^{209}Bi(p,n),(p,np′): IAS

History

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

1972Cr07: E=25 MeV proton beam was produced from the Michigan State University Cyclotron. Targets of 1 to 6 cm/cm^2 isotopic bismuth. Neutrons were detected by a liquid scintillator. Measured tof, $\sigma(E_n)$. Deduced width of the analog state. Also see 1972Cr04.

1973Gr13: E=25, 27 MeV. Measured $\sigma(\theta)$. Deduced level-width of IAS.

1974Fi14,1974Sc31: E=25.8 MeV. Measured $\sigma(E_n)$. Deduced level-width of IAS.

1983Ha33: E=27 MeV. Measured $\sigma(\theta)$. Deduced IAS excitation.

Others: 1970Cr05, 1970Be41.

Coulomb energy difference=19030 25 (1974Fi14), 19011 21 (1972Cr07), 18991 12 (1972Cr04), 18917 33 (1970Cr05). Weighted average of these data gives ΔE(C)=18994 12.

^{209}Po Levels

E(level)	Comments
16319 12	E(level): from ΔE(C)=18994 12 and Q(^{209}Po)=1892.6 16 (2012Wa38).
	Analog of ^{209}Bi g.s.. Γ=257 keV 35, 299 keV 35 (1974Fi14, for Breit-Wigner, Gaussian line shapes, respectively), 235 keV 50 (1973Gr13), 151 keV 34 (1972Cr07, Breit-Wigner), 380 keV 80 (1970Cr05, Breit-Wigner). Γ=327 keV 31 from 1972Cr04 and partial widths for decay to states in ^{208}Bi with assumed configuration neutron hole lj coupled to an h$_{9/2}$ proton are 60, 36 3, 68 4 for p$_{1/2}$, f$_{5/2}$, p$_{3/2}$ hole states, respectively. These partial widths are normalized to 60 for the p3/2 hole state, a calculated value quoted by 1969Ig01. The weighted average of these values is 263 keV 31, which gives T$_{1/2} \approx 1.7 \times 10^{-6}$ fs.