^{9}Be(^{238}U,Fγ) 2018Bh07

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	ENSDF	04-Jun-2021

Includes γ-ray study from ^{252}Cf SF decay.

2018Bh07: data from the two experiments have been combined.

1. ^{9}Be(^{238}U,Fγ),E=6.2 MeV/nucleon, measured Eγ, Iγ, Z- and A- gated $\gamma\gamma$-coincidences with isotopically identified fission fragments using VAMOS++ and EXOGAM array at GANIL facility. Deduced high-spin levels, J^{π}, alignment plots, and configurations.
2. ^{252}Cf SF decay: measured Eγ and $\gamma\gamma$-coin using Gammasphere array of 101 Compton-suppressed Ge detectors at LBNL facility. Deduced high-spin levels.

^{157}Pm Levels

E(level)[†]	J$^{\pi}$[‡]	E(level)[†]	J$^{\pi}$[‡]	E(level)[†]	J$^{\pi}$[‡]	E(level)[†]	J$^{\pi}$[‡]
0.0[#]	(5/2$^-$)	254.0[@] *3*	(11/2$^-$)	683.0[#] *4*	(17/2$^-$)	1263.0[@] *5*	(23/2$^-$)
66.0[@] *2*	(7/2$^-$)	379.0[#] *3*	(13/2$^-$)	855.0[@] *4*	(19/2$^-$)	1515.0[#] *6*	(25/2$^-$)
151.0[#] *3*	(9/2$^-$)	518.0[@] *4*	(15/2$^-$)	1062.0[#] *5*	(21/2$^-$)	1739.0[@] *7*	(27/2$^-$)

[†] From least-squares fit to Eγ data.
[‡] As given in 2018Bh07, based on (5/2$^-$) assignment for the g.s.
[#] Band(A): π5/2[532],α=+1/2.
[@] Band(a): π5/2[532],α=−1/2.

γ(^{157}Pm)

E$_\gamma$[†]	I$_\gamma$[‡]	E$_i$(level)	J$_i^{\pi}$	E$_f$	J$_f^{\pi}$	Comments
66.0 *2*	2 *1*	66.0	(7/2$^-$)	0.0	(5/2$^-$)	
85.0 *2*	5 *2*	151.0	(9/2$^-$)	66.0	(7/2$^-$)	
103.0 *2*	6 *1*	254.0	(11/2$^-$)	151.0	(9/2$^-$)	
125.0 *2*	9 *1*	379.0	(13/2$^-$)	254.0	(11/2$^-$)	
139.0 *2*	6 *2*	518.0	(15/2$^-$)	379.0	(13/2$^-$)	
151		151.0	(9/2$^-$)	0.0	(5/2$^-$)	Weak γ ray.
165.0 *2*	10 *1*	683.0	(17/2$^-$)	518.0	(15/2$^-$)	
172.0 *2*	6 *1*	855.0	(19/2$^-$)	683.0	(17/2$^-$)	
188.0 *2*	2 *1*	254.0	(11/2$^-$)	66.0	(7/2$^-$)	
201.0 *2*	4 *1*	1263.0	(23/2$^-$)	1062.0	(21/2$^-$)	
207.0 *2*	4 *1*	1062.0	(21/2$^-$)	855.0	(19/2$^-$)	
228.0 *2*	2 *1*	379.0	(13/2$^-$)	151.0	(9/2$^-$)	
252.0 *5*	2 *1*	1515.0	(25/2$^-$)	1263.0	(23/2$^-$)	
264.0 *5*	7 *2*	518.0	(15/2$^-$)	254.0	(11/2$^-$)	
304.0 *5*	6 *1*	683.0	(17/2$^-$)	379.0	(13/2$^-$)	
337.0 *5*	6 *1*	855.0	(19/2$^-$)	518.0	(15/2$^-$)	
[x]350.0 *5*						
379.0 *5*	2 *1*	1062.0	(21/2$^-$)	683.0	(17/2$^-$)	
408.0 *5*	3 *1*	1263.0	(23/2$^-$)	855.0	(19/2$^-$)	
453.0 *5*	4 *2*	1515.0	(25/2$^-$)	1062.0	(21/2$^-$)	
476.0 *5*	7 *4*	1739.0	(27/2$^-$)	1263.0	(23/2$^-$)	

[†] 2018Bh07 stated typical uncertainty of 0.2 keV for Eγ around 200 keV, 0.5 keV around Eγ=500 keV, and 1 keV around Eγ=1 MeV. Based on the above statement, evaluator assigns 0.2 keV for Eγ<250 keV, and 0.5 keV for Eγ>250 keV.
[‡] 2018Bh07 mention that the uncertainties are from fitting procedure.
[x] γ ray not placed in level scheme.

