(12 ⁻)	671.1+x	(10 ⁻)
318.2	1564.2+x	(12 ⁻)	1246.0+x	(11 ⁻)	734.7	2020.3+x	(14 ⁻)	1285.6+x	(12 ⁻)
324.5	813.7+x	(10 ⁻)	489.2+x	(9 ⁻)	737.9	1706.5+x	(13 ⁻)	968.6+x	(11 ⁻)
406.9	407.0+x	(9 ⁻)	0.0+x	(7 ⁻)	750.5	1564.2+x	(12 ⁻)	813.7+x	(10 ⁻)
420.9	1706.5+x	(13 ⁻)	1285.6+x	(12 ⁻)	756.8	1246.0+x	(11 ⁻)	489.2+x	(9 ⁻)

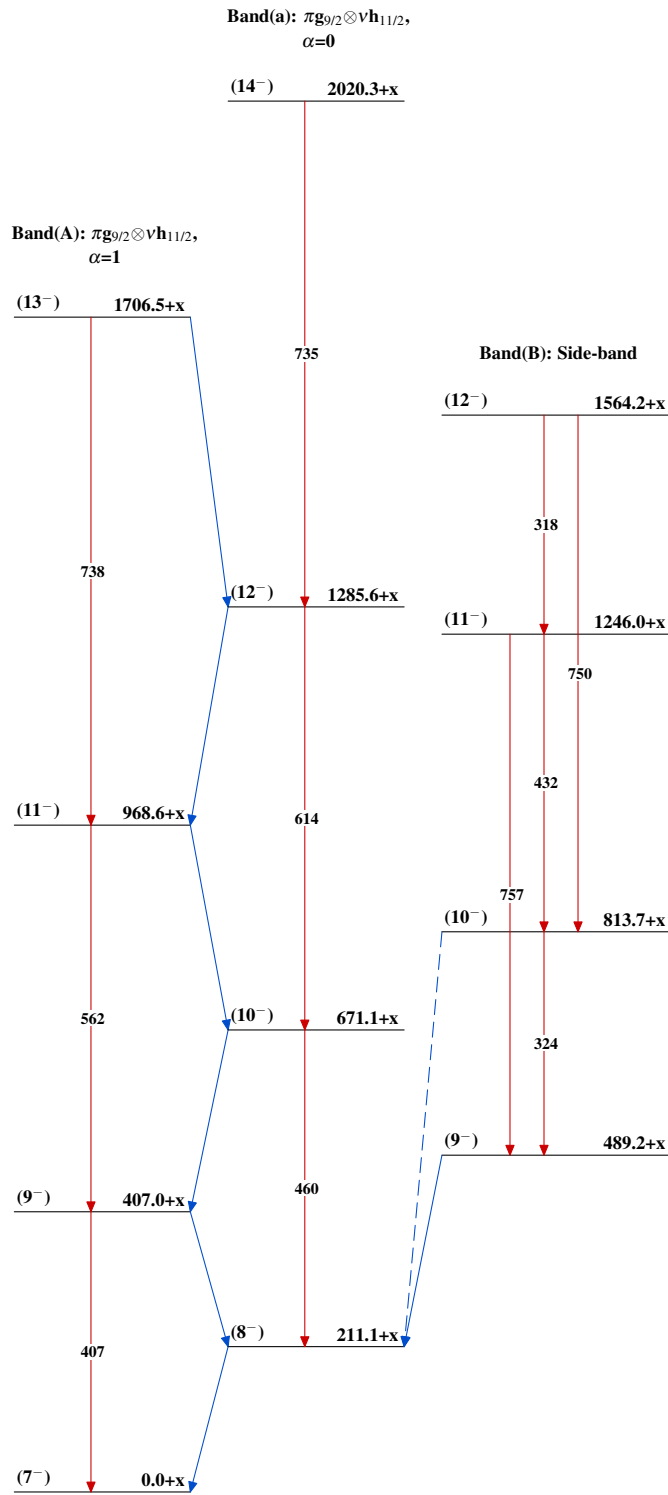
[†] Placement of transition in the level scheme is uncertain.

^{252}Cf SF decay 2011Li25

Legend

Level Scheme

-----► γ Decay (Uncertain)

^{252}Cf SF decay $^{2011}\text{Li}_{25}$  $^{114}_{45}\text{Rh}_{69}$