$^{1}H(^{18}C,^{17}C\gamma)$ 2009Ko02

History

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

The authors produced a E(^{18}C)=68 MeV/nucleon beam by fragmenting ^{22}Ne ions at the RIKEN/RIPS facility. The beam impinged on a 120 mg/cm^2 liquid hydrogen target in 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 ^{17}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 ^{17}C fragments. Two γ-ray transitions were observed in coincidence with ^{17}C particles in the focal plane; the deduced level scheme is understood based on the known first and second excited states decaying to $^{17}C_{g.s.}$.

In the analysis, transverse momentum distributions of ^{17}C reaction products were generated for coincidences with each of the γ-ray transitions. The momentum distributions were then evaluated, via CDCC analysis, to obtain l values of the removed neutrons.

Also deduced σ_{1n}= 54 mb *11*.

^{17}C Levels

E(level)	J^π	L	σ (mb)	Comments
0	$3/2^+$		<12	J^π: from shell model expectations.
210	$1/2^+$	0	11 *2*	
330	$5/2^+$	2	43 *5*	

$\gamma(^{17}C)$

E_γ	E_i(level)	J_i^π	E_f	J_f^π
210	210	$1/2^+$	0	$3/2^+$
330	330	$5/2^+$	0	$3/2^+$

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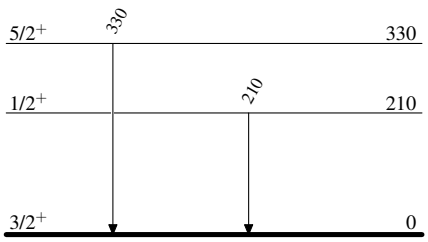
Level Scheme



$^{17}_{6}C_{11}$