

^{167}Tb β^- decay (18.9 s) [1999As03](#)

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

Parent: ^{167}Tb : $E=0.0$; $J^\pi=(3/2^+)$; $T_{1/2}=18.9$ s 20; $Q(\beta^-)=4028$ 4; $\% \beta^-$ decay=100

^{167}Tb - $J^\pi, T_{1/2}$: From ^{167}Tb Adopted Levels.

^{167}Tb - $Q(\beta^-)$: From [2021Wa16](#).

[1999As03](#): sources from on-line isotope separation of products from 20-MeV proton induced fission of ^{238}U at the on-line isotope separator of Japan Atomic Energy Research Institute (JAERI-ISOL). Measured E_γ , I_γ , $I(K\alpha \text{ x-ray})$, $K \text{ x-ray}(t)$, $\gamma(t)$, $\beta\gamma$ -coin.

[Additional information 1](#).

The 57.2- and 69.7-keV γ rays are tentatively assigned by [1999As03](#) to the decay of ^{167}Tb .

 ^{167}Dy Levels

$E(\text{level})^\dagger$	J^π	Comments
0.0 [#]	(1/2 ⁻) [‡]	
57.2 [#] 2	(3/2 ⁻) [‡]	
69.7 [#] 2	(5/2 ⁻) [‡]	
97.8? 3	(5/2 ⁻)	J^π : possible $\nu 5/2[512]$ 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). Same J^π assignments in the Adopted Levels.

[†] From E_γ values.

[‡] Members of probable $\nu 1/2[521]$ band ([1999As03](#)). Same J^π assignments in the Adopted Levels.

[#] Band(A): Probable $\nu 1/2[521]$ band. Band assignment from [1999As03](#).

 $\gamma(^{167}\text{Dy})$

E_γ^\dagger	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.	α^\ddagger	Comments
40.6 [#] 2	97.8?	(5/2 ⁻)	57.2	(3/2 ⁻)	[M1+E2]	62 56	$\alpha(L)=48$ 43; $\alpha(M)=12$ 11; $\alpha(N)=2.5$ 24; $\alpha(O)=0.30$ 27; $\alpha(P)=0.0010$ 8
57.2 2	57.2	(3/2 ⁻)	0.0	(1/2 ⁻)	[M1+E2]	18 7	$\alpha(K)=6$ 4; $\alpha(L)=9$ 8; $\alpha(M)=2.2$ 19; $\alpha(N)=0.50$ 42; $\alpha(O)=0.06$ 5; $\alpha(P)=0.00040$ 24
69.7 2	69.7	(5/2 ⁻)	0.0	(1/2 ⁻)	[E2]	10.93 20	$\alpha(K)=2.32$ 4; $\alpha(L)=6.62$ 13; $\alpha(M)=1.59$ 4; $\alpha(N)=0.356$ 7; $\alpha(O)=0.0422$ 9; $\alpha(P)=1.05 \times 10^{-4}$ 2

[†] From [1999As03](#).

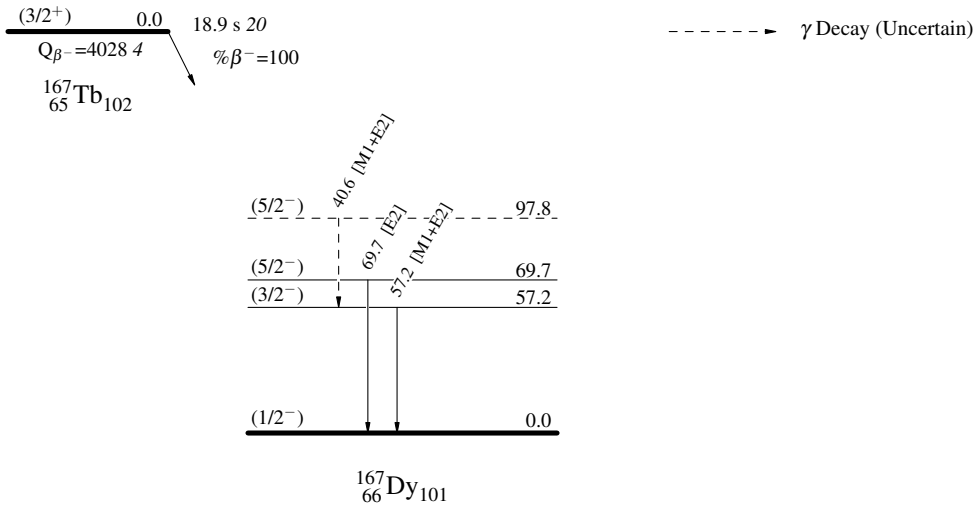
[‡] Total theoretical internal conversion coefficients, calculated using the BrIcc code ([2008Ki07](#)) with Frozen orbital approximation based on γ -ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

[#] Placement of transition in the level scheme is uncertain.

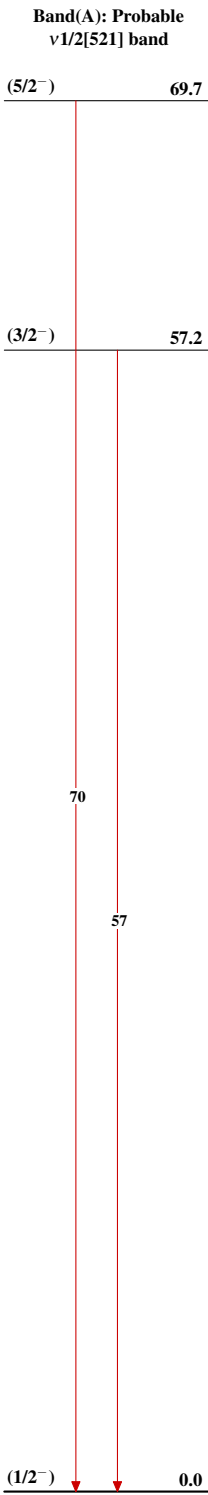
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Decay Scheme

Legend



$^{167}\text{Tb} \beta^-$ decay (18.9 s) 1999As03



$^{167}_{66}\text{Dy}_{101}$