^{154}Er $\varepsilon+\beta^+$ decay 1982Ba75,1982To14

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 200,2 (2025)	22-Aug-2022

Parent: ^{154}Er: E=0; $J^\pi=0^+$; $T_{1/2}$=3.73 min *9*; Q(ε)=2034 *9*; %ε+%β^+ decay=99.53 *13*
^{154}Er-$T_{1/2}$: Additional information 1.
^{154}Er-Q($\varepsilon+\beta^+$): Additional information 2.
^{154}Er-Q($\varepsilon+\beta^+$): From 2021Wa16.
Additional information 3.
Experimental methods:
1982Ba75: Produced by spallation with 1-GeV protons followed by on-line isotope separation. Ge and Si(Li) detectors were used for γ and ce counting.
1982To14: Produced by ^{147}Sm(^{12}C,5n). γ singles and $\gamma\gamma$ coincidences measured with Ge detectors.
Since only one γ transition has been reported and the decay energy is 2 MeV, the decay scheme is doubtless incomplete.

^{154}Ho Levels

E(level)	J^π †	$T_{1/2}$ †
0	2^-	11.76 min *19*
26.9 *2*	1^+	

† From Adopted Levels.

ε,β^+ radiations

E(decay)	E(level)	Iβ^+ †	Iε†	Log *ft*	I($\varepsilon+\beta^+$)†	Comments
(2007 *9*)	26.9	2.77 *10*	97.23 *11*	3.99	100	av Eβ=452 *5*; εK=0.8099; εL=0.12531 *15*; εM+=0.03712 *5* I($\varepsilon+\beta^+$): The authors, and the evaluator, assume that all the ε decay takes place to this level. Log *ft*: Value computed assuming 100% ε feeding. Since the decay scheme is incomplete, this value is probably a lower limit.

† Absolute intensity per 100 decays.

$\gamma(^{154}$Ho)

E$_\gamma$	E$_i$(level)	J_i^π	E$_f$	J_f^π	Mult.	α†	Comments
26.9 *2*	26.9	1^+	0	2^-	E1	2.07 *6*	α(L)=1.62 *4*; α(M)=0.363 *10*; α(N+..)=0.0899 *23* α(N)=0.0802 *20*; α(O)=0.00940 *23*; α(P)=0.000267 *6* E$_\gamma$: From 1982To14; other: 27.6 (1982Ba75). I$_\gamma$: If transition intensity is 100, Iγ is 33. Mult.: From α_L(exp)=1.50 *15* (1982Ba75). α: α(exp)=1.8 *1* and α_L(exp)=1.50 *15* (1984Al31 and 1982BaZE).

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

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Decay Scheme