Adopted Levels

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. H. Kelley, J. E. Purcell and C. G. Sheu	NP A968,71 (2017)	1-Jan-2017

Q(β^-)=23842 *15*; S(n)=−120 *15*
From the mass excess ΔM(^{12}Li)=48920 keV *15* deduced from (2008Ak03).

^{12}Li Levels

Cross Reference (XREF) Flags

A ^{1}H(^{14}Be,^{12}Li)
B ^{9}Be(^{14}Be,^{12}Li)
C ^{9}Be(^{14}B,^{12}Li)
D ^{14}C(π^-,2p)

E(level)	J$^\pi$	T$_{1/2}$	E$_{res}$(^{11}Li+n)(keV)	XREF	Comments
0	(1$^-$,2$^-$)		120 *15*	ABC	%n=100 S(n)(^{12}Li)=−120 keV *15* from (2010Ha04) analysis of a$_s$=−13.7, which was given on (2008Ak03). This is the most inclusive interpretation of the data. A subsequent experiment (2013Ko03) deduced a$_s$>−4 fm, and suggested that the state at E$_{res}$≈250 keV should be considered the ground state. This interpretation is not accepted, as further experimental results are necessary for such a conclusion. J$^\pi$: Interpreted as a s-state with a scattering length of −13.7 fm *16*, which implies J$^\pi$=1$^-$,2$^-$, since J$^\pi$=3/2$^-$ for core nucleus ^{11}Li. This assignment contradicts J$^\pi$=4$^-$ predicted from shell-model calculations by (1985Po10).
130 *25*	(4$^-$)	<15 keV	250 *20*	C	%n=100 E(level): From (2010Ha04) who reported E$_{res}$=250 keV *20* above the ^{11}Li+n breakup threshold. A reanalysis in (2013Ko03), suggests the *s*-wave state is not the ground state and that this state, with a revised E$_{res}$=210 keV *30*, is the ground state.
435 *25*	(1$^-$)	<80 keV	555 *20*	C	%n=100 E(level): From (2010Ha04) who reported E$_{res}$=555 keV *20* above the ^{11}Li+n breakup threshold. A reanalysis on in (2013Ko03) suggests a different interpretation, including E$_{res}$=525 keV *25* for this state.
3.88×10^3† *20*		1.1 MeV *4*	4.00×10^3 *20*	D	E(level): From E(n+^{11}Li)=4.0 MeV *2* (2013Ch30).
≈6400†			6.5×10^3 *5*	D	E(level): From (2013Ch30).

† Decay mode not specified.