Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 187,1 (2023)	12-Oct-2022

S(n)=13120 *syst*; S(p)=−1177 *7*; Q(α)=4180 *syst* 2021Wa16
ΔS(n)=640, ΔQ(α)=570 (syst,2021Wa16).
S(2p)=810 *500*, Q(εp)=8830 *900* (syst,2021Wa16).
Additional information 1.
1998Da03, 1999Ry04, 2001Se03, 2002Cu01, 2002Kr04, 2003BaZZ, 2005Bi24, 2007KaZO, 2008Ka16, all of them using the ^{92}Mo(^{54}Fe,p4n) reaction.
Ground-state deformation: from the analysis of the proton radioactivity data, β≈0.3 was deduced (1998Da03, 1999Ry04, 1999Ma05, 2000Bb02, 2000Kr07, 2001Es01). A similar value was deduced following the study of the high-spin data (2001Se03). More recent calculations deduced generally larger values of deformation, β=0.3-0.4 (2005Fe06, 2007Ka60, 2008Ka16).

^{141}Ho Levels

Cross Reference (XREF) Flags

A ^{92}Mo(^{54}Fe,p4n):P data
B ^{92}Mo(^{54}Fe,p4nγ):γ data

E(level)†	Jπ‡	$T_{1/2}$	XREF	Comments
0.0#	(7/2−)	4.1 ms *1*	AB	%p=100 %p: decay modes other than p were not observed and their calculated $T_{1/2}$ are far larger than the experimental $T_{1/2}$; as a consequence we adopt %p=100. Configuration=π([523]7/2−) (1998Da03). Jπ: from Nilsson model analysis of lifetime. $T_{1/2}$(calc) for [523] state=19.1 ms (2000Bb02). $T_{1/2}$: weighted average of 4.2 ms *4* (1998Da03), 3.9 ms *5* (1999Ry04), and 4.1 ms *1* (2008Ka16). Proton decay of J^{π}(p)=7/2−, $T_{1/2}$(p)=4.1 ms *1* g.s.: 1) to 0+ g.s. in ^{140}Dy: E(p)(0+ g.s.)=1169 keV *8*, Q(p)=1190 keV *8* (1998Da03), B(p)=0.991 *2*. 2) fine structure − proton decay to first 2+ state in ^{140}Dy: E(p)(2+)=968 keV *10* (2008Ka16, 201 keV *6* smaller than E(p)(0+ g.s.)), B(p)=0.009 *2* (2008Ka16). σ≈250 nb at 76 MeV at and 88 MeV of excitation energy (1998Da03); σ≈130 nb at 95 MeV of excitation energy (1999Ry04); 1.4 μb at 300 MeV of excitation energy (2008Ka16).
66& *12*	(1/2+)	7.3 μs *3*	AB	%p=100 %p: decay modes other than p were not observed and their calculated $T_{1/2}$ are far larger than the experimental $T_{1/2}$; as a consequence we adopt %p=100. Configuration=π([411]1/2+) (1999Ry04). E(level): from energy difference in Q(p)'s to g.s. Jπ: from Nilsson model analysis of lifetime. $T_{1/2}$(calc) for [411] state=14.6 μs (2000Bb02). $T_{1/2}$: weighted average of 8 μs *3* (1999Ry04), 6.5 μs *+9−7* (2001Se03), and 7.4 μs *3* (2008Ka16). Proton decay of J^{π}(p)=1/2+, $T_{1/2}$(p)=7.3 μs *3* isomer: 1) to 0+ g.s. in ^{140}Dy: E(p)(0+ g.s.)=1234 keV *8* (weighted average of 1230 keV *20* (1999Ry04) and 1235 keV *9* (2001Se03)), Q(p)=1256 keV *8*, B(p)=0.983 *5*. 2) fine structure − proton decay to first 2+ state in ^{140}Dy: E(p)(2+)=1030 keV *14* (2008Ka16, 204 keV *11* smaller than E(p)(0+ g.s.)), B(p)=0.017 *5* (2008Ka16). σ≈30 nb at 95 MeV of excitation energy (1999Ry04); 240 nb at 290 MeV of excitation energy (2008Ka16).
66+x&	(3/2+)		B	Additional information 2.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{141}Ho Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	XREF	Comments
			E(level): x ≈20 keV from particle-rotor calculations (2001Se03).
77.8[@] *4*	(9/2$^-$)	B	
169.1[#] *4*	(11/2$^-$)	B	
277.7+x?[&] *4*	(7/2$^+$)	B	
386.7[@] *5*	(13/2$^-$)	B	
499.6[#] *5*	(15/2$^-$)	B	
623.2+x?[&] *6*	(11/2$^+$)	B	
978.1[#] *7*	(19/2$^-$)	B	
1062.5+x?[&] *7*	(15/2$^+$)	B	
1565.4+x?[&] *8*	(19/2$^+$)	B	
1595.5[#] *10*	(23/2$^-$)	B	
2333.1[#] *13*	(27/2$^-$)	B	
3165.7[#] *17*	(31/2$^-$)	B	
4084.6[#] *21*	(35/2$^-$)	B	

