^{64}Zn(p,p),(p,p′):IAR 1981Sa24,1981Ra23

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 202,59 (2025)	25-Feb-2025

S(p)=3942.4 *6* (2021Wa16).

1981Sa24: (p,p) E(p)=2.50-3.24 MeV from TUNL 3 MV Van de Graaff. Scattered protons were detected with surface-barrier detectors. Measured σ(E,θ), θ_{cm}=90°−160°. Deduced IAR levels, J, π, widths from R-matrix analysis.

1981Ra23: (p,p) E(p)=2.88-5.02 MeV from Physik-Insitut der Universitat. Measured σ(E,θ), θ_{cm}=90°−165°.

1966Ga14: (p,p),(p,p′) E(p)≈3.2-3.6 MeV. Measured σ(E(p)). Deduced width for E(p)=3790 resonance.

Other: 1972LeYE, (p,p).

The data are mainly ^{64}Zn(p,p) from 1981Sa24 and 1981Ra23. For statistical properties of resonances in ^{64}Zn(p,p) see 1981Ra23, 1981SaZW and 1981Sa24.

^{65}Ga Levels

E(level)[†]	L[‡]	S[#]	Comments
0			
6670	1	0.17	E(p)(lab)=2771, Γ(p)=360 eV (1981Sa24). E(level): IAS of the 867, 1/2$^-$ level in ^{65}Zn. The resonance has two or three fragments and E(level) is determined from the centroid of the individual states, uncertainty not given (1981Sa24).
6717	1	0.03	E(p)(lab)=2818, Γ(p)=80 eV (1981Sa24). E(level): IAS of the 910, 3/2$^-$ level in ^{65}Zn. The resonance has two or three fragments and E(level) is determined from the centroid of the individual states, uncertainty not given (1981Sa24).
7113	2	0.16	E(p)(lab)=3221, Γ(p)=360 eV (1981Sa24). E(level): IAS of the 1370, 5/2$^+$ level in ^{65}Zn. The resonance has two fragments and E(level) is determined from the centroid of the individual states, uncertainty not given (1981Sa24).
7658.4[@]	0	0.18	E(p)(lab)=3774.6 (1981Ra23). Other: 3790 *10* (1966Ga14). (2J+1)Γ(p)=12.0 keV *24* (1966Ga14), Γ=16 keV (1966Ga14). IAS of 1911, 1/2$^+$ level in ^{65}Zn. L: from inspection of σ(E,θ) (1966Ga14). S: from S=(2T$_z$)Γ(p)/Γ(s.p.) (1966Ga14).
7688.6[@]			E(p)(lab)=3805.3 (1981Ra23). IAS of 1942 level in ^{65}Zn.
8602.6[@]			E(p)(lab)=4733.7 (1981Ra23). IAS of 2870, (5/2$^-$,7/2$^-$) level in ^{65}Zn.
8830.7[@]			E(p)(lab)=4965.4 (1981Ra23). IAS of 3108, (3/2$^+$,5/2$^+$) level in ^{65}Zn.
8885.9[@]			E(p)(lab)=5021.4 (1981Ra23). IAS of 3170, (5/2$^-$,7/2$^-$) level in ^{65}Zn.

[†] From E(level)=E(p)(c.m.)+S(p)(^{65}Ga), where S(p)=3942.4 *6* (2021Wa16) and E(p)(c.m.)=E(p)(lab)×m(^{64}Zn)/[m(p)+m(^{64}Zn)].

[‡] From analysis of σ(E,θ) in 1981Sa24, unless otherwise noted.

[#] From S=(2T$_z$)Γ(p)/Γ(s.p.) (1981Sa24), unless otherwise noted.

[@] Uncertainty on E(p) not given by 1981Ra23, but consistency of Coulomb displacement energy implies ΔE≈5 keV.