^{49}Ti(n,γ),(n,n):resonances 2018MuZY

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh	NDS 157, 1 (2019)	15-Apr-2019

J^π(^{49}Ti g.s.)=7/2$^-$.

2018MuZY: compilation of experimental neutron resonance parameters. All data are from 2018MuZY.

Measurements: 1993Ko15, 1979ThZW, 1977AlYR, 1971Mu06, 1971Ga11, 1966Go38.

E(level), J^π, and L are from the evaluation of 2018MuZY. See 2018MuZY for $2g\Gamma_n^0$ and $2g\Gamma_n^1$ values, and for references to experiments.

Statistical weight factor g=(2J+1)/16, where J=spin of resonant state.

^{50}Ti Levels

E(level)[†]	J^π[#]	Γ[‡]	L[#]	$g\Gamma_n\Gamma_\gamma/\Gamma$ (eV)	Comments
S(n)-0.377?[@]	4$^-$		0		
S(n)+1.5?[@] *40*	$^+$		1		$2g\Gamma_n$=0.05 eV.
S(n)+3.827 *5*	3$^-$		0		$2g\Gamma_n$=225 eV *25*, Γ_γ=0.60 eV *6*.
S(n)+4.796 *6*	$^+$		1	0.01	$2g\Gamma_n$=0.021 eV.
S(n)+7.637 *9*	$^+$		1	0.06	$2g\Gamma_n$=0.1275 eV.
S(n)+8.435 *10*	4$^-$	0.24 keV	0	0.25	$2g\Gamma_n$=310 eV *30*, Γ_γ=0.39 eV *4*.
S(n)+13.170 *16*	$^+$		1	0.028	$2g\Gamma_n$=0.065 eV.
S(n)+13.980 *18*	$^+$		1	0.035	$2g\Gamma_n$=0.081 eV.
S(n)+14.780 *19*	$^+$		1	0.16	$2g\Gamma_n$=0.38 eV.
S(n)+17.060 *21*	$^+$		1	0.034	$2g\Gamma_n$=0.078 eV.
S(n)+18.600 *24*	$^+$		1	0.042	$2g\Gamma_n$=0.1 eV.
S(n)+19.050 *25*	3$^-$	0.14 keV *3*	0	0.18 *2*	$2g\Gamma_n$=110 eV *20*, Γ_γ=0.46 eV *5*.
S(n)+21.880 *28*	3$^-$	0.15 keV *3*	0	0.38 *4*	$2g\Gamma_n$=130 eV *15*, Γ_γ=0.90 eV *8*.
S(n)+22.92	$^+$		1	0.17	
S(n)+23.000 *29*	3$^-$	0.50 keV *15*	0	0.51 *5*	$2g\Gamma_n$=0.57 keV *10*, Γ_γ=0.9 eV *2*.
S(n)+25.840 *33*	$^+$		1	0.14	
S(n)+27.300 *34*	4$^-$	0.37 keV *10*	0	0.42 *8*	$2g\Gamma_n$=420 eV *60*, Γ_γ=0.73 eV *11*.
S(n)+28.310 *35*	$^+$		1	0.11	
S(n)+28.640 *36*	$^+$		1	0.038 *6*	$2g\Gamma_n$=0.079 eV.
S(n)+29.630 *37*	$^+$		1	0.085 *6*	$2g\Gamma_n$=0.19 eV.
S(n)+29.800 *37*	$^+$		1	0.093	$2g\Gamma_n$=0.21 eV.
S(n)+31.580 *39*	($^+$)	≈32 eV	(1)	0.64	$2g\Gamma_n$=30 eV *15*, Γ_γ=1.35 eV.
S(n)+32.40 *4*	4$^-$	1.4 keV *8*	0	0.47 *23*	$2g\Gamma_n$=1.50 keV *40*, Γ_γ=0.90 eV *17*.
S(n)+34.110 *43*	$^+$		1	0.037 *9*	$2g\Gamma_n$=0.077 eV.
S(n)+35.320 *44*	$^+$		1	0.089 *9*	$2g\Gamma_n$=0.2 eV.
S(n)+36.180 *45*	$^+$		1	0.11 *1*	$2g\Gamma_n$=0.25 eV.
S(n)+36.700 *46*	(3$^-$,4$^-$)	0.39 keV *13*	(0)	0.15 *3*	$2g\Gamma_n$=0.40 keV *10*, Γ_γ=0.29 eV.
S(n)+36.970 *46*	$^+$		1	0.090 *1*	$2g\Gamma_n$=0.2 eV.
S(n)+38.40 *5*	4$^-$	1.5 keV *5*	0	0.73 *21*	$2g\Gamma_n$=1.70 keV *20*, Γ_γ=1.3 eV *2*.
S(n)+42.51 *5*	[3]$^+$		1	0.15	Γ_γ=0.34 eV.
S(n)+42.72 *5*	($^+$)		(1)	0.060 *15*	$2g\Gamma_n$=0.13 eV.
S(n)+43.45 *5*	[4]$^+$		1	0.19	Γ_γ=0.34 eV.
S(n)+44.01 *6*	[3]$^+$		1	0.14 *1*	Γ_γ=0.32 eV.
S(n)+45.95 *6*	[3]$^+$		1	0.15 *1*	Γ_γ=0.34 eV.
S(n)+49.72 *6*	[3]$^+$		1	0.15	Γ_γ=0.34 eV.
S(n)+50.20 *6*	($^+$)		(1)	0.061 *15*	$2g\Gamma_n$=0.13 eV.
S(n)+50.46 *6*	[5]$^+$		1	0.33	Γ_γ=0.48 eV.
S(n)+51.45 *6*	[3]$^{(-)}$	0.32 keV *10*	(0)	0.11 *2*	$2g\Gamma_n$=200 eV *50*, Γ_γ=0.35 eV.
S(n)+51.97 *7*	($^+$)		(1)	0.06 *3*	$2g\Gamma_n$=0.13 eV.
S(n)+53.20 *7*				0.43	
S(n)+56.82 *7*	4$^-$	0.53 keV *23*	0	0.44 *17*	$2g\Gamma_n$=0.59 keV *10*, Γ_γ=0.79 eV.
S(n)+58.40 *7*	(4$^+$)		(1)	0.18	Γ_γ=0.32 eV.

