^{47}Cr $\varepsilon+\beta^+$ decay 1985Bu07

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	S. Ota and E. A. Mccutchan	NDS 203,1 (2025)	1-Apr-2025

Parent: ^{47}Cr: E=0.0; $J^\pi=3/2^-$; $T_{1/2}=461$ ms *2*; $Q(\varepsilon+\beta^+)=7444$ *5*; $\%\varepsilon+\beta^+$ decay=100

1985Bu07: ^{47}Cr produced in ^{9}Be(^{40}Ca,2n) reaction with E=120 MeV. Measured Eγ, Iγ, $\beta(\gamma)$ using He-jet system and Ge(Li) detectors.

Others: 1977Ho25, 1977Ed01, 1976EdZX, 1986HoZS, 2017RuZX.

^{47}V Levels

E(level)†	Jπ‡	$T_{1/2}$‡	Comments
0.0	$3/2^-$	32.6 min *3*	$\%\varepsilon+\%\beta^+=100$
87.5 *1*	$5/2^-$	0.68 ns *6*	

† From Eγ.
‡ From the Adopted Levels.

ε,β^+ radiations

av Eβ: Additional information 1.

E(decay)	E(level)	Iβ+ †	Iε†	Log *ft*	I(ε+β+)†	Comments
(7357 *5*)	87.5	3.7 *12*	0.0039 *13*	5.06 *14*	3.7 *12*	av Eβ=2950.9 *24*; εK=9.41×10^{-4} *15*; εL=1.006×10^{-4} *16*; εM+=1.635×10^{-5} *28*
(7444 *5*)	0.0	96.2 *12*	0.0979 *20*	3.668 *6*	96.3 *12*	av Eβ=2993.3 *24*; εK=9.04×10^{-4} *15*; εL=9.67×10^{-5} *16*; εM+=1.571×10^{-5} *27*

† Absolute intensity per 100 decays.

$\gamma(^{47}V)$

Iγ normalization: Absolute β feeding provided by 1985Bu07.

1985Bu07 searched for additional transitions with a half-life of 500 ms in the energy range of 50 to 2800 keV. No evidence was found and a limit of <0.5% was determined for additional transitions depopulating from states above 87-keV.

Eγ†	Iγ#	E_i(level)	J_i^π	E_f	J_f^π	Mult.†	δ†	α‡	Comments
87.5 *1*	3.6 *12*	87.5	$5/2^-$	0.0	$3/2^-$	M1+E2	+0.128 *22*	0.041 *4*	α(K)=0.0372 *32*; α(L)=0.00357 *32*; α(M)=0.00047 *4*; α(N)=2.30×10^{-5} *19* Iγ: from beta-feeding to level and assumption of negligible feeding from higher lying states.

† From the Adopted Gammas.
‡ Additional information 2.
# Absolute intensity per 100 decays.

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Decay Scheme

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