^{58}Ni(d,^{3}He), ^{58}Ni(pol d,^{3}He) 1987Re10,1985Ma23

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	M. R. Bhat	NDS 85, 415 (1998)	24-Sep-1998

1987Re10: E(pol d)=79.6, 80.1 MeV, FWHM= 50 keV; $\sigma(\theta)$ for 7 scattering angles between 8°−18°; vector-analyzing power; DWBA analysis, spin determination by empirical method involving comparison of measured angular distributions with levels of known J^{π} since unique assignments were not possible from DWBA predictions.

1985Ma23: E=78 MeV, FWHM=25 keV; magnetic spectrometer with multi-wire gas proportional counter; θ=2.7°−25° in steps of 0.8°−2°; DWBA.

Others: 1987Pu02, 1984Wa19, 1977Au04, and 1969Ma26.

1987Re10 give centroid energy, bin limits, determined l,j and spectroscopic factors for 39 energy groups above 4 MeV in addition to the data for the g.s. and the 17 discrete energy levels.

^{57}Co Levels

E(level)[#]	J^{π}[†]	L[#]	C^2S[‡#]	Comments
0.0	7/2$^-$	3	4.27	J^{π}: 7/2$^-$ (1987Re10). C^2S: 5.09 (1987Re10).
1224 *5*	9/2$^-$	5	0.06	C^2S: 0.10 for 1h9/2 transfer (1987Re10).
1378[@]	3/2$^-$	1	0.06	J^{π}: 3/2$^-$ (1987Re10). C^2S: 0.07 (1987Re10).
1505[@]	(1/2)$^-$	1	0.007	
1689[@]	11/2$^-$	(5)	0.04	C^2S: 0.02 for 1h11/2 transfer (1987Re10).
1757[@]	3/2$^-$	1	0.11	J^{π}: 3/2$^-$ (1987Re10). C^2S: 0.15 (1987Re10).
1897[@]	7/2$^-$	3	0.92	J^{π}: 7/2$^-$ (1987Re10). C^2S: 1.14 (1987Re10).
2133[@]	3/2$^+$,5/2$^+$[&]	2	0.04,0.03	
2311[@]	7/2$^-$	3	0.14	J^{π}: 7/2$^-$ (1987Re10). C^2S: 0.18 (1987Re10).
2486[@]	(9/2$^-$)	5	0.06	C^2S: 0.08 for 1h9/2 transfer (1987Re10).
2611[@]	7/2$^-$	3	0.06	J^{π}: 7/2$^-$ for a level at 2590 (1987Re10). C^2S: 0.07 (1987Re10).
2728 *5*	7/2$^-$,5/2$^-$	3	0.03,0.05	J^{π}: 7/2$^-$ (1987Re10). C^2S: 0.04 for J^{π}=7/2$^-$ (1987Re10).
2879[@]	3/2$^-$	(0,1)	0.007	
2981[@]	1/2$^+$	0	1.05	J^{π}: 1/2$^+$ (1987Re10). C^2S: 1.86 (1987Re10).
3184 *5*	3/2$^+$,5/2$^+$	2	0.14,0.09	J^{π}: (5/2$^-$) (1987Re10). C^2S: 0.19 for L=3, J^{π}=(5/2$^-$) (1987Re10).
3273 *5*	7/2$^-$,5/2$^-$	3	0.07,0.11	J^{π}: 7/2$^-$ for a level at 3260 (1987Re10). C^2S: 0.09 (1987Re10).
3365 *5*	(3/2)$^-$	1	0.035	J^{π}: 3/2$^-$ (1987Re10). C^2S: 0.07 (1987Re10).
3469 *5*	3/2$^-$,1/2$^-$	1	0.013,0.016	
3560 *5*	3/2$^+$,5/2$^+$	2	1.50,1.00	J^{π}: 3/2$^+$ (1987Re10). C^2S: 2.46 (1987Re10).
3688 *5*	7/2$^-$	3	0.10	J^{π}: 7/2$^-$ (1987Re10).
3728 *5*				
3922 *5*	7/2$^-$,5/2$^-$	3	0.07,0.12	J^{π}: 7/2$^-$ (1987Re10). C^2S: 0.09 (1987Re10).
4318 *5*	(3/2$^+$,5/2$^+$)	(2)	0.19,0.128	
4530 *5*	3/2$^-$,1/2$^-$	1	0.028,0.034	

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^{58}Ni(d,^{3}He), ^{58}Ni(pol d,^{3}He) 1987Re10,1985Ma23 (continued)

^{57}Co Levels (continued)

E(level)[#]	Jπ[†]	L[#]	C^{2}S[‡#]	E(level)[#]	Jπ[†]	L[#]	C^{2}S[‡#]
4619 *5*	(3/2$^+$,5/2$^+$)	(2)	0.07,0.05	5715 *5*	(3/2$^-$,1/2$^-$)	(1)	0.007,0.009
4774 *5*	(3/2$^+$,5/2$^+$)	(2)	0.16,0.10	5877 *5*	3/2$^+$,5/2$^+$	2	0.26,0.17
4882 *5*	(7/2$^-$,5/2$^-$)	(3)	0.04,0.07	5987 *5*	3/2$^+$,5/2$^+$	2	0.34,0.22
5057 *5*	(3/2$^-$,1/2$^-$)	(1)	0.007,0.008	6148 *5*	(3/2$^-$,1/2$^-$)	(1)	0.013,0.016
5103 *5*	3/2$^+$,5/2$^+$	2	0.12,0.08	6228 *5*		(2,3)	
5157 *5*	(3/2$^-$,1/2$^-$)	(1)	0.019,0.023	6306 *5*	3/2$^-$,1/2$^-$	1	0.011,0.014
5222 *5*	3/2$^+$,5/2$^+$	2	0.04,0.03	6398 *5*	3/2$^+$,5/2$^+$	2	0.21,0.14
5384 *5*	(3/2$^-$,1/2$^-$)	(1)	0.006,0.007	6671 *5*	(3/2$^+$,5/2$^+$)	(2)	0.09,0.06
5459 *5*	(7/2$^-$,5/2$^-$)	(3)	0.04,0.08	6817 *5*	(3/2$^+$,5/2$^+$)	(2)	0.04,0.03
5524 *5*	3/2$^-$,1/2$^-$	1	0.02,0.025	6901 *5*	(3/2$^-$,1/2$^-$)	(1)	0.014,0.017
5638 *5*	(3/2$^-$,1/2$^-$)	(1)	0.024,0.03				

† Assumed in DWBA calculations. Other values assumed by 1985Ma23 could be excluded by the adopted J^{π}.
‡ Estimated uncertainty 25%.
# From 1985Ma23, unless indicated otherwise.
@ Value adopted by 1985Ma23 for calibration.
& L=3 in (^{3}He,d); may be a doublet with L=2 transition dominating in (d,^{3}He).