^{181}Ta(d,t) 1983De43

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. A. Mccutchan	NDS 126, 151 (2015)	1-Feb-2015

$J^\pi(^{181}Ta)=7/2^+$.

E(d)=17.4 MeV. Measured $\sigma(\theta)$ for θ=7.5° to 90° in 7.5° steps using QDDD spectrometer (FWHM=20 keV); DWBA analysis.

^{180}Ta Levels

E(level)	J^π [†]	L [‡]	C^2S [#]	E(level)	J^π [†]	L [‡]	C^2S [#]	E(level)	J^π [†]	L [‡]	C^2S [#]
0.0 [@]	1^+	4	1.09	462 [c] *4*	7^-	5	0.638	753 [b] *5*	7^-	3	0.544
45 [@] *2*	2^+	4	2.79	476 [a] *4*	2^-	3	0.480	775 [d] *5*	3^-	1	0.983
114 [@] *2*	3^+	6	1.30	545 [a] *4*	3^-	3	0.643	822 [e] *5*	5^-	3	0.587
172 [&] *5*	8^+	4	0.690	571 [b] *4*	6^-	3	0.565	875 [d] *8*	4^-	3	0.227
187 [@] *2*	4^+	6	0.348	592 [&] *3*	10^+	6	1.95	893 *6*			
312 [@] *3*	5^+	6	1.16	652 [a] *4*	4^-	3	1.43	930 *2*			
376 [&] *4*	9^+	6	1.42	671 [c] *6*	8^-	5	0.720	948 [e] *2*	6^-		0.468
420 [a] *4*	1^-	3	0.555	712 [e] *5*	4^-	1	0.951				

[†] Spin, parity, and configuration assignments are based on comparison between experimental and theoretical cross sections, on rotational structure, and on measured L-transfers.

[‡] From comparison of measured angular distributions and DWBA calculations.

[#] $C^2S=(1/N)$ (σ(exp)/σ(DWBA)), N=1.33. C^2S values are for θ=60°, except for members of the K=1$^-$ rotational band, for which θ=30°. Note that a typical normalization factor for a (d,t) reaction is N=3.33.

[@] $K^\pi=1^+$ rotational band; probable configuration=((π7/2[404])-(ν9/2[624])).

[&] $K^\pi=8^+$ rotational band; probable configuration=((π7/2[404])+(ν9/2[624])).

[a] $K^\pi=1^-$ rotational band; probable configuration=((π7/2[404])-(ν5/2[512])).

[b] $K^\pi=6^-$ rotational band; probable configuration=((π7/2[404])+(ν5/2[512])).

[c] $K^\pi=7^-$ rotational band; probable configuration=((π7/2[404])+(ν7/2[514])).

[d] $K^\pi=3^-$ rotational band; probable configuration=((π7/2[404])-(ν1/2[521])).

[e] $K^\pi=4^-$ rotational band; probable configuration=((π7/2[404])+(ν1/2[521])).