^{137}Ba(^{3}He,d) 1975IsZY

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 146, 1 (2017)	30-Sep-2017

$J^{\pi}(^{137}\text{Ba g.s.})=3/2^{+}$.

1975IsZY: E=24 MeV ^{3}He beam was produced from the McMaster University FN Tandem Van de Graaff accelerator. Targets were barium oxide with thickness about 40 μg/cm^2 evaporated onto 30 μg/cm^2 carbon backings. Reaction products were momentum analyzed with a split-pole Engel spectrograph (FWHM=16 keV) and detected by nuclear emulsions. Measured σ(E,θ). Deduced levels, J, π, spectroscopic factors from DWBA analysis. Comparisons with shell-model calculations.

^{138}La Levels

Spectroscopic factor S is defined by σ(exp)=N×σ(DWBA)*S/(j+1), where j is the momentum of transferred particle, N=4.42 (1975IsZY).

E(level)[†]	L[‡]	S[‡]	E(level)[†]	L[‡]	S[‡]	E(level)[†]	L[‡]	S[‡]
0.0	4	1.3 *1*	1057 *2*	0	0.10 *1*	1568 *3*	0	0.09 *2*
72.6	2+4	0.13+0.4	1096 *2*	0	0.05 *1*	1580 *3*	5	2.7 *9*
115.7 *8*	2+4	0.24+0.8	1154 *2*			1624 *4*	0	0.11 *2*
160.9 *9*	2+4	0.84+1.7	1178 *5*	0	0.03 *1*	1645 *2*	5	3.2 *4*
192.3 *9*	2+4	0.45+1.0	1230 *2*	0	0.05 *2*	1685 *3*	0	0.14 *3*
230 *2*	4	0.4 *1*	1243 *2*	5	2.0 *2*	1715 *4*	2	0.31 *6*
293 *1*	2	0.65 *5*	1267 *1*	5	2.4 *3*	1733 *3*	0	0.20 *4*
409 *5*			1360 *3*	0	0.08 *2*	1757 *4*	2	0.11 *2*
479.2 *5*	2	0.77[@] *8*	1426 *3*	0	0.03 *1*	1788 *4*	2	0.12 *2*
517.9[#] *5*	2+4	0.89+1.5	1455 *2*	0	0.16 *5*			
642 *1*	0	0.04 *1*	1532 *2*	0	0.04 *1*			

[†] From 1975IsZY.
[‡] From comparisons of measured differential cross sections with theoretical predictions (1975IsZY).
[#] Levels at 510, 518 not resolved in angular distributions (1975IsZY).
[@] S(possible L=4 component)<0.1 (1975IsZY).