^{9}Be(^{64}Ga,^{62}Gaγ),(^{65}Ge,^{62}Gaγ) 2015He22

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, Huang Xiaolong, and Wang Xianghan	NDS 204,1 (2025)	30-Jun-2023

Study of the Triplet Energy Differences (TED) of A=62 triplet via two neutron knockout from ^{64}Ga, and also one-proton and two-neutron removal from ^{65}Ge.

2015He22: A cocktail of secondary beams including ^{64}Ga and ^{65}Ge were produced by fragmentation of E=150 MeV/nucleon primary beam of ^{78}Kr from the Coupled Cyclotron Facility at NSCL on a 650 mg/cm^2 beryllium target. Fragments were identified and selected by the A1900 fragment separator and incident on a secondary target of 96 mg/cm^2 Be foil. Reaction products were identified in the S800 spectrometer; The γ rays were detected using the GRETINA array with 28 coaxial HPGe crystals. Measured Eγ, Iγ, $\gamma\gamma$-coin, (^{62}Ga recoils)γ-coin. Deduced levels, J^π, isospin. Comparison with shell-model calculations.

^{62}Ga Levels

T: 2015He22 quote values from 2013Da16, unless otherwise noted. Energies are rounded values.

E(level)[†]	J^π[†]	Comments
0	0^+	T=1
571	1^+	T=0
817	3^+	T=0
977 *2*	(2^+)	T=1 (2015He22) E(level),J^π: from 2015He22. The authors suggest that the observed 977γ is a strong candidate for the decay of the T=1, $J^\pi=2^+$ state based on systematics of T=1 triplet. Other: $J^\pi=1^+$, T=0 in 2013Da16.
1194	5^+	T=0
1355 *2*		E(level): level proposed in 2015He22 based on 784γ-571γ coin.
1439	4^+	T=0

[†] 2015He22 quote values from 2013Da16, unless otherwise noted. Energies are rounded values.

γ(^{62}Ga)

Eγ	E$_i$(level)	J^π_i	E$_f$	J^π_f	Comments
(246[†])	817	3^+	571	1^+	Eγ: γ not observed in 2015He22 due to the long half-life of the decaying state.
376[‡]	1194	5^+	817	3^+	
571[†]	571	1^+	0	0^+	
622[‡]	1439	4^+	817	3^+	
784 *2*	1355		571	1^+	Eγ: new transition observed in 2015He22.
977 *2*	977	(2^+)	0	0^+	Eγ: from 2015He22.

[†] Rounded value from the Adopted Gammas.
[‡] 2015He22 quote rounded value from 2013Da16.

Legend

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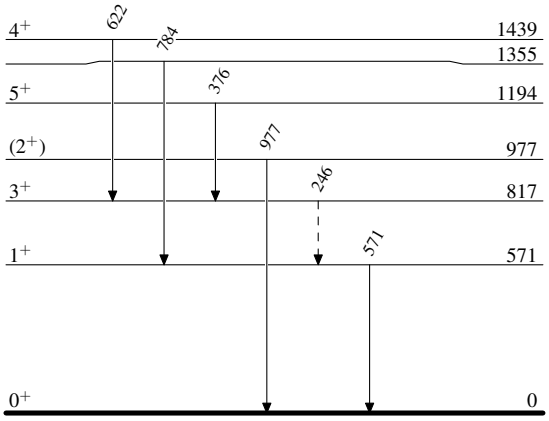
Level Scheme

γ Decay (Uncertain)



$^{62}_{31}Ga_{31}$