^{49}Ti(p,γ):resonances 1961Du03,1969Se01

History

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

Includes (p,n) resonances from 1986FeZV.

1961Du03: E=880.7-1283.3 keV beam from the Van de Graaff at Chalmers University of Technology. Measured γ yields with a NaI crystal. Observed 107 resonances.

1969Se01: E=800-1100 keV beam from the 4-MV electrostatic generator of NAIG laboratory. Measured excitation function, γ rays on and off resonance, and $\gamma\gamma$-coincidences with NaI crystals.

1980Ke09: E=0.74-3.25 MeV. Measured excitation function. Deduced thermonuclear reaction rates; statistical model.

1986FeZV: E=836-2578. Measured excitation function. Deduced parameters for 40 resonances from (p,γ) and (p,n) channels.

Data for resonances are from 1961Du03, unless otherwise stated.

^{50}V Levels

E(level)‡	J$^{\pi}$[a]	E(p)(lab)†	Relative intensity	E(level)‡	E(p)(lab)†	Relative intensity
0.0	6$^+$			8976.3 *11*	1048.2	25
225.0 *10*	5$^+$			8987.3 *11*	1059.5	50
317.0 *14*	4$^+$			8990.1 *11*	1062.3	50
347.0 *14*	3$^+$			8992.7 *11*	1065.0	90
8768&		836&		8996.4 *11*	1068.8	150
8812.1? *11*		880.7	20	9004.1 *11*	1076.6	100
8814.3 *11*		882.9	35	9011.6? *11*	1084.3	190
8840.0 *11*		909.1	240	9014.4 *11*	1087.1	70
8842.2 *11*		911.4	50	9016.6 *11*	1089.4	50
8847.7 *11*		917.0	60	9017.7 *11*	1090.5	100
8854.6 *11*		924.0	50	9021.6 *11*	1094.5	50
8864.4 *11*		934.0	86	9025.0 *11*	1098.0	90
8869.8 *11*		939.6	85	9026.6 *11*	1099.6	70
8875.7 *11*		945.6	120	9029.3 *11*	1102.3	130
8878.9 *11*		948.8	70	9031.9 *11*	1105.0	70
8883.3 *11*		953.3	100	9034.6 *11*	1107.7	100
8889.7 *11*		959.9	1500	9037.9 *11*	1111.1	120
8893.3 *11*		963.5	35	9039.3 *11*	1112.5	120
8894.6 *11*		964.9	70	9042.5# *11*	1115.8#	70
8896.4 *11*		966.7	120	9045.8 *11*	1119.2	85
8899.2 *11*		969.6	300	9050.9 *11*	1124.4	260
8904.0 *11*		974.5	540	9053.1 *11*	1126.6	160
8906.5 *11*		977.0	50	9056.9# *11*	1130.5#	70
8908.3 *11*		978.8	130	9061.9 *11*	1135.6	70
8911.2 *11*		981.8	610	9065.0 *11*	1138.8	240
8914.9 *11*		985.6	370	9069.6 *11*	1143.5	220
8918.0 *11*		988.7	220	9072.6 *11*	1146.5	70
8921.1 *11*		991.9	100	9076.2# *11*	1150.2#	70
8923.0 *11*		993.9	250	9081.3 *11*	1155.4	150
8925.8# *11*		996.7#	70	9084.3 *11*	1158.5	130
8933.7 *11*		1004.8	190	9087.2 *11*	1161.4	85
8937.8 *11*		1009.0	70	9088.5 *11*	1162.8	100
8941.8@ *11*		1013.0@	25	9092.2 *11*	1166.5	170
8949.9 *11*		1021.3	120	9097.5 *11*	1171.9	240
8957.7 *11*		1029.3	50	9100.4 *11*	1174.9	85
8959.4 *11*		1031.0	25	9104.5 *11*	1179.1	120
8964.2 *11*		1035.9	35	9107.2 *11*	1181.8	100
8966.1 *11*		1037.8	85	9109.8 *11*	1184.5	200
8968.1 *11*		1039.9	35	9112.4 *11*	1187.2	50
8972.9 *11*		1044.8	35	9115.6 *11*	1190.4	300

Continued on next page (footnotes at end of table)

^{49}Ti(p,γ):resonances 1961Du03,1969Se01 (continued)

^{50}V Levels (continued)

