^{104}Ru(d,^{3}He), ^{104}Ru(pol t,α) 1983De20,1981Fl02

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	D. De Frenne	NDS 110, 2081 (2009)	1-Mar-2009

1983De20: (d,^{3}He), E=50 MeV. Measured: σ(E(^{3}He),θ), θ=6° to 30°. Deduced: ^{103}Tc levels, J^π, L, spectroscopic factors. DWBA analysis. Magnetic spectrograph. FWHM≈30 keV. Enriched target.

1981Fl02: (t,α), E(t)=17 MeV, polarized beam. Measured: σ(Eα,θ), θ=15° to 45°, Ay. Deduced: ^{103}Tc levels, J^π, L, spectroscopic factors. DWBA analysis. Magnetic spectrograph, FWHM≈15 keV. Enriched target.

Data are taken from 1983De20, unless noted otherwise.

^{103}Tc Levels

E(level)	J$^\pi$[#]	L[‡]	C^{2}S[@]	Comments
0.0	5/2$^+$	2	0.11	
48 *3*	7/2$^+$	4	0.49	E(level): from 1981Fl02.
84 *3*	3/2$^-$	1	1.5	
140 *3*	9/2$^+$	4	4.6	
180 *3*	5/2$^-$	3	2.8	
257 *3*	5/2$^-$	3	0.65	
338 *3*	1/2$^-$,3/2$^-$	1		C^{2}S: C^{2}S=0.036 (1/2$^-$) or 0.034 (3/2$^-$) from 1983De20.
474[†] *5*	(3/2$^+$,5/2$^+$)	(2)		
492[†] *5*	1/2$^-$	1	0.70[&]	
524[†] *5*	3/2$^-$	1	0.083[&]	J$^\pi$: 3/2$^-$ favored from γ decay to 5/2$^+$ g.s. in ^{103}Mo β^- decay.
688 *5*				E(level): possible unresolved multiplet. Close-lying triplet observed in β decay of ^{103}Mo. 1981Fl02 give E=663.
779 *5*	3/2$^-$	1	0.32[&]	
859 *5*	(7/2$^+$)	(4)	(0.71)[&]	1981Fl02 give L=(3), J^π=(5/2$^-$), C^{2}S=0.40, for possible unresolved multiplet. Peak too broad to be a singlet.
918 *5*	7/2$^+$,9/2$^+$	4	0.63,0.27[&]	
1097 *7*	3/2$^-$	1	0.62	
1150 *7*	(3/2$^-$)	(1)	(0.12)[&]	1981Fl02 give L=(4), J^π=(9/2$^+$), C^{2}S=0.22.
1219 *7*	1/2$^-$	1	0.13[&]	
1256 *7*	(5/2$^-$,7/2$^-$)	(3)	0.99,0.55[&]	
1310 *7*	5/2$^-$,7/2$^-$	3	0.30,0.17[&]	
1591				Unresolved multiplet. Peak too broad to be a singlet.
1692? *10*				Observed only by 1981Fl02 in (t,α).
1727 *7*	5/2$^-$,7/2$^-$	3	0.57,0.32[&]	
1766 *7*	1/2$^-$,3/2$^-$	1	0.23,0.16[&]	In column with level energies of table 2 of 1983De20 the positions of the 1766 and 1727 levels should be changed.
1817 *7*	(5/2$^-$,7/2$^-$)	(3)	0.38,0.21[&]	

[†] Level energy differences taken from ^{103}Mo β^- decay and held fixed for the peak analysis in (d,^{3}He).

[‡] From comparison of experimental and DWBA angular distributions.

[#] From L-transfer in (d,^{3}He) and analyzing-power results in (t,α). See also Adopted Levels.

[@] C^{2}S deduced from: dσ/dΩ(exp)=NC^{2}S dσ/dΩ(DWBA)/(2J+1) with N=2.95. C^{2}S given as unweighted average from 1983De20 and 1981Fl02.

[&] C^{2}S from 1983De20.