

$^{63}\text{Cu}(\text{p},\text{n})$ 1970Ta01,1975Wo01

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

1970Ta01: E=4.85-6.35 MeV proton beams were produced from the ORNL 6-MV pulsed-beam Van de Graaff accelerator. Target was $\approx 128 \mu\text{g}/\text{cm}^2$ ^{63}Cu (99.9% enriched) on a platinum backing. Neutrons were detected with a time-of-flight spectrometer system (FWHM ≈ 10 keV). Measured neutron spectrum. Deduced levels.

1975Wo01: E=16, 19, 22 MeV beams at Lawrence Livermore Laboratory. Target was $4.1 \text{ mg}/\text{cm}^2$ self-supporting ^{63}Cu . Neutrons were detected with NE-213 scintillators. Measured $\sigma(\theta)$ for four isobaric analog states. Deduced IAS levels, Q-values. Comparisons with coupled-channel calculations.

1962An01 (also **1962An02,1962An08**): E=13 and 14.8 MeV proton beams were from the Livermore variable-energy cyclotron. Measured neutron spectrum. Deduced levels.

1960Ta05: E=4.0-6.5 MeV. Measured σ .

Data below 1.5 MeV are from **1970Ta01**, other data are from **1975Wo01**.

 ^{63}Zn Levels

E(level) [†]	J π [‡]	Comments
0.0		
194 3		E(level): other: 214 25 (1962An01).
249 3		
628 4		
639 4		E(level): other: 640 25 (1962An01).
652 4		
1028 5		E(level): other: 1047 25 (1962An01).
1070 5		
1213 6		E(level): other: 1246 25 (1962An01).
1291 6		
1403 6		E(level): other: 1386 25 (1962An01).
1444 7		
1640 25		E(level): from 1962An01 .
1697 25		E(level): from 1962An01 .
x	3/2 ⁻	E(level): IAS of ^{63}Cu g.s., x ≈ 5300 (1975Wo01).
x+670	1/2 ⁻	E(level): IAS of 670, 1/2 ⁻ level in ^{63}Cu (1975Wo01).
x+960	5/2 ⁻	E(level): IAS of 962, 5/2 ⁻ level in ^{63}Cu (1975Wo01).
x+1330	7/2 ⁻	E(level): IAS of 1327, 7/2 ⁻ level in ^{63}Cu (1975Wo01).

[†] From **1970Ta01**, unless otherwise noted.

[‡] From comparisons of measured $\sigma(\theta)$ with coupled-channel calculations for IAS states (**1975Wo01**).