^{67}Ni β^- decay 1985Ru05

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Huo Junde, Huang Xiaolong, J. K. Tuli	NDS 106, 159 (2005)	1-Apr-2005

Parent: ^{67}Ni: E=0.0; $J^\pi=(1/2)^-$; $T_{1/2}$=21 s *1*; Q(β^-)=3576 *3*; %β^- decay=100.0

1985Ru05: ^{67}Ni activity produced from bombardment of a thick W target with 11.5 MeV/u, ^{82}Se beam, on-line mass separated samples, measured Eγ, Iγ, β-γ, $\gamma\gamma$ coincidences, $T_{1/2}$.

^{67}Cu Levels

E(level)[†]	J^π[‡]	$T_{1/2}$[‡]
0	$3/2^-$	61.83 h *12*
1115.4 *4*	$5/2^-$	
1937.1 *4*	$3/2^-$	
2272.0 *10*	$(1/2,3/2)^-$	
2623.1 *10*	$(1/2,3/2)^-$	
2680.1 *10*	$3/2^-$	
2841.1 *10*	$(1/2,3/2)^-$	

[†] From a least-squares fit to the Eγ data.
[‡] From Adopted Levels.

β^- radiations

E(decay)	E(level)	Iβ^-[†‡]	Log *ft*	Comments
(735 *3*)	2841.1	≈0.26	≈4.5	av Eβ=252.7 *13*
(896 *3*)	2680.1	≈0.24	≈4.8	av Eβ=318.9 *14*
(953 *3*)	2623.1	≈0.14	≈5.2	av Eβ=342.9 *14*
(1304 *3*)	2272.0	≈0.22	≈5.5	av Eβ=495.1 *14*
(1639 *3*)	1937.1	≈1.13	≈5.2	av Eβ=645.7 *14*
3.83×10^3 *9*	0	≈98	≈4.7	av Eβ=1560.5 *15*
				E(decay): from 1975Re09.

[†] From 1985Ru05 for the g.s. based on a comparison of β^- singles and γ-count rates. The value is uncertain since the contribution of isobaric contaminants to the β^- spectrum is not known. For other levels Iβ are based on γ-rays intensity imbalance.
[‡] Absolute intensity per 100 decays.

$\gamma(^{67}Cu)$

Iγ normalization: From≈98% β^- transitions to the g.s. as estimated by 1985Ru05.
The strongest γ-rays, except the 1938γ assigned to the ^{67}Ni β^- decay in the earlier evaluation 1983Mo26 based on 1971Ta03 and 1975Re09 data, have been reassigned to ^{70}Cu (1985Ru05).

E$_\gamma$[†]	I$_\gamma$[‡#]	E$_i$(level)	J_i^π	E$_f$	J_f^π
821.6 *5*	100 *17*	1937.1	$3/2^-$	1115.4	$5/2^-$
1115.3 *5*	105 *19*	1115.4	$5/2^-$	0	$3/2^-$
1937.1 *5*	137 *22*	1937.1	$3/2^-$	0	$3/2^-$
2272 *1*	46 *16*	2272.0	$(1/2,3/2)^-$	0	$3/2^-$
2623 *1*	30 *19*	2623.1	$(1/2,3/2)^-$	0	$3/2^-$

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^{67}Ni β^- decay 1985Ru05 (continued)

$\gamma(^{67}Cu)$ (continued)

E_γ [†]	I_γ [‡#]	E_i(level)	J_i^π	E_f	J_f^π
2680 *1*	49 *23*	2680.1	$3/2^-$	0	$3/2^-$
2841 *1*	57 *20*	2841.1	$(1/2,3/2)^-$	0	$3/2^-$

[†] From 1985Ru05.
[‡] Relative intensity (1985Ru05).
[#] For absolute intensity per 100 decays, multiply by $\approx 4.7\times10^{-3}$.

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Decay Scheme

Intensities: I_γ per 100 parent decays