^{188}Os(d,p),^{190}Os(d,t)   1976Be50,1975Mo29

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	T. D. Johnson, Balraj Singh	NDS 142, 1 (2017)	15-Apr-2017

1976Be50: ^{188}Os(d,p); E(d)=12 MeV; FWHM=10-17 keV; measured σ(Ep,θ). ^{190}Os(d,t); E(d)=12 MeV; FWHM=14-21 keV; measured σ(Et,θ). DWBA, ^{189}Os deduced levels, J^π. Nilsson model.

1975Mo29: ^{188}Os(d,p), ^{190}Os(d,t), E=12.1 MeV; measured $\sigma(\theta)$; deduced levels, J^π. Enriched targets, magnetic spectrograph.

^{189}Os Levels

E(level)‡	L†	dσ/dΩ mb/sr^c	Comments
0.0^d	1	6 1	L=1 (1975Mo29,1976Be50). dσ/dΩ(90°)(d,t)=10 mb/sr 1.
31 1	5	9 1	Configuration=9/2[505]. E(level): from 1975Mo29. 1976Be50 list 30.81 from compilations. L=high (1975Mo29). dσ/dΩ(90°)(d,t)=19 mb/sr 2.
69.60$^{\&d}$ 7	3	147 12	E(level): 70 2 (1975Mo29). L=3 (1975Mo29,1976Be50). dσ/dΩ(90°)(d,t)=245 mb/sr 7.
95.35$^{\&e}$ 6	1	233 16	E(level): 95 1 (1975Mo29). L=1 (1975Mo29,1976Be50). dσ/dΩ(90°)(d,t)=451 mb/sr 10.
217^d 2	3	84 6	E(level): from 1975Mo29. 1976Be50 list 216.8 from compilations. L=3 (1975Mo29,1976Be50). dσ/dΩ(90°)(d,t)=252 mb/sr 7.
275	3	$\approx$48	E(level): from 1975Mo29. 1976Be50 list 275.8 from compilations. L=3 (1975Mo29,1976Be50). dσ/dΩ(90°)(d,t)=24 mb/sr 2.
290.5^a 47	6	$\approx$20	E(level): 286 (1975Mo29). L=high (1975Mo29). dσ/dΩ(90°)(d,t)=58 mb/sr 3.
365.7^{ae} 9	3	64 5	E(level): 365 3 (1975Mo29). L=3 (1975Mo29,1976Be50). dσ/dΩ(90°)(d,t)=82 mb/sr 4.
439.1$^{\&}$ 4	1	$\approx$100	E(level): doublet at 436 2 and 446 4, each with L=1, reported by 1975Mo29 but not confirmed by 1976Be50. L=1 (1975Mo29,1976Be50). dσ/dΩ(90°)(d,t)=147 mb/sr 5 for 439 level.
446 4	1	60 5	E(level),L: from (d,p) only in 1975Mo29. Level population is treated as uncertain by the evaluators.
506.0$^{\&}$ 3	1	10 3	E(level): 501 2 (1975Mo29). L=1,3 from 1975Mo29. dσ/dΩ(90°)(d,t)=14 mb/sr 2.
530.4 15	3^b	<5	Level either not populated in (d,p) or obscured by an impurity. E(level): 526 1 (1975Mo29). L<5 in 1976Be50. dσ/dΩ(90°)(d,t)=20 mb/sr 3.
557.6$^{\&}$ 3			Level either not populated in (d,p) or obscured by an impurity. E(level): 554 1 (1975Mo29). L=3 in 1975Mo29 is inconsistent with tentative (3/2$^-$) assignment in authors' Fig. 4. dσ/dΩ(90°)(d,t)=20 mb/sr 3.
599.7^a 14	1	193 14	E(level): 597 3 (1975Mo29). L=1 (1975Mo29,1976Be50). dσ/dΩ(90°)(d,t)=100 mb/sr 4.
621.7$^{\#e}$ 19		8 2	σ at 125° in (d,p) (1975Mo29); <11 at 90°.

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^{188}Os(d,p),^{190}Os(d,t)   1976Be50,1975Mo29 (continued)

^{189}Os Levels (continued)

