^{1}H(^{19}C,2n^{17}Cγ) 2005El07

History

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

Beam=^{19}C, target=liquid H_2.

2005El07:

XUNDL set compiled by J. Roediger and B. Singh (McMaster) July 2005.

A 20% pure beam of 49.4 MeV/nucleon ^{19}C, produced by fragmentation of 110 MeV/nucleon ^{22}Ne ions on a ^{9}Be target at the RIKEN/RIPS facility, impinged on a liquid H_2 target. Incident particles were identified using standard energy-loss, and time-of-flight (tof) techniques. The mean energy in the target was 49.4 MeV/nucleon for ^{19}C.

The target was surrounded by the 158 NaI(Tl) scintillator DALI2 array. A 48×48 mm^2 ΔE-ΔE-E-Veto Si detector telescope was placed 80 cm downstream of the target (θ<1.7°). Eγ, Iγ, $\gamma\gamma$, and particle-γ coin were measured.

^{17}C Levels

E(level)	J$^{\pi}$[†]	Comments
0.0	3/2$^+$	Possible configuration=mixture of $[\nu d^3_{5/2}]_{3/2}$ and $\nu s_{1/2}\otimes[\nu d^2_{5/2}]_{3/2}$.
210 *4*	(1/2$^+$)	Configuration of state suggested to have small $[d^3_{5/2}]_{1/2}$ admixture. E(level): uncertainty of 6 keV is also stated in the abstract of (2005El07). Cross sections: 37 mb *4* in (^{19}C,2n^{17}c) reaction, ≈1.5 mb in (p,p′).
331 *6*	(5/2$^+$)	Possible configuration=$d_{5/2}$; β_2=0.52 *4*, deduced from integrated experimental cross section for this level from 0°−1.7° and an assumed J$^{\pi}$ of 5/2$^+$. Cross sections: 33 mb *4* in (^{19}C,2n^{17}C) reaction, 13.8 mb *15* in (p,p′).

[†] Tentative assignments to excited states based upon systematics of transition strengths combined with considerations of g.s. configuration.

γ(^{17}C)

E$_\gamma$	I$_\gamma$	E$_i$(level)	J$_i^{\pi}$	E$_f$	J$_f^{\pi}$
210 *4*	100 *11*	210	(1/2$^+$)	0.0	3/2$^+$
331 *6*	89 *11*	331	(5/2$^+$)	0.0	3/2$^+$

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Level Scheme

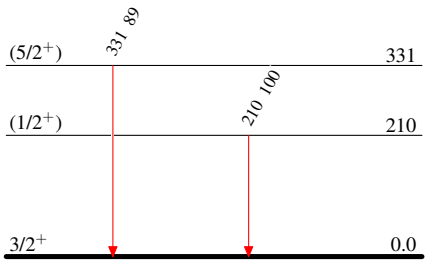
Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$



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