

$^{99}\text{Ru}(\text{d,p})$ 2002Ho17

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen		NDS 172, 1 (2021)	31-Jan-2021

$J^\pi(^{99}\text{Ru g.s.})=5/2^+$.

2002Ho17: E=15 MeV deuteron beam was produced from the Sao Paulo Pelletron facility. Target was 97.6% enriched ^{99}Ru .

Reaction products were momentum-analyzed with an Engel split-pole spectrograph (FWHM \approx 15 keV) and detected in nuclear emulsions. Measured proton spectra, $\sigma(\theta)$. Deduced levels, J, π , L-transfers, spectroscopic factors from DWBA analysis.

Other:

1966So01: E=15 MeV. Two groups reported at 0 and 540 with L=2 and 2+0, respectively.

All data are from 2002Ho17, unless otherwise noted.

 ^{100}Ru Levels

E(level)	J π [#]	L [@]	S' _j	Comments
0	0 ⁺	2	0.33 1	S' _j : other: 2.7 4 (1966So01).
540 [†] 2	2 ⁺	0+2	0.040,0.102	S' _j : 0.040 3 for L=0; 0.102 5 for L=2.
1129 [†] 2	0 ⁺	2	0.110 5	
1224 [†] 2	4 ⁺	2	0.081 5	
1363 [†] 2	2 ⁺			L: high, but the peak is contaminated.
1742 [†] 2				
1867 [†] 2	2 ⁺	2+4	0.020,0.14	S' _j : 0.020 2 for L=2; 0.14 3 for L=4.
1882 [†] 2	3 ⁺	2+4	0.017,0.28	S' _j : 0.017 2 for L=2; 0.28 3 for L=4.
2063.4 [‡] 9	4 ⁺	2	0.065 3	
2099.6 [‡] 11		0+2	0.006,0.024	S' _j : 0.006 1 for L=0; 0.024 2 for L=2.
2166.9 [‡] 18	3 ⁻	1+3+5		S' _j : 0.003 1 for L=1; 0.023 4 for L=3; 0.21 5 for L=5.
2242.0 [‡] 10		2	0.208 6	
2352 [†] 3				
2367 [†] 3				
2414 [†] 3				
2495 [†] 3				
2515 [†] 3				
2542 [†] 3				
2608.1 [‡] 8				
2664.3 [‡] 13				
2707.2 [‡] 19				
2748 [†] 3				
2762 [†] 3				
2803 [†] 3				
2839 [†] 3				
2878 [†] 3				
2909.0 [‡] 10				
2953 [†] 3				
3001.1 [‡] 13				
3034.9 [‡] 7				
3065.5 [‡] 10				
3101.9 [‡] 19				

Continued on next page (footnotes at end of table)

 $^{99}\text{Ru}(\text{d,p})$ [2002Ho17](#) (continued)

 ^{100}Ru Levels (continued)

[†] Systematic uncertainty of 2 keV below 2 MeV and 3 keV above this energy is assigned based on a general statement by [2002Ho17](#).

[‡] From table 1 of [2002Ho17](#). Uncertainty is statistical. Systematic uncertainty is <2 keV up to 2 MeV excitation energy and <3 keV up to ≈ 3 MeV excitation energy.

[#] From the Adopted Levels.

[@] From comparison of experimental and DWBA calculations of $\sigma(\theta)$ distributions ([2002Ho17](#)).