E(level)[‡]	L[†]	$d\sigma/d\Omega$ mb/sr[c]	Comments
			E(level): 620 1 (1975Mo29).
			L=(high) in 1975Bo29.
			$d\sigma/d\Omega(90°)$(d,t)<5 mb/sr.
679.4[#@] 17	<5		
688.4 8	1,3		Level either not populated in (d,p) or obscured by an impurity.
			E(level): 684 2 (1975Mo29).
			L=1 in 1976Be50. L=3 in 1975Mo29.
			$d\sigma/d\Omega(90°)$(d,t)=149 mb/sr 5.
716.9[a] 15	3[b]	18 2	E(level): 714 3 (1975Mo29).
			$d\sigma/d\Omega(90°)$(d,t)=7 mb/sr 3.
735.1[a] 13	1[b]	12 2	E(level): 730 3 (1975Mo29).
			<5 from 1976Be50.
			$d\sigma/d\Omega(90°)$(d,t)=53 mb/sr 3.
786.4[a] 33		11 2	σ at 125° in (d,p) (1975Mo29).
			E(level): 793 3 (1975Mo29).
			L=(high) in 1975Bo29.
			$d\sigma/d\Omega(90°)$(d,t)<5 mb/sr.
817.8[a] 17	3[b]	12 2	E(level): 813 2 (1975Mo29).
			L<5 in 1976Be50.
			$d\sigma/d\Omega(90°)$(d,t)=49 mb/sr 3.
848.3[#@] 19			
878.5[a] 34		13 2	E(level): 879 3 (1975Mo29); (d,p) only.
898.2[@] 18			Level from (d,t) in 1976Be50; not populated in (d,p).
907.7[#] 19	1,3	82 6	E(level): 906 0 (1975Mo29); (d,p) only.
			L=1 (1975Mo29), L=3 (1976Be50).
957.3[#@] 24			
993.4 20	1	43 4	E(level): weighted average of (d,p),(d,t), and (n,γ) (1976Be50).
			E(level): 997 1 (1975Mo29); (d,p) only.
			L=1 (1975Mo29,1976Be50).
1018 2			E(level),L: from 1975Mo29, L=high.
			$d\sigma/d\Omega(90°)$(d,t)=13 mb/sr 2.
1028.5[@] 3			Level from (d,t) in 1976Be50; not populated in (d,p).
1058.0[@] 39			
1107.8[#@] 18			
1163.0[@a] 38			
1188.0[#] 18	1[b]	27 3	E(level): 1187 1 (1975Mo29).
1210.5[@] 39			Level from (d,t) in 1976Be50; not populated in (d,p).
1220.2[#@] 20			
1242.8[@] 43			Level from (d,t) in 1976Be50; not populated in (d,p).
1269 1		11 2	Level from (d,p) in 1975Mo29, not populated in (d,t). Not reported in 1976Be50.
			L=high (1975Bo29).
1374.7[#@&] 15			
1394.2[@&] 20			Level from (d,t) in 1976Be50; not populated in (d,p).
1411.3[#] 20	1[b]	47 5	E(level): 1412 0 (1975Mo29).
1445.5[#] 20	1[b]	29 3	E(level): 1446 1 (1975Mo29).
1474.0[#] 30	1[b]	30 3	E(level): 1473 1 (1975Mo29).
1554.6[#] 25	1[b]	86 7	E(level): 1558 1 (1975Mo29).
1633.7[#] 23			Level not in 1975Mo29.
1699.6[#] 20	3[b]	52 5	E(level): 1701 2 (1975Mo29).

^{188}Os(d,p),^{190}Os(d,t)   1976Be50,1975Mo29 (continued)

^{189}Os Levels (continued)

E(level)[‡]	L[†]	dσ/dΩ mb/sr[c]	Comments
1724.8[#] *21*	3[b]	293 *20*	E(level): 1725 *1* (1975Mo29).
1816[#] *1*	1,3	19 *2*	E(level),L: level only from (d,p) in 1975Mo29.

[†] From angular distributions at 20°, 30°, 40°, 45°, 55°, 60°, 75°, 95°, and 125° (d,p); and 75°, 90°, 95°, and 125° (d,t) (1976Be50), except where noted. DWBA analysis. Values of L-transfers are also given by 1975Mo29 based on data for only two angles for (d,p) and three angles for (d,t).

[‡] From 1976Be50, based on their (d,p), (d,t) and (n,γ) data and relative to the energy of the 95.35 level, except where noted. Other levels at 898.2 *18* and 1028 *3* were not observed by 1975Mo29. Above 1018 keV excitation, levels in 1975Mo29 are populated only in (d,p), whereas 1976Be50 give levels in (d,t) up to 1394 keV.

[#] Level seen only in (d,p); not populated in (d,t). Energy is from 1976Be50 unless otherwise stated.

[@] Level not reported by 1975Mo29.

[&] From (n,γ) (1976Be50).

[a] Average from (d,p) and (d,t).

[b] From 1975Mo29, value not determined by 1976Be50 from transfer data.

[c] Values are for 90° in (d,p) reaction from 1975Mo29. Cross section data for 125° in (d,p), and for 60°, 90° and 125° in (d,t) are also given by 1975Mo29. Cross sections at 20°, 30°, 40°, 45°, 55°, 60°, 75°, 95°, and 125° in (d,p); and 75°, 90°, 95°, and 125° in (d,t) are also listed by 1976Be50. Cross sections for 90° in (d,t) from 1975Mo29 are listed under comments.

[d] Band(A): 3/2[512] band.

[e] Band(B): 1/2[510] band.

^{188}**Os(d,p),**^{190}**Os(d,t)   1976Be50,1975Mo29**

Band(B): 1/2[510] band

_____ **621.7**

_____ **365.7**

Band(A): 3/2[512] band

_____ **217**

_____ **95.35**

_____ **69.60**

_____ **0.0**

$^{189}_{76}$Os$_{113}$