[†] From least-square fit to Eγ for γ decaying states.
[‡] For γ decaying states, the assignments are based on the γ energy and intensity pattern expected for band members, supported by cranked-shell model calculations and comparisons with neighboring nuclei.
[#] Band(A): π7/2[523], α=−1/2. Possible hexadecapole deformation and triaxial shape in the g.s.
[@] Band(a): π7/2[523], α=+1/2.
[&] Band(B): π1/2[411].

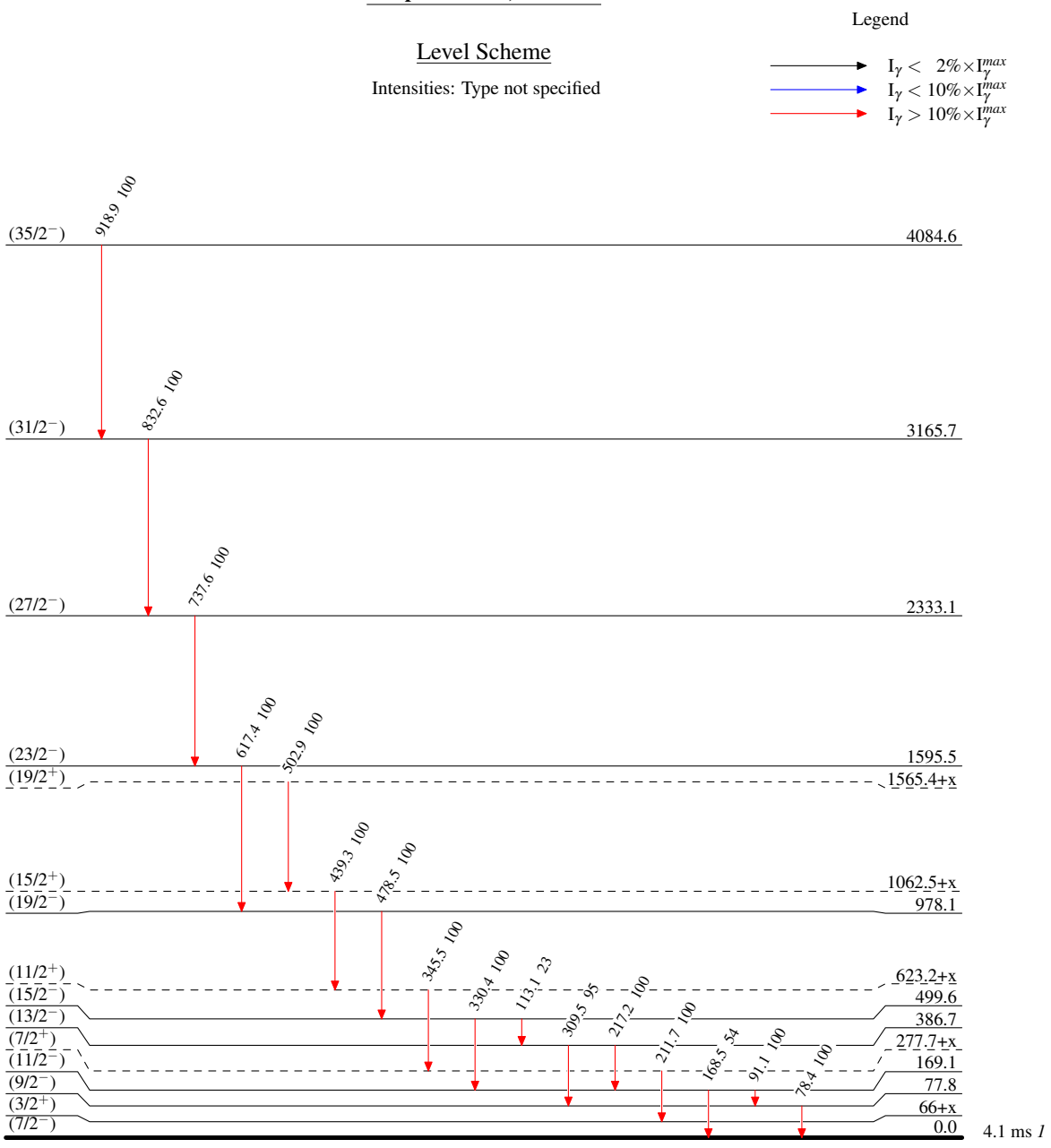
γ(^{141}Ho)

