^{71}Ga(p,n) 1970Ma09

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen	NDS 188,1 (2023)	17-Jan-2023

1970Ma09: E=1.5-3.1 MeV proton beams from the 3-MeV pulsed Van de Graaff accelerator at Pelindaba, South Africa. Enriched target. Measured neutron spectrum by time-of-flight method with a plastic scintillator and γ rays with a Ge(Li) detector. Deduced levels.

Others:

1985Kr10 (also 1987KrZX thesis): E=120, 200 MeV at the Indiana University Cyclotron Facility. Measured cross sections, and $\sigma(\theta)$ for Gamow-Teller excitations for peaks in the 2-7 MeV excitation energy range. Deduced neutrino capture in ^{71}Ga detector. In the neutron spectrum, peaks present at g.s., 175, 500, 750, 8950 (IAS peak) and wide pumps in 4-8 MeV and 9-12 MeV regions.

1983Or04: E=35 MeV at the Cyclotron and Radioisotope Center (CYRIC), Tohoku University. Measured neutron spectra, $\sigma(\theta)$ with a NE-213 scintillator, FWHM=165 keV. DWBA analysis of $\sigma(\theta)$ for g.s., 175, 500 and 8957 (IAS) levels. Deduced Gamow-Teller B(GT) strengths for g.s. and first excited state.

Additional information 1.

^{71}Ge Levels

E(level)[†]	J^π	Comments
0		B(GT)=0.085 *15* (1985Kr10). dσ/dΩ=0.153 mb/sr at 0° (1983Or04).
179 *5*		B(GT)<0.009 (1985Kr10). dσ/dΩ=0.145 mb/sr at 0° (1983Or04).
500 *5*		B(GT)=0.010 *15* (1985Kr10). dσ/dΩ=0.036 mb/sr at 0° (1983Or04).
523 *5*		
590 *5*		E(level): mixed with a peak from ^{37}Ar.
709 *5*		
748 *5*		
808 *5*		
831 *5*		
1026 *5*		
1095 *5*		
1136 *8*		
1207 *8*		
1287 *8*		
1298 *8*		
1348 *8*		
1379 *8*		
1412 *8*		
1453? *8*		
1477 *8*		
1508 *8*		
1543 *8*		
1561 *8*		
1598 *8*		
1629 *8*		
1697 *10*		
1745 *10*		
1793 *10*		
6×10^3 *2*		E(level): wide bump between 4-8 MeV (1985Kr10). B(GT)=4.3 *7* (1985Kr10).
8.95×10^3 *10*	$3/2^-$	E(level): from 1985Kr10, IAS of ^{71}Ga g.s. Other: 8957 (1983Or04).

[†] From 1970Ma09, the g.s. is labeled as 4 keV *5* in table 2 of 1970Ma09, this number has been subtracted from each value.