^{68}Zn(p,p′)

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. A. Mccutchan	NDS 113, 1735 (2012)	1-Mar-2012

1993Mo15: E(p)=20.4 MeV, polarized proton source. Measured $\sigma(\theta)$ (FWHM≈35 or 100 keV); DWBA and coupled channel calculations, deduced β_L.

1987Ja05: E(p)=22 MeV. Measured $\sigma(\theta)$ for θ=10°−110° using split-pole magnetic spectrograph and position sensitive proportional counter (FWHM=14 keV); DWBA and coupled channel calculations, deduced β_L (see also 1984JaZU).

1985MaZO: E(p)=65 MeV, polarized proton source. Measured $\sigma(\theta)$ and analyzing powers; coupled channels calculations, deduced β_L.

1980Fa07: E(p)=35.2 MeV. Measured $\sigma(\theta)$; optical model and coupled-channels analysis, deduced β_L.

1973Ta03: E(p)=30.5 MeV, FWHM≈100 keV; FWHM≈150 keV for polarization data. Measured $\sigma(\theta)$, analyzing powers; DWBA analysis; deduced β_L.

1970Pe09: E(p)=11 MeV, FWHM≈40 keV; measured $\sigma(\theta)$, DWBA and coupled channel calculations, deduced β_L.

1967Ca15: E(p)=49.08 MeV, FWHM=75 keV. Measured level energies.

1967Ca19: E(p)=49.08 MeV, FWHM=75-80 keV. Measured $\sigma(\theta)$, optical model analysis.

Others: 1959Be65, 1968Hu08, 1968Le23 (analysis of data from 1967Ca19 using DWBA and strong coupling approximation, deduced β_L), 1973An28, 1976An21, 1982Dj04, 1982Za06 (DWBA and coupled channel analysis of proton scattering data to study the effects of coupling, optical model and other parameters on β_2); 1992Ke07 (re-analysis of data for 37 even-even A≥40 nuclei using consistent coupled-channels calculations and optical model parameters).

^{68}Zn Levels

E(level)[†]	L[‡]	Comments
0		
1076 *4*	2	β_2=0.220 *15* (1987Ja05); Others: 0.217 (1968Le23), 0.19 (1970Pe09), 0.186 (1973Ta03), −0.19 (1980Fa07), 0.240 *18* (1992Ke07), 0.21 (1993Mo15). β_2R=1.12 *8* (1987Ja05).
1654 *5*		
1880 *5*		
2334 *5*	2	
2413 *5*		β_2=0.174, β_4=0.013 (1985MaZO).
2745 *5*	3	β_3=0.225 *16* (1987Ja05); Others: 0.217 (1968Le23), 0.17 (1970Pe09), 0.202 (1973Ta03), 0.220 *17* (1992Ke07), 0.21 (1993Mo15). β_3R=1.14 *8* (1987Ja05).
2818 *5*	2	
2954 *5*	4	
3005 *5*	4	
3168 *5*	(1)	
3190[#] *5*	(1)+2	
3290[#] *5*	2+4	
3350 *5*		
3432 *5*	2	
3465 *5*	5	
3498 *5*	4	
3595 *5*	4	
3622 *5*	3	
3658 *5*	(1)	
3701[#] *5*	(1)+5	
3727 *5*	(1)	
3783 *5*	2	
3840 *5*	4	
3888 *5*	4	
3940 *5*	4	
3965 *5*	2	

Continued on next page (footnotes at end of table)

^{68}Zn(p,p′) (continued)

^{68}Zn Levels (continued)

E(level)†	L‡	E(level)†	L‡	E(level)†	L‡	E(level)†	L‡
4060 *10*		4278 *10*	2	4520 *10*		4722 *10*	2
4096 *10*	5	4345 *10*	4	4545 *10*		4746 *10*	
4124 *10*	5	4389 *10*	4	4586 *10*	2	4782 *10*	(1)
4150 *10*		4413 *10*	2	4612 *10*	(1)	4841 *10*	
4205 *10*	(1)	4440 *10*	4	4642 *10*	(1)	4875 *10*	3
4240 *10*	(1)	4491 *10*		4678 *10*			

† From 1987Ja05.
‡ From DWBA fits to $\sigma(\theta)$ from 1987Ja05.
# Doublet (1987Ja05).