

$^{62}\text{Ga}(^{12}\text{C}, ^{62}\text{Ga}'\gamma)$ 2023Wi05

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

2023Wi05: Secondary beam of ^{62}Ga produced through fragmentation of ^{78}Kr primary beam at 345 AMeV on a Be target at RIKEN. Secondary beam energy approximately 165 AMeV. Measured E_γ , I_γ $\gamma\gamma$ using the DALI2⁺ array consisting of 226 NaI(Tl) crystals. Data include inelastic scattering on natural carbon target as well as nucleon removal reaction from ^{63}Ge . Comparison with the shell-model calculations with the K3BGR (GXPF1A) effective interactions.

 ^{62}Ga Levels

E(level) [†]	J^π [‡]	Comments
0	0 ⁺	
571 5	1 ⁺	
817	3 ⁺	
981 2	2 ⁺	T=1
		E(level): 981 γ is strongest intensity transition, indicating decay of the T=1 level as it is the only one expected to be strongly populated in the inelastic scattering experiment.
1193	5 ⁺	
1490 20		
2005 54		
2212	(4 ⁺)	
3221 34	(3 ⁻)	J^π : from comparison to similar transition energy and excitation cross section for state in ^{62}Zn .

[†] From E_γ .

[‡] Proposed in 2023Wi05 based on comparisons with mirror nucleus ^{62}Zn and shell-model predictions.

 $\gamma(^{62}\text{Ga})$

E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π
376	1193	5 ⁺	817	3 ⁺
571 5	571	1 ⁺	0	0 ⁺
981 2	981	2 ⁺	0	0 ⁺
1233	2212	(4 ⁺)	981	2 ⁺
1490 20	1490		0	0 ⁺
2005 54	2005		0	0 ⁺
2242 34	3221	(3 ⁻)	981	2 ⁺

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Level Scheme

