^{208}Pb(p,p′),(pol p,p′): IAR 1985Me01,1968Wh02,1969Fi01

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. Chen # and F. G. Kondev	NDS 126, 373 (2015)	30-Sep-2013

S(p)=3799.0 *8* (2012Wa38).

1985Me01: (pol p,p′) E=14.2-17.4 MeV polarized proton beams were produced from the Koln FN tandem Van de Graaff accelerator. Measured $\sigma(E_p,\theta)$. Deduced isobaric analog resonances (IAR), spectroscopic factors.

1968Wh02: (p,p′) E=14-18 MeV proton beams were produced from the University of Washington three-stage FN tandem Van de Graaff. A 99% enriched ^{208}Pb target was used. Scattered protons were detected by two Si(Li) detectors, FWHM=26 keV. Measured $\sigma(E_p)$. Deduced levels, widths, isobaric analog.

1969Fi01: (p,pol p) E=16-18 MeV. Scattered protons were detected by a surface barrier detector. Measured $\sigma(E,\theta)$. Deduced breakup Radius.

1971Da18: (p,p) E=8-18 MeV. Scattered protons were detected by lithium-drifted silicon detectors. Measured $\sigma(E_p,\theta)$. Deduced isobaric analog resonance parameters, spectroscopic factors.

Others:

(p,p′): 2011He08, 2010He08, 2008GoZT, 1996Ra07, 1969Ri10.

(p,p): 1966Ka02, 1969DoZZ, 1972Se10.

Spreading widths and isospin purity of the IAR are deduced by 1985Me01.

Coulomb energy difference=18793 *11*, a weighted average of values of 1968Wh02 (18787 *11*) and 1972Se10 (18811 *19*). The value quoted for 1968Wh02 is a weighted average deduced by evaluators based on E(res)-E(^{209}Pb parent state)+S(n)(^{209}Pb) with the resonance energies, E(res), in center-of-mass coordinates.

^{209}Bi Levels

Level widths are weighted averages, as given by 1985Me01, of values of 1968Wh02 and 1985Me01. The elastic-scattering partial widths, Γ_p, are weighted averages, as given by 1985Me01, of data of 1968Za01 (as reanalyzed by 1968Wh02) and 1985Me01.

E(level)†	Jπ‡	S#	Comments
S(p)+14899 *4*	9/2$^+$	0.98	Γ=251 keV *6*; Γ_p=21.9 keV *6* Jπ: if L(n)=4 for the analog state in ^{209}Pb.
S(p)+15658 *26*	(11/2$^+$)		Γ=221 keV *19*; Γ_p=1.7 keV *4* Jπ: probable analog of the $1i_{11/2}$ neutron state in ^{209}Pb.
S(p)+16380	(15/2$^+$)		Γ=202 keV *25*; Γ_p=0.85 keV *80* Jπ: probable analog of the $1j_{15/2}$ neutron state in ^{209}Pb. E(level): the uncertainty is 150 keV. The proton partial Γ is from 1985Me01.
S(p)+16466 *4*	5/2$^+$	0.86	Γ=297 keV *5*; Γ_p=46 keV *6* Jπ: if L(n)=2 for the analog state in ^{209}Pb.
S(p)+16953 *6*	(1/2$^+$)	0.90	Γ=320 keV *10*; Γ_p=52.0 keV *15* Jπ: probable analog of the $4s_{1/2}$ neutron state in ^{209}Pb.
S(p)+17398 *16*	7/2$^+$	0.84	Γ=293 keV *16*; Γ_p=43 keV *4* Jπ: if L(n)=4 for the analog state in ^{209}Pb. Γ_p is from 1968Za01 as reanalyzed by 1968Wh02. The value from 1985Me01 is suspect since the authors′ energy range covers only the lower part of the resonance.
S(p)+17457 *18*	3/2$^+$	0.86	Γ=278 keV *19*; Γ_p=35 keV *7* Jπ: if L(n)=2 for the analog state in ^{209}Pb. Γ_p is from 1968Za01 as reanalyzed by 1968Wh02. The value from 1985Me01 is suspect since the authors′ energy range covers only the lower part of the resonance.

† Resonance energies (given in the lab coordinate system), are from 1985Me01. Values are systematically lower by 25 keV on the average compared with data of 1968Wh02 and 1983BaZL. Others: 1968Wh02, 1971Da18 (no uncertainties given), 1983BaZL.

‡ From (p,pol p) data of 1969Fi01 (except for the ground-state value which is from 1967FiZY) based on known L(n) transfer to assumed parent analog. Additional tentative assignments are noted.

From 1971Da18. Several sets of values, calculated with different models and parameters, are also given by 1985Me01.