^{193}Ir(^{3}He,d) 1982Bl17

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh	NDS 177, 1 (2021)	3-Sep-2021

$J^{\pi}(^{193}Ir\ g.s.)=3/2^{+}$.

1982Bl17: E=40 MeV ^{3}He beam was produced from the KVI cyclotron. Target was 140 μg/cm^2 99.45% enriched ^{193}Ir on a 40 μg/cm^2 carbon backing. Reaction products were momentum-analyzed with the QMG/2 magnetic spectrograph (FWHM=25-30 keV) and detected with a plastic scintillator. Measured $\sigma(\theta)$ at angles which give maximum sensitivity for L=2 and L=0 transfer components. Deduced levels, J, π, L-transfers, spectroscopic factors from DWBA analysis. Comparison of experimental single-particle transfer strengths to the predicted values from IBA model. Uncertainty in absolute cross sections is 10%. Also includes ^{193}Ir(α,t) reaction at 27 MeV (1981Ve02).

Others:

1981Be20: E=36 MeV ^{3}He beam was produced from the Orsay tandem. Reaction products were momentum-analyzed with a split-pole magnetic spectrograph (FWHM=20 keV). Measured σ at 10°, 17° and 38° (lab). Ten levels identified. Cross sections for 17° (lab).

1981Ve02: E=36 MeV and 25.5 MeV from the Orsay tandem. Data at 50° (lab). Six levels identified. DWBA calculations. Experimental cross sections compared with selection rules predicted by IBA model. The authors also report data for first four levels from ^{193}Ir(α,t) reaction at E=27 MeV and θ=60° (lab).

All data are from 1982Bl17, unless otherwise noted.

^{194}Pt Levels

E(level)	L	S†	E(level)	L	S†	E(level)	L	S†
0[a]	2	0.36‡	1620 *16*	0+2	0.03,0.25	2150 *22*	0+2	0.02,0.03
330[a] *3*	0+2	0.08,0.21	1670 *17*	0+2	0.07,0.14	2520 *25*	0+2	0.03,0.10
620[a] *6*	0+2	0.13,0.28	1780 *18*	0+2	0.03,0.06	2880 *29*	0+2	0.20,0.39
1270[a] *13*	2	0.13#	1880 *19*	5,6	&	3010 *30*	(0)	
1480@ *15*	5+2	0.22,0.08	1920 *19*	0+2	0.01,0.12			
1510 *15*	0+2	0.02,0.12	2000 *20*	0+2	0.03,0.12			

† $((2J_f+1)/(2J_i+1))C^2S$ values, where J_f=J(level in residual nucleus) and J_i=J(target nucleus). Uncertainty=20%. For L=2 transfer, only the d3/2 orbit is considered. The absence of 4^+ states in this reaction indicates that the contribution from d5/2 orbit is probably not significant.

‡ 0.40 (1981Be20).

0.18 (1981Be20).

@ Unresolved doublet. Part of known 1432 level may also be present.

& 1.74 for L=6, i13/2; 0.20 for L=5, h11/2 and 0.16 for h9/2.

[a] Level seen in ^{193}Ir(α,t) also (1981Ve02).