^{10}B(^{3}He,p):res

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. H. Kelley, C. G. Sheu and J. E. Purcell	NDS 198,1 (2024)	1-Aug-2024

1956Sc01: ^{10}B(^{3}He,p) E=1-5 MeV; measured $\sigma(\theta)$ for θ=0° and 90°. Deduced resonances at $E_{^3He}$(res)= 2.0, 3.7, 4.1, 4.6 MeV (E_x=23.2, 24.5, 24.8, 25.2 MeV) with Γ=0.5 MeV, 0.7 MeV, 120 keV and 150 keV, respectively.

1961Al27: ^{10}B(^{3}He,p_2)^{12}C*(7.65 MeV) E=2.2 MeV; measured pγγ-coincidence.

1964Ku09: ^{10}B(^{3}He,p)^{12}C*(15.11 MeV) E(^{3}He)=1.8-5.5 MeV; measured σ(E) excitation function for E_γ=15.1 MeV. Deduced resonances at $E_{^3He}$(res)=2.85 and 5.2 MeV.

1966Ba01: ^{10}B(^{3}He,p)^{12}C*(15.11 MeV) E(^{3}He)=4.5-9 MeV; measured σ(E) excition function for E_γ=15.1 MeV across $E_x\approx$ 26 MeV region. No evidence of resonances.

1966Pa10: ^{10}B(^{3}He,p) E(^{3}He)=1.2-12 MeV; deduced resonances to ^{12}C(0,4.44,7.65,9.64 MeV) at $E_{^3He}$(res)=2.2, 3.7, 5.8 and 8.2 MeV, $E_x\approx$23.3, 24.5, 26.1, 28.0 MeV.

1972Be56: ^{10}B(^{3}He,n), (^{3}He,p), (^{3}He,d), (^{3}He,α) E=11-19 MeV; measured σ(E,E_n), σ(E,E_p,θ), σ(E,$E_d\theta$), for θ=90° and 150° and σ(E,E_α,θ) for θ=30° to 150°. Analyzed existing data and deduced resonances at $E_{^3He}$(res)=5.6, 8.5, 13.5 MeV.

See also:

1972Al03: ^{10}B(^{3}He,p)^{12}C*(15.11 MeV) E=2.2 MeV; measured $\sigma(E_p,E_\gamma)$.

1983Ch08: ^{10}B(^{3}He,p) E=15.75 MeV; measured $\sigma(E_p)$, deduced Q-value.

1996Mc09: ^{10}B(^{3}He,p) E=2-4 MeV; measured $\sigma(E_p,\theta)$ for θ=90° and 135°.

^{13}N Levels

E(level)	J^π †	Γ	$E_{^3He}$(res) (MeV)	Comments
23.3×10^3		500 keV	2.2	$E_{^3He}$(res) (MeV): From (1966Pa10): (^{3}He,p_0). Γ: From (1956Sc01): $E_{^3He}$(res)=2.0 MeV.
23.83×10^3 *4*		346 keV *38*	2.85 *5*	$E_{^3He}$(res) (MeV),Γ: From (1964Ku09): (^{3}He,p) resonance to ^{12}C(15.1 MeV).
24.5×10^3		0.7 MeV	3.7	$E_{^3He}$(res) (MeV): From (1966Pa10): (^{3}He,$p_{0,1}$). Γ: From (1956Sc01): $E_{^3He}$(res)=3.7 MeV.
24.8×10^3		120 keV	4.1	$E_{^3He}$(res) (MeV),Γ: From (1956Sc01).
25.2×10^3?		150 keV	4.6	$E_{^3He}$(res) (MeV),Γ: From (1956Sc01).
25.64×10^3 *8*		184 keV *60*	5.2	$E_{^3He}$(res) (MeV),Γ: From (1964Ku09): (^{3}He,p) resonance to ^{12}C(15.1 MeV). (1966Ba01) suggest no evidence of a GDR at $E_x\approx$ 26 MeV.
26.1×10^3	≥3/2		5.8	$E_{^3He}$(res) (MeV): From (1966Pa10): (^{3}He,p) resonance to ^{12}C(0,4.44,9.6 MeV). See also (1972Be56) where $E_{^3He}$(res)=5.6 is reported for $p_{0,2,3}$.
28.0×10^3	≥7/2		8.2	$E_{^3He}$(res) (MeV): From (1966Pa10): (^{3}He,p_0) resonance. See also (1972Be56) where $E_{^3He}$(res)=5.5 is reported for p_0.

† From analysis of angular distributions in (1966Pa10).