^{10}B(p,p),(p,α)

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. H. Kelley, C. G. Sheu	NP A880, 88 (2012)	1-Jan-2011

1951Br10: ^{10}B(P,α).
1956Cr07: ^{10}B(P,α).
1962Op03: ^{10}B(P,$\alpha\gamma$), ^{10}B(p,p′γ), measured not abstracted; deduced nuclear properties.
1962Ov02: ^{11}C; measured not abstracted; deduced nuclear properties.
1964Be31: ^{10}B(P,P′γ),(p,$\alpha\gamma$) E$_P$=2.0-4.1 MeV, measured γ-spectrum (E), P, $\gamma(\theta)$. ^{11}C deduced levels, Γ-level.
1964Je01: ^{10}B(P,α), measured not abstracted; deduced nuclear properties.
1965Ha17: ^{10}B(p,p′) E=185 MeV, measured σ(E$_P$,θ).
1966Se03: ^{10}B(p,X) E(p)=4-12 MeV. Cross section curves only.
1969Wa11: ^{10}B(p,p) E=5-13.4 MeV, measured σ(E,θ). Deduced optical model parameters.
1969Wa23: ^{10}B(p,p′) E=5-16 MeV, measured σ(E,E$_{P'}$,θ). Deduced reaction mechanism. ^{11}C deduced resonances, Γ-level.
1970Ba05: ^{10}B(pol. p,P) E=50 MeV, measured wolfenstein D parameter At several angles.
1970Bo17: ^{10}B(p,p) E=3-10.5 MeV, measured σ(E,θ). ^{11}C deduced resonances, J, π, L.
1970Cl01: ^{10}B(p,n) E=30, 50 MeV, measured σ(E,E$_N$,θ). ^{11}C deduced levels, J, π.
1971Wa21: ^{10}B(p,p′) E=3.5-5.0 MeV, measured σ(E,E$_{P'}$,θ). ^{11}C deduced T=3/2 levels, Γ-level.
1972Sz02: ^{10}B(P,α) E=60-180 keV, measured σ(E), branching ratio for ^{7}Be(EC)^{7}Li. Deduced S(E). ^{11}C deduced Γ-level.
1977Av01: ^{10}B(P,α) E=660 MeV, measured absolute σ.
1977Ph02: ^{10}B(pol. p,P) E=30 MeV, analyzed $\sigma(\theta)$, A(θ). Deduced optical model parameters.
1979Ba68: ^{10}B(p,n) E=1 GeV, measured σ(E$_N$,θ). Deduced dependency of quasielastic neutron production on mass.
1979Ri12: ^{10}B(P,P′γ),(p,$\alpha\gamma$) E=2.0-4.1 MeV, measured E$_\gamma$, I$_\gamma$. ^{11}C deduced levels.
1980Fa07: ^{10}B(p,p),(p,p′) E=35.2 MeV, measured $\sigma(\theta)$. Deduced optical-model parameters.
1980Ha55: ^{10}B(p,$\alpha\gamma$) E=2.4 MeV, measured E$_\gamma$, I$_\gamma$.
1981Ca06: ^{10}B(P,γ) E=1.22 MeV, measured E$_\gamma$, I$_\gamma$, nγ-coin, DSA. ^{11}C levels deduced T$_{1/2}$, B(λ).
1983Do07: ^{10}B(P,α) E=1.5, 4.5 MeV, measured σ(E(^{7}Be)).
1984Ev01: ^{10}B(P,α) E=2 MeV, measured E$_\gamma$, I$_\gamma$, recoil σ(E(^{7}Be)), σ(E$_\alpha$).
1985Ki07: ^{10}B(p,$\alpha\gamma$) E=2.4-4.2 MeV, measured thick target relative γ yields, E$_\gamma$, I$_\gamma$.
1985Sc08: ^{10}B(p,n) E=13.7-14.7 MeV, measured absolute $\sigma(\theta)$ vs E.
1986Ha27: ^{10}B(P,α) E=18-45 MeV, measured σ(E,θ).
1986Is04: ^{10}B(p,p) E$_{C.M.}$=3.454-15.382 MeV, analyzed data. Deduced anomalous absorption.
1987Ra23: ^{10}B(P,γ) E=7-9 MeV, ^{10}B(p,n) E=7-9 MeV measured absolute thick target γ yield, relative neutron yield.
1988Ka30: ^{10}B(p,n) E=15.8, 18.6 MeV, measured $\sigma(\theta)$. Deduced residual nuclei vertex constants. ^{11}C deduced resonance widths.
1990Bo15: ^{10}B(p,$\alpha\gamma$) E≈3.2-3.6 MeV, measured γ yields.
1991Le22: ^{10}B(p,p),(p,p′) E=200 MeV, measured $\sigma(\theta)$. Optical model, DWA analyses, density-dependent bonn t-matrix, other data analyzed.
1991Yo04: ^{10}B(P,α) E=120-480 keV, measured σ(E,θ). Deduced σ(E), astrophysical S-factor, thermonuclear reaction rate.
1992Ba76: ^{10}B(pol. p,P) E=200 MeV, measured $\sigma(\theta)$, analyzing power, induced polarization, polarization transfer coefficients vs θ.
1993An06: ^{10}B(P,α) E$_{C.M.}$=17-134 keV, measured spectra, α yield. Deduced absolute astrophysical S-factor vs E, electron screening role.
1994Ga49: ^{10}B(p,n) E=1 GeV, analyzed $\sigma(\theta)$, mass dependences. Deduced resonance phenomena related features.
1994Wi09: ^{10}B(pol. p,P′),(pol. p, P′γ) E=200 MeV, analyzed spin observables D(NN′) data. Deduced NN interaction In medium modifications role.
1995Ri12: ^{10}B(P,α) E=0.7-3.2 MeV, measured γ emission yields.
1995Sj01: ^{10}B(p,p′),(P,α) E=2.4-3 MeV, measured yields.
1999Sa16: ^{10}B(p,p′),(P,α) E=1.0-4.1 MeV, measured E$_\gamma$, I$_\gamma$, thick target γ-ray yields.
2001Al06: ^{10}B(p,n) E=5-30 MeV, measured σ. Deduced excitation function, thick target yield.
2001Ch78: ^{10}B(p,p) E=0.5-3.3 MeV, measured $\sigma(\theta)$.
2002Ki10: ^{10}B(P,α) E=2 MeV, measured E$_\gamma$, I$_\gamma$, DSA.
2003To21: ^{10}B(pol. p,γ), E=100, 130, 160 keV; measured E$_\gamma$, I$_\gamma$, σ(E,θ), Ay(E,θ). Deduced astrophysical S-factors, subthreshold resonance.

