Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen	NDS 191,1 (2023)	22-Aug-2023

Q(β^-)=2368 *7*; S(n)=5398 *4*; S(p)=9392 *4*; Q(α)=−948 *4* 2021Wa16
S(2n)=12442 *4*, S(2p)=17964 *4* (2021Wa16).
1960Wi10, 1974Ka21: identification through genetic relationship of product from neutrons on ^{170}Er to known γ rays from ^{167}Ho.
1977Tu01: coincidences between Ho x rays and γ rays attributed to ^{170}Er(n,α).
2019No05: theory: calculated neutron and proton pairing residual interaction strength, binding energy, and moments of inertia using self-consistent Hartree-Fock plus BCS framework, with self-consistent blocking and Skyrme SIII parametrization.
2015Ch53: calculated odd−even mass differences, binding energy per nucleon, pairing energy using RMF+SLAP and RMF+BCS methods.
Additional information 1.
The level scheme is tentative according to 1999As03.

^{167}Dy Levels

Cross Reference (XREF) Flags

A ^{167}Tb β^- decay (18.9 s)

E(level)[†]	J$^\pi$	T$_{1/2}$	XREF	Comments
0.0[#]	(1/2$^-$)[‡]	6.20 min *8*	A	%β^-=100 T$_{1/2}$: from decay curves for 133, 250, 259, 310 and 570 γ rays (1977Tu01). Others: ≈6 min (1974Ka21), ≈4.5 min (1963Ka10), 4.4 min *4* (1960Wi10).
57.2[#] *2*	(3/2$^-$)[‡]		A	
69.7[#] *2*	(5/2$^-$)[‡]		A	
97.8? *3*	(5/2$^-$)		A	J$^\pi$: possible ν5/2[512] bandhead, expected at ≈100 keV, based on energy systematics for this bandhead in nearby N=101 isotones, which should deexcite to the 3/2 member of the 1/2[521] band (1999As03).

[†] From Eγ.
[‡] Probable ν1/2[521] band assignment, based on consistency of band parameters with those for ν1/2[521] bands in neighboring N=101 isotones of ^{169}Er, ^{171}Yb and ^{173}Hf.
[#] Band(A): Probable ν1/2[521] band. Band assignment from 1999As03. Band parameters of A=10.8 and a=+0.77 are consistent with systematics for 1/2[521] band in N=101 isotones, for which the Nilsson model predicts a 1/2[521] g.s. over a very broad deformation range, with experimental assignment for ^{169}Er, ^{171}Yb, and ^{173}Hf isotones.

$\gamma(^{167}Dy)$

E$_i$(level)	J$_i^\pi$	E$_\gamma$[†]	I$_\gamma$	E$_f$	J$_f^\pi$	Mult.	α[‡]
57.2	(3/2$^-$)	57.2 *2*	100	0.0	(1/2$^-$)	[M1+E2]	18 *7*
69.7	(5/2$^-$)	69.7 *2*	100	0.0	(1/2$^-$)	[E2]	10.93 *20*
97.8?	(5/2$^-$)	40.6[#] *2*	100	57.2	(3/2$^-$)	[M1+E2]	62 *56*

[†] From ^{167}Tb β^- decay.
[‡] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.
[#] Placement of transition in the level scheme is uncertain.

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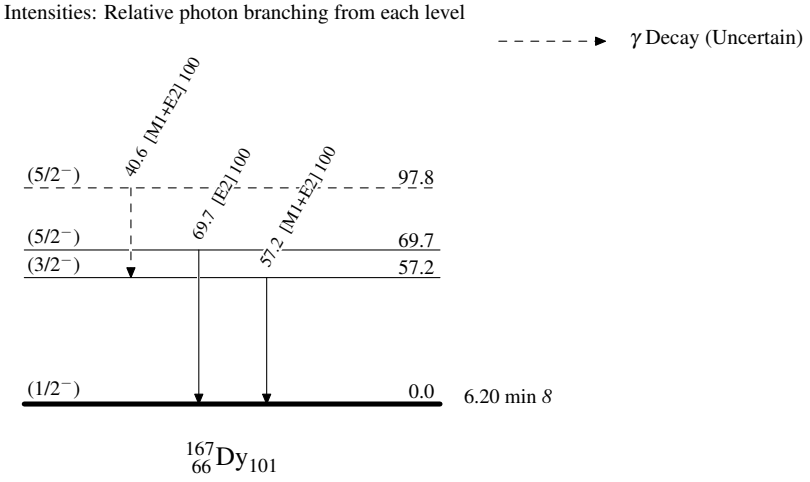
Legend

Level Scheme

Intensities: Relative photon branching from each level



$^{167}_{66}Dy_{101}$

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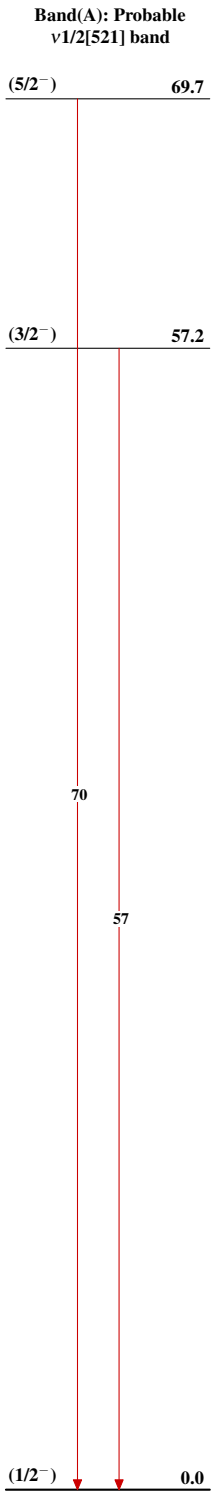

$^{167}_{66}Dy_{101}$