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^{49}Ti(n,γ),(n,n):resonances 2018MuZY (continued)

^{50}Ti Levels (continued)

E(level)†	Jπ#	Γ‡	L#	gΓnΓγ/Γ (eV)	Comments
S(n)+58.72 *7*	(+)		(1)	0.069 *14*	2gΓn=0.15 eV.
S(n)+59.40 *7*				0.067 *12*	
S(n)+60.07 *8*	3−	0.45 keV *11*	0	0.26 *2*	2gΓn=390 eV *90*, Γγ=0.6 eV.
S(n)+60.34 *8*	(5)+		1	0.29	Γγ=0.72 eV.
S(n)+62.10 *9*	+		1	0.057 *15*	
S(n)+63.22 *9*	[3](−)	0.23 keV *12*	(0)	0.30 *2*	2gΓn=0.20 keV *10*, Γγ=0.685 eV.
S(n)+63.43 *9*	(4)+		1	0.18	Γγ=0.32 eV.
S(n)+67.60 *9*	3−		0	0.29 *10*	2gΓn=700 eV *90*.
S(n)+68.10 *9*	(3)+		1	0.15 *2*	Γγ=0.34 eV.
S(n)+72.00 *9*	(2)+		1	0.12 *2*	Γγ=0.38 eV.
S(n)+72.20 *9*	(4)+		1	0.18	Γγ=0.32 eV.
S(n)+72.75 *9*	(5)+		1	0.26	Γγ=0.38 eV.
S(n)+76.7 *1*	4−	0.86 keV *34*	0	0.81 *26*	2gΓn=1.00 keV *23*, Γγ=1.4 eV.
S(n)+77.92 *10*				0.39 *3*	
S(n)+78.35 *10*	(5)+		1	0.27 *3*	Γγ=0.33 eV.
S(n)+96.6 *3*	3−		0		2gΓn=2.63 keV *44*.
S(n)+106.4 *3*	3−		0		2gΓn=2.90 keV *45*.
S(n)+138.8 *4*	4−		0		2gΓn=1.80 keV *23*.
S(n)+145.7 *4*	3−		0		2gΓn=1.70 keV *26*.
S(n)+151.2 *5*	3−		0		2gΓn=2.90 keV *90*.
S(n)+152.2 *5*	4−		0		2gΓn=3.1 keV *11*.
S(n)+170.5 *5*	4−		0		2gΓn=0.90 keV *23*.
S(n)+172.3 *5*	4−		0		2gΓn=3.90 keV *80*.
S(n)+176.2 *5*	4−		0		2gΓn=2.00 keV *56*.
S(n)+184.7 *5*	3−		0		2gΓn=2.60 keV *53*.
S(n)+185.8 *6*	4−		0		2gΓn=2.80 keV *56*.
S(n)+187.7 *6*	3−		0		2gΓn=3.50 keV *88*.
S(n)+197.0 *6*	4−		0		2gΓn=3.40 keV *68*.
S(n)+208.5 *6*	3−		0		2gΓn=1.30 keV *26*.
S(n)+216.0 *6*	4−		0		2gΓn=2.50 keV *45*.
S(n)+224.5 *7*	3−		0		2gΓn=1.80 keV *35*.
S(n)+239.0 *7*	4−		0		2gΓn=2.30 keV *56*.

† S(n)=10939.19 *4* (2017Wa10). Neutron energies (in keV) are in the lab system.
‡ Deduced by evaluators from 2gΓn, Γγ and gΓnΓγ/Γ values in 2018MuZY.
# From 2018MuZY.
@ Fictitious level.