^{9}Be(^{29}Na,pγ),(^{30}Mg,2pγ) 2007RoZY,2006FaZX,2005Be60

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 114, 1189 (2013)	1-Apr-2013

Other: 2000Be44.

2012Sm08: ^{9}Be(^{29}Ne,P): An unbound excited state in ^{28}Ne at 3860 keV *110* was deduced from measured decay energy of 32 keV *22* in the ^{27}Ne+n system and expected J$^{\pi}$ to be either 2^{+},3^{+}, or 4^{+}. Presumably this is a different state than the (4^{+}) state at 3904 keV *7*, reported in 2007RoZY from γ-ray coincidence measurements.

2007RoZY,2006FaZX: ^{9}Be(^{29}Na,pγ),(^{30}Mg,2pγ): ^{28}Ne was produced from ^{48}Ca primary beam fragmentation, E=140 MeV/nucleon followed by 1p (inclusive cross section=14 mb *7*) and 2p knockout (inclusive cross section=0.8 mb *2*) reactions of ^{29}Na and ^{30}Mg secondary beams, respectively; Detector: Segmented HPGe array SeGA; Measured Eγ, $\gamma\gamma$ coin.

2005Be60,2000Be44: ^{28}Ne was produced from fragmentation of ^{36}S beam, E=77.5 MeV/nucleon, on Be and C targets. γ-ray energy, intensity, and coincidences were measured by an array of 74 BaF$_2$ detectors along with 4 HPGe detectors.

^{28}Ne Levels

E(level)†	J$^{\pi}$	Comments
0.0	0^{+}	
0.0+x		E(level): From 2007RoZY. Additional information 1.
1127+x *4*		E(level): From 2007RoZY.
1304 *3*	2^{+}	J$^{\pi}$: From Adopted Levels.
3010 *6*	(4^{+})	J$^{\pi}$: 4$_1$+ in 2007RoZY, based on comparison of experimental level scheme with the predicted energies and transition strengths by shell model.
3904 *7*	(4^{+})	E(level): From 2007RoZY. J$^{\pi}$: J$^{\pi}$=4$_2$+, based on comparison of the experimental level scheme with the predicted energies and transition strengths from shell model.

† From a least-squares fit to γ-ray energies.

γ(^{28}Ne)

E$_{\gamma}$†	I$_{\gamma}$†	E$_i$(level)	J$^{\pi}_i$	E$_f$	J$^{\pi}_f$	Mult.	Comments
894 *4*	18 *6*	3904	(4^{+})	3010	(4^{+})		E$_{\gamma}$: Weighted average of 891 keV *5*, 895 keV *4* (1p, 2p knockout-2007RoZY) − uncertainty from experiment. Others: 936 keV *28* (2005Be60), 900 keV (2006FaZX). In 2007RoZY, placement of this γ ray is based on coincidence (better statistics) with 1706γ forming a single cascade. In contrary, the 936 keV γ ray (i.e. 894 keV γ ray in this dataset) is shown to feed the 2^{+} state at 1293 keV (1304 keV here), based on $\gamma\gamma$ coin of the 1293γ with both the 936γ and 1707γ (poor statistics) in 2005Be60. I$_{\gamma}$: using the Limitation of Relative Statistical Weight (LWM) averaging method (1985ZiZY) of data: Iγ = 10 *2*, 23 *6* (1p, 2p knock out − 2007RoZY), and 35 *10* (2005Be60).
1127 *4*	21 *3*	1127+x		0.0+x			E$_{\gamma}$: In ^{9}Be(^{30}Mg,2pγ): Eγ=1117 *7* and Iγ=13 *6* (2007RoZY).
1304 *3*	100	1304	2^{+}	0.0	0^{+}	E2	E$_{\gamma}$: Weighted average of 1306 keV *4*, 1304 keV *5* (1p, 2p knockout-2007RoZY), and 1293 keV *8* (2005Be60). Others: 1320 keV *25* (2000Be44), and 1310 keV (2006FaZX).
1706 *5*	37 *5*	3010	(4^{+})	1304	2^{+}		E$_{\gamma}$: Weighted average of 1707 keV *7*, 1704 keV *8* (1p, 2p knockout − 2007RoZY), and 1707 keV *15* (2005Be60). Others: 1750 keV *50* (2000Be44) and 1720 keV (2006FaZX).

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$^{9}Be(^{29}Na,p\gamma),(^{30}Mg,2p\gamma)$ 2007RoZY,2006FaZX,2005Be60 (continued)

$\gamma(^{28}Ne)$ (continued)

E_{γ} †	E_i(level)	Comments
		I_{γ}: Weighted average of $I\gamma$ = 23 *3*, 55 *10* (1p, 2p knockout-2007RoZY), and 45 *10* (2005Be60).

† From 2007RoZY ($^{9}Be(^{29}Na,p\gamma)$), except otherwise noted.