E(level)‡	E(p)(lab)†	Relative intensity	Comments
9118.8 *11*	1193.7	85	
9125.6 *11*	1200.6	80	
9127.8 *11*	1202.9	340	
9131.4 *11*	1206.5	170	
9133.6 *11*	1208.8	100	
9141.0# *11*	1216.3#	200	
9145.3 *11*	1220.7	130	
9148.1 *11*	1223.6	170	
9150.8 *11*	1226.3	130	
9154.4 *11*	1230.0	170	
9157.5 *11*	1233.2	290	
9162.3 *11*	1238.1	130	
9163.6 *11*	1239.4	320	
9165.9 *11*	1241.8	100	
9167.8 *11*	1243.7	250	
9173.8 *11*	1249.8	290	
9175.4 *11*	1251.4	70	
9178.4 *11*	1254.5	240	
9179.7 *11*	1255.8	300	
9182.3 *11*	1258.5	220	
9188.3 *11*	1264.6	370	
9191.7 *11*	1268.1	240	
9196.8 *11*	1273.3	300	
9198.6 *11*	1275.1	440	
9203.2 *11*	1279.8	240	
9206.6 *11*	1283.3	130	
9255	1333		σ(p,γ)=398 μb *21*.
9304&	1383&		σ(p,γ)=408 μb *20*.
9451&	1533&		σ(p,γ)=152 μb *6*.
9499&	1582&		σ(p,γ)=139 μb *6*, σ(p,n)=3.5 mb *2*.
9529&	1612&		σ(p,γ)=153 μb *7*, σ(p,n)=4.2 mb *2*.
9548&	1632&		σ(p,γ)=168 μb *7*, σ(p,n)=5.0 mb *1*.
9646&	1732&		σ(p,γ)=144 μb *7*, σ(p,n)=6.9 mb *3*.
9743&	1831&		σ(p,γ)=92 μb *6*, σ(p,n)=10.4 mb *4*.
9841&	1931&		σ(p,γ)=90 μb *5*, σ(p,n)=14.7 mb *7*.
10036&	2130&		σ(p,γ)=125 μb *8*, σ(p,n)=23.9 mb *10*.
10133&	2229&		σ(p,γ)=140 μb *8*, σ(p,n)=32.1 mb *19*.
10280&	2379&		σ(p,γ)=178 μb *8*, σ(p,n)=43.5 mb *21*.
10387&	2488&		σ(p,γ)=199 μb *11*, σ(p,n)=59 mb *3*.
10475&	2578&		σ(p,γ)=185 μb *13*, σ(p,n)=72 mb *4*.
10572&	2677&		σ(p,n)=81 mb *6*.
10669&	2776&		σ(p,n)=96 mb *6*.
10767&	2876&		σ(p,n)=116 mb *11*.
10830&	2940&		σ(p,n)=119 mb *10*.
10928&	3040&		σ(p,n)=133 mb *12*.
11222&	3340&		σ(p,n)=196 mb *13*.

† Uncertainty=1 keV when E(p) quoted to nearest tenth of a keV, higher in other cases.
‡ Excitation energies deduced from E(p)(c.m.)+S(p), where S(p)=7949.2 *4* (2017Wa10).

Continued on next page (footnotes at end of table)

^{49}Ti(p,γ):resonances 1961Du03,1969Se01 (continued)

^{50}V Levels (continued)

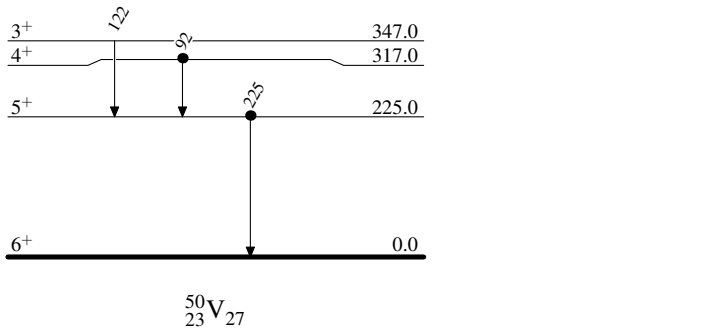
Doublet.
@ Probably a doublet.
& From 1986FeZV in (p,γ) and (p,n) channels. Measured cross sections are listed.
a From the Adopted Levels.

$\gamma(^{50}V)$

E_γ	E_i(level)	J_i^π	E_f	J_f^π
92	317.0	4^+	225.0	5^+
122	347.0	3^+	225.0	5^+
225	225.0	5^+	0.0	6^+

^{49}Ti(p,γ):resonances 1961Du03,1969Se01

Level Scheme



$^{50}_{23}V_{27}$