^{208}Pb(^{12}C,^{11}B) 1976To08,1988Me04

History

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

1976To08: E=77.4, 97.9, 116.4 MeV ^{12}C beams were produced from the Oak Ridge isochronous cyclotron. Target was a 100 μg/cm^2 ^{208}Pb evaporated onto a 40 μg/cm^2 carbon foil. Reaction products were momentum analyzed with an Elbek spectrograph and detected by position-sensitive proportional counters at the focal plane, FWHM≈250 keV at E=97.9 MeV (estimated by evaluators). Measured $\sigma(\theta)$. Deduced levels, spectroscopic factors from DWBA analysis.

1988Me04: E=480 MeV ^{12}C beam was produced from the GANIL cyclotron. Target was 1.7 mg/cm^2 thick 99% enriched ^{208}Pb foil. Reaction products were momentum analyzed with the energy-loss magnetic spectrometer SPEG, FWHM≈200 keV. Measured $\sigma(\theta)$. Deduced levels, spectroscopic factors from DWBA analysis.

Others: 1972La38, 1973Ko09, 1984Vo06, 1989Wi07, 2001Sa41.

^{209}Bi Levels

E(level)†	S‡	Comments
0.0	0.84	S: if configuration=$\pi(1h_{9/2})^{+1}$. Other: 0.48 (1988Me04).
900	0.81	S: if configuration=$\pi(2f_{7/2})^{+1}$. Other: 0.66 (1988Me04).
1610	0.75	S: if configuration=$\pi(1i_{13/2})^{+1}$. Other: (0.70) (1988Me04).
2820	0.54	S: if configuration=$\pi(2f_{5/2})^{+1}$. Other: 0.80 (1988Me04).
3120	0.69	S: if configuration=$\pi(3p_{3/2})^{+1}$.
3640?		E(level): tentative peak. Possible $\pi(3p_{1/2})^{+1}$ state seen at 3633 in (^{3}He,d).
3870	0.017	S: for configuration=$\pi(1i_{13/2})^{+1}$ as suggested by 1985Ga01 in (α,t) (at E=3835).
4270	0.063	S: for configuration=$\pi(1j_{15/2})^{+1}$ as suggested by 1985Ga01 in (α,t). Peak is probable multiplet consisting of the 4174, 4247, and 4543 levels reported in (α,t).
4990	0.021	S: for configuration=$\pi(1j_{15/2})^{+1}$ as suggested by 1985Ga01 in (α,t). Peak is probable doublet consisting of 4886 and 4998 levels reported in (α,t).
5440	0.018	S: for configuration=$\pi(1j_{15/2})^{+1}$. Peak is probable multiplet consisting of 5277 and 5380 (configuration=$\pi(1j_{15/2})^{+1}$) and 5469 and 5580 (configuration=$\pi(1i_{11/2})^{+1}$), with configurations as suggested by 1985Ga01 in (α,t).

† Values below 3800 are from 1976To08. Values for higher levels are from 1988Me04. In addition to the resolved peaks listed here, broad structures are observed around an excitation energy of 10 MeV in the spectra of 1988Me04.

‡ From 1976To08 for E(level)<3800. Values are from E=97.9 MeV data with S(^{12}C=^{11}B+p)=2.85, a theoretical estimate. Authors also quote spectroscopic values for E=77.4 and 116.4 MeV. Values for higher levels are from 1988Me04 and are normalized to the theoretical value of 0.70 for the 1610 level (1973Ri13). Values from 1988Me04 for the lower levels are given in comments.