1 H(19 C, 18 C γ) 2009Ko02

History							
Туре	Author	Citation	Literature Cutoff Date				
Full Evaluation	J. Kelley, C. G. Sheu	ENSDF	01-May-2017				

The authors produced a $E({}^{19}C)=81$ MeV/nucleon beam by fragmenting ${}^{22}Ne$ ions at the RIKEN/RIPS facility. The beam impinged on a 120 mg/cm² liquid hydrogen target an the CRYPTA (cryogenic proton/ α) target system. The trajectory of the incident beam on target was measured, and the outgoing particles were momentum analyzed using a large acceptance magnetic spectrometer that selected ${}^{18}C$ particles following one-neutron removal. In addition, the 48 NaI crystal DALI γ -ray array surrounded the hydrogen target and measured γ -rays in coincidence with the ${}^{18}C$ fragments. Three γ -ray transitions were observed in coincidence with ${}^{18}C$ particles in the focal plane; the deduced level scheme is understood based on known levels.

In the analysis, transverse momentum distributions of ¹⁸C reaction products were generated for coincidences with each of the γ transitions. The momentum distributions were then evaluated, via CDCC analysis, to obtain *l* values of the removed neutrons from ¹⁹C.

¹⁸C Levels

E(level)	$J^{\pi \dagger}$	l^{\ddagger}
0	0^{+}	0
1600	2+	2
2500	$(0,2)^+$	0,2
4000	$(2,3)^+$	2

[†] From shell model expectations.

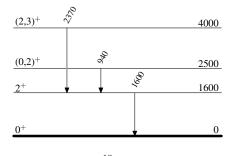
[±] Orbital angular momentum of removed neutron.

$\gamma(^{18}{\rm C})$

Eγ	E_i (level)	\mathbf{J}_i^{π}	\mathbf{E}_{f}	\mathbf{J}_f^{π}
940 20	2500	$(0,2)^+$	1600	2+
1600 20	1600	2+	0	0^{+}
2370 20	4000	$(2,3)^+$	1600	2^{+}

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Level Scheme



 ${}^{18}_{6}C_{12}$