Adopted Levels

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 127, 69(2015)	1-Apr-2015

Q(β^-)=2.155×10^4 *31*; S(n)=124 *SY*; S(p)=2.942×10^4 *SY* 2012Wa38
ΔS(n)=470(syst), ΔS(p)=937(syst) 2012Wa38.
1986Po13: First observation of ^{22}C. Produced by ^{181}Ta(^{40}Ar,x), E=44 MeV/A; Measured residual yields, TOF.
2010Ta04: ^{1}H(^{22}C,^{22}C′), E=41 MeV/nucleon; ^{22}C beam was produced from ^{40}Ar fragmentation by Ta(^{40}Ar,X), E=63 MeV/nucleon, reaction products were separated using RIPS fragment separator at RIKEN; Liquid hydrogen target; Measured reaction cross section by transmission method, deduced rms radius.

^{22}C Levels

E(level)	J$^\pi$	T$_{1/2}$	Comments
0.0	0$^+$	6.1 ms *+14−12*	%β^-=100; %β^-n=61 *+14−13*; %β^-2n<37 T$_{1/2}$: From 2003Yo02. Other value: 9 ms *3* (1998Yo06). %β^-n: From 2003Yo02. Total neutron emission probability P$_N$>60 (1998Yo06). %β^-2n: From 2003Yo02. Measured reaction cross section=1.34 b *27* (2010Ta04 − assuming no excited states in ^{22}C). Deduced rms radius=5.4 fm *9* (2010Ta04). Halo structure of ^{22}C is suggested in 2010Ta04 from comparison of measured reaction cross sections for ^{22}C, ^{20}C and ^{19}C isotopes and from deviation of systematic trend for measured rms radius in C isotopes. The two-valence neutrons in ^{22}C preferentially occupy the 1s$_{1/2}$ orbital (from Glauber model calculation − 2010Ta04). Also supported in 2012Ko38 from two-neutron removal reaction studies of ^{22}C on a carbon target. Two-neutron removal cross section 266 mb *19*, measured from the C(^{22}C,^{20}C), E=240 MeV/A, knock-out reaction (2012Ko38).