^{1}H(^{6}He,^{2}He) 2001Ko52

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. E. Purcell, C. G. Sheu	ENSDF	28-Feb-2019

1997Ko07: The experiment was performed at the RIKEN research facility with primary ^{15}N beam with energy 115 MeV/nucleon. The secondary beam included ^{6}He with energy 83 MeV/nucleon. The target was CH_2. The separation energy spectrum of the two outgoing protons was measured. A broad resonance was reported corresponding to a ^{5}H state at E_{res}=1.1 *4*(stat) *3*(syst) MeV above the ^{3}H+2n threshold. This experiment is also discussed in (1997KoZV).

2001Te07,2001Ko52,2002Ko24: As reported in (2001Te07), the experiment was performed at Flerov Laboratory of Nuclear Reactions in Dubna. The ^{6}He secondary beam with energy 37 MeV/nucleon was obtained from a primary beam of 42 MeV/nucleon ^{13}C on a beryllium target. The target for the secondary beam was hydrogen gas. Measurements of the two protons and ^{3}H from the decay of ^{5}H allowed the energy of the ^{5}H to be determined. The result was a peak $E_{res}\approx$2 MeV above the ^{3}H+2n threshold.

In what appears to be the same experiment as briefly reported in (2001Te07), the authors of (2001Ko52) give more experimental details and analysis of the measurements. Here, the energy of the secondary ^{6}He beam is given as 36 MeV/nucleon. The resonance parameters obtained are E_{res}=1.7 MeV *3* and Γ=1.9 MeV *4* for the energy above the ^{3}H+2n threshold and width, respectively. Analysis of the two protons showed that they came from a virtual singlet state of ^{2}He and that the ^{5}H state formed in the reaction was likely the expected ground state with $J^{\pi}=1/2^{+}$. This experiment is also discussed in (2003Ko68,2004Gr17,2004Wo10).

See related measurements reported in (2001Go35).

^{5}H Levels

E(level)	J^{π}[†]	Γ[†]	$E_{res}(^{3}H+2n)$(MeV)[†]	Comments
0	$(1/2^{+})$	1.9 MeV *4*	1.7 *3*	J^{π}: From systematics. E(level): See also E_{res}=1.1 *4*(stat) *3*(syst) MeV (1997Ko07).

[†] From (2001Ko52).