$^{14}C(^{6}Li,t)$ 1981Cu11

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	C. G. Sheu, J. H. Kelley, J. Purcell	ENSDF	5-Aug-2021

1981Cu11,1983Cu02,1983Cu04: A beam of E(^{6}Li)=34 MeV ions, produced at the Saclay FN-Tandem Van de Graaff, impinged on a 45±9 μg/cm^2 thick ^{14}C target (70% enriched). The emitted particles were measured and identified by a ΔE-E Si counter telescope over the angular range 5°≤θ_{lab}≤45° in steps of 5°. A triton energy spectrum was detected at θ_{lab}=5° with a overall resolution FWHM≈80 keV.

In (1983Cu02), authors compared the (^{6}Li,t) energy spectra on ^{14}C and ^{16}O targets (1972Pa29: ^{16}O(^{6}Li,t)^{19}Ne at E(^{6}Li)=36 MeV) using a weak coupling hypothesis, and they identifiedstates at 6.36- and 8.89-MeV.

In (1983Cu04), the authors compared (^{6}Li,t) and (^{6}Li,^{3}He) measurements at E(^{6}Li)=34 MeV to identify the analog states of ^{17}N and ^{17}O and to identify 14.76- and 15.2-MeV states.

Excitated states of ^{17}O up to ≈18 MeV were deduced.

^{17}O Levels

E(level)[†]	J$^{\pi}$[†]	L[‡]	C^{2}S (×10^3)[#]	Comments
0	5/2$^+$	2		
0.87×10^3	1/2$^+$	0		
3.05×10^3	1/2$^-$	1		
3.84×10^3	5/2$^-$	3		
4.55×10^3	3/2$^-$	1		
5.22×10^3	9/2$^-$			
5.69×10^3	7/2$^-$	3		
6.36×10^3	1/2$^+$		4.9[@]	T=1/2 (1983Cu02)
7.17×10^3	5/2$^-$	3		Unresolved.
7.38×10^3	5/2$^+$		8.8[@]	T=1/2 (1983Cu02) Unresolved.
7.75×10^3	11/2$^-$	5		
8.20×10^3	3/2$^-$	1		
8.47×10^3	7/2$^+$	4		Unresolved.
8.89×10^3	3/2$^+$		6.3[@]	T=1/2 (1983Cu02)
9.18×10^3	7/2$^-$	3		Unresolved.
9.72×10^3	7/2$^+$	4		
9.87×10^3	9/2$^+$	4	6.4[@]	T=1/2 (1983Cu02) Unresolved.
10.43×10^3				
11.23×10^3				
11.82×10^3		3,4		
12.01×10^3				
12.27×10^3	(7/2$^+$)		5.1[@]	T=1/2 (1983Cu02)
12.99×10^3	5/2$^-$		4.8	Unresolved. C^{2}S (×10^3): 5.4 for set II.
13.6×10^3	5/2$^+$		21.3	Unresolved. C^{2}S (×10^3): 27.5 for set II.
14.76×10^3	7/2$^-$		8.8	Unresolved. C^{2}S (×10^3): 10.5 for set II. For 14.76-MeV; J$^{\pi}$=9/2$^-$ state: C^{2}S=4.3×10^3 for set I and 4.0×10^3 for set II.
15.20×10^3	3/2$^+$		25.6	C^{2}S (×10^3): 32.7 for set II.
16.3×10^3	9/2$^+$		4.4	T=3/2 (1983Cu02) Unresolved. C^{2}S (×10^3): 5.1 for set II, see also (1983Cu02).
18.15×10^3				

Continued on next page (footnotes at end of table)

^{14}C(^{6}Li,t) 1981Cu11 (continued)

^{17}O Levels (continued)

† From (1981Cu11,1983Cu02,1983Cu04).
‡ From (1981Cu11).
# Set I from (1983Cu04) except where noted. Estimate absolute uncertainties ±25% (due to statistical errors (≈±10%) and absolute-value uncertainty (≈±20%)).
@ From (1983Cu02).