^{9}Be(^{18}C,^{18}C′γ) 2008On02,2009On02

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. Kelley, C. G. Sheu	ENSDF	01-May-2017

Produced E(^{18}C)=79 MeV/nucleon beam using the ^{9}Be(^{22}Ne,X) at the RIPS/RIKEN facility. Event-by-event particle identification of the secondary beam was obtained by ΔE-time-of-flight between two 1 mm thick plastic scintillators, and the trajectory onto the ^{9}Be target was tracked using two parallel plate avalanche counters. The lifetime of first 2^+ state was measured using the recoil shadow method; γ rays were detected using an array of 130 NaI(Tl) detectors. After the target, the residual nuclides were detected using a plastic scintillator hodoscope.

See detailed theoretical discussion on the E2 transition from the first excited state, which is anomolously hindered, in (1997Ka25, 2004La24, 2004Sa58, 2004Su23, 2005Ka03, 2005Sa63, 2008Um02, 2008Zh16, 2009Su17, 2009Um05, 2009Yu07, 2011Ya11, 2012Yu07, 2013Fo11, 2013Ka33, 2014Ma97, 2016Pr01).

^{18}C Levels

E(level)	J^π	$T_{1/2}$	Comments
0	0^+		
1585 *10*	(2^+)	13.1 ps *31*	$T_{1/2}$: from (2008On02, 2009On02), recoil-shadow method. The statistical uncertainty of 0.9 ps and systematic uncertainty of 4.4 ps in mean lifetime were combined in quadrature.
2504 *14*			A g.s. transition is shown in the level/transition diagram of 2009On02 but is absent in 2008On02. The measured spectrum does not show strong support for this transition.
4000? *32*			E(level): probably taken from 2008St18.

γ(^{18}C)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	Comments
1585	(2^+)	1585 *10*	100	0	0^+	E2	B(E2)(W.u.)=1.5 *4*
2504		919		1585	(2^+)		
4000?		2415		1585	(2^+)		Shown in 2008On02, but not in 2009On02. The measured spectrum may show weak support for this transition.

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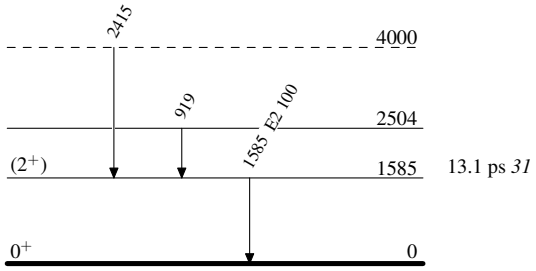
Level Scheme

Intensities: Relative photon branching from each level



$^{18}_{6}C_{12}$