^{48}Ca(α,2p) 1990Fi07

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh	NDS 157, 1 (2019)	15-Apr-2019

1990Fi07: E=55.4 MeV beam from the Bonn isochronous cyclotron. Measured $\sigma(\theta$(c.m.)≈20°−60°) via breakup protons detected in coincidence with position-sensitive ΔE/E telescopes (FWHM=200-300 keV). Deduced levels, J, π, L-transfers from DWBA analysis, 2-neutron configurations and normalization.

Values of N deduced from (dσ/dΩ(exp)=N($\Delta\varepsilon$)dσ/dΩ(DWBA)) are given in the comments, where $\Delta\varepsilon$=breakup energy interval.

^{50}Ca Levels

E(level)	L	Comments
0		No oscillations observed in $\sigma(\theta)$ in contradiction to all other g.s. transitions reported by 1990Fi07 and DWBA predictions. 1990Fi07 suggest this is due to ^{40}Ca(α,2p) contamination. $(p_{3/2})^2_{0+}$; N=380 *230*.
9.8×10^2 *5*	(2)	$(p_{3/2})^2_{2+}$; N=140 *40*. L: $\sigma(\theta)$ plot in figure 32 of 1990Fi07 consistent with L=2 but does not seem to rule out L=4.
3.00×10^3 *5*	(4)†	L: 1990Fi07 favor L=4 but $\sigma(\theta)$ plot in figure 32 of 1990Fi07 does not seem to rule out L=2. $(p_{3/2},f_{5/2})_{4+}$; N=90 *35*.
3.96×10^3 *5*	4†	L: L(t,p)=3 disagrees with L(α,2p)=4. $(p_{3/2},f_{5/2})_{4+}$; N=90 *35*.
4.97×10^3 *5*	4+5‡	E(level): possible doublet. $(p_{3/2},f_{5/2})_{4+}+(p_{1/2},g_{9/2})_{5-}$; N=90 *35*.
8.38×10^3 *5*	7†‡	$(f_{5/2},g_{9/2})_{7-}$; N=60 *25*.
8.98×10^3 *5*	7†	$(f_{5/2},g_{9/2})_{7-}$; N=60 *25*.
9.80×10^3 *5*	6,(8)	$(g_{9/2},d_{5/2})_{6+}$; N=45 *10* or $(g_{9/2})^2_{8+}$; N=60 *35*.
10.33×10^3 *5*	8,(6)	$(g_{9/2})^2_{8+}$; N=60 *20* or $(g_{9/2},d_{5/2})_{6+}$; N=40 *15*.

† N is the sum for both states.
‡ Spectra contaminated by ^{12}C(α,2p) or ^{16}O(α,2p).