^{176}Lu β^- decay 1990Ge05,1975Ar11,1992Da03

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	M. S. Basunia	NDS 107, 791 (2006)	15-Sep-2005

Parent: ^{176}Lu: E=0.0; $J^\pi=7^-$; $T_{1/2}=3.76\times10^{10}$ y *7*; Q(β^-)=1190.2 *8*; %β^- decay=100.0
Others: 1954Ar03, 1954Di18, 1971Be10.

^{176}Hf Levels

E(level)‡	J^π†
0.0	0^+
88.34 *3*	2^+
290.17 *5*	4^+
596.95 *6*	6^+
997.94 *7*	8^+

† From Adopted Levels.
‡ Deduced by evaluator from a least-squares fit to Eγ.

β^- radiations

E(decay)	E(level)	Iβ^-‡	Log *ft*†	Comments
(192.3 *8*)	997.94	0.39 *4*	19.98 *5*	av Eβ=52.03 *25*
(593.2 *8*)	596.95	99.61 *4*	19.169 *9*	av Eβ=182.32 *29* E(decay): Eβ=565 keV *25* $\beta\gamma$ coin (1969Pr11). Others: 1939Li13, 1947Fl07, 1953Ar03, 1954Di18.

† K forbidden β^-decay from $K^\pi=7^-$ g.s. rotational band (^{176}Lu) to $K^\pi=0^+$ g.s. rotational band(^{176}Hf).
‡ Absolute intensity per 100 decays.

$\gamma(^{176}Hf)$

Iγ normalization: From decay scheme and Ti(88γ)=Ti(202γ)=Ti(307γ)=100%.

E$_\gamma$†	I$_\gamma$‡@	E$_i$(level)	J_i^π	E$_f$	J_f^π	Mult.#	α&	Comments
88.34 *3*	15.5 *6*	88.34	2^+	0.0	0^+	E2	5.86	α(K)= 1.21; α(L)= 3.53; α(M)= 0.877; α(N+..)= 0.250 E$_\gamma$: weighted average of 88.35 keV *5* (1975Ar11) and 88.37 keV *7* (1992Da03).
201.83 *3*	83.3 *22*	290.17	4^+	88.34	2^+	E2	0.282	α(K)= 0.164; α(L)= 0.0893; α(M)= 0.0218; α(N+..)= 0.00618 E$_\gamma$: weighted average of 201.82 keV *5* (1975Ar11) and 201.84 keV *8* (1992Da03).
306.78 *4*	100	596.95	6^+	290.17	4^+	E2	0.0746	α(K)= 0.0520; α(L)= 0.0173; α(M)= 0.00416; α(N+..)= 0.00117 E$_\gamma$: weighted average of 306.88 keV *5* (1975Ar11) and 306.79 keV *5* (1992Da03).
400.99 *4*	0.40 *4*	997.94	8^+	596.95	6^+	E2	0.0347	α(K)= 0.0258; α(L)= 0.00678; α(M)= 0.00160; α(N+..)= 0.000454 E$_\gamma$: weighted average of 401.4 keV *5* (1975Ar11), 401.1 keV *2* (1973Ko22), and 401.0 keV *5* (1992Da03).

Continued on next page (footnotes at end of table)

^{176}Lu β^- decay 1990Ge05,1975Ar11,1992Da03 (continued)

$\gamma(^{176}Hf)$ (continued)

E_γ [†]	E_i(level)	Comments
		I_γ: weighted average of 0.32 *3* (1973Ko22), 0.365 *22* (1983Sa44), and 0.48 *3* (1992Da03). Other value: 0.9 *2* (1975Ar11).

[†] From Adopted Levels.
[‡] From 1990Ge05, unless otherwise specified.
[#] From adopted gammas.
[@] For absolute intensity per 100 decays, multiply by 0.936 *17*.
[&] 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.

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Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays