Adopted Levels

History

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

S(n)=2.26×10^4 *4*; S(p)=−1.32×10^3 *5*; Q(α)=−5.80×10^3 *6* 2012Wa38

Note: Current evaluation has used the following Q record 22.39e$^+$340-1489 60-5818 92 1997Au04.

Based on mass excess (^{11}C)=10650.4 *9* Here the mass excess for ^{11}N = 24477 keV 60 differs from that of 2011AuZZ (24303 keV 46).

S(n),ΔS(n): From systematics.

^{11}N Levels

Cross Reference (XREF) Flags

A ^{1}H(^{10}C,p) D ^{12}C(^{14}N,^{15}C)
B ^{9}Be(^{12}N,^{11}N) E ^{14}N(^{3}He,^{6}He)
C ^{10}B(^{14}N,^{13}B)

E(level)	J$^\pi$	T$_{1/2}$	XREF	Comments
0.0	1/2$^+$	830 keV *30*	ABC E	%p=100 T=3/2 E(level): from E$_{res}$=1.49 MeV *6*, see comments. E(level): there are essentially three high resolution measurements of the ^{11}N ground state mass. They do not have overlap in their uncertainties. The measured values, in the ^{10}C+p relative energy system, are E$_{res}$=1.54 MeV *2* (2006Ca05) from ^{1}H(^{10}C,^{1}H), 1.63 MeV *5* (2000Ol01) from ^{10}B(^{14}N,^{13}B) and 1.31 MeV *5* (2003Gu30) from ^{14}N(^{3}He,^{6}He). In this situation, the evaluator has taken the unweighted average and assigned an uncertainty of 60 keV. This yields reasonable agreement with each value and the average. Other reported values are E$_{res}$=1.27 MeV *+18−5* (2006Ma62) and 1.45 MeV *40* (1998Az01). Γ: From (2006Ca05). The measured widths are in poor agreement. Reported values are Γ=0.83 MeV *3* (2006Ca05) from ^{1}H(^{10}C,^{1}H), 1.44 MeV *20* (2000Ma62) from ^{1}H(^{10}C,^{1}H), >400 keV (1998Az01) from ^{9}Be(^{12}N,^{10}C+p), 0.4 MeV *1* (2000Ol01) from ^{10}B(^{14}N,^{13}B) and 0.24 MeV *24* (2003Gu30) from ^{14}N(^{3}He,^{6}He).
730 *70*	1/2$^-$	0.6 MeV *1*	ABCDE	%p=100 E(level): E$_{res.}$=2220 keV *30* from the weighted average of E$_{res.}$=2240 keV *50* from ^{1}H(^{10}C,p), E$_{res.}$=2160 keV *50* from ^{10}B(^{14}N,^{13}B), E$_{res.}$=2180 keV *50* from ^{12}C(^{14}N,^{15}C). The value E$_{res.}$=2310 keV *20* from ^{14}N(^{3}He,^{6}He) was not included in the average because it is significantly larger and has no overlap with other values. Γ: From the unweighted average of Γ=960 keV *160* from ^{1}H(^{10}C,p), 250 keV *80* from ^{10}B(^{14}N,^{13}B), 440 keV *80* from ^{12}C(^{14}N,^{15}C) and 730 keV *60* from ^{14}N(^{3}He,^{6}He).
1570? *80*		<100 keV	C	%p=100 E(level): Γ: from E$_{res}$=3060 keV *80* in ^{10}B(^{14}N,^{13}B).
2200 *70*	5/2$^+$	540 keV *40*	A CDE	%p=100 E(level): E$_{res.}$=3690 keV *30* from the weighted average of E$_{res.}$=3750 keV *50* from ^{1}H(^{10}C,p), E$_{res.}$=3610 keV *50* from ^{10}B(^{14}N,^{13}B), E$_{res.}$=3630 keV *50* from ^{12}C(^{14}N,^{15}C), E$_{res.}$=3780 keV *50* from ^{14}N(^{3}He,^{6}He). Γ: From the weighted average of Γ=600 keV *50* from ^{1}H(^{10}C,p), 500 keV *80* from ^{10}B(^{14}N,^{13}B), 400 keV *80* from ^{12}C(^{14}N,^{15}C) and 560 keV *170* from ^{14}N(^{3}He,^{6}He).
2860 *70*	3/2$^-$	340 keV *40*	A CDE	%p=100

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Adopted Levels (continued)

^{11}N Levels (continued)

E(level)	J^π	$T_{1/2}$	XREF	Comments
				E(level): $E_{res.}$=4350 keV *30* from the weighted average of $E_{res.}$=4330 keV *50* from ^{1}H(^{10}C,^{1}H), $E_{res.}$=4330 keV *50* from ^{10}B(^{14}N,^{13}B), $E_{res.}$=4390 keV *50* from ^{12}C(^{14}N,^{15}C). The value $E_{res.}$=4560 keV *10* from ^{14}N(^{3}He,^{6}He) was not included in the weighting because it is significantly larger and has no overlap with other values. Γ: From the weighted average of Γ=450 keV *80* from ^{10}B(^{14}N,^{13}B) and 300 keV *50* from ^{14}N(^{3}He,^{6}He). Also see Γ≈270 from ^{1}H(^{10}C,p) and ≤220 keV from ^{12}C(^{14}N,^{15}C).
3.63×10^3? *10*	(5/2$^-$)	<220 keV	D	%p=100 E(level): Γ: from E_{res}=5120 keV *80* in ^{12}C(^{14}N,^{15}C)).
4420 *70*	(5/2$^-$)		CDE	%p=100 E(level): from $E_{res.}$=5910 keV *30* from the weighted average of $E_{res.}$=5870 keV *150* from ^{12}C(^{14}N,^{15}C), $E_{res.}$=5980 keV *100* from ^{10}B(^{14}N,^{13}B), $E_{res.}$=5910 keV *30* from ^{14}N(^{3}He,^{6}He). Γ: See 100 keV *60* from ^{10}B(^{14}N,^{13}B), 700 keV *200* from ^{12}C(^{14}N,^{15}C) and 1.30 MeV *9* from ^{14}N(^{3}He,^{6}He). J^π: (5/2$^-$) from ^{10}B(^{14}N,^{13}B) and DWBA analysis in ^{14}N(^{3}He,^{6}He). Also see (7/2$^-$) from ^{12}C(^{14}N,^{15}C).
5.08×10^3 *12*	(3/2$^-$)	100 keV *60*	C E	%p=100 E(level): from $E_{res.}$=6.57E3 keV 10 from the weighted average of $E_{res.}$=6540 keV *100* from ^{10}B(^{14}N,^{13}B), $E_{res.}$=6800 keV *300* from ^{14}N(^{3}He,^{6}He). Γ: From ^{10}B(^{14}N,^{13}B). J^π: from DWBA analysis in ^{14}N(^{3}He,^{6}He).