^{190}Os(^{3}He,d),(α,t) 1971Pr13

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	M. S. Basunia	NDS 195,368 (2024)	1-Dec-2023

Target: 95.5% enriched ^{190}Os.
Spectrometer: magnetic.
^{190}Os(^{3}He,d), E=28 MeV, FWHM=16-17 keV, θ=35°, 60°.
^{190}Os(α,t), E=28 MeV, FWHM=12 keV, θ=45°, 60°.

^{191}Ir Levels

E(level)[†]	Jπ[#]	L[‡]	$C^2_{jl}U^2$[@]	Comments
0.0[&]	3/2$^+$	2	0.70	$C^2_{jl}U^2$ in (α,t) for all transitions were normalized to give 0.70 for this transition.
83[a]	1/2$^+$	0	0.40	$C^2_{jl}U^2$: 0.31 in (α,t).
129[&]	5/2$^+$	2	0.04	$C^2_{jl}U^2$: 0.04 in (α,t).
174		5+2		Unresolved doublet. Dividing the intensity in the same proportion of the similar states in ^{193}Ir, 1971Pr13 obtained: L=5 and $C^2_{jl}U^2$=0.87 (0.71 in (α,t)) for 171 level; L=2 and $C^2_{jl}U^2$=0.06 (0.06 in (α,t)) for 178 level.
353		(4+2)	0.19	$C^2_{jl}U^2$: for L=2; 0.79 for L=4. $C^2_{jl}U^2$=0.13 for L=2 and 0.21 for L=4 in (α,t). Doublet. 7/2, 3/2[402] + 5/2, 1/2[400].
392		3	0.04	$C^2_{jl}U^2$: 0.03 in (α,t).
591[b]	5/2$^+$	2	0.25	$C^2_{jl}U^2$: 0.26 in (α,t). Jπ: Adopted: 3/2$^+$,5/2$^+$, see Adopted Levels.
690[c]	7/2$^+$	4	0.03	$C^2_{jl}U^2$: 0.03 in (α,t).
882		5,6	1.46	$C^2_{jl}U^2$: for L=5; 1.66 for L=6. Spectroscopic factors in (α,t) are 2.08 for L=5, 1.65 for L=6. Probable doublet, 9/2, 1/2[541] + 13/2, 1/2[660].
978	3/2$^+$,5/2$^+$	2		Jπ: Adopted: (7/2$^-$), see comments in Adopted Levels.
1034	1/2$^+$	0	0.18	$C^2_{jl}U^2$: 0.17 in (α,t).
1070	3/2$^+$,5/2$^+$	2		Jπ: Adopted: 3/2$^+$, see Adopted Levels.
1138		1,2		
1254				
1359		4,5		
1433		3,4		
1449[d]	3/2$^-$	1	0.06	$C^2_{jl}U^2$: 0.09 in (α,t). Jπ: Adopted: 1/2$^-$,3/2$^-$, see Adopted Levels.
1520[d]	7/2$^-$	3	1.13	$C^2_{jl}U^2$: 0.85 in (α,t). Jπ: Adopted: 5/2$^-$,7/2$^-$, see Adopted Levels.
1613				
1642				
1660				
1711				

[†] Adopted values from (^{3}He,d) and (α,t). Uncertainties are ≈3 keV for strongly populated states.
[‡] From comparison of experimental (^{3}He,d) and (α,t) cross-section ratios with calculated(DWBA) values.
[#] From Nilsson-model interpretation of L values and spectroscopic factors; fingerprint evaluated taking into account Coriolis interaction (1971Pr13).
[@] From DWBA analysis, $C^2_{jl}U^2$=(dσ/dΩ)(exp)/2N (dσ/dΩ)(DWBA) where N=4.42 for (^{3}He,d); values for (α,t) are given under comments, normalized to (^{3}He,d) observed value for g.s., which required N=118, much greater than the expected value N=48.
[&] Band(A): 3/2[402] band member.
[a] Band(B): 1/2[400]+(3/2[402],2$^+$) band member.
[b] Band(C): 5/2[402]? band member.
[c] Band(D): 7/2[404]+(3/2[402],2$^+$) band member.
[d] Band(E): 1/2[530] band member.

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Band(E): 1/2[530] band member

7/2$^-$ 1520

3/2$^-$ 1449

Band(D): 7/2[404]+(3/2[402],2$^+$) band member

7/2$^+$ 690

Band(C): 5/2[402]? band member

5/2$^+$ 591

Band(A): 3/2[402] band member

5/2$^+$ 129

Band(B): 1/2[400]+(3/2[402],2$^+$) band member

1/2$^+$ 83

3/2$^+$ 0.0

$^{191}_{77}Ir_{114}$