^{48}Ca(^{18}O,3nγ) 1978Wa09

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 196,17 (2024)	30-Sep-2023

1978Wa09: E=25-55 MeV ^{18}O beam was produced at BNL. Target was enriched ^{48}Ca. γ rays were detected with Ge(Li) detectors. Measured Eγ, Iγ, $\gamma(\theta)$, recoil distance, Doppler-shift attenuation, DSA. Deduced levels, J, π, $T_{1/2}$.

^{63}Ni Levels

E(level)†	J$^\pi$	$T_{1/2}$‡	Comments
0.0	1/2$^-$		
87.2	5/2$^-$		E(level): rounded values from Adopted Levels.
1291.79 *21*	(9/2)$^+$	3.33 ns *21*	J$^\pi$: 9/2$^+$ supported by $\gamma(\theta)$ in 1978Wa09. $T_{1/2}$: from τ=4.8 ns *3* in 1978Wa09.
2183.50 *26*	(11/2$^+$,13/2$^+$)	3.6 ps *6*	$T_{1/2}$: from τ=5.2 ps *8* in 1978Wa09. J$^\pi$: from $\gamma(\theta)$ and also from comparisons of the level spacings between even-parity states in odd-A nuclides with the spacing and Q(2$^+$) value of the ΔJ=2 g.s. transitions of the coresponding A-1 nuclides (see FIG.9 of 1978Wa09).
2814.43 *29*		0.49 ps *21*	J$^\pi$: (13/2$^+$) suggested from comparison of level diagrams of similar odd nuclides (1978Wa09). $T_{1/2}$: from τ=0.7 ps *3* in 1978Wa09, which is from τ(631γ)<1 ps by RDM and τ(1523γ)>0.4 ps by DSAM.

† From 1978Wa09 based on Eγ data.
‡ From RDM in 1978Wa09, unless otherwise stated.

γ(^{63}Ni)

E$_\gamma$†	I$_\gamma$†	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Comments
87.1		87.2	5/2$^-$	0.0	1/2$^-$	Eγ: rounded vales from Adopted Gammas.
630.9 *3*	≈100	2814.43		2183.50	(11/2$^+$,13/2$^+$)	Observed in coincidence and the RDM only and Eγ derived from the level separation (1978Wa09).
891.70 *16*	261	2183.50	(11/2$^+$,13/2$^+$)	1291.79	(9/2)$^+$	A_2=+0.30 *2*; A_4=0 (1978Wa09)
1204.66 *18*	559	1291.79	(9/2)$^+$	87.2	5/2$^-$	A_2=+0.19 *1*; A_4=−0.11 *6* (1978Wa09)
1522.63 *20*	159	2814.43		1291.79	(9/2)$^+$	A_2=+0.13 *4*; A_4=−0.15 *10* (1978Wa09)

† From 1978Wa09, unless otherwise noted.

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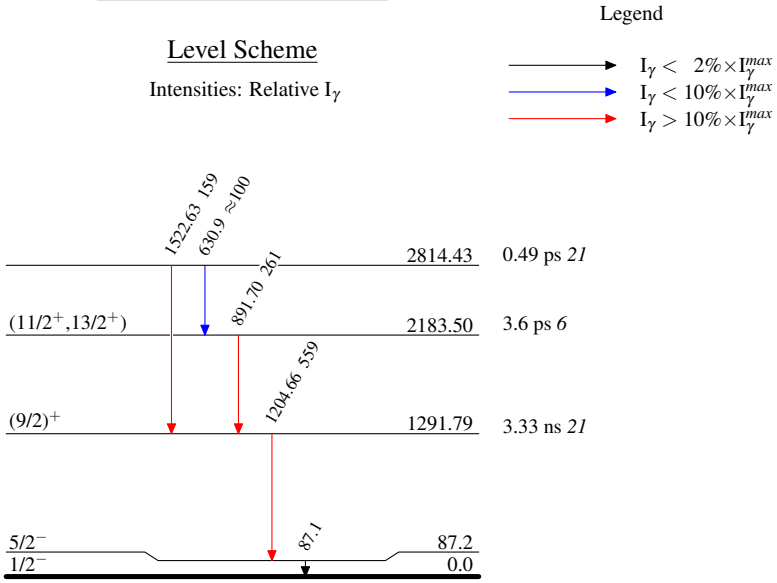
Level Scheme

Intensities: Relative I_γ



$^{63}_{28}Ni_{35}$