E$_i$(level)	J$_i^{\pi}$	E$_{\gamma}$	I$_{\gamma}$	E$_f$	J$_f^{\pi}$
77.8	(9/2$^-$)	78.4 *5*	100	0.0	(7/2$^-$)
169.1	(11/2$^-$)	91.1 *6*	100 *23*	77.8	(9/2$^-$)
		168.5 *5*	54 *18*	0.0	(7/2$^-$)
277.7+x?	(7/2$^+$)	211.7 *4*	100	66+x	(3/2$^+$)
386.7	(13/2$^-$)	217.2 *4*	100 *22*	169.1	(11/2$^-$)
		309.5 *4*	95 *22*	77.8	(9/2$^-$)
499.6	(15/2$^-$)	113.1 *6*	23 *7*	386.7	(13/2$^-$)
		330.4 *3*	100 *13*	169.1	(11/2$^-$)
623.2+x?	(11/2$^+$)	345.5 *4*	100	277.7+x?	(7/2$^+$)
978.1	(19/2$^-$)	478.5 *4*	100	499.6	(15/2$^-$)
1062.5+x?	(15/2$^+$)	439.3 *4*	100	623.2+x?	(11/2$^+$)
1565.4+x?	(19/2$^+$)	502.9 *4*	100	1062.5+x?	(15/2$^+$)
1595.5	(23/2$^-$)	617.4 *7*	100	978.1	(19/2$^-$)
2333.1	(27/2$^-$)	737.6 *9*	100	1595.5	(23/2$^-$)
3165.7	(31/2$^-$)	832.6 *11*	100	2333.1	(27/2$^-$)
4084.6	(35/2$^-$)	918.9 *12*	100	3165.7	(31/2$^-$)

Adopted Levels, Gammas

Level Scheme

Intensities: Type not specified

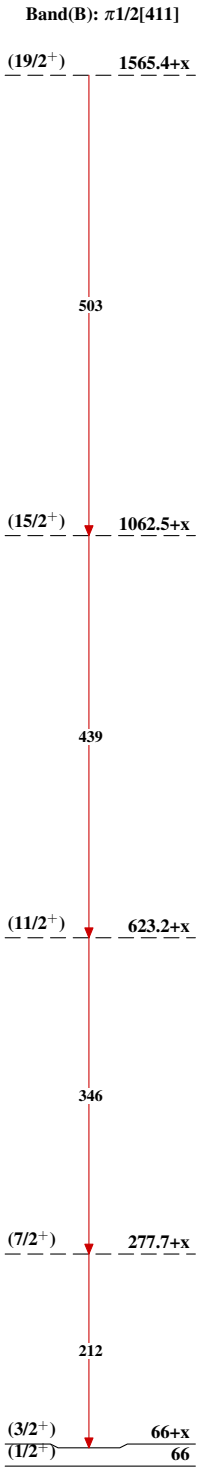


$^{141}_{67}Ho_{74}$

Adopted Levels, Gammas

$^{141}_{67}Ho_{74}$

Adopted Levels, Gammas (continued)



$^{141}_{67}Ho_{74}$