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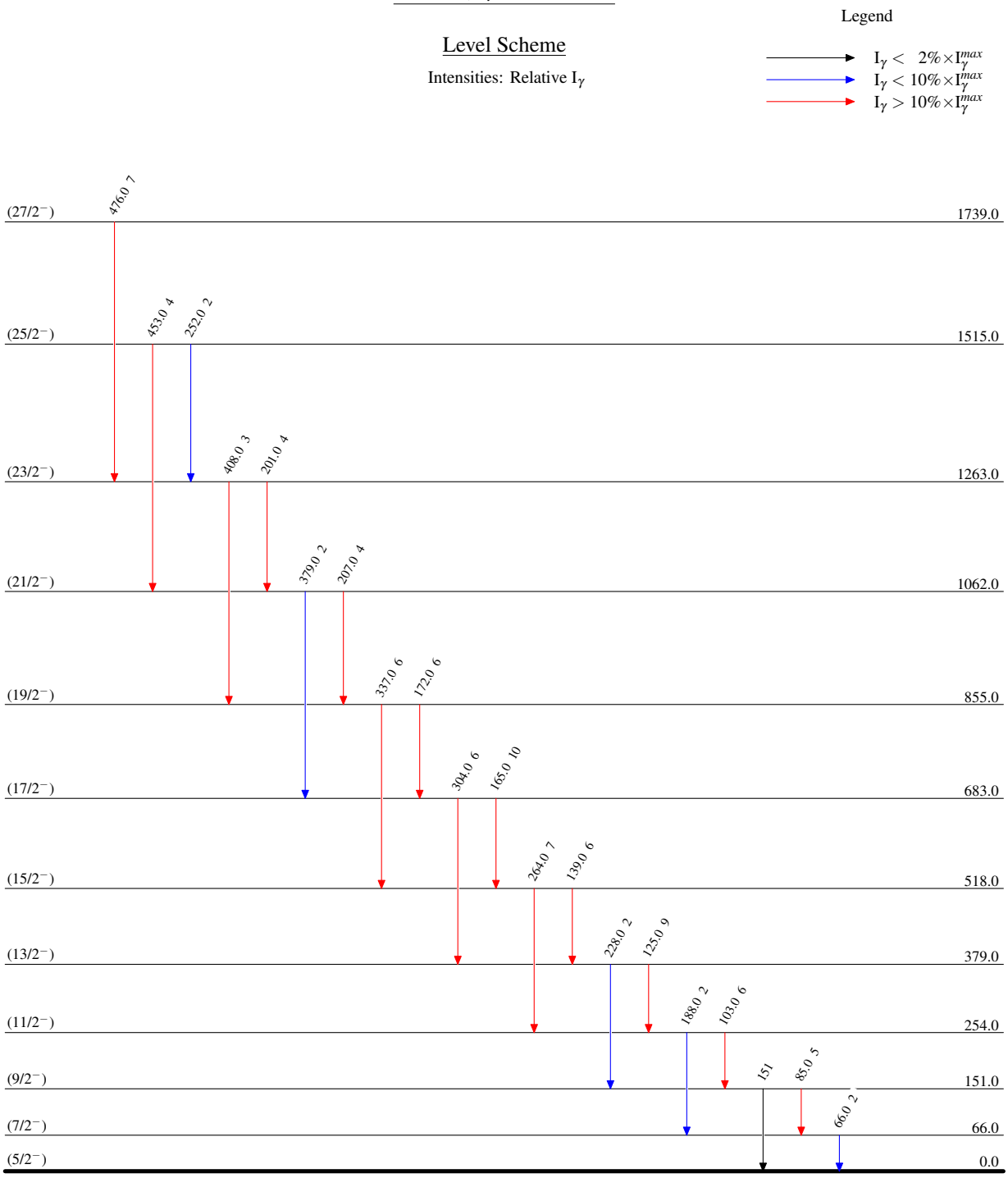
Level Scheme

Intensities: Relative I_γ



$^{157}_{61}Pm_{96}$

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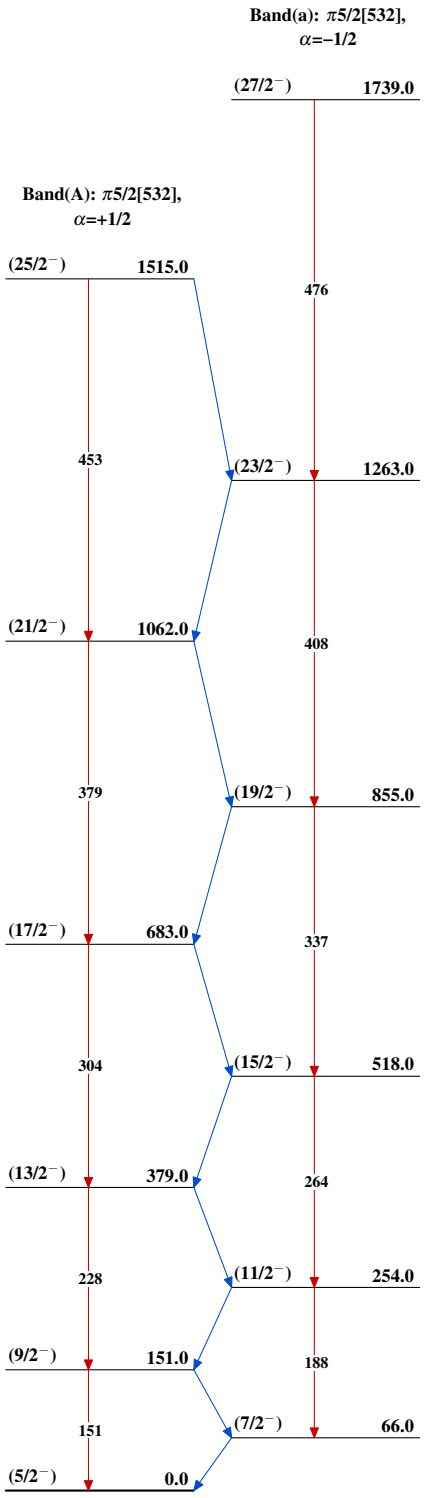

$^{157}_{61}Pm_{96}$