^{98}Ru(p,p′),(p,p′γ) 1981Du06,1979La15

History

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

1981Du06: (p,p′) E=50 MeV proton beam was produced from the AVF cyclotron of the University of Groningen. Target was ≈200 μg/cm^2 ^{98}Ru. Scattered protons were momentum analyzed with the Groningen QMG/2 spectrograph (FWHM≈35 keV). Measured σ(θ). Deduced levels, J, π, L-transfers from DWBA analysis.

1979La15: (p,p′γ) E=5.6 and 8 MeV proton beams were produced from the Dynamitron tandem at the University of Bochum. Target was 500 μg/cm^2 ^{98}Ru (98% enriched) on a Au backing. γ rays were detected with two Ge(Li) detectors and protons were detected with a annular Si detector. Measured Eγ, Iγ, pγ-coin, pγ(θ). Deduced levels, J, π, γ-ray multipolarities and mixing ratios.

^{98}Ru Levels

E(level)†	Jπ@	L[a]	E(level)†	Jπ@	E(level)†	L[a]	E(level)†	L[a]
0.0	0+	0	1397.4 *7*	4+	1817‡		2435# *10*	(3)[b]
652.1 *5*	2+	2	1414.3 *4*	2+	2013‡		2671# *10*	
1320.8 *7*	0+&		1797‡		2285# *10*	4		

† From 1979La15 based on Eγ data, unless otherwise noted.
‡ Reported in (p,p′γ) (1979La15) but no details given.
# From (p,p′) (1981Du06).
@ From Adopted Levels.
& Isotropic behavior of 669γ(θ) also supports J=0 (1979La15).
[a] From DWBA analysis of σ(θ) (1981Du06).
[b] σ(θ) does not exclude L=4, but strong excitation favors L=3 (1981Du06).

γ(^{98}Ru)

Eγ†	Iγ†	Ei(level)	Jiπ	Ef	Jfπ	Mult.‡	δ‡
652.1		652.1	2+	0.0	0+		
668.7		1320.8	0+	652.1	2+		
745.3		1397.4	4+	652.1	2+		
762.2	198 *2*	1414.3	2+	652.1	2+	Q+D	+13.4 *+39−25*
1414.3	100	1414.3	2+	0.0	0+	Q	

† From 1979La15.
‡ From γ(θ) (1979La15). Mult=Q is most likely E2.

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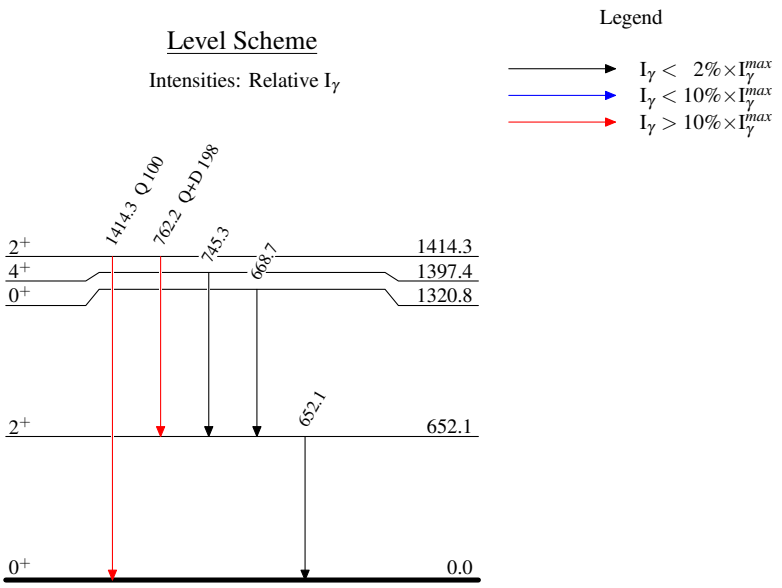
Level Scheme

Intensities: Relative I_γ



$^{98}_{44}Ru_{54}$