^{62}Ni(t,^{3}He) 1976Aj03

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Alan L. Nichols, Balraj Singh, Jagdish K. Tuli	NDS 113, 973 (2012)	15-Apr-2012

1976Aj03: E=24 MeV. 98.7% enriched target of 60 μg/cm^2 thickness. Measured E(^{3}He), I(^{3}He), $\sigma(\theta)$ from 20° to 55° in 5° steps using Q3D magnetic spectrometer and a helix detector system, FWHM=11-20 keV, but observed width of the g.s. group is 11 keV. Absolute cross sections accurate to 20%. Deduced mass of ^{62}Co.

Measured Q value=−5296 keV *20* leads to Q(β^-)=5315 keV *20* for decay of ^{62}Co to ^{62}Ni, as adopted in 2011AuZZ and 2003Au03.

^{62}Co Levels

E(level)	J$^\pi$[†]	Comments
0.0	(2$^+$)	
22 *5*	(5$^+$)	E(level),J$^\pi$: 1976Aj03 state (2$^+$ and 5$^+$) for a doublet. Not clear whether 22-keV group is a doublet with J^π=2$^+$ and 5$^+$, or whether 22-keV group and g.s. form a doublet. The evaluators consider the latter possibility as more likely.
230 *5*	(3$^+$)	
244 *5*	(3$^+$,4$^+$)	
504 *5*	(1$^+$)	
530 *8*		
610 *5*	(5$^+$,6$^+$)	
701 *5*	(2$^+$)	
912[‡] *5*		
1170? *10*		
1218 *5*	(5$^+$,6$^+$)	
1271[‡] *5*	(3$^+$,4$^+$)	
1360[‡] *5*	(2$^+$)	
1470 *8*	(1$^+$,2$^+$,3$^+$)	
1542 *8*	(5$^+$,6$^+$)	
1660 *15*		
1695 *10*		
1803 *10*		
1820 *10*		
1873[‡] *15*		
1980 *20*		
2120 *15*		
2135[‡] *15*		
2165 *20*		

[†] Based on comparison of empirical curves of $\sigma(\theta)$ for ^{62}Co levels with those for lighter nickel isotopes to levels of known J^π values. 1976Aj03 state that lack of $\sigma(\theta)$ data at forward angles below 20° places limits on J^π, without specifying whether these are upper or lower limits. The evaluators consider all spin assignments proposed here as tentative and have not carried them over to the Adopted Levels.

[‡] Probable doublet from the width of the ^{3}He group.