^{10}B(p,p),(p,α) (continued)

2005Be43: ^{10}B(pol. p,P), (pol. p,P′), E=197 MeV; measured σ(E,θ), analyzing power, polarization transfer coefficients.
2008Ro05: ^{10}B(P,α)^{7}Be, $E_{C.M.}$=0-400 keV; analyzed cross section, S-factors.
Partial widths are discussed In various manuscripts.

^{11}C Levels

E(level)	J^π	$T_{1/2}$	Comments
9.64×10^3 *5*	(3/2$^-$)	210 keV *40*	%IT=?; %p=?; %α=? E(level): from E_{res}=1.15 MeV (1951Br10) 1.17 MeV (1956Cr07) 1.14 MeV (1967Pa19). J^π=3/2$^-$ from (1956Cr07). Γ: Γ_{lab}=300 (1956Cr07), $\Gamma_{\varepsilon M}$=450 keV (1967Pa19). (1956Cr07) gives Γ_p=45 keV, $\Gamma_{\alpha 0}$=255 keV, but the 9.64 MeV and 9.78 MeV states were not resolved.
9.78×10^3 *5*	(5/2$^-$)	240 keV *50*	%IT=?; %p=?; %α=? E(level): note the 9.64 and 9.78 MeV states were not resolved until (1983Wi09). (1956Cr07) gives Γ_p=45 keV, $\Gamma_{\alpha 0}$=255 keV, but the 9.64 MeV and 9.78 MeV states were not resolved.
10083. *5*	7/2$^+$	≈230 keV	%p=?; %α=? J^π=3/2$^-$ from (1956Cr07, 1962Ov02). E(level): from E_{res}=1.5 MeV (1951Br10) E_{res}=1.5 (1956Cr07) E_{res}=1.50 MeV *2* (1962Ov02). Γ: from Γ_{lab}≈250 keV (1951Br10) Γ_{lab}≈250 keV (1956Cr07) Γ = 250 keV (1962Ov02). (1962Ov02) gives Γ_p=90 keV, $\Gamma_{\alpha 0}$=100 keV, $\Gamma_{\alpha 1}$=60 keV.
10679. *5*	9/2$^+$	200 keV *30*	%p=?; %α=? E(level): from E_{res}=2180 keV (1962Ov02), 2189 keV *5* (1964Be31). Γ: from Γ=200 keV (1962Ov02) Γ=220 keV *30* (1964Je01). J^π from (1962Ov02). (1962Ov02) gives Γ_p=100 keV, $\Gamma_{\alpha 1}$=100 keV.
10799? *5*			E(level): from E_{res}=2320 keV *5* (1964Be31).
11030? *5*			E(level): from E_{res}=2574 keV *5* (1964Be31).
11.44×10^3 *1*		360 keV	%α=? E(level): from E_{res}=3.0 MeV(1964Je01), 3.03 MeV *1* (1962Op03). Γ: from from Γα≈400 keV (1962Op03).
11954 *7*			E(level): from E_{res}=3592 keV *7* (1964Be31). also see (1970Bo17).
12.20×10^3 *10*			%p=? T=3/2 E(level): from (1971Wa21). Note: typo In the error given In (1990Aj01).
12.45×10^3 *10*		0.40 MeV *10*	%p=? T=3/2 E(level): Γ: from (1971Wa21).
12.65×10^3 *2*	(7/2$^+$)	360 keV	%IT=?; %^{3}He=?; %α=? E(level): from E_{res}=4.4 MeV(1964Je01) 4.4 MeV (1966Se03), 4.36 MeV *2* (1962Op03). Γ: from Γ_{lab}=400 keV(1964Je01). J^π from (1964Je01). also see (1970Bo17). (1964Je01) gives Γ_p=200 keV, $\Gamma_{\alpha 0}$=150 keV, $\Gamma_{\alpha 1}$=50 keV.
13.4×10^3		1.10 MeV *9*	%α=? E(level): see (1975Aj01). Also see (1966Se02) and (1970Bo17).
13.90×10^3 *2*		≈450 keV	%IT=?; %p=? E(level): from E_{res}=5.75 MeV *20* (1969Wa23), 5.73 MeV *2* (1962Op03). Γ: from Γ≈500 keV (1969Wa23). also see (1970Bo17).
14.07×10^3			E(level): see (1966Se02) and (1970Bo17).

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^{10}B(p,p),(p,α) (continued)

^{11}C Levels (continued)

E(level)	J^π	$T_{1/2}$	Comments
14.76×10^3 *4*		≈450 keV	%n=?; %p=?; %^{3}He=? E(level): from E_{res}=6.90 MeV *20* (1969Wa23), 6.4 MeV (1966Se03), 6.68 MeV *4* (1963Ea01). Γ: from Γ≈500 keV (1969Wa23), broad (1963Ea01), also see (1970Bo17).
15.35×10^3 *5*	–		%IT=?; %n=?; %p=? Γ: Broad. E(level): from E_{res}=7.33 MeV *5* (1963Ea01), also see (1966Se03).
15.60×10^3 *5*		≈450 keV	%n=?; %p=? E(level): from E_{res}=7.80 MeV *20* (1969Wa23), 7.60 MeV *5* (1963Ea01) also see (1966Se03). Γ: from Γ≈500 keV (1969Wa23), broad (1963Ea01). also see (1970Bo17).