^{108}Pd(d,p) 1967Co24

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	S. Kumar(a), J. Chen(b) and F. G. Kondev	NDS 137, 1 (2016)	31-May-2016

Target ^{108}Pd J^{π}(g.s.)=0^+.

1967Co24: E=12 MeV deuteron beam was produced from the University of Pittsburgh cyclotron. Target is 40 μg/cm^2 98% enriched ^{108}Pd. Reaction products were momentum analyzed by a Enge split-pole spectrograph (FWHM=7 keV) and detected in photographic plates. Measured σ(E$_p$,θ). Deduced levels, L, spectroscopic factors from DWBA analysis. Also see 1968Co32 with E=17 MeV beam and 1963Cu02 with E=15 MeV beam and spectrometer FWHM=30 keV.

^{109}Pd Levels

Additional information 1.

E(level)[†]	L[‡]	(2J+1)×S[‡]	Comments
0.0	2	1.06	
112 *4*	0	0.60	
188 *4*	5	3.36	
245 *4*	4	3.52[#]	
262 *4*	0	0.11	
291 *4*	2	1.32	
324 *4*	2,0	0.18	(2J+1)×S: 0.018 for L=0.
370 *4*	(1)	0.0084	
382 *4*	0,2	0.0064	(2J+1)×S: 0.035 for L=2.
404 *4*	0	0.008	
427 *4*	4	1.6[#]	
489 *4*	2	0.416	
539 *4*	2	0.162	
623 *4*	0	0.106	
644 *4*	4	0.96[#]	
671 *4*	1	0.038	
719 *4*	2	0.068	
742 *4*	0	0.0124	
788 *4*	2	0.212	
808 *4*	2	0.132	
844 *4*	2	0.248	
908 *4*	2	0.90	
940 *4*	1	0.056	
954 *4*	0	0.021	
981 *4*			
1006 *4*			
1051 *4*	2	0.10	
1093 *4*	2	0.64	
1145 *4*	2	0.26	
1176 *4*	3	0.053	
1231 *4*	0	0.018	
1241 *4*	3	0.052	
1263 *4*	2	0.035	
1308 *4*			
1329 *4*	(1)	0.12	
1344 *4*	0	0.042	
1474 *4*	0	0.022	
1484 *4*	2,(1)	0.064	(2J+1)×S: 0.019 for L=1.
1499 *4*			
1541 *4*	(3,2)	0.064	(2J+1)×S: 0.044 for L=2.

Continued on next page (footnotes at end of table)

^{108}Pd(d,p) 1967Co24 (continued)

^{109}Pd Levels (continued)

E(level)[†]	L[‡]	(2J+1)×S[‡]	Comments
1561 *4*			
1644 *4*			
1664 *4*	2,(1)	0.084	(2J+1)×S: 0.029 for L=1.
1682 *4*	0	0.068	
1737 *4*	2,(1)	0.068	(2J+1)×S: 0.22 for L=1.
1773 *4*	3	0.037	
1789 *4*	(1,2)	0.021	(2J+1)×S: 0.072 for L=2.
1800 *4*	0	0.018	
1819 *4*			
1836 *4*	3	0.058	
1846 *4*	(1,2)	0.03	(2J+1)×S: 0.11 for L=2.
1863 *4*	(3)	0.050	
1877 *4*	1	0.030	
1915 *4*	1	0.035	
1923 *4*	1	0.088	
1941 *4*	3	0.144	
1954 *4*			
1972 *4*	3	0.24	
2021 *4*	1	0.0056	
2053 *4*			
2091 *4*	2	0.12	
2117 *4*	1	0.072	
2135 *4*	(1)	0.018	
2160 *4*	1	0.064	
2209 *4*	3	0.144	
2245 *4*	1	0.044	
2259 *4*	1	0.038	
2280 *4*	2	0.084	
2301 *4*	(1)	0.0039	
2346 *4*	(3)	0.112	
2357 *4*	(1)	0.038	
2371 *4*	3	0.168	
2391 *4*	3	0.088	
2415 *4*	1	0.030	
2465 *4*	3	0.224	
2473 *4*	1	0.072	
2493 *4*	(3)	0.176	
2522 *4*	2	0.088	
2541 *4*	(3,0)	0.096	(2J+1)×S: 0.028 for L=0.

[†] From 1967Co24. Authors do not give uncertainty. Evaluators estimate ΔE=4 keV from the proton spectrum.

[‡] From DWBA analysis in 1967Co24. Spectroscopic factor S is deduced using $d\sigma/d\Omega(exp)=N\times(2J+1)\times S\times d\sigma/d\Omega(DWBA)$, where N=1.5 for (d,p) transfer reaction.

[#] 1968Co32 obtain (2J+1)×S=1.76, 1.76 and 0.72 for E=245, 427 and 644 keV $J^{\pi}=7/2^{+}$ levels, respectively, with beam energy=17 MeV. They claim that the strong variations of S(E=12 MeV)/S(E=17 MeV) could arise from a breakdown of the basic stripping theory.