

$^{70}\text{Zn}(\alpha, p)$ 1980Ro09

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen		NDS 158, 1 (2019)	16-May-2019

$J^\pi(^{70}\text{Zn g.s.})=0^+$.

1980Ro09: E=26 MeV α beam was produced from the Orsay MP tandem accelerator. Target was 60 $\mu\text{g}/\text{cm}^2$ 86.8% enriched GeO_2 evaporated on a carbon backing. Reaction products were momentum analyzed with a magnetic spectrometer (FWHM=12 keV) and detected by two solid-state position-sensitive detectors. Measured $\sigma(E_p, \theta)$, $\theta=5^\circ-69^\circ$ in 8° . Deduced levels, J, π , spectroscopic factors from DWBA analysis. Comparisons with available data.

Other:

1977Lu01: E=12.5 MeV. Measured proton spectra. Deduced relative contribution of compound and pre-compound processes.

 $^{73}\text{Ga Levels}$

S is defined by $d\sigma/d\Omega(\text{exp})=N \times S \times d\sigma/d\Omega(\text{DWBA})$, normalized such that the g.s. of ^{71}Ga has the average experimental value of 1.95.

E(level) [†]	J^π [‡]	S	E(level) [†]	J^π [‡]	S	E(level) [†]	J^π [‡]	S
<0.3 ^{&}	(3/2 ⁻)	1.47	952 [@]	(7/2 ⁻ , 5/2 ⁻) [#]		1620 [@]	(7/2 ⁻ , 5/2 ⁻)	
198 3	(5/2 ⁻)	2.2	1119 4	(1/2 ⁻)	0.86	1812 8		
216 3	(3/2 ⁻)	0.51	1237 4	(9/2 ⁺)	3.45	1939 8	(5/2 ⁻)	0.9
495	(5/2 ⁻ , 7/2 ⁻) [#]	(0.12)	1531 [@]	(7/2 ⁻)				
913 4	(3/2 ⁻)	0.69	1576 6	(5/2 ⁻)	1.1			

[†] From 1980Ro09 where uncertainties are given. Other values are from (d, ^3He) in 1978Ro14 or (t,p) in 1979Ve01, as taken by 1980Ro09.

[‡] From comparisons of measured $\sigma(\theta)$ with those for states of known J^π in $^{68}\text{Zn}(\alpha, p)$ and shell-model considerations (1/2⁻, 3/2⁻, 5/2⁻ and 9/2⁺ proton states strongly populated), unless otherwise noted.

[#] Taken by 1980Ro09 from L(d, ^3He)=3 in 1978Ro14.

[@] Very weakly populated (1980Ro09).

[&] From Adopted Levels. This level is assigned by 1980Ro09 as the g.s. but likely correspond to a closely-spaced level at <0.3 keV in Adopted Levels.