^{226}Ra(pol t,d) 1981Vo03

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Ictp-2014 Workshop Group	NDS 132, 257 (2016)	15-Jan-2016

Target: ^{226}Ra, 40 μg/cm^2 thick. Projectile: polarized tritons, E=17 MeV from the LANL FN tandem Van de Graaff accelerator. Measured scattered deuterons at eleven angles between θ=24° and 73°. Detector: Q3D type magnetic spectrometer in conjunction with a 1 min long helical-cathode, position-sensitive proportional counter, FWHM≈12 keV. Deduced: level energies and analyzing powers. Angular distributions do not distinguish between different values of transferred angular momentum.

Measured Q(t,d)=−1697 keV 40 calibrated using Q(t,d)=−1471.0 keV 3 for the ^{232}Th(t,d)^{233}Th reaction and the known excitation energies for levels below 1 MeV in ^{233}Th.

^{227}Ra Levels

E(level)	J$^\pi$[†]	Comments
0.0[a]	(3/2$^+$)[‡@]	E(level),J$^\pi$: doublet includes g.s. (3/2$^+$,3/2[631]) and the 1.7-keV level (5/2$^+$,5/2[633]).
25[&] *3*	(5/2$^+$)[‡@]	E(level),J$^\pi$: possible doublet including the 25-keV level (5/2$^+$,3/2[631]) and the yet unobserved 7/2$^+$,5/2[633] level, calculated at 39 keV in 1981Vo03.
84[a] *3*	9/2$^+$[‡]	
119[c] *3*	(1/2$^+$)[‡@]	J$^\pi$: measured vanishing analyzing power is typical of L=0 transitions.
138[b] *3*	(11/2$^-$)[‡@]	
162[c] *3*	3/2$^+$[#]	
175[c] *3*	(5/2$^+$)[‡@]	
185[&] *3*	(11/2$^+$)[#@]	
228[b] *3*	(15/2$^-$)[‡@]	
266[c] *3*	(7/2$^+$)[#@]	
300[c] *3*	9/2$^+$[‡]	
337 *3*		
755[d] *3*	3/2$^-$[‡]	
806[d] *3*	7/2$^-$[‡]	
858 *3*	[#@]	
907 *3*		
926 *3*		
947 *3*	[#]	
968 *3*		
998 *3*		
1017 *3*	[#]	
1056 *3*	[#]	
1099 *3*		
1129 *3*	[‡]	
1167 *3*	[‡]	
1307 *3*	[‡@]	

[†] From rotational structure, energy and transition strength systematics of Nilsson orbitals in neighboring nuclei, and from measured analyzing powers. J$^\pi$ values in parentheses correspond to analyzing powers without definite signs. See also Adopted Levels for additional details.

[‡] Positive analyzing power (J=L+1/2).

[#] Negative analyzing power (J=L−1/2).

[@] Sign of analyzing power is uncertain.

[&] Band(A): 3/2[631] rotational band.

Continued on next page (footnotes at end of table)

^{226}Ra(pol t,d) 1981Vo03 (continued)

^{227}Ra Levels (continued)

[a] Band(B): 5/2[633] rotational band.
[b] Band(C): 3/2[761] rotational band.
[c] Band(D): 1/2[631] rotational band.
[d] Band(E): Possible 1/2[761] rotational band.

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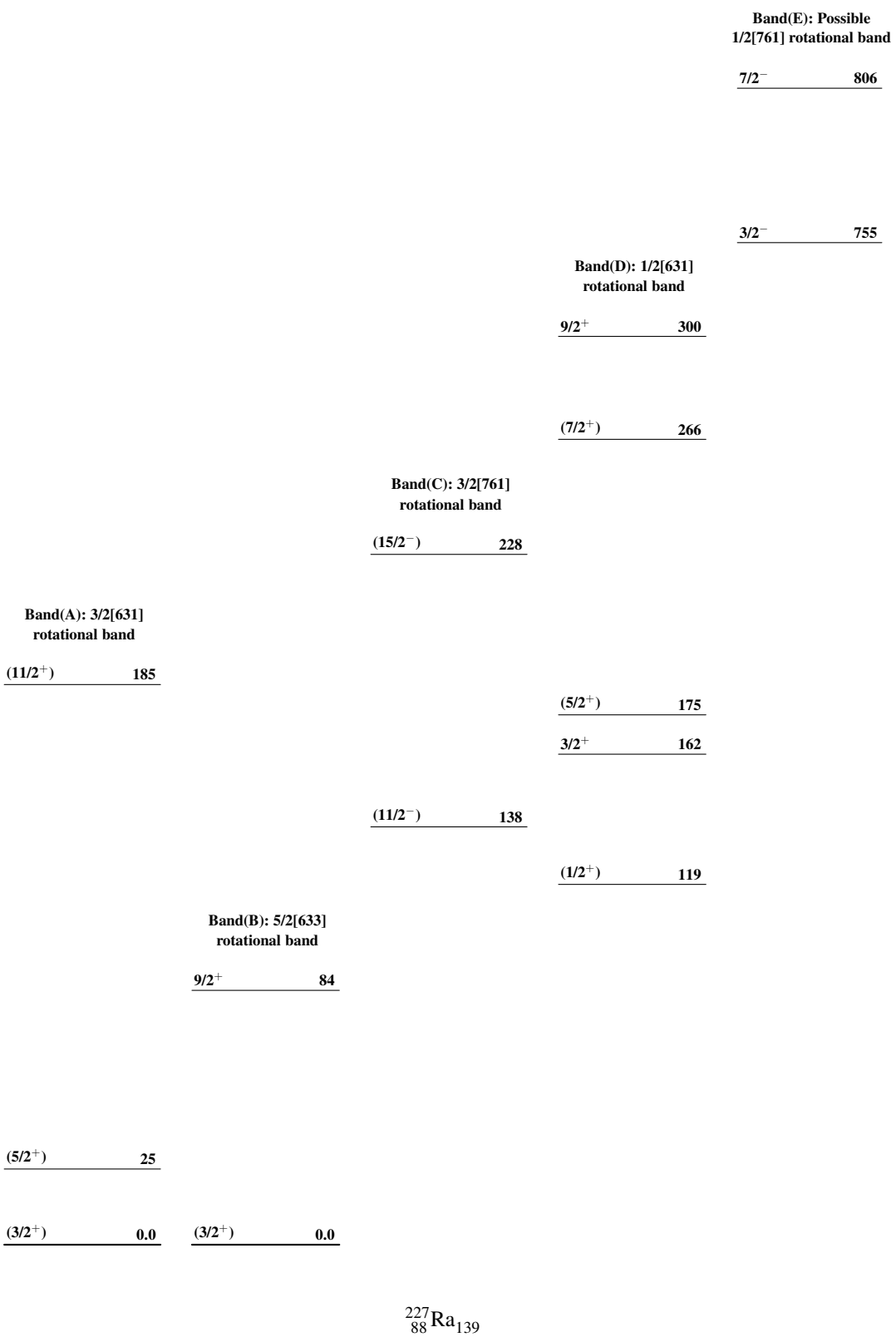

$^{227}_{88}Ra_{139}$