^{99}Ru(d,t) 2002Ro34

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen, Balraj Singh	NDS 164, 1 (2020)	15-Feb-2020

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

2002Ro34: E=16 MeV deuteron beam was produced from the Sao Paulo Pelletron accelerator. Target was 97.6% enriched metallic ^{99}Ru on a carbon backing. Reaction products were momentum-analyzed with the Engel magnetic spectrograph (FWHM=7 keV) and detected in nuclear emulsions. Measured $\sigma(\theta)$. Deduced levels, L-transfers, spectroscopic factors from DWBA analysis.

All data are from 2002Ro34.

^{98}Ru Levels

Spectroscopic factor is defined and obtained using $\sigma(\theta)(\text{exp})=\Sigma[3.33/(2j+1)\times C^2S_{Lj}\times\sigma_{Lj}(\theta)(\text{DWBA})]$, where j is the total spin of transferred particle (2002Ro34).

E(level)	L†	S_{Lj}†	E(level)	L†	S_{Lj}†	E(level)	L†	S_{Lj}†
0	2	0.339 *7*	2247 *2*	(2+0)	0.054,0.0064@	2621 *2*	&	
651 *2*	2	0.130 *3*	2277 *2*	2	0.675 *15*	3020 *5*	(2)	0.040 *3*
1397 *2*	2	0.127 *5*	2365 *2*	&		3046 *5*	0	0.022 *1*
1415 *2*	2+0	0.037,0.012‡	2373 *2*	&		3071 *5*	(2+0)	0.024,0.020‡
1797 *2*	2+0	0.009,0.0041#	2409 *2*	(2)	0.018 *2*	3209[a] *5*	&	
1818 *2*	2	0.120 *3*	2429 *2*	(2+0)	0.105,0.011‡	3284 *5*	(0)	0.013 *1*
2013 *2*	(2)	0.036 *3*	2469 *2*	0	0.0099 *8*	3441 *5*	0	0.045 *2*
2224 *2*	(4)	0.12 *2*	2605 *2*	(2)	0.060 *4*			

† Extracted from DWBA fit to measured $\sigma(\theta)$. The transferred neutron is assumed as $3s_{1/2}$ orbital for L=0, $2d_{5/2}$ for L=2 and $1g_{7/2}$ for L=4 (2002Ro34).

‡ Uncertainty=0.006 for L=2, 0.002 for L=0.

Uncertainty=0.002 for L=2, 0.0007 for L=0.

@ Uncertainty=0.005 for L=2, 0.0011 for L=0.

& $\sigma(\theta)$ distribution does not allow a unique assignment.

a Possible doublet.